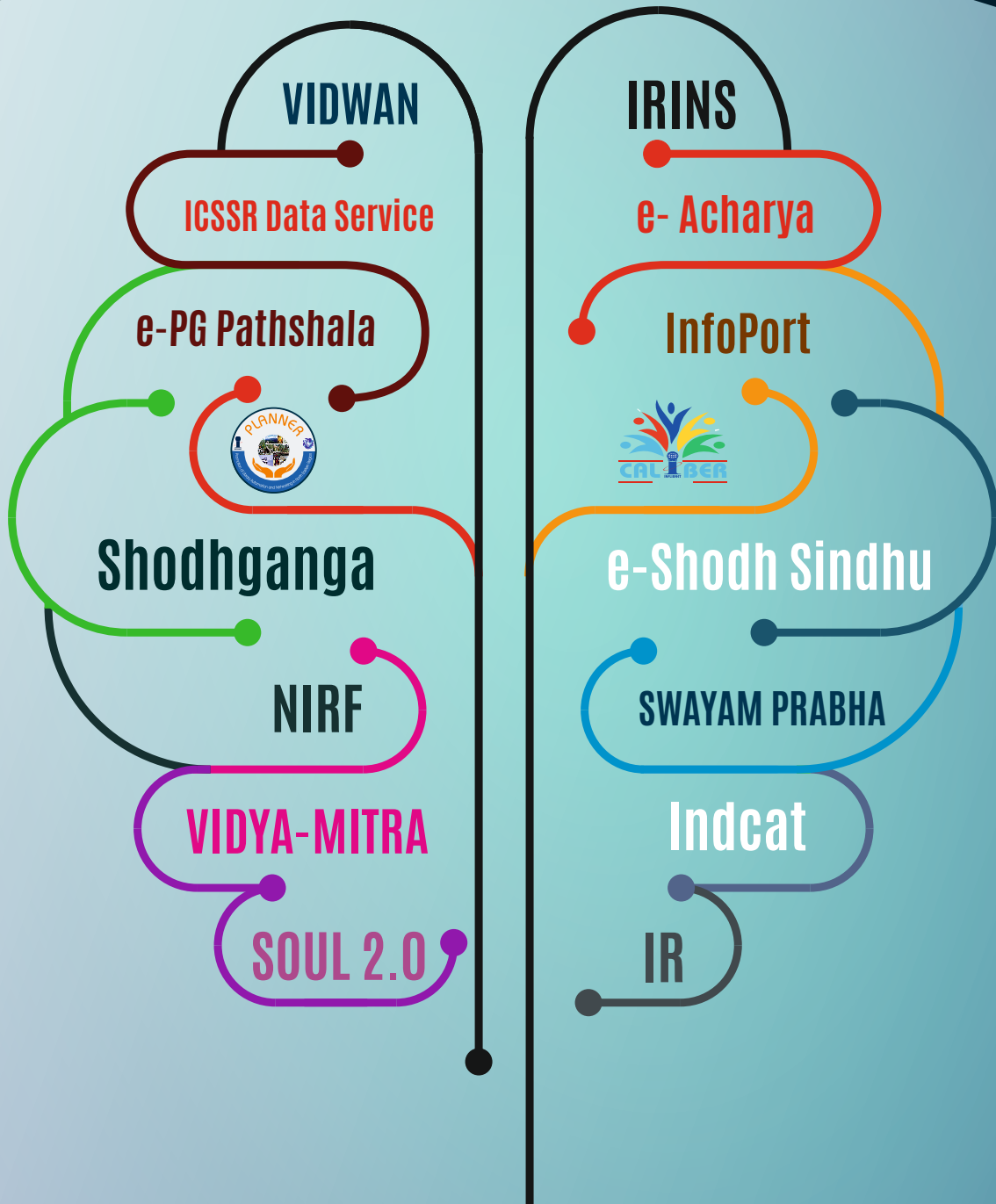




# Annual Report

April 2018 to March 2019



Information and Library Network Centre  
Gandhinagar

# Annual Report

(April 2018 to March 2019)

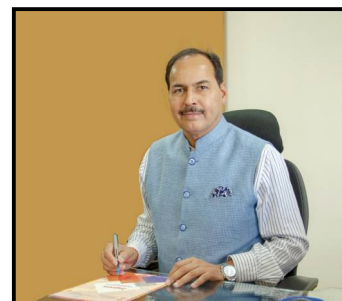


Information and Library Network Centre  
Gandhinagar

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## From the Director's Desk

### Prof J P Singh Joorel Director



At the outset, I would like to convey my sincere thanks to Dr Jagdish Arora, Former Director, INFLIBNET Centre for his great leadership and pride in heading this prestigious organization all these years. On 17<sup>th</sup> December 2018, I joined as Director, INFLIBNET Centre. I look forward to working with Team INFLIBNET to maintain its legacy and to attain new heights. The focus of INFLIBNET Centre would try to provide all facilities to the stakeholders.

I am happy to present the Annual Report of the Information and Library Network (INFLIBNET) Centre for the period April 2018 to March 2019. During the period under the report, the centre had witnessed many activities. Hold more responsibilities through a challenging project like "Indian Research Information Network System (IRINS)". Geared up once again for the Indian Ranking 2019. Centre also executed "Atal Ranking of Institutions on Innovation Achievements (ARIIA)" for the innovative cell of MHRD and dedicated considerable time in the development of portals for Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT), 'Scheme for Higher Education Youth for Apprenticeship and Skills (SHREYAS) and National Testing Agency (NTA)

Ranking Institutions of Higher Education in the country has become one of the flagship activities of the Centre. The Centre plays a pivotal role in the ranking of institutions in terms of developing an automated ranking platform that facilitates users to rank institutions based on any one of the five ranking parameters in addition to combined ranking and provides information of publications, citations, highly cited papers and other bibliographic parameters. The key role played by the Centre has duly been acknowledged by the National Board of Accreditation as well as by the Ministry of Human Resource Development (MHRD). Seven scientists including Director from the INFLIBNET Centre was invited to participate in the India Rankings 2018 Award Ceremony organized at Vigyan Bhawan, New Delhi on 3<sup>rd</sup> April 2018 wherein the role played by the INFLIBNET Centre in India Rankings 2018 was duly acknowledged.

Providing access to scholarly content through library consortia is one of the key and most prominent activity of the Centre. During the calendar year 2018, e-Shodh Sindhu continued to provide differential access to 17 resources with more than 7,038+ full-text journals, 4 bibliographic databases, to 314 eligible institutions including CFTIs, central universities, 12(B) universities, national law schools

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and IUCs of the UGC. The College component of the consortium, called N-LIST, continued to provide access to 6,094+ journals and 31,65409+ e-books to more than 3237+ colleges under the N-LIST programme. The Consortium also provides access to three e-resources, namely, ASCE, ASME, Bentham Pharmacy to 109 AICTE-funded institutes (including 20 Universities/department of Universities) with the funding from the AICTE. Apart from the 17 resources, consortium negotiated rates for 68 resources in an open model where institutions can subscribe it directly from the publisher as per rates negotiated by the consortium.

Also, I am happy to announce that the INFLIBNET Centre adds one more feather to its cap. 'Indian Research Information Network System (IRINS)' a project under NMEICT Phase II has been approved by Ministry of Human Resource Development, Government of India during December 2018. I would like to make a special mention of "Indian Research Information Management (IRINS)", a new initiative taken by the INFLIBNET Centre in collaboration with Central University of Punjab, Bathinda to complement and supplement VIDWAN: An Expert Database. IRINS is web-based Research Information Management (RIM) service developed by the Centre to organize research-related information at the institute level. The portal facilitates academic, R&D organizations and faculty members, scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create a scholarly network of scientists in a given discipline. The IRINS is available as free software-as-a-service to the academic and R&D organizations in India. It supports the integration of existing research repository with open and commercial citation databases, scholarly publishers, etc. It is integrated with academic identities such as ORCID ID, Scopus ID, Research ID, Microsoft Academic ID, Google Scholar ID for ingesting the scholarly contributions. A number of 150 centrally-funded institutions and universities are to be adopted with IRINS. Already, 20 institutes have been implemented with IRINS.

Further, I am happy and glad to congratulate the INFLIBNET Centre team in getting associated with three newly launched projects: 'Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT)', 'Scheme for Higher Education Youth for Apprenticeship and Skills (SHREYAS)' and 'National Testing Agency (NTA)'. PMMMNTT is a Scheme launched by the Ministry of Human Resource Development, Government of India. The aim of the scheme to improve the quality of the school and higher education by addressing comprehensively all issues related to more than 1,00,000 college and university teachers, teaching, teacher preparation, professional development, Curriculum Design, Designing and Developing Assessment. SHREYAS is a programme conceived for students in degree courses, primarily non-technical, with a view to introducing employable skills into their learning, promote apprenticeship as integral to education and also amalgamate employment facilitating efforts of the Government into the education system so that clear pathways towards employment opportunities are available to students during and after their graduation. NTA portal facilitates platform which automates the complete administration and management process of "Exam Observer", "Training Practice Centre", mobile-app, etc. INFLIBNET Centre is providing web and technical development support to the above projects.

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While taking new projects and schemes, it was ensured that our existing initiatives do not suffer. Shodhganga: a repository of full-text theses in Indian Universities has grown by leaps and bounds during the year under report. As on 31<sup>st</sup> March 2019, 451 universities have signed MoU on Shodhganga with the INFLIBNET Centre including 78 universities who signed the MoU during the financial year under report. Total numbers of theses deposited in the repository have grown to 2,22,222. Moreover, 80 universities that are signatory to MoU with INFLIBNET Centre on Shodhganga, have received funds from UGC as per the recommendation of the INFLIBNET Centre as an incentive for joining this initiative. Shodhgangotri; a repository of approved synopsis for doctoral dissertation thesis holds near about 6,450 synopsis from 63 contributing institutions.

The INFLIBNET Centre provides access to URKUND: a plagiarism detection software to eligible universities that are covered under Sections 12(B)/2(f) of the UGC Act and have signed MoU on Shodhganga with INFLIBNET Centre. 207 eligible universities were provided access to URKUND software during the year under report.

Remarkable developments were made under e-content projects namely, e-PG Pathshala and Vidhya-mitra. 10,000 e-text and 17,000 self-learning (video) along with other two components, i.e. self-assessment and Learn More were developed and uploaded into e-PG Pathshala across 70 subjects. Vidya-mitra, as on 31<sup>st</sup> March, 2018, hosts more than 44,459 e-texts, 66,174 e-tutorials and 37,827 other e-material. During the period under the report, two off-spring projects of e-PG Pathshala were also be inducted into INFLIBNET Centre via. e-Adhyayan and e-Pathya. INFLIBNET's Access Management Federation (INFED) launched for providing off-campus access to e-resources in member institutions reached newer heights of success with joining of 49 institutes and 36 publishers. Satisfactory progress is also being reported in other key activities including IndCat, Vidwan, SOUL software, ICSSR Data Service, etc.

During the period under report, the '11<sup>th</sup> Convention PLANNER 2018' was organised by Tripura University, Agartala in collaboration with INFLIBNET Centre, Gandhinagar at Maharaja Bir Bikram Satabarshiki Bhawan, Tripura University, Agartala during 15<sup>th</sup> to 17<sup>th</sup> November 2018 on the theme "Rejuvenate Academic Library as a Social Hub". The main theme of the convention was divided into four sub-themes i.e. Library as a Skill Development Centre; Preservation, Publication & Sharing of Knowledge; Next Generation Library Infrastructure; and Case Studies on North-East Libraries. 25 publishers participated in the exhibition arranged as part of the Convention. More than 100 delegates have participated in the Convention. Out of 102 submissions, 31 papers were selected for presentation and 7 papers were selected for abstract presentations.

Capacity building and imparting training in the use of ICT to LIS professionals working in university and college libraries is one of the foremost mandates of the Centre and the Centre continued imparting training programmes and workshops on various topics of interest. During the year under report, 27 workshops and training programmes were organized that benefitted 719 participants. These workshops and training programmes included In-house Training Programme on SOUL 2.0 (2), INFLIBNET Regional Training Programme on Library Automation (IRTPLA) (5), Specialised Training

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Programmes (21) of variable durations on various topics including Research Ethics, Plagiarism and Reference Management, MOOCs, Research Data and Statistical Analysis using R Programming, Metadata Standards, INFED, Bibliometric Analysis, Research Impact Evaluation and Altmetrics, Creation and Management of IR using DSpace, Eprints, Advanced Training Programme on Shodhganga.

I am pleased to inform that seven courses in library and information science offered on SWAYAM platform last year were approved for re-launch for the second consecutive year. These seven courses are i.e. Digital Libraries, Knowledge Society, Information Sources, Systems and Services, Information Communication Technology for Libraries, Management of Libraries and Information Centres & Knowledge Centres, Information Storage and Retrieval and Bibliometrics and Scientometrics. These 15-week courses attracted a fairly large number of learners. An MoU was signed between the Central University of Himachal Pradesh and INFLIBNET Centre to transfer the MOOC course credit under the subject Library and Information Science. Launched in July 2018, these seven courses were successfully completed in October 2018 and examination for these courses have been conducted on December 2018. Besides, the INFLIBNET Centre has also been given responsibility for coordination and disbursement of funds for the development of MOOCs for SWAYAM platform. Besides, the INFLIBNET Centre has also been given responsibility for coordination and disbursement of funds for the development of MOOCs for SWAYAM platform. 84 courses have been prepared / re-purposed for the MOOCs across 16 subjects that are being offered on SWAYAM platform.

I am pleased to welcome Prof. Yogesh Singh as the new Chairman of the Governing Board of INFLIBNET Centre. Prof. Yogesh Singh with his expertise in Computer Science and Engineering would be a guiding force for all of us with his domain knowledge as well as with his extensive administrative experience as Vice-Chancellor of a number of universities. We look forward to achieving newer heights under his vibrant and dynamic leadership. I take this opportunity to welcome all other new Members of the Governing Board including; Prof. Kamlesh P. Joshipura. Former Vice-Chancellor Saurashtra University, Rajkot, Dr. Pratosh Bansal, Professor in Information Technology Department of Institute of Engineering and Technology (IET), a UTD of Devi Ahilya University, Indore, Prof. B. K. Tripathi, Director of Inter-University Centre for Teacher Education, Banaras Hindu University, Varanasi and Dr. N Saravana Kumar, IAS, Joint Secretary (ICC & TEL), Government of India, MHRD. The Centre has a very special day as the Hon'ble Chairman, University Grants Commission and President, INFLIBNET Council, Prof D P Singh made his maiden visit to the INFLIBNET Centre on 15<sup>th</sup> March 2019 to chair the 19<sup>th</sup> Governing Council Meeting. Prof Singh congratulated the INFLIBNET Centre for its contributions to the academic stakeholders and the tireless support to the UGC for automating their schemes and activities. It was a great opportunity for the INFLIBNET staff to meet the Hon'ble Chairman.

The period under report is also most satisfying and rewarding for me individually as well as for the Centre. It is a matter of pride and privilege that none other than the Ministry of Human Resource Development (MHRD) recognized the contributions made by the INFLIBNET Centre. I am happy and glad to share that INFLIBNET Centre received 'EduShine Excellence Award 2019' from Shri Suresh

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Prabhu, Hon'ble Minister for Commerce & Industry and Civil Aviation, Government of India presented by ASSOCHAM in the 12th National Education Summit on 21<sup>st</sup> February 2019 in the presence of Shri Pranab Mukherjee, Hon'ble Former President of India for its digital initiative execution, for the largest ETD repository 'Shodhganga'.

The Centre continued to update and maintain the web site of UGC and provide its help, assistance and services for automation of its various schemes, Grant Management System and e-Scholarship-Fellowship Award Registration Tracking System (e-SARTS) and for developing UGC Portal for Central Universities in India for automation of administrative and financial routines. The Centre designed, developed and maintained online portals for automating scholarships, fellowships and schemes for the UGC.

I am sure that the services of the Centre were delivered to the users in universities and colleges more efficiently and effectively during the year. The Centre is, however, open to receive suggestions and comments from our user community.

Date: 31<sup>st</sup> July 2019



(Prof J P Singh Joorel)

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# **PART - I**

## **Introduction, Aims & Objectives, Governing Structure and Human Resources**

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## 1. Introduction

The Information and Library Network (INFLIBNET) Centre, setup in May 1996, is an autonomous Inter-University Centre (IUC) of the University Grants Commission (UGC) located at Infocity, Gandhinagar. Major activities and services of the Centre are geared towards modernization of academic libraries and information centres, to promote information transfer and access, to support scholarship, learning and academic pursuits. The Centre acts as a nodal agency for networking of libraries and information centres in universities, institutions of higher learning and R & D institutions in India.

The technology is a driving force in the contemporary education system, the Centre has taken up a number of initiatives for the benefit of the academic community in India. These initiatives can broadly be grouped as the following 12 categories:

### 1.1. Automation of University Libraries

The Centre proactively helps universities to automate their libraries by various means. The INFLIBNET Centre signed MoU with 166 universities for library automation which provides for universities to contribute their bibliographic records of documents available in their libraries to the IndCat: Union Catalogue of the INFLIBNET Centre.

### 1.2. IndCat: Union Catalogue of Indian Universities

IndCat consists of a union catalogue of Books, Serials and PhD theses available in university libraries. It contains bibliographical records of 142 lakh books from 184 university libraries, 0.35 lakh unique journals with holdings information for 223 universities and 2.74 lakh bibliographic records of theses from 317 universities.

### 1.3. Software Development: SOUL 2.0: Integrated Library Automation Software

**SOUL 2.0:** INFLIBNET Centre contributes towards the automation of libraries through in-house developed SOUL software. SOUL has more than 3,500 + installations across the country.

### 1.4. Open Access and Open Data Initiatives

**1.4.1. Shodhganga:** Launched in January 2010, Shodhganga, a reservoir of Indian Theses, at present it hosts 2.22 lakh full-text theses contributed from 397 institutes, during the period under report 0.35 lakh full-text theses from 72 universities have been added. The initiative got momentum when eligible universities were provided access to plagiarism detection software and at present 203 institutions are availing subscription for plagiarism detection software.

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**1.4.2. Shodhgangotri:** Initiated in 2013, Shodhgangotri is a repository of research in progress that hosts total 6,450 synopsis contributed by 63 institutes, during the period of report 2,550+ synopses have been added, where as 12 more institutions has been enveloped.

**1.4.3. ICSSR Data Service - Indian Social Science Data Repository:** The project assigned to the INFLIBNET Centre in 2015 by the ICSSR, hosts 140 datasets from MoSPI on the platform customized using NADA software. This has been quite popular in the research community and has over 30 lakh resource downloads.

### **1.5. Library Consortium and its By-products**

**1.5.1. e-ShodhSindhu:** Launched in 2015, e-ShodhSindhu provides access to more than 7,000 e-journals and 31 lakh books to more than 300 institutions that include universities, centrally-funded technical institutions. NLIST which is a college component of e-ShodhSindhu that provides access to more than 6,000 electronic journals and 31.65 lakh e-books to more than 5.43 lakh users spanned across 3,200 colleges.

**1.5.2. INFLIBNET Access Management Federation (INFED):** Started in a full-fledged manner during 2017, INFED provides off-campus access to e-resources to users in institutes covered under e-ShodhSindhu.

**1.5.3. InfiStat:** InfiStats, a by-product of e-ShodhSindhu launched in 2015 facilitates monitoring and evaluation of usage statistics of subscribed e-resources made accessible to the member institutes under e-ShodhSindhu.

**1.5.4. Plagiarism detection software (PDS):** INFLIBNET Centre provides access to URKUND: a plagiarism detection software to 207 eligible universities that are covered under Sections 12(B)/2(f) of the UGC Act and have signed MoU on Shodhganga with INFLIBNET Centre.

### **1.6. E-learning, Content Development and MOOCs**

**1.6.1. e-PG-Pathshala:** Initiated in 2012, e-PG Pathshala picked-up momentum from 2014 onwards. INFLIBNET coordinates development of e-content in 70 subjects across all disciplines. Presently it hosts 23,900+ modules contributed by 5000+ experts.

**1.6.2. Vidya-mitra:** Project assigned to the INFLIBNET Centre on May 2014, Vidya-mitra is an online learning portal for all the e-content projects developed under the NME-ICT, MHRD. Vidya-mitra hosts 66,000+ Video (Self-learning / e-Tutorial) and 44,000+ e-Text.

**1.6.3. SWAYAM (for PG Course):** Launched on July 9, 2017, the INFLIBNET Centre is a nodal agency for coordinating for MOOCs for PG courses. More than 80 courses are being prepared for the

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MOOCs and 60 non-technical PG courses were offered on SWAYAM platform during the year under report. The INFLIBNET Centre is also the nodal agency for offering seven courses in library and information science on SWAYAM Platform. These seven courses in LIS launched on SWAYAM platform in the month of November 2017 have been successfully completed in March 2018. These seven courses have also been approved for re-run during 2019 on popular demand.

**1.6.4. SWAYAM-PRABHA:** Launched on July 9, 2017, the INFLIBNET Centre has developed a portal for SWAYAM-PRABHA and is hosting and archiving videos for 32 DTH channels devoted to telecasting of high-quality educational programmes. During the period under report, INFLIBNET was exclusively assigned Channel No. 29 (PG Subjects & YOGA) for management.

**1.6.5. FASSAI'S FSKAN:** A System of the network of organizations with the aim to facilitate a scientific co-operation framework by the coordination of activities, the exchange of information, the development and implementation of joint projects within the Food Authority's responsibility. FSSAI has established Food Safety Knowledge Assimilation Network (FSKAN).

#### **1.7. Ranking of Institutions and Accreditation Work for NBA and NAAC**

**1.7.1. India Ranking 2016, 2017, 2018 and 2019 (NIRF):** Launched in September 2015, the first edition of India Rankings was launched in 2016. The INFLIBNET Centre developed a portal to capture data required for ranking of institutes. The Centre also provided data on publications, citations and patents for all applicant institutes.

**1.7.2. e-NBA:** National Board of Accreditation (NBA) has assigned the task of developing a full-fledged online platform for accreditation workflow management system for technical institutes since December 2017.

**1.7.3. ARIIA:** ARIIA is an initiative of MHRD to systematically rank all major higher educational institutions and universities in India on indicators related to "Innovation and Entrepreneurship Development" amongst students and faculties. INFLIBNET is a technical partner.

**1.7.4. NAAC:** NAAC has assigned the job of providing publications, citations, H-index and other related bibliometric data to NAAC for institutions that are to be accredited since November 2017.

#### **1.8. VIDWAN and Indian Research Information Management System (IRINS)**

**1.8.1. VIDWAN:** Project assigned to the INFLIBNET Centre in May 2014 by NME-ICT. VIDWAN consists of detailed profiles of more than 0.30 lakh Indian scientists and faculty members working in 4,151+ academic institutions.

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**1.8.2. Indian Research Information Network System (IRINS):** Project proposal was accepted by MHRD and assigned to the INFLIBNET Centre in December 2018 under NMEICT Phase II. IRINS is web-based Research Information Management (RIM) service that facilitates the academic, R&D organisations and faculty members, scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network.

### **1.9. Website Development and Maintenance**

The Centre maintains a comprehensive website in English and Hindi for all its activities. RSS (Really Simple Syndication) technology is used to facilitate users and bloggers to harvest recent updates from the Centre's website. Web 2.0 features and functionalities including Wiki, Blog, Chat and Discussion Forum, RSS feed, etc. have been incorporated in the Website.

### **1.10. Web Portals on Various Government Initiatives (on behest of MHRD in the year 2018 - 2019)**

**1.10.1. Study in India:** Study in India is a web portal designed for foreign students seeking to study in India. It provides all the information one needs on Indian education institutions in India, how to plan their studies, how and where to stay in India, what kind of events are planned, application processes, etc. The core part of the portal is institute login (where institute can define their seats to the foreign students) and student login (where a registered student can participate in the choice filling, including mock counselling and final counselling).

**1.10.2. Ek Bharat Shreshta Bharat (EBSB):** A portal hosts details of events being organised by different states. Events include a cultural programme, academic programme, etc. EBSB is designed to promote the spirit of national integration through a deep and structured engagement between all Indian States and Union Territories through a year-long planned engagement between States.

**1.10.3. Unnat Bharat Abhiyan (UBA) for Institutes:** A platform cum database of all institutes who are participating in UBA 2.0.

**1.10.4. Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT):** PMMMNMTT is a Scheme launched by the Ministry of Human Resource Development, Government of India. The aim of the scheme to improve the quality of the school and higher education by addressing comprehensively all issues related to more than 1,00,000 college and university teachers, teaching, teacher preparation, professional development, Curriculum Design, Designing and Developing Assessment. INFLIBNET Centre is providing web and technical development support.

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**1.10.5. Scheme for Higher Education Youth for Apprenticeship and Skills (SHREYAS):** SHREYAS is a programme conceived for students in degree courses, primarily non-technical, with a view to introduce employable skills into their learning, promote apprenticeship as integral to education and also amalgamate employment facilitating efforts of the Government into the education system so that clear pathways towards employment opportunities are available to students during and after their graduation. INFLIBNET Centre provides web technology and development support.

**1.10.6. National Testing Agency (NTA):** INFLIBNET Centre provides website development and technical support to NTA. The portal facilitates platform which automates the complete administrative and management process of "Exam Observer", "Training Practice Centre", Mobile-app, etc.

### **1.11. UGC Web Site and e-Governance @ UGC**

**1.11.1.** The UGC assigned the responsibility for the development and maintenance of its website to INFLIBNET, that include automation of its various schemes, Grant Management System and e-Scholarship-Fellowship Award Registration Tracking System (e-SARTS) etc.

**1.11.2. e-Governance@UGC-Schemes:** INFLIBNET Centre has developed more than 30 web services for UGC for its scholarship, fellowships, travel assistance, General Development Assistance, women hostel, Autonomous and Heritage institutions, Distance Education, etc.

### **1.12. Capacity Building Programme**

Since its establishment INFLIBNET Centre has actively involved in various capacity building programmes i.e in-house and offsite workshops, conferences, seminars, specialized training programs etc., till now the Centre has trained 0.61 lakh professional through 797 such programmes. During the period under the report, the Centre conducted 29 training programmes, workshops and other events that were attended by 769 participants.

## **2. Mission and Vision**

- ☞ Leveraging on the latest technology, create a virtual network of people and resources in academic institutions with an aim to provide effective and efficient access to knowledge through perseverance, innovation and collaboration;
- ☞ Provide seamless, reliable and ubiquitous access to scholarly, peer-reviewed electronic resources to the academic community in all educational institutions with a focus on services and tools, processes and practices that support its effective use and increase the value of this information;
- ☞ Build and strengthen ICT infrastructure in educational institutions with value-added services;

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- ☞ Develop tools, techniques and procedures for secure and convenient access management enabling users to access information in electronic format from anywhere, anytime;
  - ☞ Develop resource selection guides and online tutorials for effective delivery and usage of e-resources; and
  - ☞ Facilitate the creation of open-access digital repositories in every educational institution for hosting educational and research content created by these institutions.

### 3. Aims and Objectives

The objectives of the Centre, as per the Memorandum of Association (MoA), are as follows:

- a. to promote and establish communication facilities to improve capability in information transfer and access that provide support to scholarship, learning, research and academic pursuits through cooperation and involvement of concerned agencies;
- b. to establish information and library network - a computer communication network for linking libraries and information centres in universities, deemed to be universities, colleges, UGC information centres, institutions of national importance and R&D institutions, etc. avoiding duplication of efforts;
  - ☞ to promote and implement computerization of operations and services in the libraries and information centres of the country following uniform standards;
  - ☞ to evolve standards and uniform guidelines in techniques, methods, procedures, computer hardware and software, services and promote their adoption in actual practice by all libraries, in order to facilitate pooling, sharing and exchange of information towards optimal use of resources and facilities;
  - ☞ to evolve a national network interconnecting various libraries and information centres in the country and to improve capability in information handling and services;
  - ☞ to provide reliable access to document collection of libraries by creating online union catalogue of serials, theses/dissertations, books, monographs and non-book materials (manuscripts, audio-visuals, computer data, multimedia, etc.) in various libraries in India;
  - ☞ to develop new methods and techniques for archiving of valuable information available as manuscripts and information documents in different Indian languages, in the form of digital images using high-density storage media;



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- ☞ to optimize information resource utilization through shared cataloguing, inter-library loan service, catalogue production, collection development and thus avoiding duplication in acquisition to the extent possible;
  - ☞ to enable the users dispersed all over the country, irrespective of location and distance, to have access to information regarding serials, theses/dissertation, books, monographic and non-book materials by locating the sources wherever available and to obtain it through the facilities of the INFLIBNET and union catalogues of documents;
  - ☞ to create databases of projects, institutions, specialists, etc. for providing online information services;
  - ☞ to encourage cooperation among libraries, documentation centres and information centres in the country, so that the resources can be pooled for the benefit of helping the weaker resource centres by stronger ones; and
  - ☞ to train and develop human resources in the field of computerized library operations and networking to establish, manage and sustain INFLIBNET.
- c. to facilitate academic communication amongst scientists, engineers, social scientists, academicians, faculty, researchers and students through electronic mail, file transfer, computer/audio/video conferencing, etc;
  - d. to undertake system design and studies in the field of communications, computer networking, information handling and data management;
  - e. to establish appropriate control and monitoring system for the communication network and organize maintenance;
  - f. to collaborate with institutions, libraries, information centres and other organizations in India and abroad in the field relevant to the objectives of the Centre;
  - g. to promote R&D and develop necessary facilities and to create technical positions for realizing the objectives of the Centre;
  - h. to generate revenue by providing consultancies and information services; and
  - i. to do all other such things as may be necessary, incidental or conducive to the attainment of all or any of the above-mentioned objectives.

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#### 4. Physical Infrastructure

The Centre is housed in its new institutional building constructed on land measuring 10,000 Sq. Mtrs in Infocity, Gandhinagar. It is located amidst reputed institutions such as NID, DA-IICT and NIFT. The building, consisting of Administrative, Academic and Residential Blocks, is designed by internationally acclaimed architect and renowned academician Dr Balkrishna V Doshi of Vastu-Shilpa in consultation with other experts in the field of sustainable, eco-friendly and energy-efficient building. The building is furnished tastefully by M/s Godrej. It is partially air-conditioned and partially air-cooled following tenets of a green building. The current composition of the Building Committee is given in **Appendix IV**.

#### 5. Governance

The Centre is governed by its Governing Board and Governing Council. The Finance Committee, a subcommittee of the Governing Board, looks after the financial aspects of the Centre. Constitution and major responsibilities of these three committees are mentioned below:

##### 5.1. Council

The Council is an apex body of the Centre chaired by its President, ex-officio Chairman of the UGC. The Council has six ex-officio members and three nominated members. The members of the Governing Board are also members of the Council. As such, a total number of members of the Council is twenty-one. The nominated members of the Council serve for a term of 3 years. The Director, INFLIBNET is the Member-Secretary of the Council. The Council meets once in a year. The present members of the Governing Council are listed in **Appendix I**.

##### 5.2. Governing Board

Governing Board (GB) manages, administers, directs and controls the affairs of the Centre as per Rules and Bye-laws of the Centre. The Governing Board is headed by a Chairperson, who is an eminent academician in the areas of relevance to the Centre and is appointed by the President of the Council. The Governing Board has five ex-officio members and seven nominated members who are nominated by the Chairman, UGC. The Director, INFLIBNET is the Member Secretary of the Board. The Governing Board meets at least twice in a year. The current members of the Governing Board are listed in **Appendix II**.

##### 5.3. Finance Committee

The Finance Committee (FC) is a sub-committee of the Governing Board and consists of seven members. It has four ex-officio members and two nominated members. The Chairman of the Governing Board is also the Chairman of the Finance Committee. The Administrative / Accounts Officer of the Centre is the Non-member Secretary of the Committee. The Finance Committee makes

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recommendations to the Governing Board on i) Budget proposals of the Centre; ii) Scrutiny of the Audited Accounts and replies to the annual Audited Report; iii) Approval of sanctioned and additional positions; and iv) any other matter on which the Board seeks its recommendations. The Finance Committee meets at least once a year. The minutes of the Committee, after approval by the Governing Board forwarded to the UGC for examination, approval and release of grants to the Centre. The members of the current Finance Committee are listed in **Appendix III**.

## **6. Human Resources**

The Centre employs administrative, scientific and technical personnel for achieving its defined objectives. The technical personnel are mostly qualified in library, information and computer sciences. A list of technical, administrative and supporting staff of the Centre as on 31<sup>st</sup> March, 2019 is given in **Appendix V**.

### **6.1. Functional Group @ INFLIBNET Centre**

The scientific and technical manpower available in the Centre is clustered into the following working groups based on functional requirements of the Centre.

**6.1.1. Database Management and R & D Group:** The Database Management Group has developed suitable software and search interfaces for managing and updating a large number of bibliographic records available in Union Catalogues. The IndCat contains bibliographic description, location and holdings information for books, journals and theses in all subject areas available in different university libraries across the country.

**6.1.2. Software R & D:** The objective of this group is to develop software for the academic community in India with focus on software for library automation, union catalogue and software tools to facilitate data interchange and exchange. This group is also involved in supporting all other activities of the Centre by providing adequate software support from time to time. The mission of this group is to provide technological and software support for all activities of the Centre using the latest technologies and available development tools. The group also promotes and supports open-source software movement within the Centre as well as in the entire higher education community in India.

**6.1.3. HRD:** Imparting training to manpower working in the university and college libraries in the use of IT is an important objective of the Centre and has been given due priority. INFLIBNET Regional Training Programme for Library Automation (IRTPLA) and User Awareness Training Programme were conducted across the country in collaboration with the universities. National and International Conventions called PLANNER in North-Eastern Regions and International CALIBER in various states of India is being organized in the alternate year as part of the human resource development activities. Besides, training programmes on various specialized topics

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are being organized throughout the year at INFLIBNET Centre as well as in academic institutions around the country.

- 6.1.4. E-Resource Management Group:** Major objectives of the group is to provide current as well as archival access to e-resources to faculty, researchers and students in colleges and universities at a highly discounted rates of subscription and at the best terms and conditions using consortia approach. The group also evaluates the impact of access to peer-reviewed scholarly content on research productivity of the institutions both in terms of quality and in terms of quantity of publications in colleges and universities. E-resource Management Group is responsible for all consortium related activities including e-Shodh Sindhu and NLIST.
- 6.1.5. Open Access R & D Group:** The open-access has emerged as a promising alternative to the publisher-driven model of scholarly publishing that provides free access to scientific information to its users. The open-access publishing model offers access to full-text of journals free of charge to users through well-organized and professionally-managed web interfaces. The essential premise of open access movement is that the scientific community and society in general benefits from the open exchange of ideas and information unaffected and unencumbered from the limitations of subscription costs, licensing arrangements and copyright inherent to the traditional model of commercial journal publishing. Open access journals and institutional repositories are two routes of open access publishing system.
- 6.1.6. e-Learning and e-Content Development:** The Centre has a dedicated group of people who are working on e-Learning and e-Content development. The objective of this group is to create content in open access with the help of SMEs, provide innovative technology to academician to develop/host the content. Currently, the Centre has a number of e-Content projects including e-PG Pathshala, Vidya-Mitra, SWAYAM and SWAYAM-Prabha.
- 6.1.7. Web Services R & D Group:** Major objective of the Group is to provide organized and structured access to services and resources offered by the Centre to the user community through the Centre's Website. The Group ensures that the Website of the Centre functions as an integrated interface for all services and resources accessible to the user community in the universities. The Group designs innovative web-based interfaces for effective and efficient delivery of services using the latest web-based tools and technologies. The Group undertakes all activities related to selection, organization and presentation of services and resources in a meaningful way for the benefit of the user community.
- 6.1.8. Access Management Group:** Access Management Group is responsible for examining and evaluating tools and technologies, including Web proxies, Shibboleth, Referring URL, Kerberos, etc. that are in vogue for authenticating users to access and operate upon digital materials irrespective of their login location. The Group works on access management technologies, especially using open source software, with an aim to help universities to adopt

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authentication technologies to facilitate access to e-resources to the off-campus community. The Group also works on other aspects of access management in light of the fact that Centre is involved in the process of building digital repositories of electronic theses and dissertations (Shodhganga), e-prints, preprints, manuscripts, etc.

Major R&D and human resource development activities are undertaken according to the requirements of the library and academic community including students, faculty and research scholars. Major scientific and technical activities undertaken by these functional groups during the period under report are given in Part II of this report.

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## **Part - II**

# **Activities and Major Services of the INFLIBNET Centre**

**Activities at a Glance**

Sl. No.	Activities, Services and Projects	Year of Commencement	Number of		
			Univ.	Cumulative No. of Records	
1	<b>IndCat: Union Catalogue of books, Serials and Theses in university libraries</b>	1991			
	No. of contributing Universities / No. of Books		184	1,41,85,886	
	No. of contributing Universities / No. of Serials		223	35,248	
	No. of contributing Universities / No. of Theses		317	2,74,622	
	Access: <b>Available in Open Access to the worldwide community</b>				
2	<b>IR@INFLIBNET: Institutional Repository</b>	2004		1,810	
	Access: <b>Available in open access to the worldwide academic community</b>				
	Usage: Collection Views				45,500
3	<b>Annual / Bi-annual Conventions, Training and Workshops (including SOUL, IRTPLA, e-Resource Awareness, Dspace, Shodhganga, Bibliometrics and Other Specialized Programmes)</b>	1991			
	No. of Programme			797	
	No. of Participants			60,759	
4	<b>SOUL 2.0: Library Automation Software / No. of Installations</b>	2009		3,645	
5	<b>Shodhganga: A Reservoir of Indian Theses</b>	2010			
	MoU Signed with No. of Institutes			451	
	No. of Theses			2,22,222	
	No. of Contributing Institutes			397	
	No. of Universities having access to anti-plagiarism Detection Software URKUND	2015		203	
	Access: <b>Available in open access to the worldwide academic community</b>				
	Usage: Page views				
6	<b>E-PG Pathshala: e-Content for PG Courses</b>	2011			
	No. of Subjects			70	
	No. of Modules (e-text)			23,425	
	No. of Modules (video)			23,941	
	No. of Experts			5,000+	
	Access: <b>Available in open access to the worldwide academic community</b>				

	Usage: Page views(Vidya-mitra and e-PG Pathshala)		1,53,63,492
7	<b>Shodhgangotri: Repository of Approved Synopsys for Doctoral Dissertation Theses</b>	2011	
	No. Synopsis		6,450
	No. of Contributing Institutions		63
	Access: Available in open access to the worldwide academic community		
8	<b>VIDWAN: Database of Experts with their Research Publications</b>	2013	
	No. of Expert's Profiles		29,907
	No. of Contributing Institutions		4,151
	Access: Available in open access to the worldwide academic community		
	Usage: Page Views		5,54,546
9	<b>IRINS: Indian Research Information Network System</b>	2018	
	<b>IRINS Instances:</b>		
	Centrally Funded Institutes		11
	Research & Development Organizations		04
	State Universities		06
	Private Universities & Institutes		04
	Access: Available in open access to the worldwide academic community		
10	<b>Vidya-mitra: Integrated Repository of all e-Content Project Repository of all MHRD e-Content project funded by the MHRD</b>	2013	
	No. of e-Text		44,450
	No. of e-Tutorials		66,174
	Other e-Materials		37,827
	Access: Available in open access to the worldwide academic community		
	Usage: Page Views(Vidya-mitra and e-PG Pathshala)		1,02,70,740
11	<b>India Rankings (NIRF)</b>	2015	
	No. of Applicant Institutes		3,954
	No. of Unique Institutes		2,801
12	<b>ICSSR Data Service: Platform to host Datasets from MoSPI</b>	2015	
	No. of Datasets		140
	Access: Available in open access to the Indian academic community		



	Usage: Total number of resources downloads		55,56,220
	Total number of views		1,58,77,484
	Total registered users		3,124
13	<b>E-ShodhSindhu: Access to e-Resources (e-Journals, e-Books and Databases ) to Indian Institutes</b>	2016	
	No. of Core Members (CFTIs)		91
	No. of Core Members (Universities)		178
	No. of Technical Institutes (AICTE)		106
	No. of e-Journals		7038+
	No. of Bibliographic Databases		04
	No. of e-Books		30,00,000+
	Usage: No. of full-text downloads		3,21,05,292
	<b>N-LIST: e-Resources to Colleges</b>		
	No. of 12(B) Colleges		3,237
	No. of e-Journals		6,094+
	No. of Bibliographic Databases		04
	No. of e-Books		31,65,409
	Usage: No. of User ID Created for Access		5,43,135+
14	<b>SWAYAM: Massive Open Online Courses (MOOCs)</b>	2016	
	No. of PG Courses (through UGC)		60
	No. of Courses Offered by INFLIBNET in LIS as Anchor Inst.		07
	Access: <b>Available in open access to the worldwide academic community</b>		
	Usage:		
15	<b>SWAYAM Prabha: 32 Academic DTH Channels</b>	2017	
	No. of Channels		32
	No. video lectures		49,500+
	Access: <b>Available in open access to the worldwide academic community</b>		
16	<b>INFLIBNET Access Management Federation (INFED): Off-campus Access to e-Resources</b>	2017	
	No. of Institutes joined INFED		49
	No. of Publishers		36
	Publishers Signed membership of INFED		10

## 1. Automation of University Libraries

The University Grants Commission, on the recommendation of the INFLIBNET Centre, had supported 142 universities during IX Plan period and 24 universities during XI/XII Plan periods for automation of their libraries with software and training support from the INFLIBNET Centre. The total funds allocated to 24 universities for automation of their libraries during the XI/XII Plan period was Rs. 195.60 lakhs including Rs. 6.50 lakhs for purchase of equipment (PCs, servers, accessories, scanner, etc.) and Rs 1.65 lakhs recurring grant for five years for each of the 24 universities. The Centre proactively helped these universities to automate their libraries. The INFLIBNET Centre signed an MoU with all the 166 universities (142 IX/X Plan Period+ 24 XII Plan Period) on library automation which provides for universities to contribute their bibliographic records of documents available in their libraries to the IndCat: Union Catalogue of the INFLIBNET Centre.

## 2. IndCat: Union Catalogue of Indian Universities and Databases (<https://indcat.inflibnet.ac.in/>)

Union Catalogue of Indian Universities (IndCat) is a by-product of the library automation of the INFLIBNET Centre wherein universities that are signatory to the MoU on library automation contribute the bibliographic records of documents that are available in their libraries. The scope of the IndCat has now been extended to invite contributions from universities and other institutions that have not signed MoU with INFLIBNET Centre on library automation.

A brief description of three components of the union catalogue i.e. books, theses and serials maintained by the Centre is given below. Fig. 1 depicts the current interface of the IndCat.

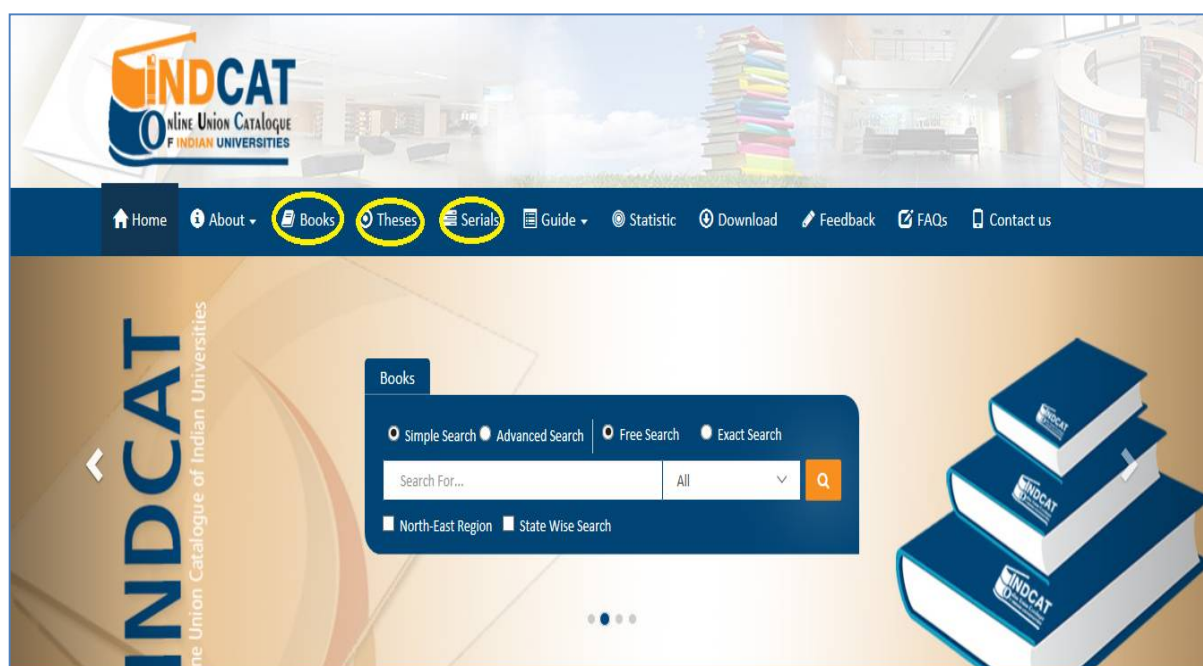


Fig. 1: Interface of IndCat: Union Catalogue of Indian Universities

## 2.1. Union Catalogue of Books

The Union Catalogue of Book Database covers bibliographic records of books available in the libraries of universities in India. The book database contains 84.19 lakhs unique records of books available in 176 universities/institutes in various disciplines. The book database contains textbooks, reference books, conference, proceedings, monographs, etc. The book database can be searched by different search elements i.e. title, author, ISBN, subject, publisher, Place, etc. Fig. 2 depicts the Search Interface for Books.

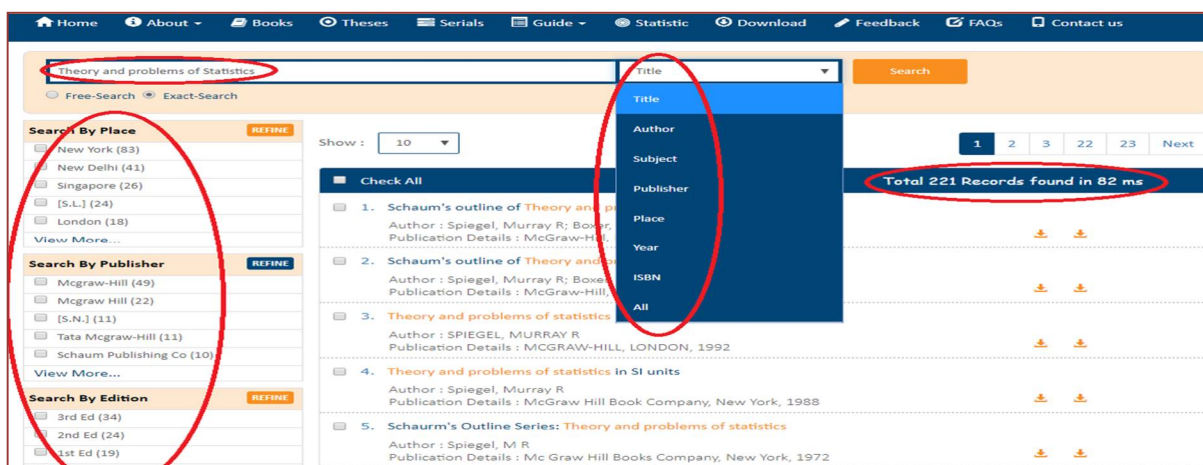


Fig. 2: Search Interface for Books

### 2.1.1. Process for Building IndCat

Process of building IndCat commences with the creation of bibliographic records in participating university libraries and their receipt at the INFLIBNET Centre. Steps involved in the building of IndCat database is as follows:

- Step 1.** INFLIBNET Centre receives bibliographic records from Indian universities in MARC or MARCXML format from different library softwares, such as Soul 2.0, KOHA, Libsys, VTLS etc.
- Step 2.** Checking the Data Quality as per the AACR-II Rules and LoC MARC standard. For that using MARCEdit Software and the following fields are mandatory for book database, i.e. Title, Author, Place, Publisher, Year, Edition, ISBN, Pages, Class No., Subject, and Accession.
- Step 3.** Importing the MARC File converted into CSV format using UCMS 2.0 Application.
- Step 4.** Importing CSV file into university database using UCMS 2.0 Application and using the following steps:
  - 1) Importing CSV file into Database;
  - 2) Creating DDString;
  - 3) Fetching Holding Details;
  - 4) Checking for Duplicate Records within University; and
  - 5) Mass Insert from Temp to Main Table.

**Step 5.** All records go under the process of authentication, using Union Catalogue management System (UCMS 2.0) Application for editing typographical errors in various fields such as place, publisher, edition, year of publication, etc.

**Step 6.** Lock Data before Matching and Merging

**Step 7.** Matching and Merging into IndCat.

**Step 8.** SOLR Indexing of Merging records

### 2.1.2. Web interface for Book Database of IndCat

Web interface for Book Database of IndCat facilitates its users to conduct searches on the title, words in title, author, subject, ISBN, location, place and publisher. The IndCat interface facilitates restricting the search to collections available within an individual university as well as for expanding the search to universities in a given state. By default, the interface searches all bibliographic records of documents available in IndCat for all the participating universities. The search results retrieved from the IndCat can be displayed in the following two formats:

- » **Brief:** By default, retrieved records are displayed in brief. A brief bibliographic record contains the title, authors, place, publisher and year of publication.
- » **Descriptive:** A detailed descriptive record contains complete bibliographic details of a book including its location. It is a second-level display that appears when a user clicks at the brief record. The descriptive record also provides the option of ILL request. Fig. 3 depicts the bibliographic details of searched records.

The screenshot shows the IndCat web interface. At the top, there is a navigation bar with links for Home, About, Books, Theses, Serials, Guide, Statistic, Download, Feedback, FAQs, and Contact us. Below the navigation bar, there is a search bar and a 'Download Record' dropdown menu with options for Plain-Text and MARC21. The main content area displays the bibliographic details for 'Schaum's outline of theory and problems of statistics in SI units'. The details are as follows:

Title :-	Schaum's outline of theory and problems of statistics in SI units
Author :-	Spiegel, Murray R; Boxer, R W
Place & Publisher :-	New York, McGraw-Hill
Date of Publication :-	1972
Pages :-	vii,359p.
Language :-	English
Catalogue Agency :-	Himachal Pradesh University

Below the details, there is a table of holding universities:

Sr. No.	Holding University	Accession Number	Class Number	ILL Request
1	Himachal Pradesh University	102483	001.422	Request
2	Jawaharlal Nehru University	58898; 82134	NA	Request
3	International Institute for Population	NA	310	Request

**Fig. 3: Bibliographic Details of a Searched Record**

### 2.1.3. Functions and Features of IndCat

#### i) Restrict Search within a University / State

Searches in Union Catalogue, by default, is conducted on the entire database containing records of documents from all universities. Users can restrict their searches to the records of documents available within their own university on different search parameters like Title, Subjects, Authors, Place, Publisher, etc.

- ▶ **State-wise Search:** User can search the book database within a State by Title, Authors, ISBNs, etc.
- ▶ **Advanced Search:** Advanced search facilitates the use of Boolean operators i.e. AND, OR, NOT with different search parameters i.e. Title, Authors, Corporate Body, Place & Publisher, Year, Subjects, Notes, ISBN, etc.

#### ii) Copy Cataloguing

The copy cataloguing feature of the IndCat facilitates downloading of bibliographic records in MARC21 and Plain Text format. The downloaded bibliographic records can be imported to any library management software compliant to MARC21 bibliographic format including SOUL 2.0. Effectively, librarians/cataloguers can copy bibliographic records of books instead of creating a new record which is a time-consuming and cost-intensive process. Fig. 4 depicts copy cataloguing of a searched record and importing in SOUL 2.0

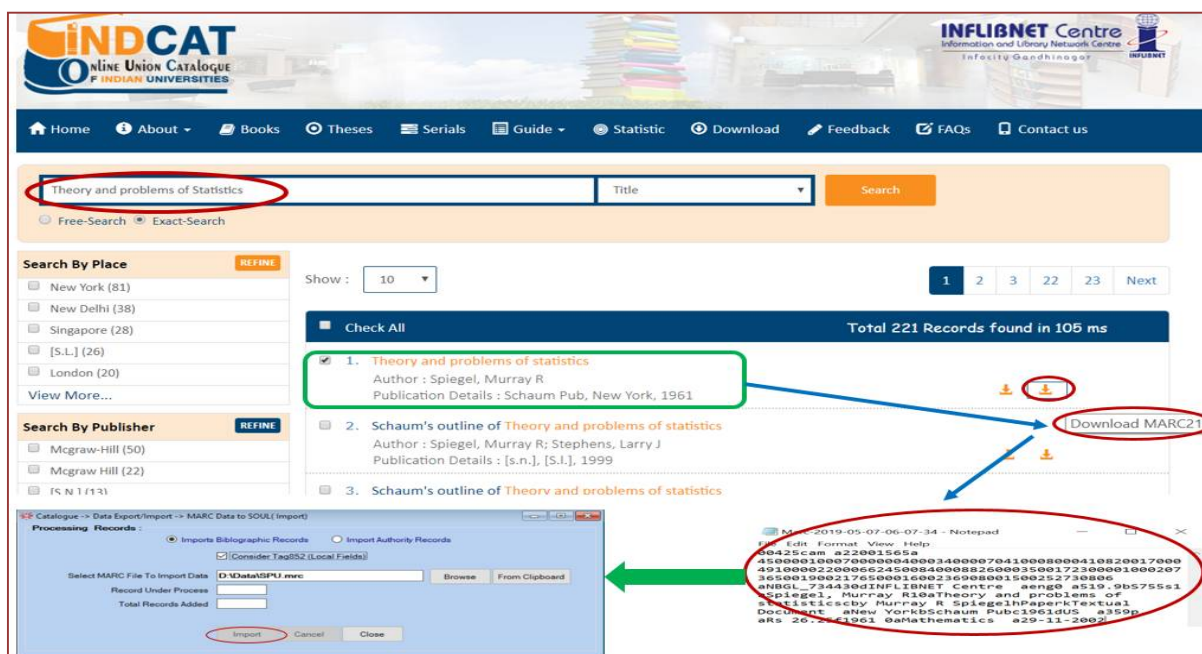


Fig. 4: Copy Cataloguing of a Searched Record and Importing in SOUL 2.0

### iii) Union Catalogue of Books: Subsets

The union catalogue of books has two subsets namely GujCat and NERCat that are separately designed on demand of the concerned geographic regions:

- ▶▶ The **GujCat**, a subset of IndCat, is unified online library catalogue of books available in major college/institute/university libraries within Gujarat state. GujCat contains bibliographic description, location and holding information of books available in libraries in Gujarat. A separate dedicated web-based interface is designed to provide easy-access to the merged catalogues of libraries in Gujarat. GujCat is a major source of bibliographic information that can be used for inter-library loan, collection development as well as for copy cataloguing and retro-conversion of bibliographic records within Gujarat.
- ▶▶ The **NERCat**, an online catalogue of books in universities in North-Eastern Region, is another subset of IndCat. NERCat is designed and implemented to restrict searching of bibliographic records to university libraries in North-Eastern region, so as to promote resource sharing amongst university libraries in North-Eastern region.

#### 2.1.4. Bibliographical Records for Books Added during Year 2018-2019

The Centre has received data first time from three universities and a second time from two universities in different bibliographic formats as per the details are given in Table 1 below.

Sl. No.	University Name	Received Date	1st Time Received Records	2 <sup>nd</sup> Time Received Records	Updated Records	Format/ Software
1	Chudhary Charan Singh University, Meerut (UP)	15 <sup>th</sup> Nov 2018	-	1,01,448	31,066	MARC (Soul 2.0)
2	Baba Ghulam Shah Badshah University, Rajouri (J & K)	3 <sup>rd</sup> Jan 2019	-	16,944	6,555	CCF (Soul 1.0)
3	Central University of South Bihar, Fatehpur (Bihar)	12 <sup>th</sup> Dec 2018	10,713	-	-	MARC (KOHA)
4	Nalanda University, Rajgir, (Bihar)	13 <sup>th</sup> Dec 2018	11,520	-	-	MARC (KOHA)
5	Alliance University, Bangalore (Karnataka)	5 <sup>th</sup> Feb 2019	32,495	-	-	MARC (KOHA)

Table 1: Bibliographic Records Received from Five Universities

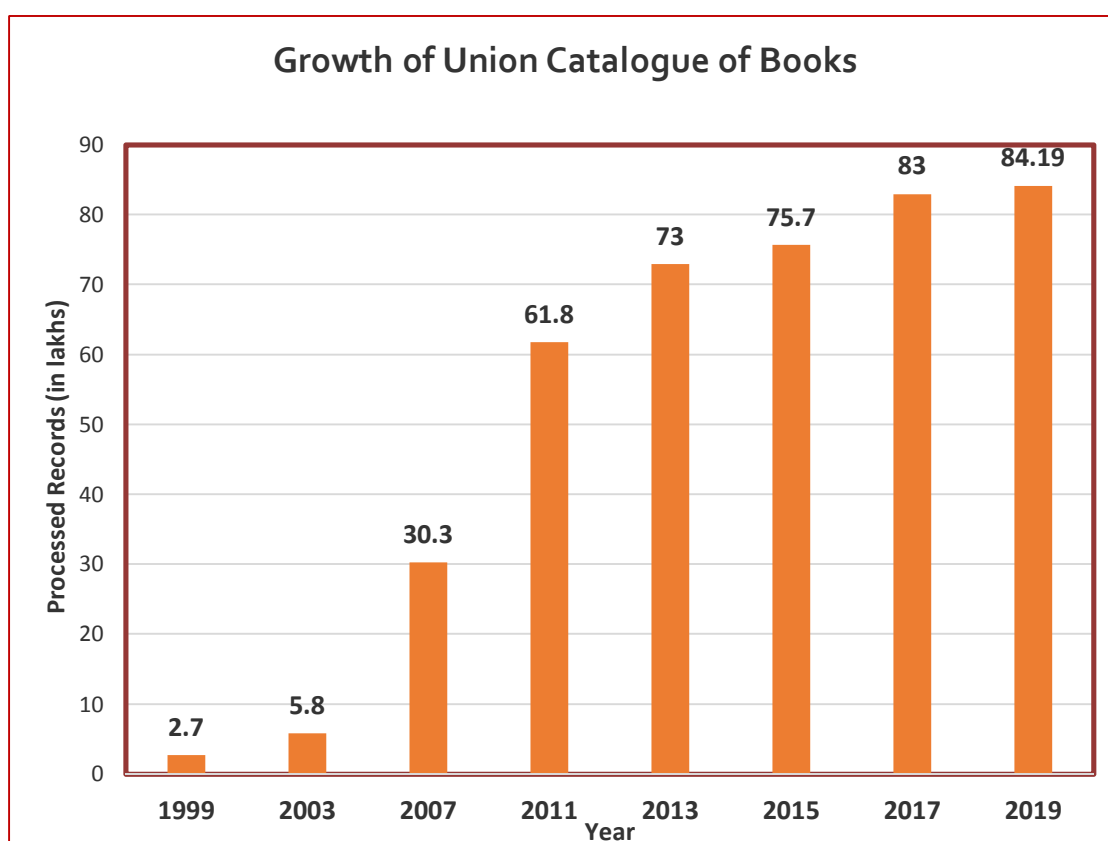
#### 2.1.5. Growth of Union Catalogue of Books

Building and maintaining a union catalogue is an ongoing activity involving the collaboration of all participating libraries. The Union Catalogue of Books is essentially an outcome of financial and logistic support that was extended to the participating universities by the Centre for creating bibliographic

records of their library collections. With initial financial incentives backed-up with logistic support in terms of training on integrated library management software including SOUL, the Union Catalogue of Books has witnessed rapid growth. The union catalogue of books has grown from 2.7 lakh records in 1999 to 84.19 lakh records in 2019 as depicted in Table 2 and Fig. 5 given below:

Year	Processed Records (in lakhs)
1999	2.7
2003	5.8
2007	30.3
2011	61.8
2013	73
2015	75.7
2017	83
2019	84.19

**Table 2: Growth in No. of Bibliographic Records in IndCat from 1999 to 2019**



**Fig. 5: Growth of Union Catalogue of Books**

The union catalogue of books has bibliographic records of documents available in libraries of 176 contributing universities. Category wise participating universities are given in Table 3 and depicted in Fig. 6.

Categories-wise University List	No. of Universities
12 (B) / 2 (f) State Universities	109
Central Universities	22
Deemed Universities (Receiving Plan Grants from UGC)	19
Centrally Funded Technological Institute	7
2 (f) State Universities	6
Deemed Universities	4
Open University	1
Private Universities	2
Others	6
<b>Total Participated Universities</b>	<b>176</b>

Table 3: Category-wise Participating Universities

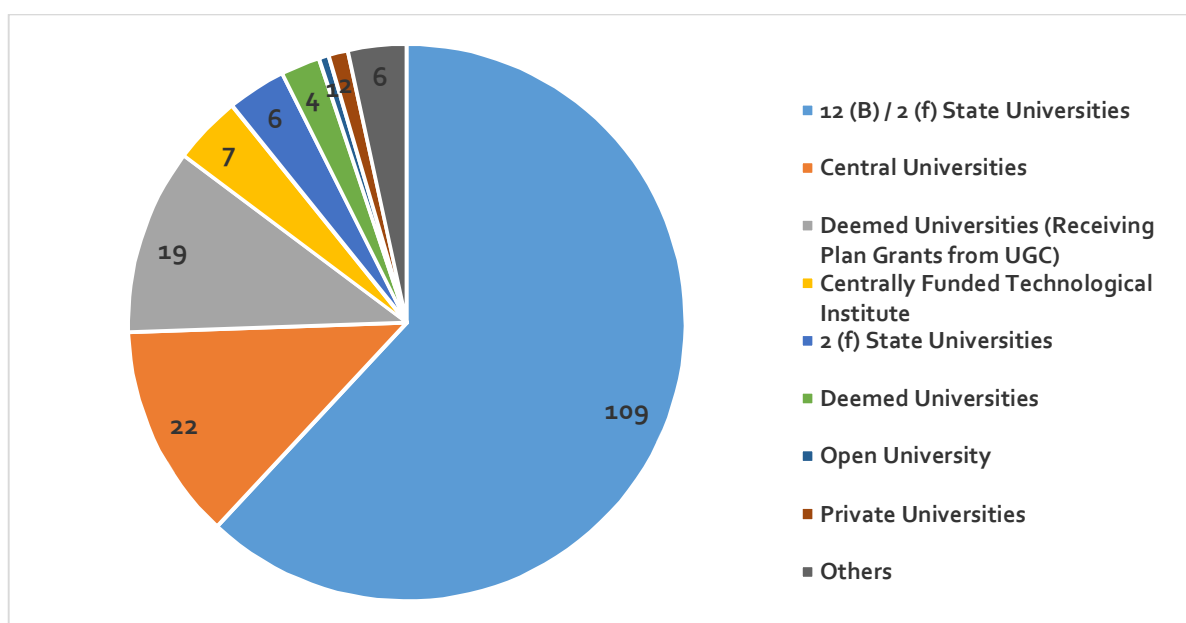


Fig. 6: Category-wise Participating Universities

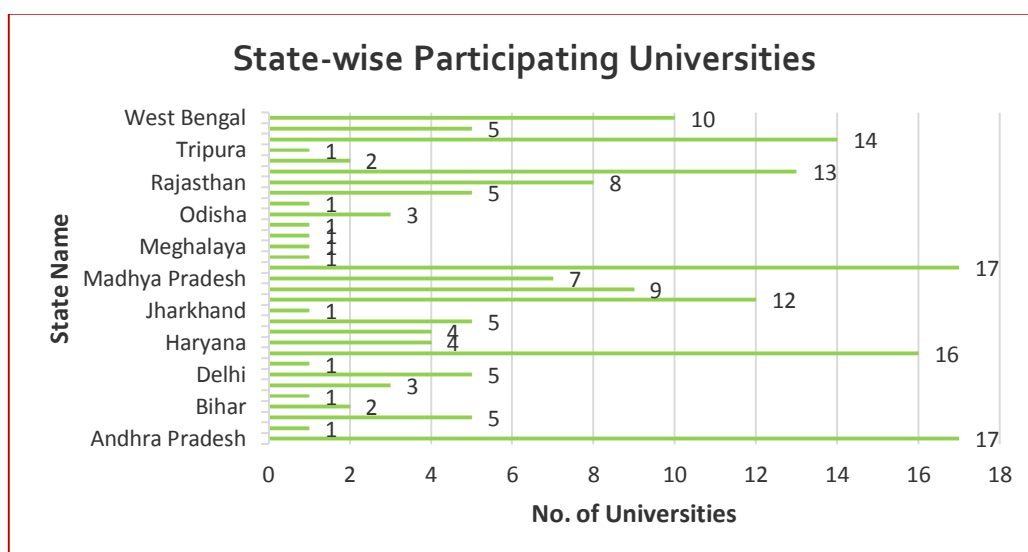
The union catalogue of books (IndCat) has bibliographic records of documents available in libraries of 176 contributing universities. State-wise participating universities are given in Table 4 and depicted in Fig. 7

Sl. No.	Name of the States	No. of University
1	Andhra Pradesh	17
2	Arunachal Pradesh	1
3	Assam	5
4	Bihar	2
5	Chandigarh	1
6	Chhattisgarh	3
7	Delhi	5



8	Goa	1
9	Gujarat	16
10	Haryana	4
11	Himachal Pradesh	4
12	Jammu and Kashmir	5
13	Jharkhand	1
14	Karnataka	12
15	Kerala	9
16	Madhya Pradesh	7
17	Maharashtra	17
18	Manipur	1
19	Meghalaya	1
20	Mizoram	1
21	Nagaland	1
22	Odisha	3
23	Puducherry	1
24	Punjab	5
25	Rajasthan	8
26	Tamil Nadu	13
27	Telangana	2
28	Tripura	1
29	Uttar Pradesh	14
30	Uttarakhand	5
31	West Bengal	10
<b>Total Universities</b>		<b>176</b>

**Table 4: State-wise Participating Universities**



**Fig. 7: State-wise Participating Universities**

### 2.1.6. Online Copy-Catalogue System (OCS)

The Centre has developed application software called “**Online Copy-Catalogue System**” (OCS) to promote co-operative cataloguing and avoid duplication of efforts. The interface called “Online Copy Catalogue System (OCS)” is a window-based application that facilitates libraries to interact with the Union Catalogue of Books (IndCat) and catalogue their new acquisitions online. The OCS, on one hand, facilitates libraries to search and browse bibliographic records of documents available in IndCat and download selected records directly into SOUL 2.0 or any MARC21 compliant software. The holding information for the bibliographic record being downloaded from the IndCat gets updated automatically in the process. On the other hand, the interface facilitates the creation of a new record for a document that is not available in the IndCat. This new record gets saved into local integrated LMS as well as into the IndCat simultaneously. Besides, online cataloguing and copy cataloguing, the interface also facilitates bulk uploading and downloading of bibliographic records of books. More details on OCS are available at: [http://indcat.inflibnet.ac.in/includes/UserGuide\\_OCS.pdf](http://indcat.inflibnet.ac.in/includes/UserGuide_OCS.pdf)

### 2.1.7. Union Catalogue Management System 2.0 (UCMS 2.0)

The Centre has developed an in-house application called Union Catalogue Management System 2.0 (UCMS 2.0). It is purely used for the development of Union Catalogue Database. It allows you to build and manage bibliographic records of Indian universities libraries. It supports Unicode multilingual Data and MARC ISO 2709 Structure. It is a windows desktop application which is developed on the Microsoft platform. For both front end as well as back end used community versions which are free for developers.

#### 2.1.7.1. Main Screen of UCMS 2.0 with Main and Sub Menus

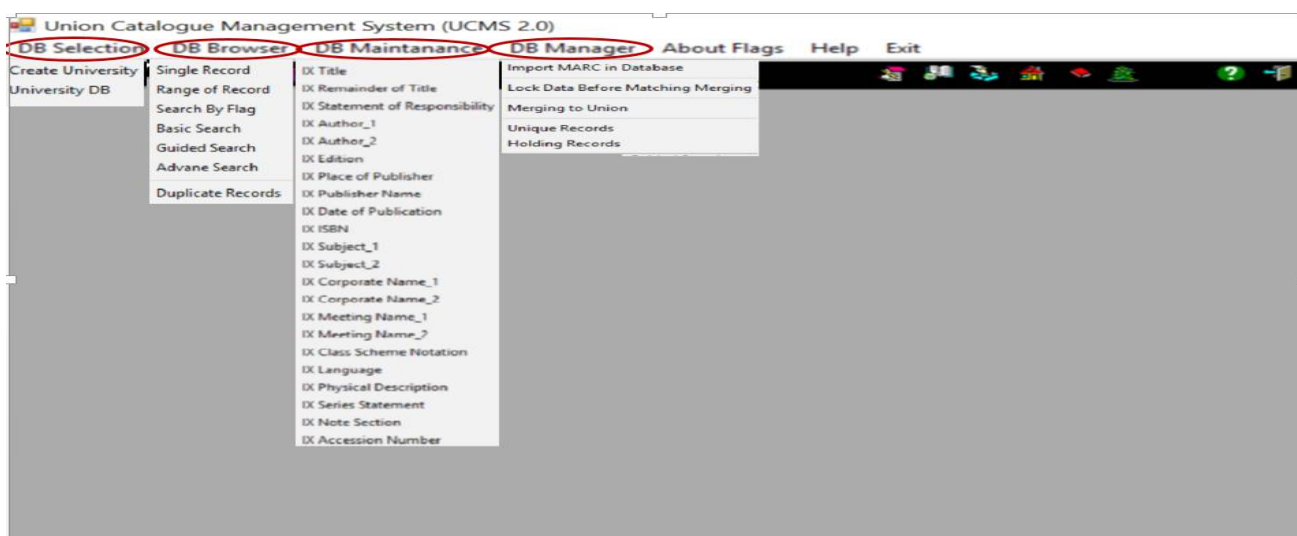


Fig. 8: Main Screen of UCMS 2.0 with Main and Sub Menus

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### 2.1.7.2. Features and Functionalities of UCMS 2.0:

- ❖ Data Import: UCMS 2.0 provides the facility to Import the Data. Data should be available in MARC format. DDString is being generated at the time of importing the data. Here, total of 7 fields considered in DD String i.e., Title, Sub Title, Author, Place, Publisher, Year and Edition.
- ❖ Duplicate Check: It checks duplicate records within the university. If found then it gives the flag "D" and Accession No. is to add in the original record.
- ❖ Duplicate Accession Nos.: It checks duplicate Accession Numbers also. If found then it gives the flag "DA" and that record is not considered for the next process.
- ❖ Field Browsing: It provides browsing feature of all the fields i.e. Title (245\$a), Author (100\$a), Author (700\$a), Place (260\$a), Publisher (260\$b), Year (260\$c), Edition (250\$a), ISBN (020\$a), Class No. (082\$a), Subject (650\$a), Accession No. (852\$p) etc.
- ❖ Authentication of data (Editing of Typo Errors Globally and Swapping the Values Field to Field)
- ❖ De-Duplicate/Matching Data Process: It checks the DDString with existing university data. If found the same DDString then it gives the flag "DD". It means that DD record already matched with an existing record. So, it takes only local holdings details i.e. University Name with Code and Accession No.
- ❖ Merging Process: If not found the data with existing university records then it gives the flag "M". It means data has been merged with IndCat.
- ❖ Data Indexing: After completion of the above process university wise data is to be indexed. We used SOLR for data indexing. Indexing process is mainly used for search and retrieval of the data.
- ❖ Available at IndCat: After completion of above process data available on IndCat Web site.
- ❖ It provides the flag wise reports, i.e. D, DA, DD, M (D – Duplicate Records, DA – Duplicate Accession No., DD – De-Duplicate Records, M – Merged Records).
- ❖ It provides the process of Phase wise (Updated) Data.

### 2.1.8. Major Works during Financial Year 2018-2019

- ❖ 3 universities contributed their bibliographic records in 1<sup>st</sup> phase for IndCat;
- ❖ 2 universities contributed their updated bibliographic records;

- 
- ❖ The Centre launched a new version of “Books, Theses and Serials Databases” on a new platform to facilitate faster access and enhanced users preference including faceted search and filtered search on different parameters, i.e. university-wise, department-wise, subject-wise, publisher-wise, etc. and combination of these parameters. The Centre launched beta version of union catalogue on a new platform which includes all databases i.e. book, theses, serial and CEC’s Video records. Through this version, universities may update their records directly by log in into system; and
  - ❖ UCMS 2.0 Application is developed as per the MARC Standard. Significant improvements were made in the process of importing, duplicating, browsing, editing, generating ddstring, matching, merging and SOLR indexing.

## **2.2. Union Catalogue of Serials**

The INFLIBNET Centre maintains union database of serials that provides bibliographic information of journals subscribed in various universities and maintains the information in three categories, namely; i) Serials Holdings ii) Current Serials and iii) e-journals.

“Serials Holdings” provides data on library holdings, i.e. backfiles of journals and their availability in various university libraries, ii) “Current Serials” provides titles of the serials that are currently subscribed by the universities in print format and iii) “e-journals” that are: a) currently subscribed by the participating universities in electronic formats; b) journals subscribed under the e-ShodhSindhu in electronic format and c) e-journals available in open access mode.

The Serials Database includes bibliographic information of serials (including journals, periodicals, annuals and serials) available in 229 universities/institute libraries along with its holdings information (includes available and missing volumes of the journals) in participating libraries. The serial database has over 35,234 unique titles with holdings information for 229 universities. Each bibliographic record for serials contains the title, publisher, frequency, year of publication, homepage URL and subject headings along with holdings details and names of the universities.

## **2.3. Union Catalogue of Theses**

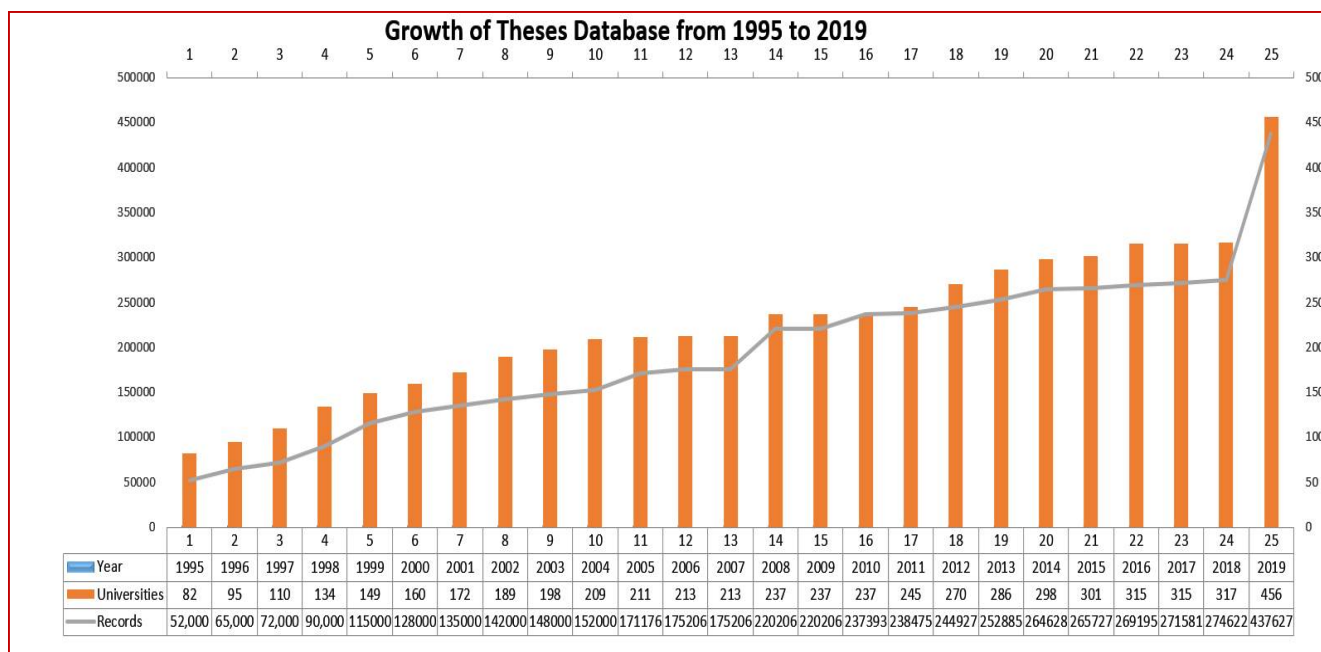
The Union Catalogue of Theses consists of bibliographic records of doctoral theses submitted to the universities in India. The database contains 4,37,627 unique bibliographic records of the theses awarded by 456 Indian universities/institutions of higher learning in all disciplines. The bibliographic records of theses are contributed by participating universities. Besides, records in the database have also been collected from other reliable sources such as notification from universities, University News and Records submitted by the individual researchers.

The compilation of Union Catalogue of Theses commenced in 1995 with 52,000 bibliographic records of theses from 82 universities. The database has grown to 4,37,627 records of theses as on 31<sup>st</sup> March 2019 from 456 universities over a period of 24 years.

The Centre receives a copy of the notification on the award of PhD theses from different universities across the country. Table 5 and Fig. 9, given below depict the growth of theses database from 1995 to March 2019.

Year	No. of Universities	No. of Records	Year	No. of Universities	No. of Records
1995	82	52,000	2008	237	2,20,206
1996	95	65,000	2009	237	2,20,206
1997	110	72,000	2010	237	2,37,393
1998	134	90,000	2011	245	2,38,475
1999	149	1,15,000	2012	270	2,44,927
2000	160	1,28,000	2013	286	2,52,885
2001	172	1,35,000	2014	298	2,64,628
2002	189	1,42,000	2015	301	2,65,727
2003	198	1,48,000	2016	315	2,69,195
2004	209	1,52,000	2017	315	2,71,581
2005	211	1,71,176	2018	317	2,74,622
2006	213	1,75,206	2019	456	4,37,627
2007	213	1,75,206			

**Table 5: Growth in Number of Records in Theses Database: 1995 – 2019**



**Fig.9: Year-wise Growth of Theses Database**

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The number of records and participating universities has been increased manifold as new records from the Shodhganga have been imported directly.

Theses database can be searched through IndCat interface by title, researcher, research supervisor, university, department, year of submission, keywords, etc. Bibliographic records of theses are linked to full-text records in "Shodhganga", if available.

#### **2.4. Research Projects Database (<http://www.inflibnet.ac.in/researchproject/>)**

The Research Project Database provides details of completed and ongoing projects carried out by faculty members working in universities and institutions across the country. As on 31<sup>st</sup> March 2019, 29 records were added in the database which has increased the total records in the database up to 15,563. The Centre gets project details along with the project reports in print/digital formats from the project investigators of Minor Research Projects (MRP) funded by the UGC. The softcopy and print copy of the project reports are available at the INFLIBNET Centre for walk-in users. Project Investigators of the UGC-funded Minor Research Projects (MRP) were requested to submit softcopies and print copies of their project reports. Project Investigators, whose project reports were received, are acknowledged and their project details were added into the database available at (<http://www.inflibnet.ac.in/researchproject/>).

### **3. SOUL 2.0 (<http://www.inflibnet.ac.in/soul/>)**

The SOUL 2.0 (Software for University Libraries) is state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based on requirements of colleges, universities and other academic libraries. It is user-friendly software developed to work under a client-server environment. The software is compliant to international standards for bibliographic formats and circulation protocols. After a comprehensive study, discussions and deliberations with the senior library professionals of the country, the software was designed to automate all house-keeping operations in a library. The software is suitable for the academic libraries as well as for all kinds of other libraries. SOUL 2.0 is compliant to international standards such as MARC 21 for the bibliographic format, Unicode based Universal Character Sets for multilingual bibliographic records and NCIP 2.0 and SIP 2 based protocols for RFID, electronic surveillance and control.

The SOUL 2.0 was released in January 2009 and was well received by the academic libraries in India. During the year under report, several minor enhancements were made in reporting and other functionalities. New updates of the software are made available through the SOUL 2.0 website at no additional cost to existing users. As on 31<sup>st</sup> March 2019, the software was supplied to 3,645 institutions across the country.

SOUL 2.0 was adopted by the Directorate of Libraries for all their public libraries as well as by the Department of Technical Education, Government of Gujarat. State Governments of Madhya Pradesh,

Haryana and Andhra Pradesh have also adopted SOUL 2.0 software for automating their public and academic libraries.

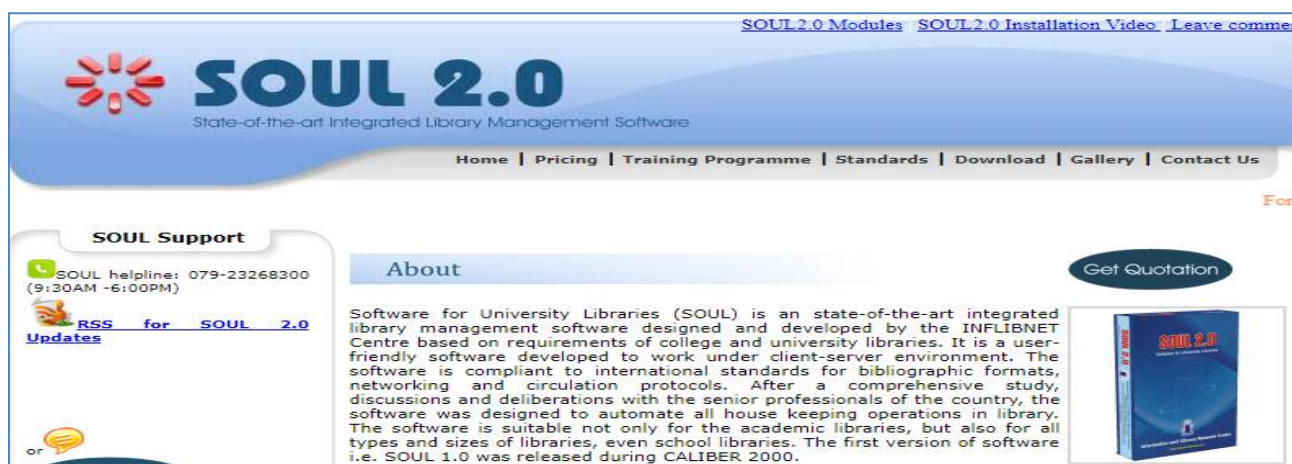


Fig. 10: Website for SOUL 2.0

A separate website, shown in Fig.10, is maintained by the Centre that provides detailed information about SOUL 2.0 along with the updates of software.

**Technologies:** Visual Studio.Net 2005, Microsoft SQL Server 2005, Microsoft Server Platform

### 3.1. Customization of SOUL 2.0, Data Conversion and Transfer

Customization of the SOUL 2.0 software is offered on payment basis as per the requirement of libraries. Under this offer, SOUL 2.0 can be customized according to the requirements of a library. The Centre has customized SOUL software for many institutes including major universities namely, DRT's A. E. Kalsekar Degree College, District-Thane, Maharashtra, Sri Guru Teg Bahadur Khalsa College, Sri Anandpur Sahib, Punjab, etc.

The Centre provides SMS Server application that facilitates libraries to send SMS through SOUL 2.0 application using SMS Gateway on payment basis. So far 29 institutions have started using SMS Server application services integrated with SOUL 2.0 as a customised option.

The Centre also undertakes jobs for converting client's existing data from any format to MARC21 format for importing it into SOUL 2.0 on payment basis. During the year under report, the Centre has converted data from different format i.e. MS Excel, MS Access, MS SQL, PostgreSQL, ISO / LibSys, etc. to MARC21. About 4+ lakh bibliographic records from 25+ different institutes were processed and converted into MARC21 format.

The Centre also offers data conversion service to new users of SOUL, free-of-cost, if the data volume is less than 10,000 records.

**Technologies:** Visual Studio.Net, Microsoft SQL Server 2005, Microsoft Office

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### 3.2. SOUL-Web Edition

The Centre is in the process of developing a web-based version of SOUL based on the requirement collected from the user community. The web edition of SOUL would be platform-independent that would run on any operating system (i.e. Linux, Windows). Any browser could be used as a client so that user can work on any device independently e.g. desktop, laptop, mobile, tablet, etc. Moreover, SOUL web edition could be hosted on a cloud platform. SOUL (Web edition) is based on Representational State Transfer (REST) protocol, which relies on a stateless, client-server, cacheable communication protocol and in virtually all cases, the HTTP protocol is used. Web-based SOUL can be configured in any language for performing housekeeping operations.

During the period under report, reporting services for the SOUL web edition have been started and required REST-based web services have been implemented. The report viewer control for displaying the report is also implemented with functionalities like search within the report, page navigation, sorting, etc.

**Technologies:** Java, JSP, MySQL, REST protocol (JAX-RS), Apache Tomcat, Visual SVN

### 3.3. SOUL New Version (For Microsoft Windows 8 and above)

The Centre has started working on a new version of SOUL software using the latest technologies. The new version of SOUL for Microsoft Windows 8 and above would be compatible with Microsoft.Net Framework 4.5 and Microsoft SQL Server 2014 or later version. The software has the state-of-the-art Graphical User Interface wherein the user can create or choose the theme for his / her account. Users would be able to change the font size and other parameters as per their requirement for better visual and performance experience. The new version would have a built-in facility of sending SMS / email for each circulation transactions along with several enhancements. The new version of SOUL would be responsive. As such, it will be compatible with touch screen laptops/tablets.

During the period under report, revised MARC Tag and subfields as per the standard. Transactions of various modules have been implemented with responsive design including the Material Design menu style for SOUL WPF version.

**Technologies:** Microsoft Visual Studio 2015, WPF, MS SQL 2014, Microsoft Platform

### 3.4. SOUL Software Sold and Upgraded for Existing Users

As depicted in Fig.11, a total number of 176 copies of SOUL Software were sold during the year under report, which includes 86copies of Limited Edition and 29 copies of Full Edition and 61 copy of NERO Full Edition. 9 copies of SOUL 2.0 Software were offered free-of-cost to the users of SOUL 1.0, which includes 3copies of Limited Edition and 6 copies of Full Edition.



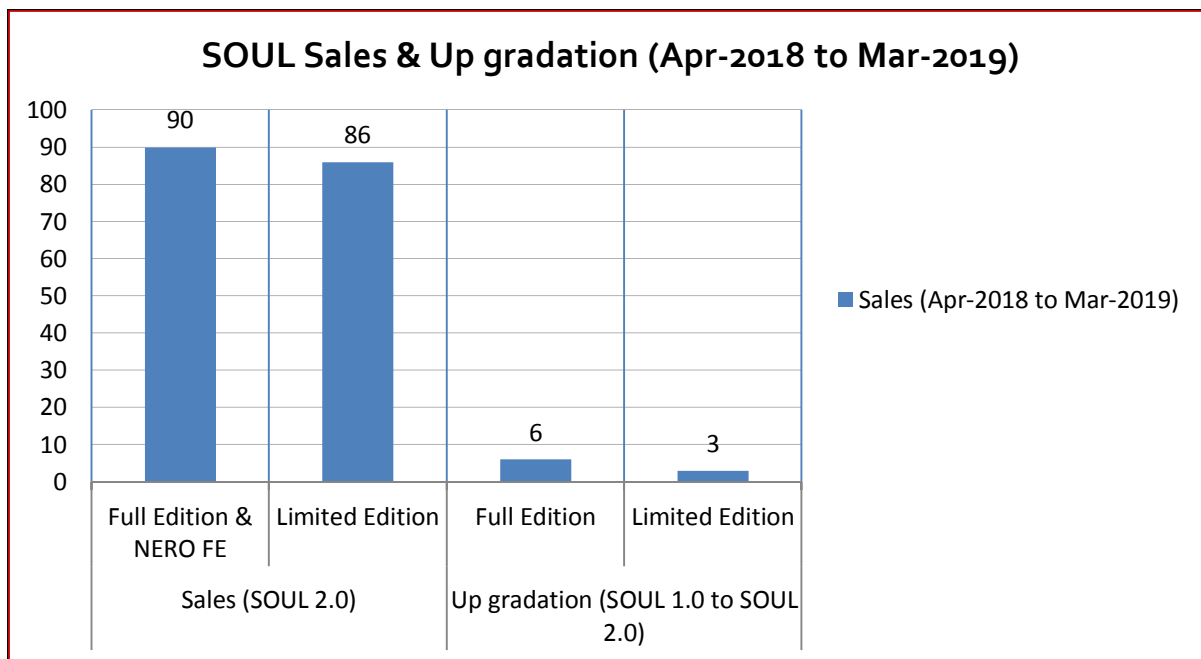


Fig. 11: SOUL 2.0 Software Sold and Upgraded for Existing Users

### 3.5. SOUL Support Services

SOUL Support Cell is a joint activity of Software Development Group and Human Resource Development Group. The SOUL Support Cell helps in handling queries and troubleshooting pertaining to SOUL software, its installation and usage for a user base of 3,645 across the country as per the details given in Appendix VI. The SOUL Support Cell coordinates with the SOUL users and SOUL developers for resolving queries regarding SOUL software and customization issues raised by them. The SOUL Support Cell consists of staff members with library and computer science background. The tools used for handling queries are mentioned below and depicted in Fig. 12.

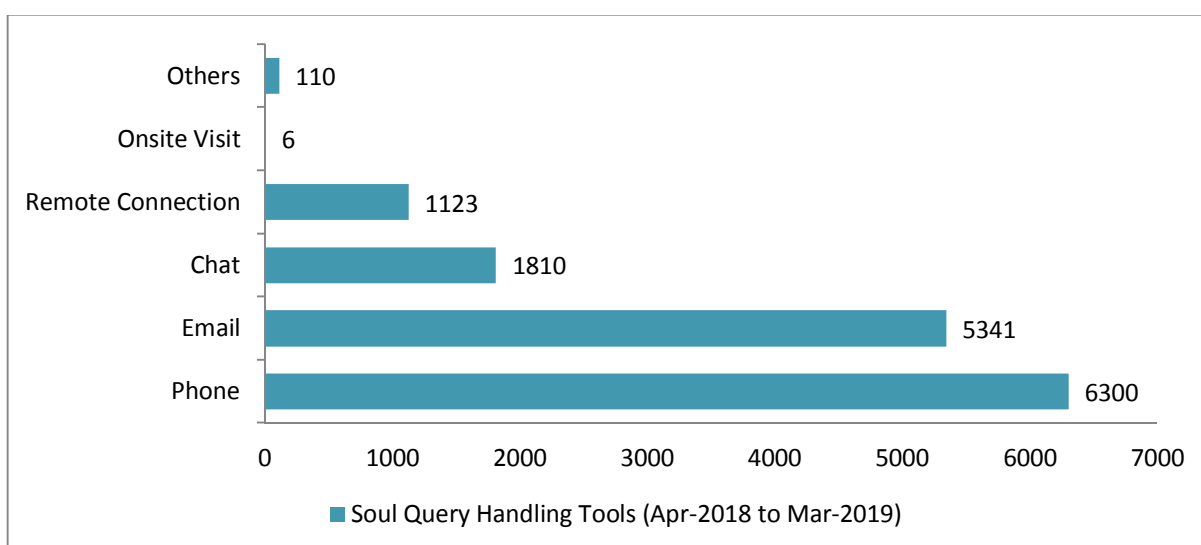


Fig. 12: SOUL Query Handled by SOUL Technical Assistants

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**Telephone Helpline:** The Centre has a dedicated telephone line (079-23268300) for handling queries from SOUL users.

**Instant Messaging:** The Centre has created a Google email ID (soulhelp0007@gmail.com) to provide support to SOUL users through Gmail and Google Talk.

**Remote Connection:** SOUL Support Cell uses software such as AnyDesk, Teamviewer, ShowMyPC, etc. to remotely connect the User's SOUL server to view and solve the problems in real-time. This method is used for fixing the problem when all other methods of solving the problems do not provide desired results.

**Onsite Visit:** Besides all above methods of solving queries, SOUL Support staff also visits the Institutes of SOUL users in case every other method could not resolve the problem and also if the user wants SOUL Technicians to install and upgrade the SOUL at their Institute.

**Frequently Asked Questions (FAQs):** FAQs were developed based on the prolonged experience of SOUL Technicians. FAQs are answered with screenshot and step-wise solution to the queries that are being asked frequently. These FAQs are available on SOUL Web site at: [www.inflibnet.ac.in/soul/faq.htm](http://www.inflibnet.ac.in/soul/faq.htm).

**Soul Query Management System (SQMS):** The Centre has developed a new software called "Soul Query Management System (SQMS)" that helps to keep track of problems and queries from all active user of SOUL Software. This software helps to serve the users more efficiently by keeping a record of the queries, its status and solution offered, which can also help to solve queries from other users.

**Documentation and Updates:** Users can download flow charts for every SOUL 2.0 module and e-book version of User Manual to learn the operations of SOUL 2.0 on their own from the SOUL Software website. User can also download SOUL 2.0 Demo Version (up to 500 entries) and can practice on SOUL 2.0. Besides, minor updates of SOUL 2.0 can also be downloaded from the website free-of-cost which facilitates users to keep their SOUL2.0 software updated.

#### 4. Open Access and Open Data Initiatives

The current system of scholarly communication inhibits rather than promote access to scholarly information at a time when technology can enable vast improvement in access, speed of publication and save the cost of publication. The open-access has emerged as a promising alternative to the current model of scholarly publishing that provides free access to scientific information to its users. The essential premise of open access movement is that the scientific community and society in general benefits from the open exchange of ideas and information unaffected and unencumbered from the limitations of subscription costs, licensing arrangements and copyright inherent to the

traditional model of commercial journal publishing. Open access journals and institutional repositories are two routes of open access publishing system.

The open-access initiatives at the INFLIBNET Centre are launched with an aim to spread open access movement in universities and institutions of higher learning. The Centre continued all the initiatives that were started in the previous years. These initiatives as described below:

#### 4.1. Shodhganga: A Reservoir of Indian Theses & Dissertations (<http://shodhganga.inflibnet.ac.in>)

Shodhganga is a digital repository set-up for submission of electronic versions of theses and dissertations by students / research scholars in universities in India and make them available in open access to the world-wide academic community in response to the UGC Notification (Minimum Standards & Procedure for Award of M.Phil. / Ph.D Degree, Regulation, 2009 and amendment made in 2016) where-in the responsibility of maintaining the digital repository of Electronic Theses and Dissertations (ETDs) is assigned to the INFLIBNET Centre. Shodhganga is set-up using DSpace, an open-source software, that uses internationally recognized protocols and interoperability standards. The repository provides a platform to research scholars in universities to deposit, re-use and share their theses and dissertations. Fig. 13 depicts the homepage of Shodhganga website.



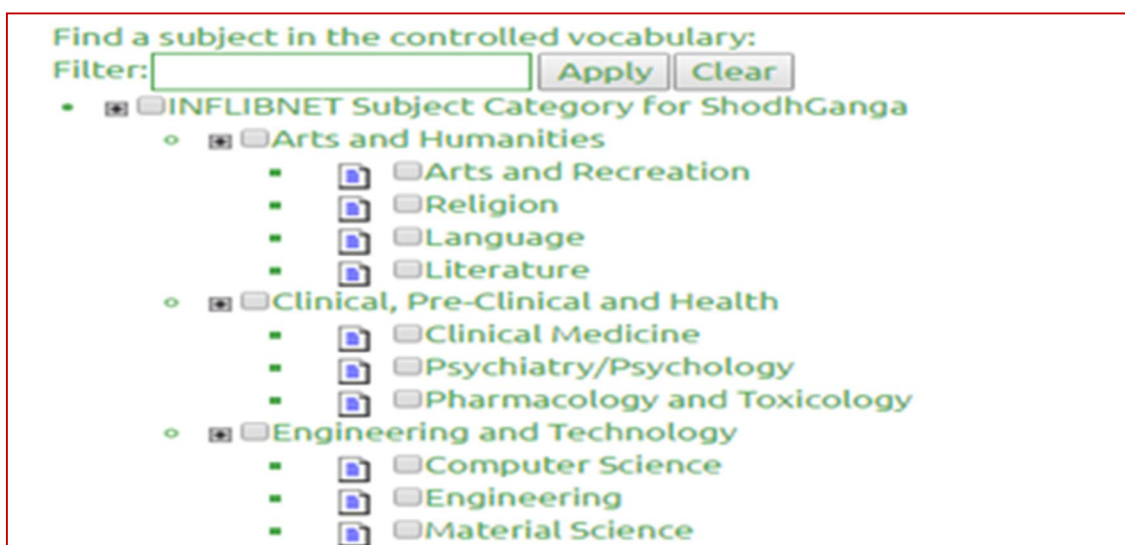
Fig.13: Shodhganga Website

The organisation of theses in Shodhganga reflects the academic structure of every university in the country which offers PhD programme to facilitate the scholars to submit their theses in the respective Departments / Centres / Colleges of their Universities. Ingestion interface of DSpace was customized to meet the specific requirements and make the process of submission easy. The customized ingestion

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interface is simple to use and involves a lesser number of steps in comparison to the default submission interface of DSpace developed by HP and MIT. The interface facilitates submission of theses either by university administrators, university representatives or researchers. The interface also facilitates self-registration of scholars wherein the user gets e-mail alerts and notifications at different stages of the workflow. The Shodhganga website provides information that is helpful to the researchers, research supervisors and university authorities with regard to ETDs including their responsibilities, access policies, submission process, metadata structure, a guideline for submission, tutorial, manual, etc.

Shodhganga provides four types of searches in its homepage vis-à-vis simple search, advanced search, Google search and subject search. Besides default search and browse options provided by the DSpace, a subject-based browse and search interface is embedded into Shodhganga consisting of six major subject categories at the first level and 28 subject categories at the second level. The major six subject categories are Arts and Humanities, Clinical, Pre-Clinical and Health, Engineering and Technology, Life Sciences, Physical Sciences and Social Sciences. The subjects are extended to micro-level using Web of Science 260 Categories. Fig. 14 depicts a subject search interface of Shodhganga.



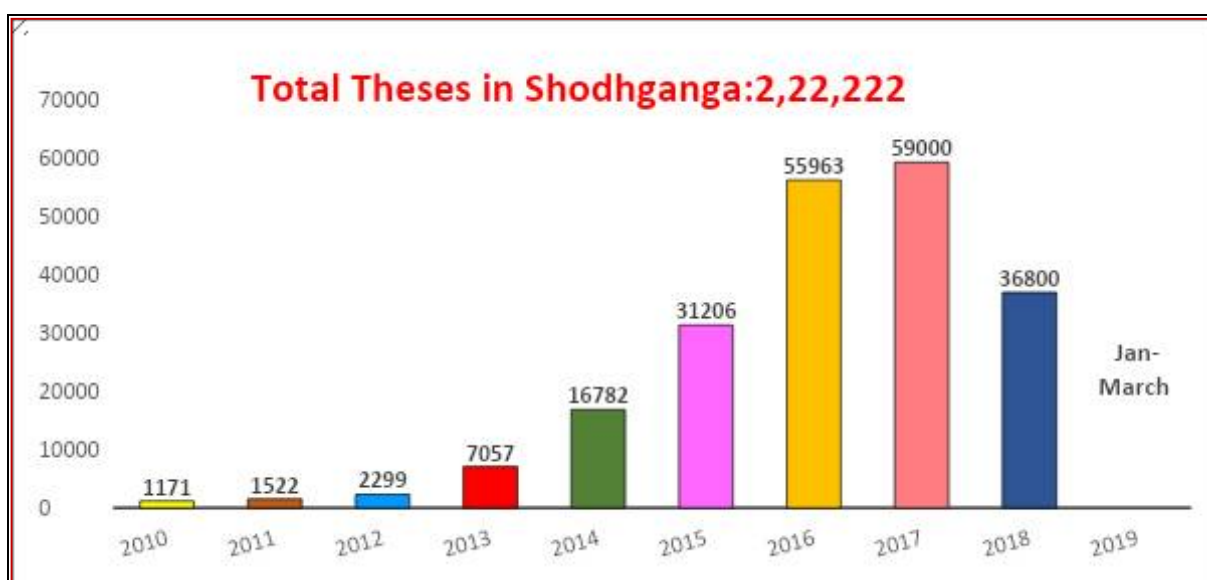
**Fig. 14: Subject Search Interface of Shodhganga**

Considering the fact that the process of adaptation of the UGC Notification may take time for universities, research students are also encouraged to submit an electronic version of their PhD theses into the Shodhganga on a voluntary basis. As such, students from different universities (who have not signed the MoU) are submitting an electronic version of their theses into the repository on a voluntary basis. However, once a university mandates the submission of theses, it can monitor the process of submission of theses and ensure that correct and final versions of all the theses are submitted into the Repository. Universities, while signing MoU with INFLIBNET Centre, are granting non-exclusive rights to INFLIBNET Centre for hosting their ETDs in Shodhganga. As on 31<sup>st</sup> March 2019, 451 universities have signed MoU with the INFLIBNET Centre including 78 universities who

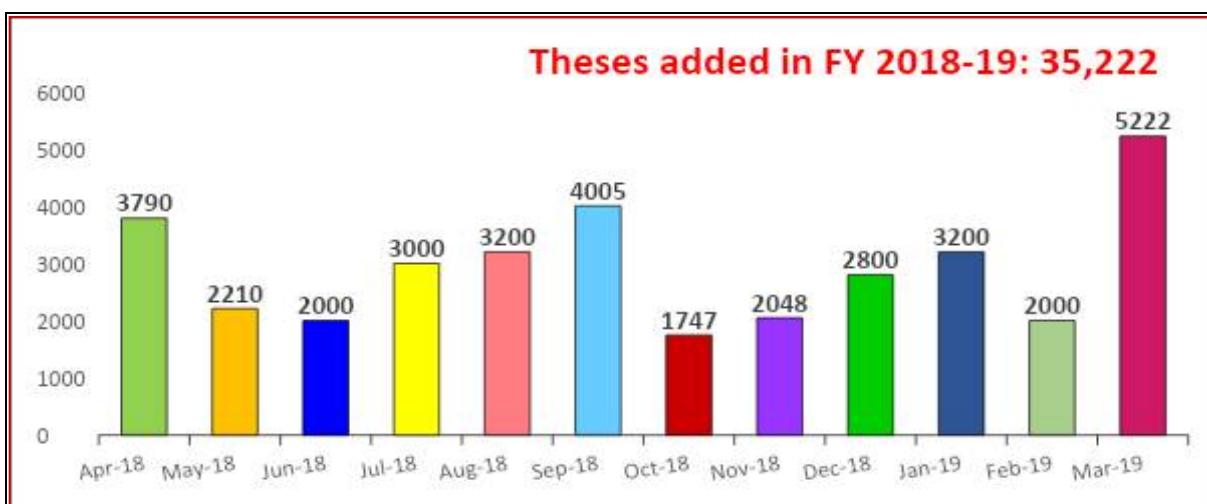
have signed MoU on Shodhganga with INFLIBNET Centre during the year under report. List of universities who have signed MoU with the INFLIBNET Centre on Shodhganga is available at [http://shodhganga.inflibnet.ac.in/annual\\_report/mou2018\\_2019.pdf](http://shodhganga.inflibnet.ac.in/annual_report/mou2018_2019.pdf)

Besides, 397 universities have also started contributing their theses into Shodhganga repository as per the UGC Notification without signing MoU. A list of 35 such universities who contributed their theses into Shodhganga without signing an MoU during the year under report is available at [http://shodhganga.inflibnet.ac.in/annual\\_report/contributing\\_wo\\_mou.pdf](http://shodhganga.inflibnet.ac.in/annual_report/contributing_wo_mou.pdf)

A total number of theses submitted into the repository has grown to 2,22,222 as on 31<sup>st</sup> March 2019. Fig. 15 depicts year-wise theses submission into Shodhganga. Fig. 16 depicts Month-wise submissions into Shodhganga during the period under report.



**Fig. 15: Year-wise Theses Submission into Shodhganga**



**Fig 16: Month-wise Theses Submission into Shodhganga**

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#### **4.1.1. Incentives to Universities for Signing MoU on Shodhganga with INFLIBNET Centre**

The UGC provides following three incentives to eligible universities that are signatory to MoU on Shodhganga:

- a. Funds for the digitization of backlist of theses available in universities;
- b. Funds for setting-up of ETD Laboratory in eligible universities; and
- c. Extending access to plagiarism detection software package in member universities.

The funds were released by UGC to eligible universities on recommendations of the INFLIBNET Centre as per the guidelines approved by a Committee of Experts or by the Competent Authority.

#### **4.1.2. Funds Released to the Universities and to the INFLIBNET Centre under Shodhganga Scheme**

The INFLIBNET Centre recommended release of Rs 14.00 crores (approx.) to 96 universities who have signed MoU on Shodhganga. The UGC has released Rs 11.42 crores to 80 eligible universities till 15<sup>th</sup> March 2017 for the digitization of backlist of theses as well as for setting-up of ETD Laboratories in their respective universities. Release of Rs 2.57 crores is pending for 16 eligible universities.

In addition, the UGC released Rs. 1.40 Crores to the INFLIBNET Centre during FY 2016-17 and Rs. 1.50 Crores released on 30<sup>th</sup> Jan 2019 for the FY 2018-19 for subscription to plagiarism detection software for universities.

#### **4.1.3. Subscription to URKUND: Plagiarism Detection Software**

The INFLIBNET Centre provides access to URKUND: a plagiarism detection software to eligible universities that are covered under Sections 12(B)/2(f) of the UGC Act and have signed MoU on Shodhganga with INFLIBNET Centre. 207 eligible universities were provided access to URKUND software during the year under report. List of universities having access to URKUND software is available at [http://shodhganga.inflibnet.ac.in/annual\\_report/urkund.pdf](http://shodhganga.inflibnet.ac.in/annual_report/urkund.pdf). Fig.17 depicts month-wise submissions of theses for plagiarism check in URKUND from April 2018 to March 2019. An average number of 23,800 submissions per month are made to URKUND for plagiarism check during the FY 2018-19.

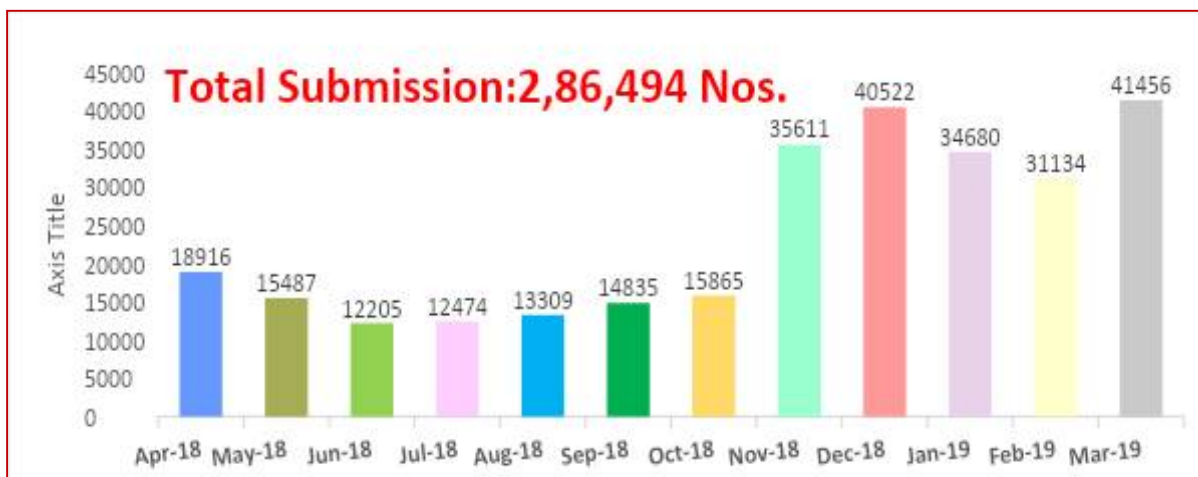


Fig.17: Submissions to URKUND for Plagiarism Check (April 2018 to March 2019)

#### 4.1.4. Usage Statistics of Theses from Shodhganga

Usage of theses hosted in Shodhganga repository by the academic community across the world is monitored by the Centre with an aim to measure its usage as well as for load balancing of the server. General statistical of Shodhganga including month-wise page views, theses views, department views, university views and website views are shown below in Table 6. The usage has considerably increased with the hosting of the repository on robust infrastructure. Yearly usage summary for Shodhganga for FY 2018 – 19 is given in Fig.18.

Views in Lakhs	Apr'18	May'18	Jun'18	Jul '18	Aug'18	Sep'18	Oct'18	Nov'18	Dec'18	Jan'19	Feb'19	Mar'19	Total
<b>Page Views</b>	332.35	427.97	484.57	446.56	370.93	303.10	291.63	224.58	262.43	330.84	290.71	164.91	3930.57
<b>Theses Views</b>	39.00	33.66	36.97	39.93	25.97	25.89	27.16	12.63	23.38	25.39	18.76	96.72	405.45
<b>Dept. Views</b>	10.56	9.95	11.53	7.92	8.03	6.34	6.08	4.19	5.74	7.47	6.08	3.13	87.02
<b>Univ. Views</b>	3.67	3.41	4.48	3.28	3.51	2.92	2.53	2.02	2.41	2.98	2.61	1.40	35.23
<b>Searches</b>	36.69	50.40	41.11	42.76	19.47	13.57	13.62	10.25	15.15	18.47	19.64	10.35	291.48

Table 6: Month-wise Usage Shodhganga

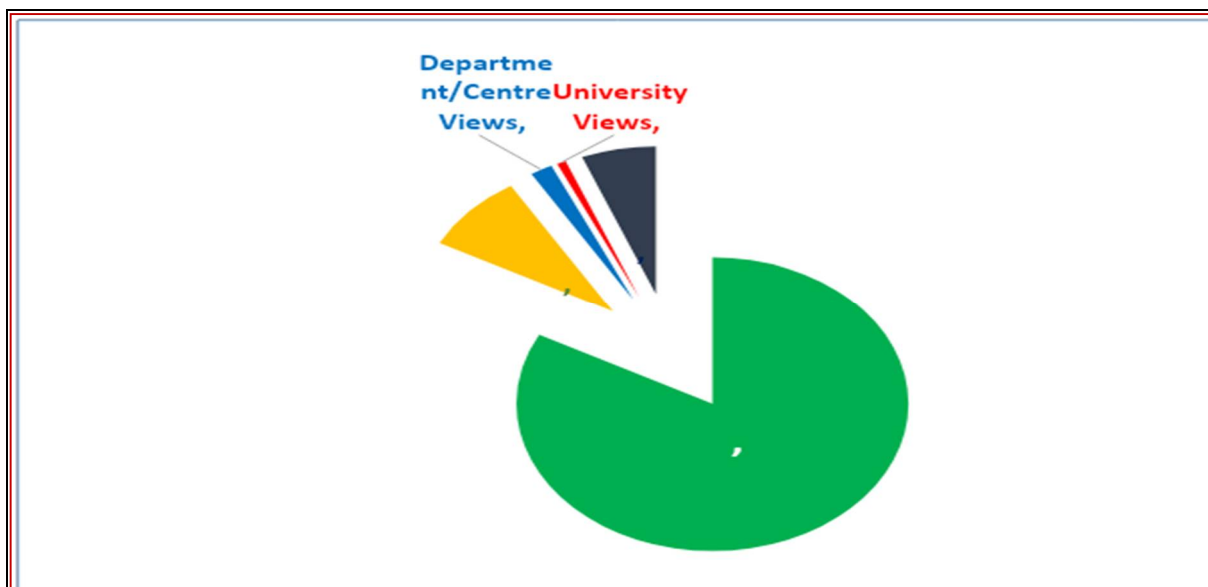


Fig. 18: Views and Searches on Shodhganga for FY 2018-2019

#### 4.1.5. Top 10 Theses Viewed Highest Number of Times in Shodhganga

The Top 10 theses that were viewed the highest number of times for the FY 2018-19 given below in Table.7

Sl. No.	Title and Its Unique URL	No. of Views
1	Humour in Malayalam short stories ഹാസ്യകഥകളുടെ ചെറുകഥയില് ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/7650">http://shodhganga.inflibnet.ac.in/handle/10603/7650</a> )	12207
2	Intelligent Techniques for securing web applications from SQL injections and XSS attacks ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/13663">http://shodhganga.inflibnet.ac.in/handle/10603/13663</a> )	9870
3	Women freedom fighters in Tamil Nadu ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/14211">http://shodhganga.inflibnet.ac.in/handle/10603/14211</a> )	9321
4	Students attitude towards entrepreneurship a study of MBA students of management institutes in Pune district ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/95837">http://shodhganga.inflibnet.ac.in/handle/10603/95837</a> )	9270
5	Synopsis of Thesis submitted to Bharathidasan University for the award of the Degree of PhD ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/30248">http://shodhganga.inflibnet.ac.in/handle/10603/30248</a> )	8578
6	Some topics in operations research ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/74490">http://shodhganga.inflibnet.ac.in/handle/10603/74490</a> )	7747
7	Urdu mein Khaka Nigari ka Tanqeedi Mutala اردو میں کھکا ناری کا تنقید متلا ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/9203">http://shodhganga.inflibnet.ac.in/handle/10603/9203</a> )	7378
8	Gujarati sonet kavita na sthityataro: ek adhyayan ગુજરાતી સોનેટકવિતાના સ્થિત્યાન્તારો: એક અધ્યયન ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/9687">http://shodhganga.inflibnet.ac.in/handle/10603/9687</a> )	6675



9	The role of women in Indian freedom movement 1857 to 1947 ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/40023">http://shodhganga.inflibnet.ac.in/handle/10603/40023</a> )	6492
10	Basavannana vachanagalu mattu aadhunika Kannada kavya mukhaamukhi adhyayana ಬಸವಣ್ಣನ ವಚನಗಲು ಮಟ್ಟು ಅಧುನಿಕಾ ಕನ್ನಡ ಕಾವ್ಯ ಮುಖಾಮುಖಿ ಅಧ್ಯಯನ( <a href="http://shodhganga.inflibnet.ac.in/handle/10603/83182">http://shodhganga.inflibnet.ac.in/handle/10603/83182</a> )	6199

**Table 7: Top 10 Theses Viewed in Shodhganga**

#### 4.1.6. EduShine Excellence Award 2019

INFLIBNET Centre, Gandhinagar received EduShine Excellence Award 2019 on 21<sup>st</sup> February 2019 at Le Meridien, New Delhi from Shri Suresh Prabhu, Hon'ble Minister for Commerce & Industry and Civil Aviation, Government of India, presented by ASSOCHAM (The Associated Chambers of Commerce and Industry of India). The award was based on the Shodhganga project to recognize INFLIBNET Centre as "Emerging Institute Promoting Government Digital Initiatives" during 12<sup>th</sup> ASSOCHAM National Education Summit under the theme "Making India a global Knowledge Powerhouse: Catalyzing Reforms and Innovation".



**Fig. 19: EduShine Excellence Award 2019**

#### 4.2. Shodhgangotri: A Repository of Synopses submitted to Indian Universities for Registration in PhD Programme (<http://shodhgangotri.inflibnet.ac.in/>)

Under this initiative, research scholars/research supervisors in universities could deposit an electronic version of approved synopsis submitted by research scholars to the universities for registering themselves under the PhD programme. Synopses in Shodhgangotri would later be mapped to full-text thesis in Shodhganga. As such, once the full-text thesis is submitted for a synopsis, a link from the synopsis in Shodhgangotri to the full-text theses in Shodhganga will be provided. During the year under report, 63 universities contributed their synopses into Shodhgangotri. A total number of synopses submitted into repository grew to 6450, awaiting its migration to cloud platform from its present server for better performance.

#### 4.3. IR @ INFLIBNET (<http://ir.inflibnet.ac.in/>)

The Centre has established an institutional repository called IR@INFLIBNET using DSpace, open-source software accessible at <http://ir.inflibnet.ac.in/>. The papers published in the proceedings of the CALIBER and PLANNER are uploaded into the repository. The Repository also includes course materials, newspaper clippings, etc. The repository has 1,810 full-text articles.

Usage Statistics Apr 2018 to March 2019	
Bitstream Views	4,46,554
Item Views	2,91,398
Collection Views	27,891
Community Views	10,893
Searches Performed	26,69,534

**Table 8: Usage Statistics**

##### 4.3.1 Institutional Repositories Customizations and Support

The INFLIBNET Centre is assisting institutions of higher learning in the process of creation and maintenance of institutional repositories. The Centre is using self-developed expertise in open source software like DSpace, Linux, Perl, Java, Apache Tomcat, PostgreSQL, MySQL etc. Under this initiative, the Centre has installed, configured, customized and hosted institutional repositories for various institutions. During the year under report, the Centre has provided help and support to the institutes given below in Table 9.

Sl. No	Name of Institute	Services Provided
1	ARAI, Pune	Maintenance Service (Renewed) DSpace version upgrade, Backup, Statistics generation, Log maintenance
2	Gujarat University, Ahmedabad	Hosting Service (Renewed) (Sampada Repository)
3	Krishna Kanta Handiqui State Open University, Guwahati	Hosting Service (Renewed)
4	Nirma University, Ahmedabad	DSpace Installation, Basic Customization, Data Import, Indexing
5	Mizoram University, Aizawl, Mizoram	DSpace Installation, Customization, Hosting
6	MG Science College, Ahmedabad	DSpace Installation

**Table 9: Institutions and DSpace Customization Services Provided by the INFLIBNET Centre**

Besides, the Centre also provides proactive help, support and consultancy to many national and international institutions over the phone and via remote login to setup their repositories. This group

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is also responsible for supporting and maintaining INFLIBNET Centre's Institutional Repositories as well as other open access initiatives like Shodhganga and Shodhgangotri.

#### 4.4. InfoPort: A Subject Gateway to Indian Scholarly Internet Resources (<http://infoport.inflibnet.ac.in/>)

INFOPORT: INFLIBNET Subject Gateway for Indian Electronic Resources is designed to facilitate registering of an Internet resource into the portal and extending its access to users. INFOPORT supports browsing of Internet resources by Dewey Decimal Classification (DDC) Scheme. The main functional parts of INFOPORT are:

- ▶▶ Dewey Decimal Classification (DDC) Search;
- ▶▶ Search Cloud;
- ▶▶ Free-Text Search;
- ▶▶ Alphabetical Search;
- ▶▶ Resource Type Search; and
- ▶▶ Intute Search

During the year under report, a number of features and functionalities of the subject gateway were enhanced based on feedback from users and additional Internet resources were added to the portal. The interface is populated with more than 1,760 e-resources.

#### 4.5. ICSSR Data Service: Indian Social Science Data Repository

The INFLIBNET Centre was given a project for setting-up of a Data Repository for Social Science by Indian Council of Social Science Research, New Delhi. ICSSR Data Service was set-up using NADA (National Data Archive) - open-source data repository software developed by IHSN (International Household Survey Network). NADA uses the Data Documentation Initiative (DDI) metadata standard for describing datasets. NADA also facilitate importing of existing datasets in DDI format. Fig.20 depicts website of ICSSR Data Service.



Fig. 20: ICSSR Data Service's Website

140 datasets (93 NSS datasets, 44 ASI datasets 1 Time Use Survey dataset and 2 Economic Census) are hosted on ICSSR Data Service portal. Unit level data for each dataset have been converted to SPSS format (\*.sav), STATA format (\*.dta) and Tab Separated Value format (\*.dat) and uploaded with the original datasets on the portal. These datasets have been categorised, described and documented according to DDI Standards. Registered users can download any dataset and do further analysis as per their requirement. There were 30,66,566 total number of downloads, 1,02,51,482 total number of views and 2,126 registered users towards usage statistics of ICSSR Data Service.

#### 4.5.1. ICSSR Data Analytic Tool

The Centre has developed an "ICSSR Data Analytic Tool" that facilitates users to explore unit-level data available in datasets online. Beta version of the tool is available at <http://www.icssrdataservice.in/shiny/analytictool/> as shown in Fig.21. This tool is developed using "R" language to facilitate advanced analysis and visualization of datasets. Various operations (like maintaining the uniform key variable name, removing duplicate fields) were performed on each block of the dataset for making ICSSR Data Analytic Tool functional. User can perform a number of analytical operations by using this tool such as univariate analysis, data transformation, cross-tabulation and pivot analysis. User can visualize the resultant data using various charts like histogram, bar plot, stacked chart, column chart, heat map, etc. Apart from this, the user can generate a map of state-wise data derived through analysis.



Fig. 21: ICSSR Data Analytic Tool

## 5. Library Consortium and its By-product: E-ShodhSindhu and InfiStat, Jgate+ and INFED

The Centre is responsible for operating two consortia, namely e-Shodh Sindhu and its college component called "National Library and Information Services infrastructure for Scholarly Contents

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(N-LIST)” with an aim to extend access to e-resources to CFTIs & universities and colleges respectively. Two separate entities within the umbrella of e-Shodh Sindhu were maintained not only to cater to the diverse needs of two sets of institutions, namely CFTIs & universities and colleges, but also to satisfy the requirements of different economic models of these two consortia. A brief description of the e-ShodhSindhu and its college component is given below.

The e-ShodhSindhu, formed with the merger of UGC-INFONET Digital Library Consortium, INDEST-AICTE Consortium and NLIST in the year 2015, has successfully completed its first phase with the completion of 12<sup>th</sup> Plan Period. In its second phase, it was resolved that from 2018 onwards, the current model of centrally-controlled and centrally-financed consortium would be transformed into a model wherein institutions would have an option to select resources from a comprehensive list of resources that are being subscribed by the consortium as well as those that are being subscribed by individual institutions. Existing members would be able to see usage statistics of existing e-resources in previous years to make an informed decision for subscribing e-resources for the year 2018 of their choice based on their requirements from their own funds. The consortium would also continue to act as a body to negotiate rates of subscription with publishers on behalf of institutions. In addition, the Consortium would also subscribe to a few selected e-resources for the year 2018 that are required by most of the eligible institutions.

For the year 2019, the consortium subscribed to the existing 17 resources available through central funding for eligible institutions during 2018. The total number of resources to be made available through central funding includes 7038+ journals and four databases. e-ShodhSindhu continued to provide current as well as archival access to these 7038+ core and peer-reviewed journals including four bibliographic and citation databases in different disciplines from a number of publishers and aggregators to its core member institutions including centrally-funded technical institutions, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act.

#### **5.1.1. Governance**

The MHRD has constituted three national committees consisting of MHRD officials, representatives of member institutions and experts in the library and information science. Composition of these three committees and their role and responsibilities are given below.

#### **5.1.2. National Advisory Committee**

National Advisory Committee for e-ShodhSindhu is constituted by the MHRD to advise and guide the Consortium on rates of subscription negotiated by it as well as on collaborative services between MHRD-funded institutions. The current composition of the National Advisory Committee is given in Appendix VII.

### 5.1.3. National Steering Committee

E-ShodhSindhu is being operated by the INFLIBNET Centre under the overall guidance of a National Steering Committee that guides and steers the activities of the Consortium. The current composition of the National Steering Committee is given in Appendix VIII.

### 5.1.4. Joint Negotiation Committee

The Joint Negotiation Committee is constituted by the MHRD for negotiating rates of subscription to e-resources. The current composition of the Joint Negotiation Committee is given in Appendix IX.

## 5.2. Member Institutions

Access to e-resources is being provided to different categories of institutions through central funding as mentioned below in Table 10:

Sl. No.	Category	No. of Institutions	Inst with ISID Only
1	12 (B) / 2 (f) State Universities	137	34
2	Central Universities	40	2
3	Deemed Universities (UGC funded)	22	3
4	IUCs of UGC	6	
5	National Law Schools/Universities	12	
	<b>Universities</b>	<b>217</b>	<b>39</b>
6	IITs & IISc	24	3
7	NITs, SLIET & NERIST	32	1
8	IIMs	20	2
9	IISERs	7	
10	SPAs	3	
11	IIITs, IEST, NITIE, NIFFT and NITTTR	11	
	<b>CFTIs (Total CFTIs)</b>	<b>97</b>	<b>6</b>
	<b>Total</b>	<b>313</b>	<b>45</b>

**Table 10: Different Categories of Institutions that are Getting Access to e-Resources through Central Funding**

In addition, access to e-resources to 106 institutions including Government engineering colleges and universities is provided with funding from the AICTE. The Consortium also provides access to 6500+ journals and 31,50,000+ eBooks to 3,211 colleges under the NLIST programme, the college component of e-Shodh Sindhu described at 5.10. The list of institutions included in various categories of institutions is given table 13 and list of colleges are listed at <http://nlist.inflibnet.ac.in/collegelist.pdf>.

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Other Higher Education Institutions can join the Consortium through online portal available on the Consortium website and subscribe to e-resources required by them on the rates negotiated by the Consortium.

### **5.3. Current Status: Services and Activities**

The INFLIBNET Centre acts as a nodal agency for implementation, monitoring and execution of the e-Shodh Sindhu through Committees mentioned above. It coordinates all activities concerned with negotiation, renewal of the subscription to e-resources and subsequent troubleshooting on behalf of the member institutions. e-Shodh Sindhu also promotes cooperation amongst member institutions and facilitates better terms of references for the use and preservation of subscribed electronic resources.

#### **5.3.1. Coordination, Negotiation and Licensing of e-Resources**

The consortium coordinates the meeting of various committees of the consortium, negotiates rates of subscription to e-resources and terms and conditions of access to e-resources. The INFLIBNET Centre has also developed a Model License Agreement for the subscription of e-resources. The INFLIBNET Centre also signs a license agreement with the publishers on behalf of the member institutions of e-ShodhSindhu.

#### **5.3.2. Access to e-Resources**

The Consortium coordinates with the member institutions and publishers for smooth access to e-resources through static IP addresses of member institutes. Since most colleges do not have static IP addresses, access to e-resources to the registered colleges is provided through EZ-Proxy set-up at the INFLIBNET Centre. The authorized users from colleges can access e-resources and download articles required by them directly from the publisher's website once they are duly authenticated as authorized users through EZ-Proxy deployed at the INFLIBNET Centre. The Consortium has developed an online interface for creation, updating and modification of valid users of the colleges by the respective college administrators. The consortium also attends to the problems faced by member institutions and liaises with publishers to resolve such problems.

#### **5.3.3. Maintain and Update Consortium Website**

The e-ShodhSindhu maintains a comprehensive website for providing detailed information about subscribed e-resources and member institutions. Tutorials and promotion materials have been developed for imparting training and technical support to member institutions. The e-ShodhSindhuwebsite provides options to searching and browsing subscribed journals, search for member institutions and view the e-resources subscribed for them by the consortium. The member institutions can also download a list of journals available under various e-resources in xls format, which

in turn, can be used for updating their local library systems. Fig.22 depicts the home page of e-ShodhSindhu website.

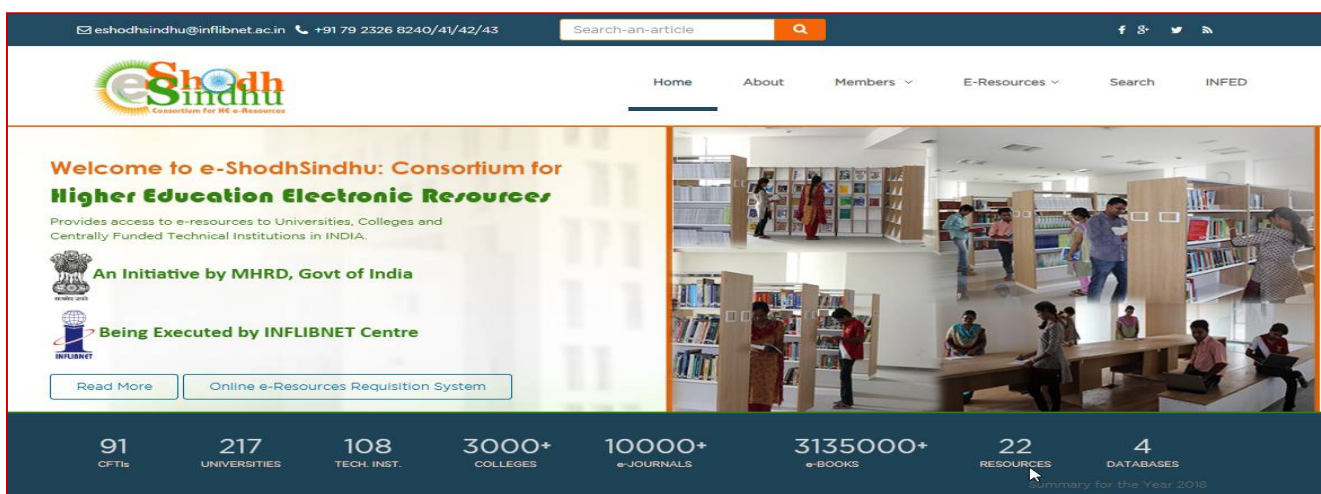


Fig. 22: e-Shodh Sindhu Website

#### 5.3.4. InfiStats: Monitoring of Usage of e-Resources

The Consortium evaluates and monitors the usage of subscribed e-resources using a software called InfiStats developed in-house. The Centre has developed a software called InfiStats, for monitoring the usage statistics of various e-resources made accessible to the member institutions. The InfiStats uses "Standardized Usage Statistics Harvesting Initiative (SUSHI)" Protocol (ANSI/NISO Standard No. Z39.93-2007) that defines an automated request and response model for harvesting of usage data for electronic resources using Web services framework. The InfiStats portal imports the usage data from the publisher's website automatically and store it in a database on InfiStats platform. The InfiStats interface provides title-level COUNTER-compliant reports to member institutions. The member institutions can also log-on to this portal for monitoring the usage of their respective e-resources. Fig. 23 depicts the home page of InfiStats website. The Consortium is working on the updated version of the InfiStats based on COUNTER 5 standard available from Jan 2019.

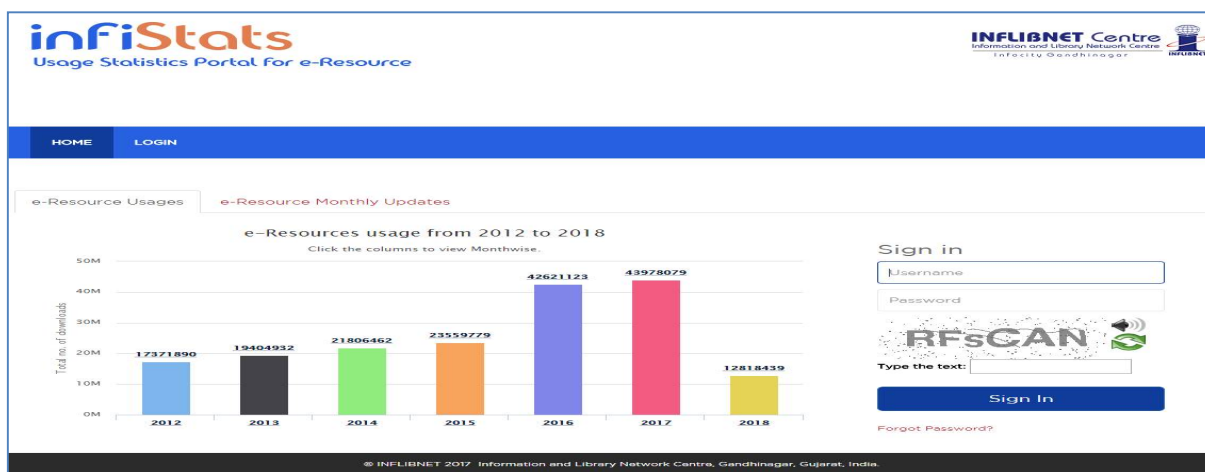


Fig. 23: InfiStats Website



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### **5.3.5. Off-Campus Access to e-Resources**

While IP-based access is most convenient, safe and hassle-free authentication mechanism for publishers as well as for subscribing institutions, it has its limitations. One of the most serious limitations of IP-filtered access to e-resources is that the users can access e-resources only when they are on the Institute campus. Ideally, an authorized user should be able to access e-resources irrespective of their physical location at any time as long as he has access to the Internet.

In order to overcome this limitation, the INFLIBNET Access Management Federation (INFED) was set-up which uses Shibboleth, a standard-based open source software, for authenticating authorized users from colleges and universities and provide them seamless access to e-resources from anywhere, anytime. Shibboleth offers a mechanism for users to access multiple resources within a federated single sign-on framework. The goal of the INFED is to allow users to access internal and external resources seamlessly using a single, institutionally controlled identity. This would not only allow authorized users to access e-resources from anywhere, anytime but would also circumvent the requirement of maintaining multiple passwords for various resources in multiple domains. The INFED has already signed agreements with 36 publishers for this service. More publishers will be joining INFED in the near future.

### **5.4. Electronic Resources**

The Consortium has negotiated rates of subscription for several electronic resources covering all major subject discipline being taught in CFTIs, universities and colleges. It includes a wide variety of materials including e-journals, bibliographic databases, factual databases, state-of-the-art reviews published by scholarly societies, university presses, institutions, commercial publishers and aggregators. While 17 e-resources are subscribed with central funding, remaining 68 e-resources can be subscribed by member institutions with their own funding. The member institutions are provided differential access to these 17 e-resources based on their e-resource requirements registered on the Online e-Resource Requirement Portal developed for this purpose.

### **5.5. Archives and e-Books Purchased under E-Shodh Sindhu**

The e-Shodh Sindhu Consortium also subscription to South Asia Archives (SAA) and World E-Book Library (WEL) on behalf of National Digital Library (NDL). The World e-Book Library includes 3 million (30,00,000) primary sources spanning past 1,000 years of world history in more than 320 different languages. In addition, contemporary journal collections of WeL include scholarly journals and academic articles from every academic field. The South Asia Archive contains more than 4.5 million pages spanning the period of 18<sup>th</sup> and mid-20<sup>th</sup> century from documents across the Indian subcontinent, including India, Pakistan, Burma, Afghanistan and Bangladesh. The access to SAA and WEL is available to all the institutions covered under the e-Shodh Sindhu Consortium as well as institutions under other Govt. funded Consortium such as CERA, DelCON, CSIR-NKRC, DRDO etc. The

access to both the resources are also available to individuals through the National Digital Library of India.

## 5.6. Major Achievements of e-Shodh Sindhu

- ▶▶ The number of colleges in the NLIST Programme increased to 3200 and under AICTE funded institutions has been increased to 108 during the year excluding the IEEE subscribers who were not provided access during 2018;

Sl.No.	Name of Resource	No. of Titles	Category of Institutions 2018 & 2019
1	JSTOR	3000+	Univ. + CFTIs + Colleges
2	EPW	1	Univ. + CFTIs + Colleges
3	JGate Plus (JCCC)	DB	Univ. + CFTIs
4	Oxford University Press	262	Univ. + CFTIs + Colleges
5	ASME Journals Online	29	CFTIs
6	ASCE Journals Online	36	CFTIs
7	ACM Digital Library	140	CFTIs
8	AIP - eSS Collection	19	Univ. + CFTIs + Colleges
9	APS - eSS Collection	13	Univ. + CFTIs
10	ISID Database	DB	All
11	Web of Science/LA	DB	Univ. + CFTIs
12	Annual Reviews	43	Univ. + CFTIs + Colleges
13	Project Muse	670	Univ. + CFTIs
14	MathSciNet	DB	Univ. + CFTIs
15	Springer Link + Nature journal	1701+	Univ. + CFTIs
16	Taylor and Francis	1076	Univ.
17	American Chemical Society	49	Univ.
18	Royal Society of Chemistry	23	Colleges
19	Institute of Physics	46	Colleges
20	H W Wilson	3000+	Colleges
21	eBrary e-Books	..25 Lakhs	Colleges
22	Indian Journals.com	180+	Colleges
23	WEL (For NDL)	0.00 lakhs	All
24	South Asia Archives		All

**Table 11: e-Resources Made Accessible to Eligible Member Institutions**

**Univ:** 12(B)/Central/Funded Deemed Universities, **Colleges:** Eligible NLIST Colleges

**CFTIs:** Centrally funded Technical Institutions (IISc, IITs, NITs, IIMs, IISERs, IIITs etc)

- ▶▶ The Negotiation Committee of e-Shodh Sindhu met 5 times during the period of 3 months for 8 days to negotiate rates of subscription for 143 e-resources collections from 53 publishers/vendors and to get the lowest rates of subscription;
- ▶▶ The Consortium negotiated for four new publishers (Brill, Canadian Science, Corporate Law Advisor & Lexis Nexis) for 2019 and negotiation failed for the existing publisher (IEEE) for 2019;

► The consortium negotiated the rates for various resources with a maximum 3% increase for all the resources except for AMS journals (4.24) that were previously negotiated under the consortium. There is no increase of rates of subscription for 11 resources and all the resources subscribed under NLIST Programme except for Oxford Univ Press where the content is increased from 198 titles to 262 titles.

## 5.7. Funds Released

The Consortium received Rs. 199.57 crores during FY 2018-19 for subscription to e-Resources for Universities/CFTIs, colleges under NLIST Programme and for the subscription of World e-Book Library and purchase of South Asia Archive. The details of funds released to e-Shodh Sindhu during FY 2018-19 are given below in Table 12:

Sl. No.	Funds Released	Rupees
1	Funds released for March 2018 (Vide Letter no F.16-23/2014-TEL, dated 08th Jun 2018)	1,27,86,66,647.00
2	Funds released for March 2018 (Vide Letter no F.16-23/2014-TEL, dated 27th Sep 2018)	42,13,33,353.00
3	Funds released for March 2018 (Vide Letter no F.16-23/2014-TEL, dated 25th March 2019)	19,57,00,000.00
4	Funds released for March 2018 (Vide Letter no F.16-23/2014-TEL, dated 25th March 2019)	10,00,00,000.00
	<b>Total (FY 2018-2019)</b>	<b>199,57,00,000.00</b>

Table 12: Funds Released to e-Shodh Sindhu during FY 2018-19

## 5.8. Usage of e-Resources: Analysis

Most publishers maintain detailed usage statistics for resources made accessible to subscribing institutions. The publishers provide username and password to subscribing institutions for accessing the usage statistics for their resources for monitoring purpose. The Consortium analyses the usage on various parameters as mentioned below.

### 5.8.1. Average Cost of an Article

The average cost per download represents the average cost of each access event to a full-text article and is calculated by dividing the subscription cost of a resource by the number of articles downloaded. Table 13 given below, provide the cost per download of an article. The cost per download is lowest for JSTOR (Rs. 8.80) and the highest for Project Muse (Rs.536.17), whereas the Consortium

average, is Rs. 82.88. In the case of databases the cost per search is lowest for MathSciNet (Rs. 17.49) and the highest for Web of Science (Rs.197.62).

SI No	Resource Name	No of Institution subscribed	Downloads	Cost per download/search
1	ACM Digital Library	61	189037	Rs. 166.07
2	American Chemical Society	109	1554700	Rs. 64.00
3	American Institute of Physics	128	787579	Rs. 135.24
4	American Physical Society	126	614917	Rs. 134.12
5	Annual Reviews	113	90060	Rs. 310.34
6	ASCE Journals Online	50	193772	Rs. 134.53
7	ASME Journals Online	56	141880	Rs. 162.64
8	JSTOR	209	3533363	Rs. 8.80
9	Oxford University Press	163	500825	Rs. 135.59
10	Project Muse	101	95637	Rs. 536.17
11	Springer Link + Nature	200	4479969	Rs. 95.32
12	Taylor and Francis	129	592239	Rs. 142.64
	Total For FT Resources		12773978	Rs. 82.88
13	JGate Plus (JCCC)	194	1017042	Rs. 19.24
14	MathSciNet	90	1508410	Rs. 17.49
15	Web of Science/LA	150	710988	Rs. 197.62
	<b>AICTE Resources</b>			
1	ASCE AICTE	52	47649	Rs. 276.67
2	ASME AICTE	61	18322	Rs. 674.51
3	IEEE AICTE	73	491283	Rs. 67.57

**Table 13: Cost per Download for Full-Text e-Resources for the Year 2018**

Note: Usage for ISID & EPW not available and cost per download not computed.

### 5.9. Document Delivery through J-Gate Plus@e-Shodh Sindhu

The J-Gate Plus@e-Shodh Sindhu is a virtual library of journals literature created as a customized e-journal articles access gateway and database solution for member institutions of e-Shodh Sindhu. It provides article-level access to e-journals subscribed under the Consortium as well as e-journals subscribed by 26 university libraries designated as ILL Centres of the INFLIBNET Centre. Moreover, an increasing number of CFTIs are now contributing their journal subscription details in the J-Gate Plus. It acts as a gateway to search 50,000+ journals including 25,000+ journals subscribed by the Consortium as well as universities designated as ILL Centres. The J-Gate Plus interface facilitates triggering of an e-mail request for articles that are not accessible online and are available only in universities designated as ILL Centres.

During the period under report, 163 ILL requests were received from member universities to the INFLIBNET Centre out of which 123 requests were fulfilled. Details of numbers of article requests received from member universities are given below in Table 14:

Sl. No.	Requested By	DDR-DU	DDR-F	DDR-P	DDR-UF	Total
1	Indian Institute of Management - Bangalore	0	22	0	0	22
2	Dr. B.R. Ambedkar Memorial Library - Acharya Nagarjuna University	1	8	0	4	13
3	Kannur University	0	10	1	0	11
4	Gulbarga University	0	6	1	0	7
5	Jiwaji University Gwalior	0	5	0	1	6
6	Osmania University	0	5	1	0	6
7	Veer Narmad South Gujarat University	0	4	0	2	6
8	Annamalai University Library	0	4	0	1	5
9	Indian Institute of Technology - Roorkee	0	5	0	0	5
10	Indira Gandhi National Open University	0	4	0	1	5
11	Tata Institute of Social Sciences	0	3	1	1	5
12	Dayalbagh Educational Institute	0	2	0	2	4
13	National Institute of Technology - Kurukshetra	0	2	1	1	4
14	National Institute of Technology-Calicut	0	3	0	1	4
15	Rabindra Library - Assam University	0	3	0	0	3
16	The National Law School of India	0	1	2	0	3
17	Central University of Kashmir	0	1	0	1	2
18	Central University of Kerala	0	2	0	0	2
19	Central University of Tamil Nadu	0	2	0	0	2
20	Indian Institute of Technology Bombay - Periodicals	0	1	1	0	2
21	J R D Tata Memorial Library - Indian Institute of Science	0	1	1	0	2
22	Jawahar Lal Nehru Library - Dr.HarisinghGour University	0	2	0	0	2
23	National Institute of Industrial Engineering - Mumbai	0	1	1	0	2
24	National Institute of Technology - Hamirpur	0	2	0	0	2
25	Other Universities	0	24	3	11	38
	<b>Total Requested</b>	<b>1</b>	<b>123</b>	<b>13</b>	<b>26</b>	<b>163</b>

\$DDR-DU: Document Delivery Request-Delay,  
+DDR-P: Document Delivery Request - Pending,

\*DDR-F: Document Delivery Request – Fulfilled  
#DDR-UF: Document Delivery Request – Unfulfilled

**Table 14: Document Delivery Requests made by Different Universities**

During the period under report, a total number of 1374 requests were received by the 26 ILL Centres and by the INFLIBNET from all the member universities, out of which 694 were fulfilled as per the details are given below in Table 15.

Sl. No.	University Name	DDR-DU	DDR-F	DDR-P	DDR-UF	Total	% of Fulfilled
1	Aligarh Muslim University	6	98	0	96	200	49.00
2	Annamalai University	0	13	1	0	14	92.86
3	Assam University	0	0	3	0	3	0.00
4	Banaras Hindu University	0	3	0	25	28	10.71
5	Banasthali University	2	80	2	16	100	80.00
6	Bangalore University	0	0	24	0	24	0.00
7	Birla Institute of Technology and Science	0	0	0	0	0	NA
8	Jadavpur University	0	0	0	0	0	NA
9	Jawaharlal Nehru University	0	0	15	0	15	0.00
10	Kurukshetra University	0	0	0	0	0	NA
11	Mangalore University	0	0	54	0	54	0.00
12	North Eastern Hill University	0	1	5	0	6	16.67
13	Pondicherry University	0	27	0	25	52	51.92
14	Pt. Ravishankar Maharaj Shukla University	0	1	0	0	1	100.00
15	Punjab University	0	56	0	13	69	81.16
16	Punjabi University	0	0	0	0	0	NA
17	Rashtrasant Tukodji Maharaj University	0	0	1	0	1	0.00
18	Sardar Patel University	0	0	1	0	1	0.00
19	Tata Institute of Social Science	0	69	0	20	89	77.53
20	The Maharaja Sayajirao University	0	11	0	14	25	44.00
21	University of Calcutta	0	0	2	140	142	0.00
22	University of Delhi	0	14	0	6	20	70.00
23	University of Hyderabad	10	178	0	54	242	73.55
24	University of Madras	0	0	1	0	1	0.00
25	University of Pune	0	20	0	104	124	16.13
26	University of Rajasthan	0	0	0	0	0	NA
27	INFLIBNET	1	123	13	26	163	75.46
	<b>Total</b>	<b>19</b>	<b>694</b>	<b>122</b>	<b>539</b>	<b>1374</b>	<b>50.51</b>

\$DDR-DU: Document Delivery Request-Delay,  
+DDR-P: Document Delivery Request - Pending,

\*DDR-F: Document Delivery Request – Fulfilled  
#DDR-UF: Document Delivery Request – Unfulfilled

**Table 15: Document Delivery Requests Received by 26 ILL Centres and INFLIBNET Centre**

Fig. 24 depicts comparison between DDR-Fulfilled and total number of DDR received by each ILL Centre.

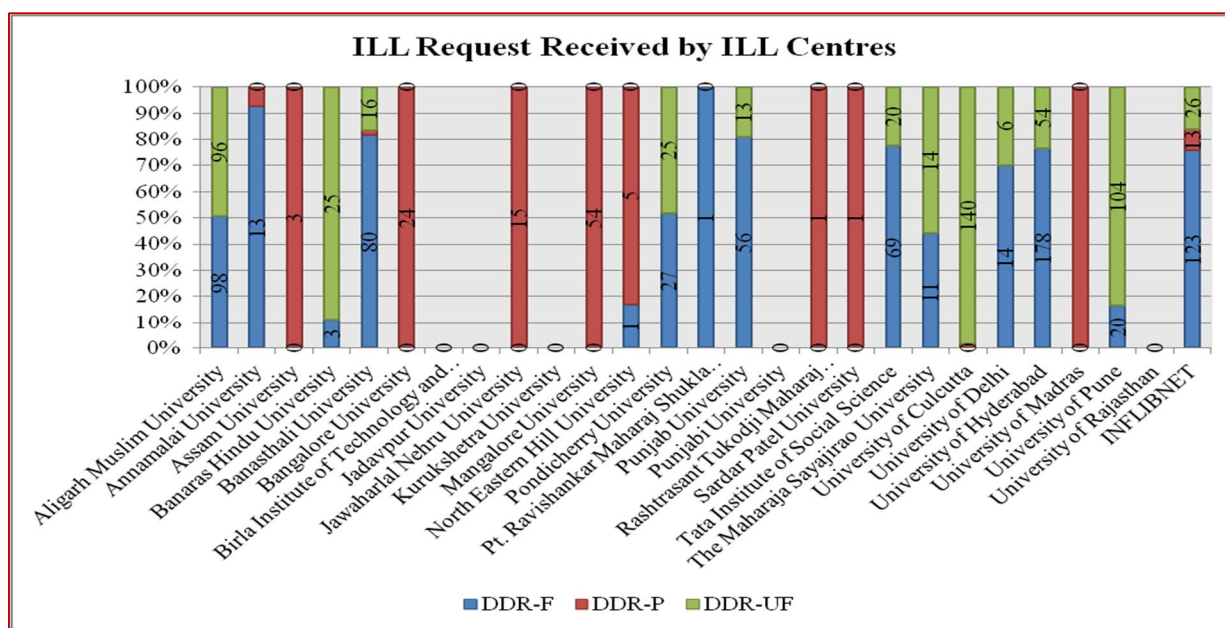


Fig. 24: Document Delivery Requests Received (DDR-R) Vs Full-filled (DDR-F) by 26 ILL Centres

### 5.10. N-LIST (National Library and Information Services Infrastructure for Scholarly Content)

The Project entitled "National Library and Information Services Infrastructure for Scholarly Content (N-LIST)", graduated as a regular scheme of UGC under UGC-INFONET Digital Library Consortium as college component, is merged into e-ShodhSindhu: Consortia for Higher Education E-Resources. Earlier, the project was jointly executed by the UGC-INFONET Digital Library Consortium, INFLIBNET Centre and the INDEST-AICTE Consortium, IIT Delhi, with financial support from the Ministry of Human Resource Development under its National Mission on Education through ICT. The NLIST project, using a highly innovative access model, provides access to 6,094 e-journals and 31,39,309 e-books to all Govt., Govt.-aided as well as non-aided colleges through a proxy server installed at the INFLIBNET Centre. Electronic resources subscribed under NLIST project covers all relevant areas taught in colleges such as arts & humanities, social sciences, physical and chemical sciences, life sciences, computer sciences, political sciences, library and information science, law, business, mathematics, statistics, etc.

#### 5.10.1. Current Status

As on March 31, 2019, a total number of 3,237 member colleges are getting access to resources subscribed under the N-LIST programme. Log-in IDs and passwords have been issued to more than 5.43 lakhs faculty members, students and researchers after obtaining a list of authorized users from these 3,237 registered colleges. Efforts are being made to enrol more colleges through advertisement in the newspaper as well as by organizing training and orientation programmes through affiliating universities and regional offices of the UGC.

### 5.10.2. Number of Colleges

Fig. 25 given below reflects the year-wise number of colleges who joined the NLIST Programme during the year 2010 to 2019. Due to changes in the eligibility criteria of membership, there was a slight decrease in the total number of registered colleges in 2018. However, a slight increase in the total number of registered colleges has been observed in 2019.

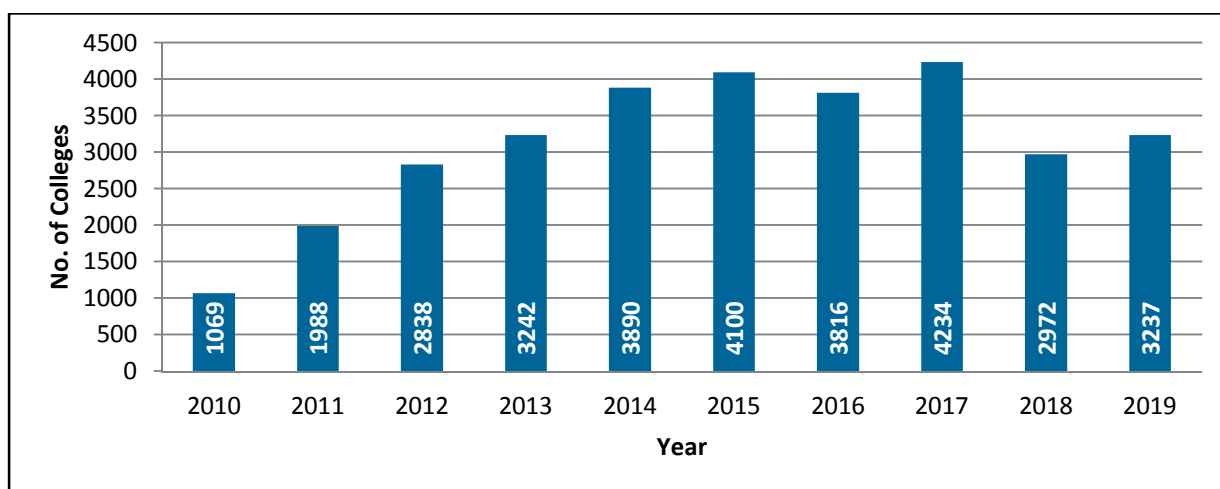


Fig. 25: Year-wise Registration of Colleges

### 5.10.3. Electronic Resources Subscribed under the N-LIST Programme

#### 5.10.3.1. Full-text Electronic Resources

Full-text electronic resources contain complete articles along with their bibliographic details. The N-LIST programme subscribes to full-text e-resources from scholarly societies, commercial publishers and aggregators like American Institute of Physics, American Physical Society, Oxford University Press, Royal Society of Chemistry, H W Wilson, etc. All full-text resources subscribed under the N-LIST programme contain electronic journals as revealed in Table 16 given below.

Sr. No.	E-resources	Publishing Country	No. of Journals	Backfiles from
1	American Institute of Physics	USA	18	Ten yrs.
2	Annual Reviews	USA	33	Ten yrs.
3	Economic and Political Weekly (EPW)	India	1	1966+
4	Indian Journals	India	186	2007+
5	Institute of Physics	UK	46	Vol. 1+
6	JSTOR	USA	2500	Vol. 1+
7	Oxford University Press	UK	206	1996+
8	Royal Society of Chemistry	UK	29	Ten yrs.
9	H. W. Wilson	USA	3,075	1982+
	<b>Total</b>		<b>6094</b>	

Table 16: Full-text Electronic Resources



### 5.10.3.2. Electronic Books

Electronic books are either subscribed on an annual subscription basis as in case of ebrary or are purchased on one-time payment and perpetual access basis as in case of all remaining publishers listed below. A total number of electronic books accessible to colleges under N-LIST programme exceeds 1,61,909 as revealed below in Table 17.

Sr. No.	E-book Name	Available Books	Purchased Books	Access Available
1	E-brary	1,25,000+	1,25,000+	1,25,000+
2	Cambridge Books Online	13,966	1,800	--
3	EBSCO Host-Net Library	4,436	936	4,436
4	Hindustan Book Agency	65	65	65
5	Institute of South-East Asian Studies(ISEAS) Books	382	382	382
6	Oxford Scholarship Online	6,577	1,402	1,402
7	Springer eBooks	50,208	2,300	18,000+
8	Taylor & Francis eBooks	40,000+	1,800	4,500+
9	Myilibrary-McGraw Hill	2,50,000	1,124	1,124
10	Sage Publication eBooks	2,700	1,000	1,000
11	Open Access (Net Library)		3,500	
	<b>Total</b>	<b>4,93,334</b>	<b>1,39,309</b>	<b>1,61,909</b>

Table 17: Electronic Book

### 5.10.4. E-Resources Available through National Subscription

Access to South Asia Archives (SAA) and World E-Book Library (WEL), subscribed by eShodh Sindhu on behalf of National Digital Library (NDL), are made available to member colleges of NLIST Programme through proxy server set up at INFLIBNET Centre. The World e-Book Library including 3 million (30,00,000) primary sources spanning past 1,000 years of world history in more than 320 different languages as mentioned in Table 18. The South Asia Archive contains more than 4.5 million pages spanning the period of 18th and mid-20th century from documents across the Indian subcontinent, including India, Pakistan, Burma, Afghanistan and Bangladesh.

Sr. No.	Name of Collection	No. of Titles
1	World eBook Library	30,00,000
2	South Asia Archive	4.5 million pages

Table 18: E-Resources Available through National Subscription

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### **5.10.5. Implementation Methodology**

E-resources subscribed under UGC-INFONET Digital Library Consortium are being made accessible to universities on their respective IPs. However, since most of the colleges registered under the NLIST Programme do not have static IP addresses, access to e-resources based on IP filtering cannot be implemented for colleges. Moreover, most of the publishers were reluctant to handle authentication of a large number of users from thousands of colleges who had to be given freedom to enrol themselves for the N-LIST Programme at anytime during the year as well as during the project period.

As such, the INFLIBNET Centre has implemented EZ-Proxy from OCLC for authenticating registered. Individual users from colleges can directly access and download articles from journals and chapters from books directly from the publisher's website once they are duly authenticated as authorized users through the authentication mechanism deployed at the INFLIBNET Centre. The Centre has also implemented Shibboleth based authentication of authorised NLIST users for off-Campus access to American Institute of Physics, Annual Reviews, Royal Society of Chemistry, Springer eBooks and Taylor & Francis.

### **5.10.6. Cost-effectiveness of the N-LIST Programme**

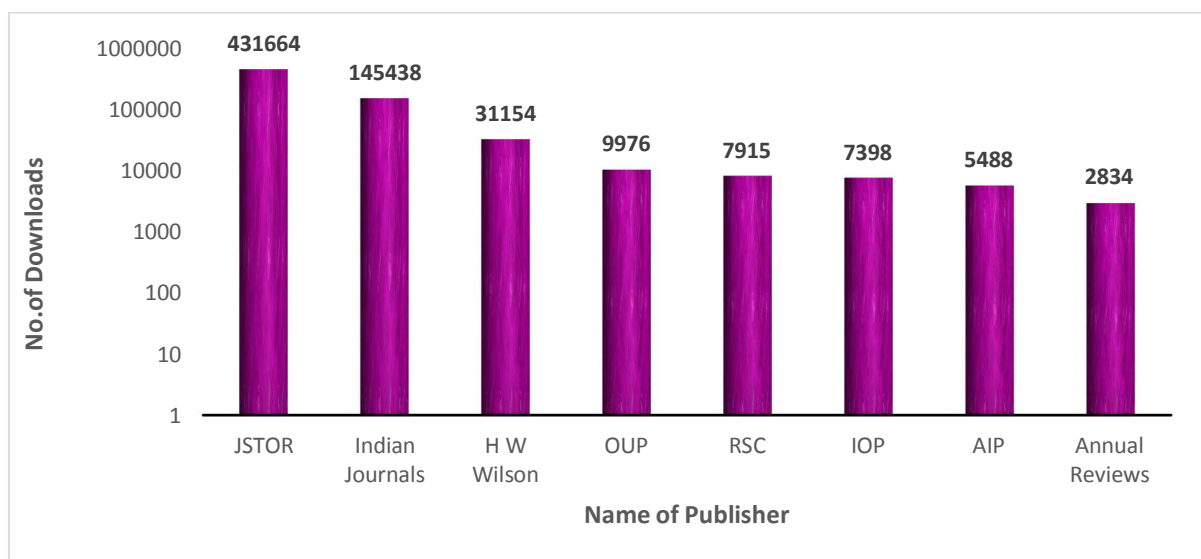
The cost-effectiveness of N-LIST programme can be judged by factors such as a number of beneficiary colleges, full-time potential users in these colleges, cost of e-resources subscribed and expenditure on e-resources per college and per potential user. The N-LIST programme is a cost-effective proposition because of a large number of colleges with a larger number of potential users and potential for growth. These factors are discussed below in detail.

### **5.10.7. Analysis of Usage**

It is important to ensure that the resources offered to the colleges are being used optimally and steps are taken to promote usage of e-resources wherever required. A brief analysis of the usage of e-resources by the beneficiary college is given below.

#### **5.10.7.1. Publisher wise Usage of E-journals**

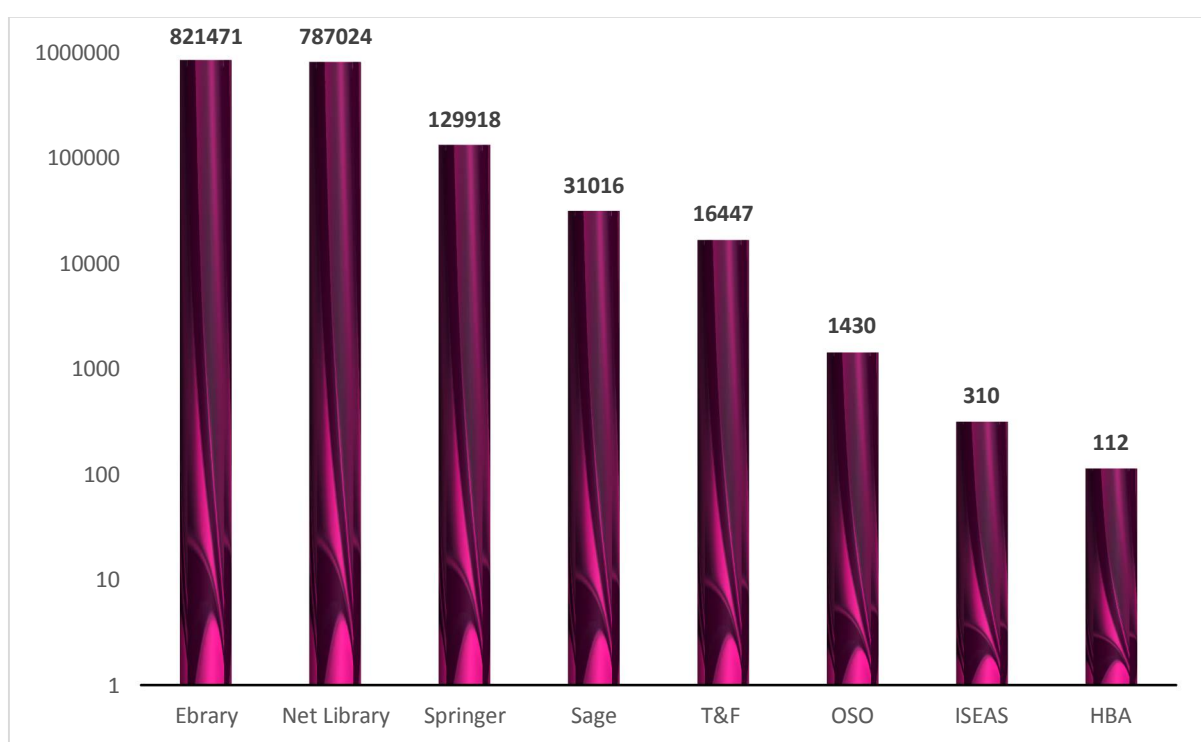
Fig. 26, given below, shows a number of articles downloaded by users from different publishers during the financial year 2018-2019. It can be observed that JSTOR is a highly used resource followed by Indian Journals and H. W. Wilson. The usage of EPW could not be analysed due to lack of usage data from the publisher.



**Fig.26: Publisher wise Usage of E-Journals 2018-2019**

### 5.10.7.2. Publisher wise Usage of E-Books

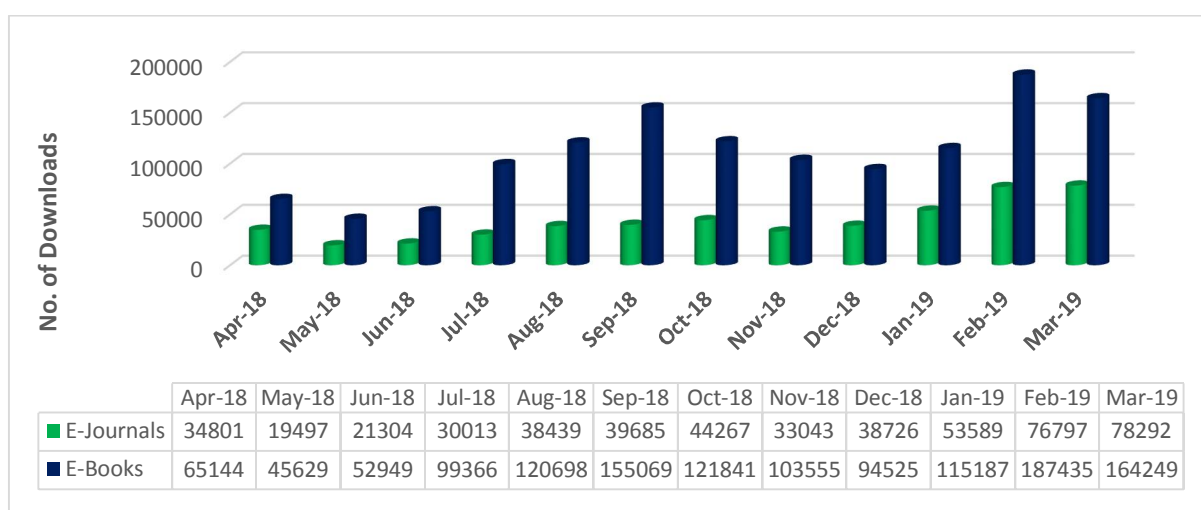
Fig. 27, given below, shows publisher wise usage of ebooks during the financial year 2018- 2019. It can be observed that Ebrary is a highly used resource followed by Net Library and Springer e-books.



**Fig.27: Publisher wise Usage of E-Books 2018-2019**

### 5.10.7.3. Month wise Usage of E-Resources

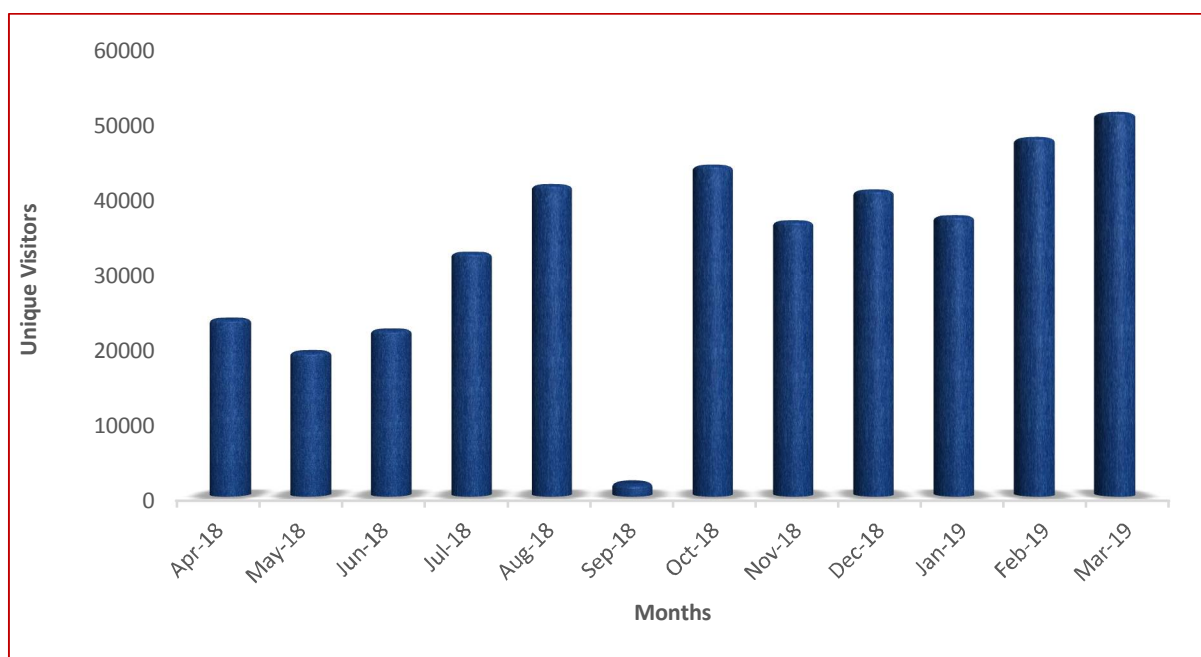
Fig. 28 given below reflects month-wise usage of e-journals and e-books for the period April 2018 to March 2019.



**Fig.28: Month-wise Usage of E-resources for 2018-2019**

#### 5.10.7.4. Month wise Unique Visitors

Since the access of e-resources is provided through a proxy server set up at the INFLIBNET Centre, it is difficult to analyse usage of e-resources by a given college. The Centre is using AW stats, a powerful open-source tool that generates statistics from the local proxy server. The Centre has used this tool to analyze log files of N-LIST Proxy Server. Fig. 29 given below shows month wise unique visitors to N-LIST resources. The graph shows average of 33,934 monthly users from 3237 member colleges. There is a 28% increase in average monthly users comparing to 2018-2019.



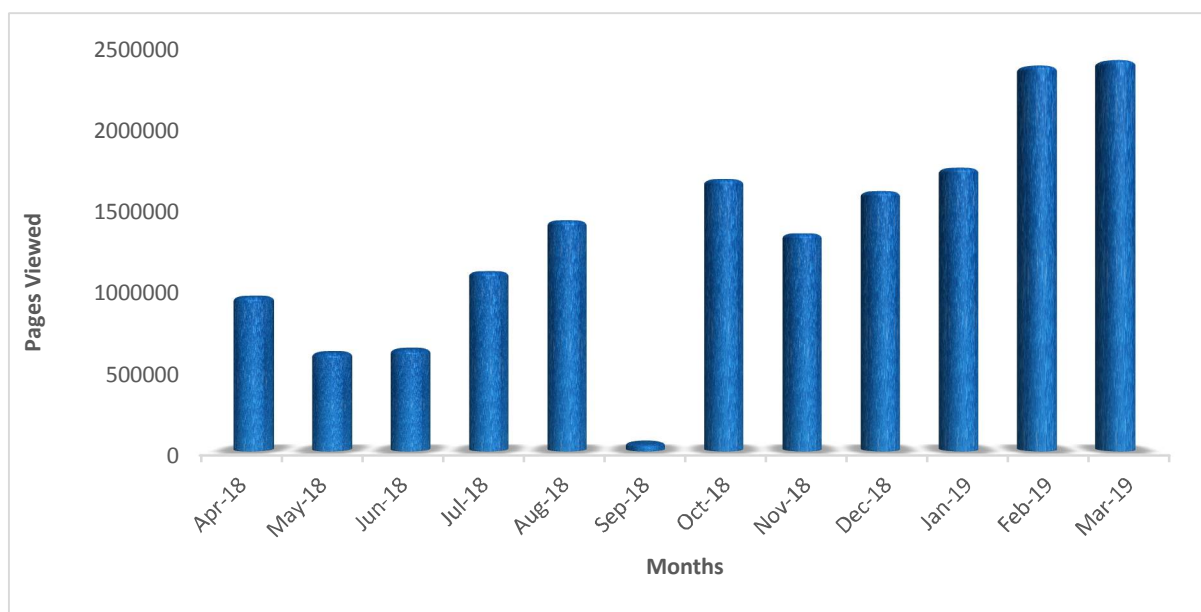
**Fig. 29: Month-wise Unique Visitors of the N-LIST Programme 2018-2019**

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**Note:** Due to the implementation of Shibboleth based authentication mechanism for a few resources which resulted in a decrease in unique visitors and pages viewed by users in the month of September 2018.

#### 5.10.7.5. Month wise Pages Viewed

A total number of 1,61,86,903 pages were viewed by the users in member colleges from the subscribed e-resources. Figure 30 given below depicts the month-wise number of pages viewed by the users in member colleges.



**Fig. 30: Month-wise Pages Viewed 2018-2019**

#### 5.10.8. Economics of N-LIST Programme

Cost recovery, cost avoidance and (lower) rates of subscription are factors that determine economic viability and cost-effectiveness of consortia-based subscription to e-resources. These factors are discussed below briefly.

##### 5.10.8.1. Cost Recovery

The recovery of cost incurred on e-resources subscribed through the N-LIST Programme can be judged in terms of intensity of use of resources. The cost recovery is calculated on the presumption that if the electronic resources were not available through the N-LIST programme, articles downloaded from these resources by the member colleges would have been sourced on inter-library loan or through document delivery services at a cost of US \$ 15.00 per article. (Average cost of an article taken from a study conducted by the American Research Libraries (ARL). As is evident from figure 31 given below that the N-LIST Programme has recovered the cost incurred on subscription for all e-resources.

The total cost that has been recovered for the year 2018 amounts to Rs. 110.11 crores as against the total expenditure of Rs. 6.17 crores with Rs. 103.33 crores as the cost of articles downloaded in excess.

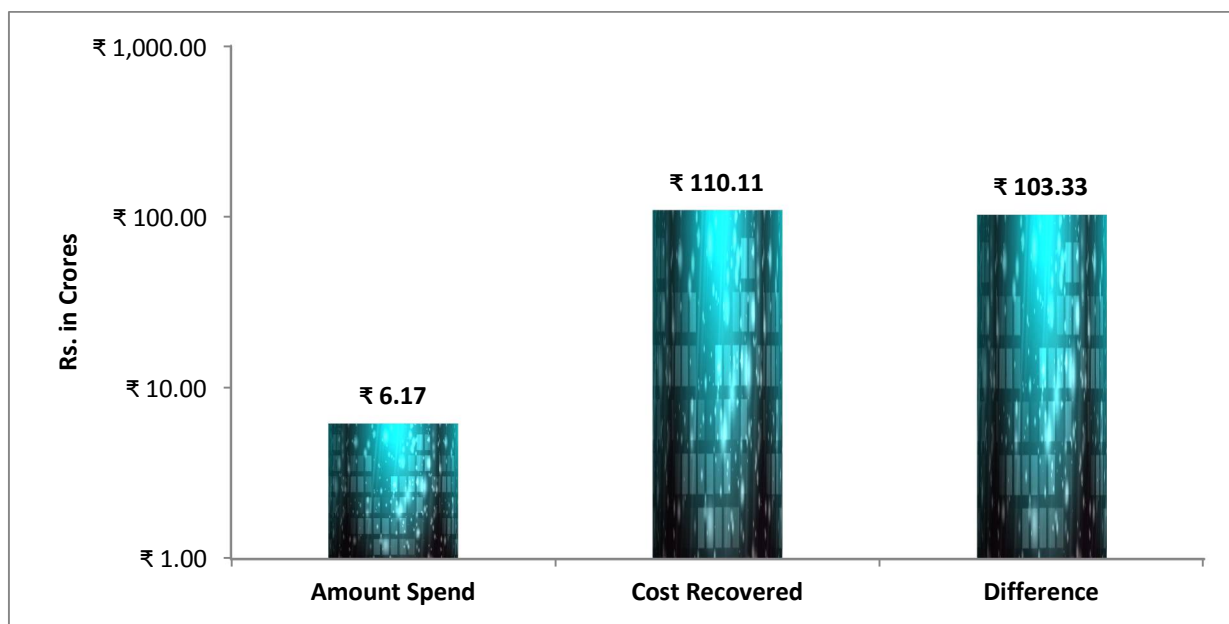


Fig.31: Cost Recovery Factor of e-Journals Subscribed under the N-LIST Programme for 2018

#### 5.10.8.2. Lower Rates of Subscription

The N-LIST Programme has used a highly innovative pricing model for subscription to e-resources wherein one subscription (equivalent to one subscription paid for a university in the UGC-INFONET Digital Library Consortium) is paid for a set of 200 colleges given the fact that extending the prevalent pricing models to college would have been highly expensive, unaffordable and impractical for the college component of the N-LIST Programme. As such, a total number of 15 subscriptions (on prorated basis) were paid for 3,000 colleges during the financial year under report.

#### 5.10.8.3. Annual Increase in Rates of Subscription

The annual increase in rates of a subscription is restricted from 0 to 5% as against the usual increase in the price of e-resources from 10 to 15%.

#### 5.10.9. Average Cost of E-resources Subscribed under the N-LIST Programme

##### 5.10.9.1. Average Cost of Journals per College

The N-LIST programme subscribes to a total number of 6,094 journals for its member colleges. The cost of a subscription to e-resources comes down with the increase in a number of colleges. As such, the average cost of a single journal per college computes to Rs. 2.48 in the year 2018 when only 3237 colleges were enrolled for the scheme.

E-resources	No. of colleges	No. Res	Price per College per Title in Rs.
AIP	2000	18	291.75
Annual Reviews	3000	33	35.49
EPW	3000	1	850.00
Indian Journals	3000	186	8.60
IOP	2000	46	41.68
JSTOR	3000	2500	0.35
OUP	3000	206	7.52
RSC	2000	29	106.55
H.W. Wilson	3000	3075	0.73
Total	3000	6094	2.48

**Table 19: Average Cost of Journals per College**

#### 5.10.9.2. Average Cost of E-books

Most of the e-books under the N-LIST programme had already been purchased for all existing 3237 colleges on "one-time purchase basis or perpetual access basis". In 2018-2019, only Ebrary was subscribed on an annual subscription basis for 3000 colleges. The average cost per book per college of Ebrary was Rs. 0.05.

E-resources	No. of colleges	No. Res	Price per College per Title in Rs.
Ebrary	3000	125000	0.05

**Table 20: Average Cost of E-books per College per Title**

#### 5.11. INFLIBNET Access Management Federation (INFED) (<http://parichay.inflibnet.ac.in/>)

The INFLIBNET Access Management Federation (INFED), the first and only access management federation in India, based on Shibboleth, standard-based open source software, for authenticating authorized users from colleges, universities and other institutes in India. The federation, set-up with permission of the Governing Board, INFLIBNET Centre provides seamless access to e-resources from anywhere, anytime. INFED is a member of eduGAIN.

As on 31<sup>st</sup> March 2019, 94 institutes have joined INFED as per the details are given below in Table 21 (a). The INFED is working with 36 publishers that are providing access to e-resources to e-ShodhSindhu as per the details are given below in Table 21(b). Moreover, 10 publishers have formally signed membership(^) of INFED as per the details are given below. While three institutes have set-up their own IDPs,(\*) the Centre has setup and established IDPs on behalf of 35 institutes as per the details are given below in Table 21 (a) & (b).

Institutes Members of INFED	
Acharya Nagarjuna University	Maharaja Krishnakumarsinhji Bhavnagar University
Alagappa University(*)	MaharshiDayanand University, Rohtak
Alliance University, Karnataka(*)	Mahatma Gandhi University, Kerala
Ambedkar University Delhi(*)	Manipal University Jaipur(*)
Anil Neerukonda Institute of Technology and Sciences	Mar Baselios College of Engineering and Technology
Assam University	MazharulUloom College
Avinashilingam University(*)	MKSSS's Cummins College of Engineering for Women, Pune
B.S.Abdur Rahman Crescent Institute of Science and Technology(*)	Nagaland University
Bharathiar University	National Brain Research Centre, Haryana
Bharathidasan University(*)	National Institute for Research in Tuberculosis(*)
BharatiVidyapeeth Deemed University, Pune(*)	National Institute of Design(*)
BPS MahilaVishwavidyalaya	National Institute of Technology, Hamirpur(*)
Central University of Kashmir	National Law School of India University, Bangalore
Central University of Kerala	National Law University, Odisha(*)
Central University of Punjab(*)	NIT Rourkela
Central University of Rajasthan	NITTTR Chennai
Central University of Tamilnadu(*)	Periyar University
Christ University	PES University, Bangalore
Deccan College Post-Graduate and Research Institute, Pune	Prin. L. N. Welingkar Institute of Management Development & Research(*)
E.G.S Pillay Engineering College, Tamil Nadu	Priyadarshini Engineering College, Tamil Nadu
Gandhigram Rural Institute(*)	Pune Institute of Business Management
Government College of Engineering, Jalgaon	Punjab University
Government Engineering College, Bhuj	Ramaiah Institute of Technology, Bangalore
Government Engineering College, Modasa	Regional Centre for Biotechnology(*)
Government Engineering College, Palanpur	Shantilal Shah Engineering College, Bhavnagar
Government Engineering College, Valsad(*)	Shivaji University, Kolhapur(*)
Government Engineering College, Dahod(*)	Sikkim University(*)
GurunanakDev University	South Asian University(*)
IIMA(*)	Sri PadmavathiMahilaVisvavidyalayam
IISER Pune	Sri Venkateswara University, Tirupati
IISER Tirupati	Srinivas University, Mangaluru
IIT Guwahati(*)	St Joseph Engineering College Mangaluru(*)
IIT-BBS	Tamil Nadu Veterinary and Animal Sciences University(*)
Indian Institute of Technology Madras(*)	Tamilnadu Physical Education and Sports University(*)



Indira Group of Institutes, Pune	Techno India University, West Bengal
INTEGRAL UNIVERSITY	Terna Public Charitable Trust's College of Engineering Osmanabad
ISEC(Institute for Social and Economic Change)(* )	Thapar Institute of Engineering and Technology(*)
Jawaharlal Nehru University	Tumkur University
JSS Academy of Higher Education & Research	University of Calicut
K. K. Wagh Institute of Engineering Education & Research	University of Delhi(*)
Kameshwar Singh Darbhanga Sanskrit University	University Of Kota,Rajasthan
KavikulaguruKalidas Sanskrit University	University of Petroleum and Energy Studies
Kuvempu University	Veer SurendraSai University of Technology
L.E. College,Morbi(*)	Vidyasagar University(*)
LIGO-India Scientific Collaboration(*)	VIGNAN's Foundation for Science, Technology & Research(*)
M S University	Vinayaka Missions Research(*)
Madurai Kamaraj University(*)	Zeal College of Engineering and Research(*)

(\*) IDP setup by INFLIBNET

**Table 21 (a): Institutes**

Publishers Members of INFED	
ACM Digital Library (^)	MathSciNet (^)
American Chemical Society (^)	Mathworks(^)
American Institute of Physics (^)	Nature (^)
American Physical Society	Optical Society of America (^)
Annual Reviews (^)	Oxford University Press (^)
ASCE Journals Online (^)	Palgrave (^)
ASME Journals Online (^)	Portland Press
ASTM Standards Digital Library	Project Euclid(^)
Cambridge University Press (^)	Project Muse (^)
Capitaline (^)	Proquest (^)
CRIS INFAC Industrial Information	Royal Society of Chemistry (^)
Ebsco (^)	ScienceDirect
Emerald Publishing (^)	SciFinder Scholar
Euromonitor Passport (^)	SheerIDInc (^)
Faculti Media Limited (^)	Springer Link (^)
IEEE Electronic Library Online (^)	Taylor and Francis (^)
Institute of Physics (^)	Web of Science (^)
JSTOR (^)	Wiley Blackwell Publishing (^)

(^ ) Formally signed membership

**Table 21 (b): Publishers**

The Centre has developed the minimal operating system ( $\beta$ ) for the installation of Shibboleth Identity Provider and INFEDStat ( $\beta$ ) to track the logged in users for the institutes.

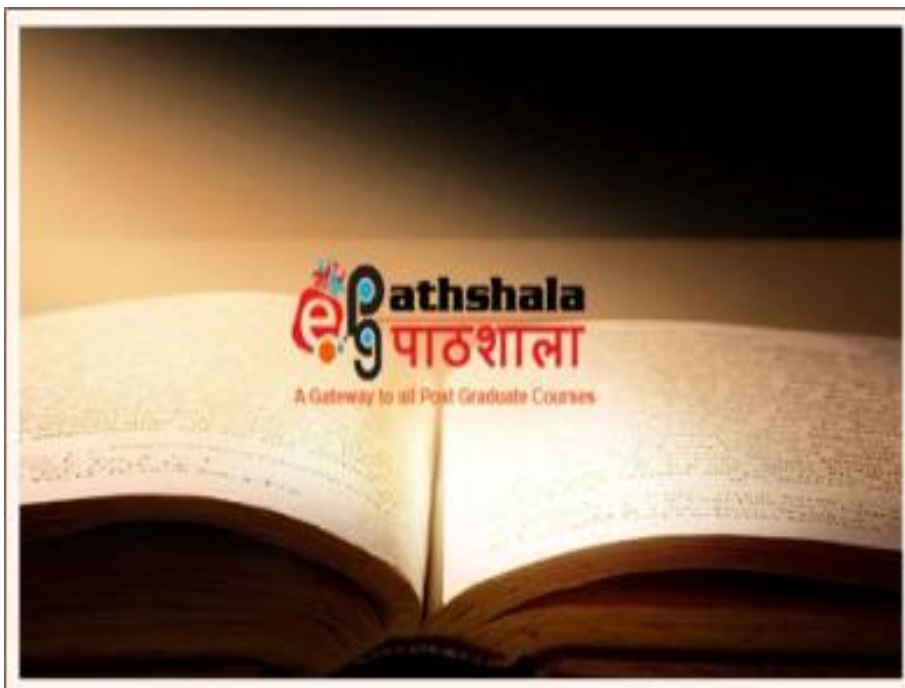
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## 6. e-Learning and e-Content Development

### 6.1. e-PG Pathshala: Production of Courseware E-content for Postgraduate Subjects

<http://epgp.inflibnet.ac.in/>

e-PG Pathshala, an MHRD initiative under its National Mission on Education through ICT (NME-ICT), executed by the UGC and completed with a huge volume of content along with its quality. The content and its quality is the key component of education system, high quality, curriculum-based, interactive e-content in 71 subjects across all disciplines of social sciences, arts, fine arts and humanities, natural & mathematical sciences, linguistics and



languages developed by the subject experts (professor, associate professor, assistant professor or equivalent) working in universities (central, state, deemed) and other R & D institutes across the country. Every subject has a team of principal investigator, paper coordinators, content writers, content reviewers and multimedia team. A dedicated portal (<http://epgp.inflibnet.ac.in/>), to host the content, is available in open access. The INFLIBNET Centre has executed this program in terms of technical infrastructure and its development along with administrative role (fund-disbursement). The Centre has also acted the role of anchor institute for Sociology, Food Technology, Political Science, Women Studies, Human Rights & Duties and Library Science.

#### 6.1.1. The outcomes of e-PG Pathshala are as follows:

- i) Develop e-content in 70 subject areas at PG level drawing expertise from subject experts in colleges and universities;
- ii) 23900+ e-modules for PG courses
- iii) All modules are in four-quadrant (e-Text, video, self-assessment, learn more)
- iv) Make e-content available to students and peers using different delivery modes to impart formal and informal education and for supplementing and complementing the process of teaching and learning in higher education
- v) Promote usage of e-content amongst students and peers; and
- vi) By-product: **e-Adhyayan & e-Pathya**

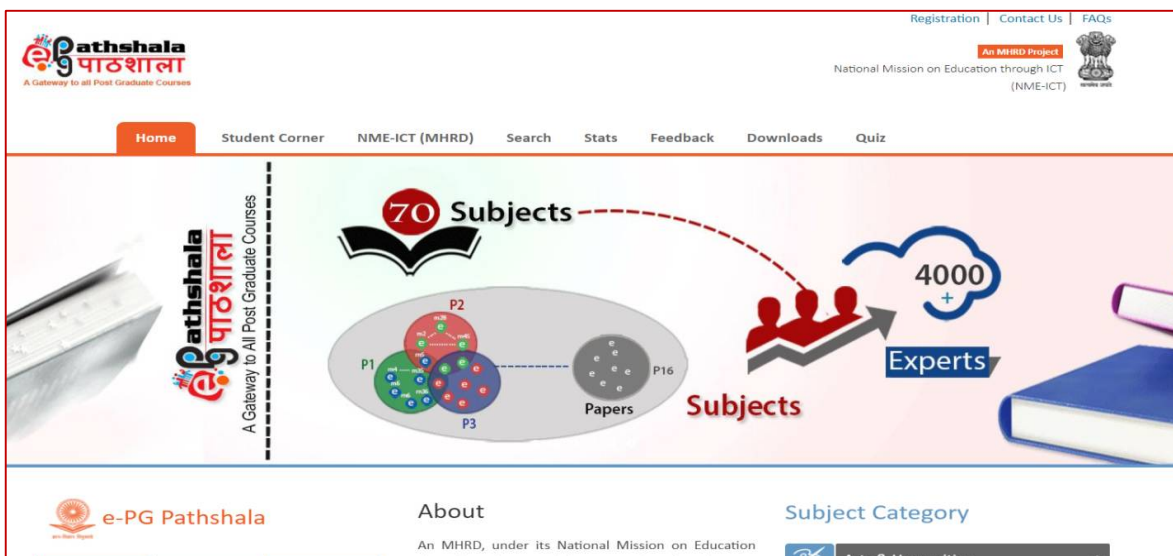


Fig.31: Website of e-PG Pathshala (<http://epgp.inflibnet.ac.in/>)

Pictorial view at ePG Pathshala of four-quadrant is shown in below figure 32:



Fig. 32: Four Quadrant of ePG Pathshala

### 6.1.2. Impact Analysis

The content of e-PG Pathshala is being viewed across the globe. As of March 2019 (Apr-18 to Mar-19), there are more than 20.7 million visitors viewed the content. A glimpse of user access is mentioned below in Table 22:

Views	2,07,31,391
Likes	2,12,977
Dislike	19,199
Share	3,05,929

Table 22: User Access

### 6.1.3. Current Status

As of today, there are more than 23900 e-module are uploaded on ePGPathshala website.

#### 6.1.4. Stakeholder of Content Creators

There are several institutes, multimedia team, subject matter experts are participating in this national initiative as mentioned below in Fig. 33:.

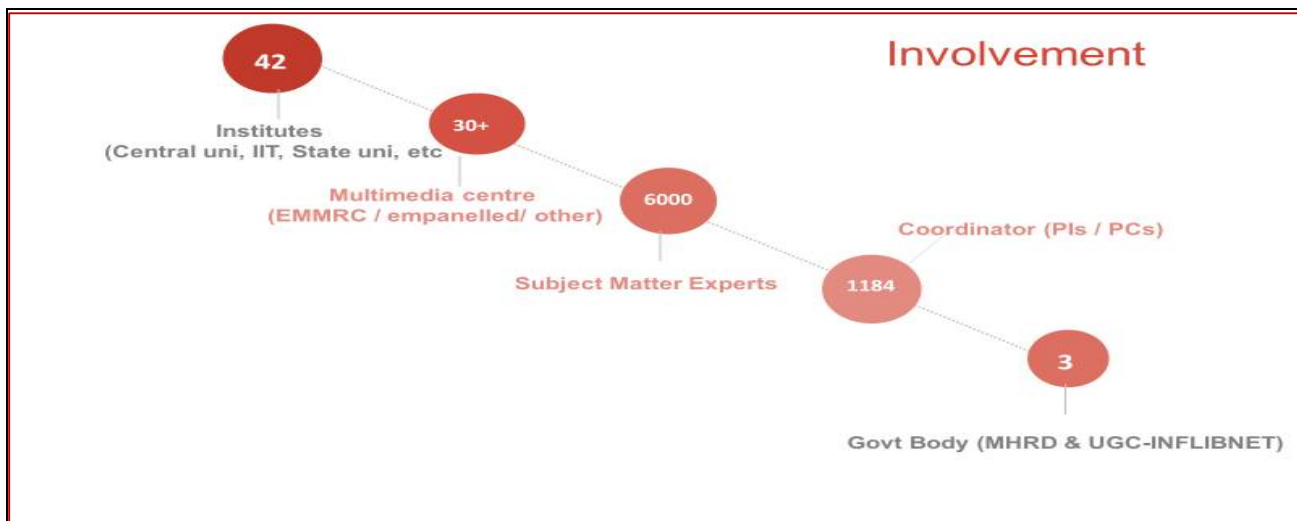


Fig. 33: Stakeholder of Content Creators

#### 6.2. e-Adhyayan: e-Book for Post-graduate Subjects <http://epgpbooks.inflibnet.ac.in/>

e-Adhyayan is a repository of e-Books for the Post-Graduate courses. The e-Books are being derived from the e-text of e-PG Pathshala course materials. e-PG Pathshala is an OER which has developed and maintained by INFLIBNET Centre. The project is initiated by the UGC / MHRD. The author/course coordinator of books is Indian experts. Currently, e-Adhyayan has more than 100 e-Books in Sociology, Library & Information Science, Computer Science & IT, etc. It is available in open access under CC BY-NC. The platform of e-Books is powered by "press book" which is open source. It has been deployed and customised by the INFLIBNET Centre. It also facilitates e-book publishing off-line, where the author can write and publish his/her own book.

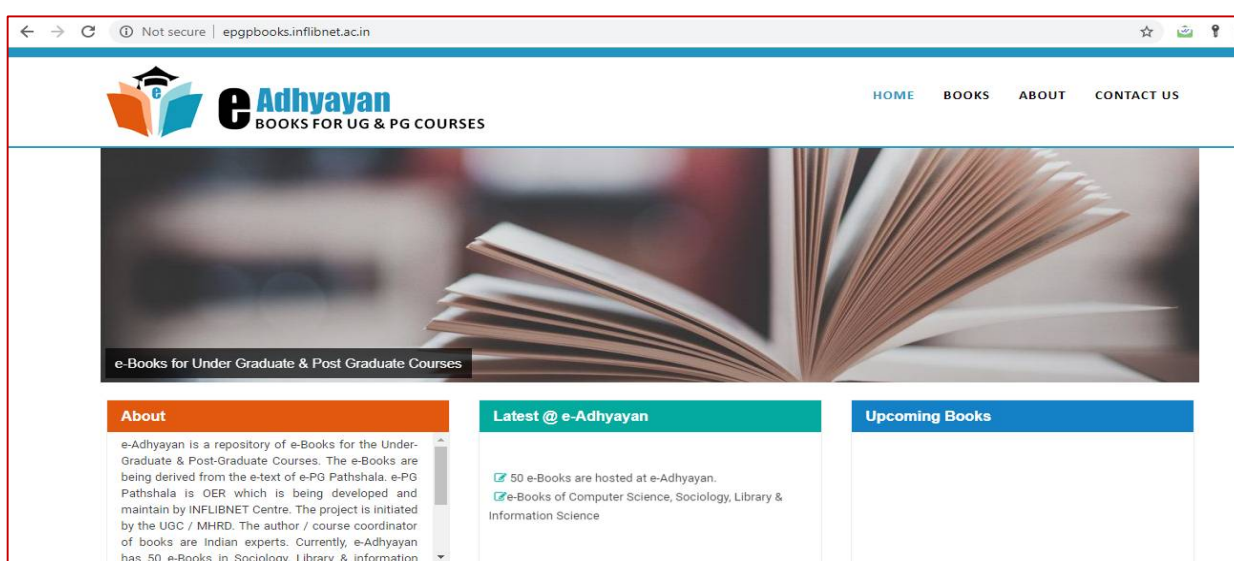


Fig.34: Website of e-Adhyayan

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### 6.2.1. Current Status

Sr No	Category	No. of books
1	Engineering & Technology	41
2	Languages	10
3	Life Science	2
4	Physical And Basic Sciences	17
5	Social Sciences	38

Table 23: Current Status

### 6.3. e-Pathya: A Vertical of e-PG Pathshala

Distance education is one of the popular learning modes for learners in India for those who do not have access to institutes of higher education for one reason or other. These learners depend on course material that are sent by institutes. However, high-level content developed under NMEICT project such as e-PG Pathshala can now be used by such learners. e-Pathya is one of the initiatives of INFLIBNET Centre in this direction.

The e-Pathya is a software-driven e-learning solution that helps institutes to setup an e-learning environment in their own campus. The e-Pathya provides hassle-free and convenient access to Open Learning Resources (OLR). It is a vertical of e-PG Pathshala that comes with course package allowing students to pursue higher education (PG level) in distance learning as well as campus learning mode. It facilitates offline access of textual study material of PG courses developed under e-PG Pathshala. There are two modes of accessing the content:

- I) **Institutes:** The institutes having network infrastructure would be provided e-learning material through the local server using a web browser.
- II) **Individual learners:** The individual learners/students who are enrolled in open distance learning mode would be required to register on ePGP website and on successful registration he/she would be provided entire course material as a package which he/she can use on his/her own laptop/desktop.

#### 6.3.1. How to Access

- I) The interested institutes may register from the e-PGPathshala platform and provide necessary details. The Centre after receiving registration would verify the requirements and infrastructure details for providing e-learning resources of respective institutes. Once registered institute satisfy the criterion, the Centre would provide e-Pathya with a software solution for the course which is offered by them.
- II) The individual students who are not able to connect online or come to the institutional campus for learning would be given facility to download desired course material under which they have enrolled after registering themselves on the EPGP portal.

## 7. Ranking of Institutions and Accreditation Work for NBA and NAAC

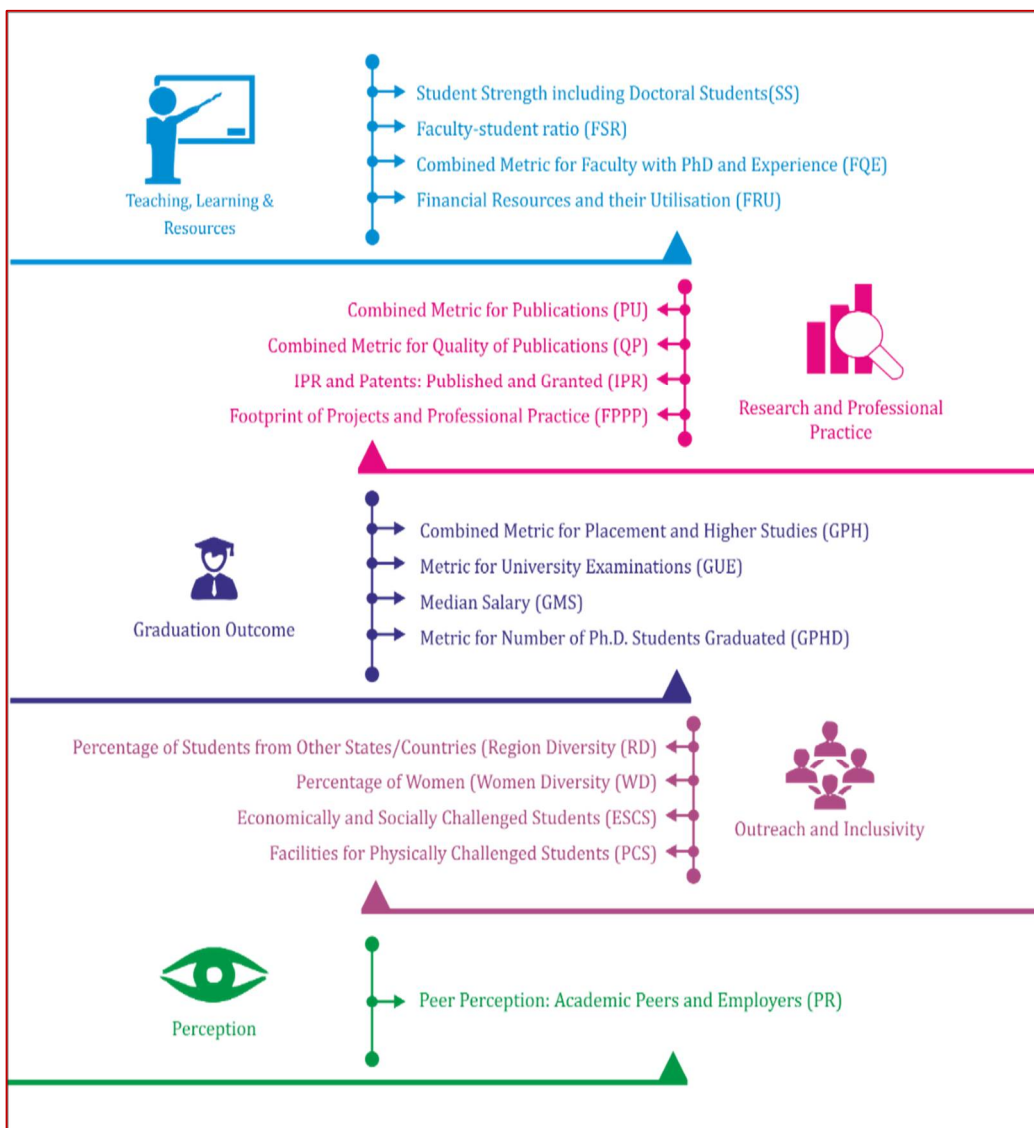
### 7.1. National Institutional Ranking Framework (NIRF): India Ranking 2019

The 4<sup>th</sup> exercise of “National Institutional Ranking Framework (NIRF): India Ranking 2019” was again awarded to INFLIBNET by the National Board of Accreditation (NBA) for the development of online interfaces including ranking modules along with research data i.e. publications, citations & patents.



Fig. 35: NIRF

The NIRF provides for ranking of institutes under five broad generic parameters, namely: i) Teaching, Learning and Resources; ii) Research and Professional Practice; iii) Graduation Outcome; iv) Outreach and Inclusivity, and v) Perception. Figure 36 given below, provides an outline of the sub-parameters for each of the five generic parameters.



**Fig. 36: NIRF Parameters for Ranking of Institutes**

This year's rankings continue with the practice of providing a *common overall rank* and in addition, a separate rank for *Universities*, and *discipline-specific ranks* in the disciplines of *Engineering, Management, Pharmacy, Law, Medical and Architecture*. This year 200 institutions being ranked in the engineering category. Last year it was 100 institutions.

The INFLIBNET Centre was responsible for the development of NIRF Web Portal including data capturing system, perception capturing system, the feedback mechanism and the ranking platform. The Centre also provided and verified data on publications, citations, patents and highly cited papers within India. The Centre also deployed technical help desk at its premises.

### 7.1.1. Participation Profiles

Institutes desirous of participating in the India Rankings 2019 were invited to register on the NIRF Web portal and submit their applications online for overall ranking as well as for one or more disciplines along with relevant data in the given format. The final picture of participation is summarised in below table 25:

Category / Discipline	Total Number of Institutions	CFTIs and CFUs
Overall	1479	120
Engineering	970	61
Management	555	35
Pharmacy	301	5
Architecture	65	13
College	1304	0
Medical	113	2
Law	80	5
<b>Total</b>	<b>4867</b>	<b>241</b>

Table 25: Number of Participating Institutions for Overall and Discipline Specific Rankings

Discipline / Region	Overall	Engg	Mgmt.	Pharmacy	Architecture	Colleges	Medical	Law	Total
North	203	120	107	42	21	126	28	30	677
South	764	527	263	116	25	732	51	18	2496
East	123	78	28	14	3	98	4	10	358
West	389	245	157	129	16	348	30	22	1336
<b>Total</b>	<b>1479</b>	<b>970</b>	<b>555</b>	<b>301</b>	<b>65</b>	<b>1304</b>	<b>113</b>	<b>80</b>	<b>4867</b>

Table 26: Region-Wise Distribution of Institutes Registered for India Rankings 2018

### 7.1.2. India Ranking 2019

"India Rankings 2019" using National Institutional Ranking Framework (NIRF) being released on 8<sup>th</sup> April by the Hon'ble President of India at Vigyan Bhawan, New Delhi. The Centre created a ranking module for NIRF 2019 and ranked institute's details are available at [www.nirfindia.org](http://www.nirfindia.org)



Fig.37: India Ranking 2019



## 7.2. e-NBA: Accreditation Workflow Management System (AWMS)

The project, called "Accreditation Workflow Management System (AWMS)" is related to accreditation of technical institution's programme being done at NBA. The Centre is working on following modules mentioned in below Table 27:

Sr. No.	Modules	Descriptions	End User / Current Status
<b>1</b>			
1.1	New Institute Registration	Institutions seeking accreditation for the first time will register with eNBA. i. Fills the registration form and uploads the Approval letters of the Competent Authority ii. Pay the Fee iii. Account gets created, i.e., Now the institution is ready to apply for accreditation.	Institute / Completed
1.2	Application for Accreditation	Institution applies for accreditation i. Selects the Discipline, Level and Programs from the drop-down. ii. Approval letters of the Competent Authority as uploaded at the time of registration will reflect with the application for each programme.	Institute/ Completed
1.3	Pre-Qualifier (PQ) Submission (This involves filling of automated PQ)	Institution fills the PQ for all the programs to be accredited. i. After filling each PQ, based on the data submitted the compliance get generated.	Institute/ Completed
1.4	Payment of 10% Accreditation Fee	i. The institution pays 10% of the Accreditation Fee towards the processing of Pre-Qualifier. ii. Payment will be through Payment Gateway only. iii. After successful submission of the 10% Accreditation Fee, Application ID gets generated.	Institute
1.5	Approval of Application	i. Application gets submitted to Accreditation Bureau for approval along with payment and PQ details. ii. The application reflects all the program(s) applied for accreditation with specific PQ status (approve/reject).	Accreditation Bureau/ Completed

		iii. Accreditation bureau either approve or refer back the application for certain corrections.	
1.6	Submission of SAR, Submission of Visit Dates and Payment of 90% Accreditation Fee	Institution fills the SAR, submits the visit dates and pays 90% Fee: i. The institution pays 90% of the Accreditation Fee only for those programs who meet all the essential Pre-Qualifiers, i.e., Compliance Report contains all "Yes". ii. Payment will be through Credit/Debit or Net Banking.	Institute/ in progress
<b>Module to be completed</b>			
1.7	Processing of SAR for Visit Team Composition	Accreditation Bureau reviews the Visit Dates and process the application for Team Composition.	Accreditation Bureau
2	<b>Automated Team Composition</b>		
2.1	Team Composition	Once the Visit Date is received by Accreditation Bureau, It sends the application for Team Composition to NBA Visit. One integrated system is required to manage all the task allotment work among experts.	NBA Visit Team Composition Bureau.  Expert Database
3	<b>Evaluator Workflow Management</b>		
3.1	Evaluator Registration	Existing experts of NBA will receive a link in their registered mail ID to get registered with eNBA. On clicking the link, expert can verify his/her details and submits it to complete the registration.  NBA maintains a separate list of Chairpersons and expert members, i.e., the role are fixed.  Each expert, on submission of registration, receives login details to access eNBA.	Experts
3.2	Evaluator as Chairman/Expert	Once a Visit team is fixed the Chairman and Expert of a particular team receives the Pre-Qualifiers and SAR as submitted by the institution.	Expert

		<p>a. Chairman of the team receives Pre-Qualifiers and SAR for all the programs along with the Visit Documents.</p> <p>b. Expert receives the Pre-Qualifiers and SAR of the respective program along with the Visit Documents.</p> <p>Visit Documents contains the following:</p> <p>a. Evaluation Guidelines (PDF)</p> <p>b. Evaluation Report - Part A (to be automated)</p> <p>c. Evaluation Worksheet - Part B (to be automated)</p> <p>d. Declaration and Feedback Form – Part C (to be automated).</p> <p>Visiting team conducts the visit and fills the Visit Documents and submits the report at the end of the visit to NBA.</p> <p>For every Visit the PDF of all the reports get generated.</p>	
3-3	Processing of Report	Once a Visit is complete, the reports in PDF are visible at Report Section of NBA in a printable form to process further.	NBA Report Bureau

**Table 27: Accreditation Workflow Management System (AWMS) Modules**

## **8. Study Webs of Active Learning for Young Aspiring Minds (SWAYAM): UGC-MOOCs**

SWAYAM provides an integrated platform for online courses, using information and communication technology (ICT) and covering courses from high school to post-graduate subjects including skill sector courses to ensure that every student benefits from learning the material through ICT.

There are seven national coordinators identified to developed the content in different domains. UGC is the "National Coordinator" for development of MOOCs for non-technology post-graduation degree programmes. UGC issued "Credit Framework for online learning courses through SWAYAM" Regulation 2016.

The INFLIBNET is executing this project with the guidance of UGC. The major role of INFLIBNET is fund disbursement to all course coordinator, the web interface of course proposal and a dedicated portal for UGC-MOOCs. Portal provides a dashboard for SWAYAM coordinators, mentors, information on PG-courses update, workshop details, etc.

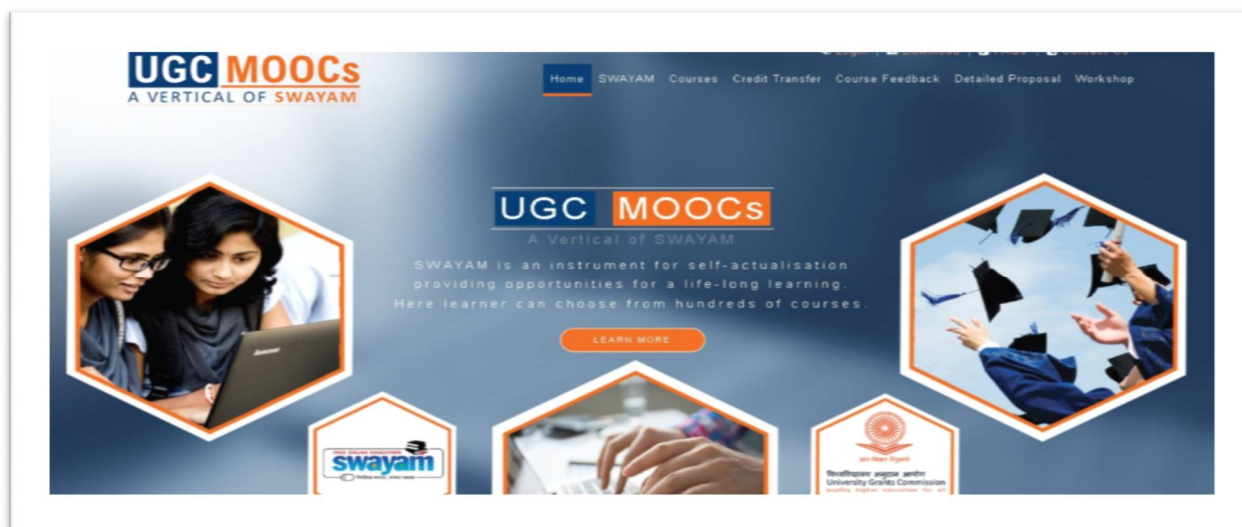


Fig. 38: Home page of UGC-MOOCs

The proposal is being invited by the dedicated portal (<https://ugcmoocs.inflibnet.ac.in>). All the new courses under said national coordinator have been identified through the portal. The portal also facilitates dashboard to UGC for the administrative task and relevant information of UGC-MOOCs.

### 8.1. SWAYAM: MOOC Courses in Library and Information Science

Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) is one of the ambitious projects of MHRD that aims to deliver MOOC courses to learners from higher secondary education to higher education. The primary objective of this programme is to reach out to the learners in masses in all the age groups and provides a better online learning environment to the academic community in the country. The INFLIBNET Centre is responsible for re-purposing the course content from content created under e-PG Pathshala in the library and information science and coordinate the course delivery through the SWAYAM platform.

Seven such courses, re-run on SWAYAM platform in the month of August 2018, were successfully completed during the period under report. These seven courses of 15 weeks duration attracted a total number of 3882 learners including a course on digital, libraries, which alone attracted 990 learners as per the details are given in Table 28.

Sl. No.	Course Title	Course Coordinators/ Co-Course Coordinators and Affiliation	Number of Learners Enrolled
1	Knowledge Society	Prof. K. S. Raghavan, Rtd. Professor, DRTC, Indian Statistical Institute, Bangalore.	380
2	Information Sources System and Services	Dr Renu Arora, Rtd. Senior Scientist, National Institute of Science Communication and Information Resources, New Delhi	311

3	Information and Communication Technology for Libraries	Dr Usha Munshi, Librarian, Indian Institute of Public Administration, New Delhi.	856
4	Management of Libraries and Information Centres and Knowledge Centres	Prof. Dinesh Gupta, Professor, Dept. Library and Information Science, Vardhaman Mahaveer Open University, Kota, Rajasthan.	441
5	Information Storage and Retrieval	Prof. Devika Madalli, Professor, DRTC, Indian Statistical Institute, Bangalore.	623
6	Digital Library	Dr. Jagdish Arora, Director, INFLIBNET Centre.	990
		Mr. Kannan P, Scientist C, INFLIBNET Centre.	
7	Scientometrics and Bibliometrics	Prof. I.K. Ravichandra Rao, Rtd. Director, DRTC, Indian Statistical Institute, Bangalore.	281
<b>Total Learners</b>			<b>3,882</b>

**Table 28: Courses in Library and Information Science on SWAYAM, their Coordinators and Number of Enrolled Learners**

Learners from across the country actively participated during 15-week courses through various activities and assignments such as reading e-text and watching self-learning modules, submission of weekly assignments, attempting weekly tests, etc. The weekly assignments were evaluated by the course coordinators and grades were assigned for each lesson. UGC NET bureau conducted Pen and Paper model, facilitating Short answer/subjective type of questions examination for the eligible learners on 19<sup>th</sup>& 20<sup>th</sup> January 2019 at UGC selected examinations centres. The Course completion certificate was issued to eligible learners.

Considering the popularity and demand of these courses, the Ministry of Human Resource Development (MHRD) has approved their re-launch of all the seven courses for the second consecutive year beginning January 2019.

Besides, the INFLIBNET Centre has also been given responsibility for coordination and disbursement of funds for the development of MOOCs for SWAYAM platform. 84 courses have been prepared / re-purposed for the MOOCs across 16 subjects that are being offered SWAYAM platform. Moreover, UGC has allocated funds for the development of new courses under SWAYAM. There are 44 courses commencing for the academic session in July 2018.

## 9. SWAYAM-PRABHA

The INFLIBNET Centre is continuing the task of developing portal of SWAYAM PRABHA and its hosting including archiving of videos for all the channel. The platform provides for uploading of

programme schedule by the channel coordinators, display of programme schedule (current, upcoming and archives), searching of e-content/videos using different kinds of filters such as channel-wise search and subject-wise search; and dashboard for MHRD, BISAG and admin view. The portal would also provide for playing of archival videos that have already been telecasted on the channels.

The SWAYAM-PRABHA, an MHRD project under NME-ICT, is conceived as a group of 32 DTH channels devoted to telecasting of high-quality educational programmes on 24X7 basis using the GSAT-15 transponders. New content for at least four hours is being telecasted that would be repeated 5 more times in a day, allowing the student to choose the time slot as per their convenience.

### Channels Details

Details of SWAYAM-PRABHA's Channels and Channel Route is given below in Table 29 which also shows viewers and subscribers of video content hosted on SWAYA-PRABHA portal as per last year.

Channel No.	Channel Name	Route/Parent	Subscriber	Views
1	Channel 01: VAGEESH: CEC/UGC: Humanities- 1, Language and Literature	EMRC, EFLU, Hyderabad	18891	1488138
2	Channel 02: SANSKRITI: CEC/UGC: Humanities- 2, Arts, History, Philosophy and related Subjects	CEC, New Delhi	20303	1632059
3	Channel 03: PRABODH: CEC/UGC: Social Science -1, Sociology, Political Science and related subjects	EMRC Jodhpur	4780	264808
4	Channel 04: SAARASWAT: CEC/UGC: Social Science - 2, Education, Psychology, Home Science and related subjects	CEC, New Delhi	7000	669637
5	Channel 05: PRABANDHAN: CEC/UGC: Social Science - 3, Management, Library Science, Information Science and related subjects	MCRC Jamia Milia	15430	795058
6	Channel 06: VIDHIK: CEC/UGC: Social Science - 4, Law, Legal Studies, Human Rights and related subjects	EMRC Patiala	3035	186882
7	Channel 07: KAUTILYA: CEC/UGC: Economics, Commerce and Finance	EMRC Ahmadabad	4375	297743

8	Channel 08: ARYABHATT: CEC/UGC: Physical sciences, Mathematics, Physics, Chemistry and related Subjects	EMRC , University of Calicut	6980	489958
9	Channel 09: SPANDAN: CEC/UGC: Life Sciences, Botany, Zoology, Bio-Science and related subjects	EMRC, Kashmir University, Srinagar	8123	631627
10	Channel 10: DAKSH: CEC/UGC: Applied Sciences, Allied Physical and Chemical sciences and related subjects	EMRC, Anna University, Chennai	2435	161575
11	Channel 11: NPTEL: Chemical Engineering, Chemistry and related Subjects	IIT Kharagpur	666	30110
12	Channel 12: NPTEL: Civil Engineering and related subjects	IIT Delhi	151	7551
13	Channel 13: NPTEL: Computer Science and Engineering	IIT Kharagpur	143	11377
14	Channel 14: NPTEL: Electrical engineering, Electronics and Communication Engineering and related subjects	IIT Delhi	68	2424
15	Channel 15: NPTEL: Engineering Sciences and general subjects for engineering	IIT Madras	78	4089
16	Channel 16: NPTEL: Humanities, Social Sciences and Management	IIT Kanpur	117	3846
17	Channel 17: NPTEL: Mechanical Engineering and related subjects	IIT Kanpur	164	10064
18	Channel 18: NPTEL: Mathematics, Physics, Metallurgy and related subjects	IIT Tirupati / IIT Madras	1218	93979
19	Channel 19: IIT PAL: Biology	IIT PAL 1 IIT Delhi	37331	708085
20	Channel 20: IIT PAL: Chemistry	IIT PAL 2, IIT Delhi	62030	1249428
21	Channel 21: IIT PAL: Mathematics	IIT PAL 3. IIT Delhi	48266	848528
22	Channel 22: IIT PAL: Physics	IIT PAL 4, IIT Delhi	64954	1045273
23	Channel 23: IGNOU: Liberal Arts and Humanities	IGNOU, New Delhi	532	21113

24	Channel 24: IGNOU: Agriculture, Vocational and Allied Sciences	IGNOU, New Delhi	2548	132177
25	Channel 25: NIOS: D.El.Ed (Regional Language)	NIOS, New Delhi	572	23879
26	Channel 26: IGNOU: State Open Universities' programs	IGNOU, New Delhi	7152	2873933
27	Channel 27: NIOS: Secondary School Education	NIOS, New Delhi	1741	77579
28	Channel 28: NIOS: Higher Secondary School Education	NIOS, New Delhi	710	31783
29	Channel 29: UGC-INFLIBNET (PG Subject's & YOGA)	UGC-INFLIBNET, Gandhinagar	119	3490
30	Channel 30: NIOS: Gyanamrit	NIOS, New Delhi	866	49667
31	Channel 31: NCERT: School and Teacher Education	NCERT, New Delhi	1191	71563
32	Channel 32: IGNOU and NIOS: Teacher Education	IGNOU and NIOS, New Delhi	2531	163710
	<b>Total</b>		<b>324500</b>	<b>14081133</b>

**Table 29: Details of SWAYAM-PRABHA's Channels and Channel Route**

### **Additional Mode for Source of Content / Learning**

Several platforms are being used to reach at learners door apart from the DTH. Viewers/learners can view the content from the following additional source of learning platform:

01. Portal (Video -Archive): Learners can learn through the portal of SWAYAM-PRABHA which is storing all the telecasted videos and streamed it through video streaming server using Youtube.
02. Mobile-App: Learner can install the mobile-app (android) and view all the video content. Mobile-app is being incorporated with Govt app UMANG.
03. Jio-TV: Learners can view the content through JIO-TV (live) as well as archived content of the last 7 days

#### **9.1. SWAYAM-PRABHA: Channel-29**

The Centre has created a dedicated web platform of SWAYAM-PRABHA to host all the telecasted content as well as program-schedule for each channel. Being a technical partner for SWAYAM-



PRABHA, the Centre has proposed the following the content to be telecasted as Channel no-29 as per the schedule of SWAYAM-PRABHA i.e. four hours of new content every day as mentioned below in Table 30.

<b>Duration: First three to six months (Fund is not required for video production)</b>		
<b>No of Hours</b>	<b>Nature of Content</b>	<b>Remarks</b>
1 to 3 Hrs	Post Graduate Courses (no of courses): Anthropology(16),Architecture(6),Buddhist Studies(1),Criminology(14),Human Resource Management(16), Jyotish-ganit(16), Performing Arts(16), Public Administration(5), Sanskrit (M.A)(16), Sanskrit (Vyakarana)(16), Social Work Education(12), Statistics(16), Visual Arts(14)	All video content is syllabus-based and available.  <b>Such courses (PG) are not being telecasted.</b>
Fourth Hour	Yoga	In collaboration with Swami Vivekananda Yoga AnusandanaSansthana (SVYAS).
<b>Duration: After six months onwards (Fund required as per SWAYAM-PRABHA norms)</b>		
First Hour	Post Graduate Courses	All video content is syllabus-based and available.
Second hour	English Spoken	Content would be available through SCOPE teachers. Cambridge and Pearson are also involved in this activity.  Discussion is being done in this regard.
Third Hour	1 week ICT training-oriented content for PG/research scholar.	20 training program (400 hr) where participants interest is more.  Textual content is available. Video content to be recorded.
Fourth Hour	Yoga	In collaboration with Swami Vivekananda Yoga AnusandanaSansthana (SVYAS).

**Table 30: SWAYAM-PRABHA's Channel-29**

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**Availability of Content:** The Centre has content of PG courses on the below mentioned subject. Such courses are not being telecasted at SWAYAM-PRABHA. However, UG level courses are being telecasted through CEC channels.

**At a Glance:**

No of subject	59
No of Courses	641
No of Hour (Video content)	1143

**Table 31: Contents for Telecasting PG Courses**

### **Current Status**

The Centre is maintaining channel 29 of Swayam-Prabha where the content of PG courses, developed under e-PG Pathshala, are being telecasted. There is also a provision to the telecast of e-content developed for YOGA.

There is a Committee constituted, under the chairmanship of VCM sir, UGC, for the revamping of this channel for the soft skill courses.

## **10. VIDWAN and Indian Research Information Network System (IRINS)**

### **10.1. VIDWAN: Expert Database National Researcher's Network**

(<http://vidwan.inflibnet.ac.in>)

**VIDWAN:** Expert Database and National Researcher's Network is the premier database of profiles of scientists and faculty members working in leading academic institutions and other R & D organizations in India and abroad. The principal objectives of this database are; i) provide information about experts to peers, prospective collaborators, funding agencies, policymakers and research scholars in the country; ii) to establish communication between subject experts and research scholars; iii) to identify peer reviewers for reviewing articles and research proposals; iv) to create information exchanges and networking opportunities among scientists; and v) to discover prospective collaborators for on-going research projects.

A persistent URL, username and password are issued to each expert facilitating them to edit and update their profile information. Data ingest dashboard was developed to import the profile information as the administrator. Solr based faceted search interface was incorporated to search the database on various parameters such as name, designation, area of expertise, organization, organization type, state, etc. with filters to narrow down the search. The profiles of an expert can also be browsed by Web of Science Subject Categories and organization categories. As on 31<sup>st</sup> March 2019, the database contained 30,000 profiles from more than 4,151 institutions including academic and R&D organizations in India and abroad. Also, VIDWAN database contains more than 4,31,000

bibliographic records which can potentially bring greater visibility to the research contributions of an expert through Vidwan database. Fig. 39 depicts screenshot of website of VIDWAN: Expert Profile with Co-author Network. Total page views for VIDWAN expert database are 3,85,126.

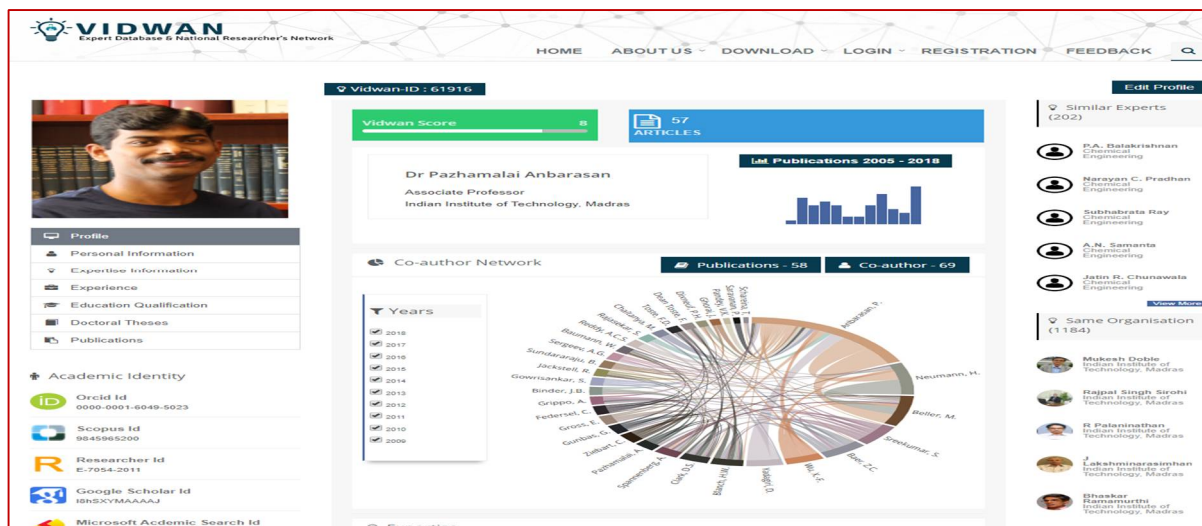


Fig.39: VIDWAN: Expert Profile with Co-author Network

### 10.1.1. Progress Made During the Year 2018-2019

During the period under report, all experts were communicated through email to update their respective profiles. About 1,250 new expert profiles were added into the database and existing profiles were updated with scholarly articles and academic identities. Graphical visualization was added to the expert profiles to enhance the visibility such as Co-author Network with filter for years and cumulative citation from Scopus and Crossref. Admin interface was improved with the feature for profile import as CSV file. Fig. 40 depicts a number of experts in eight Web of Science Subject Categories. Fig. 41 depicts a number of experts and their organization categories.

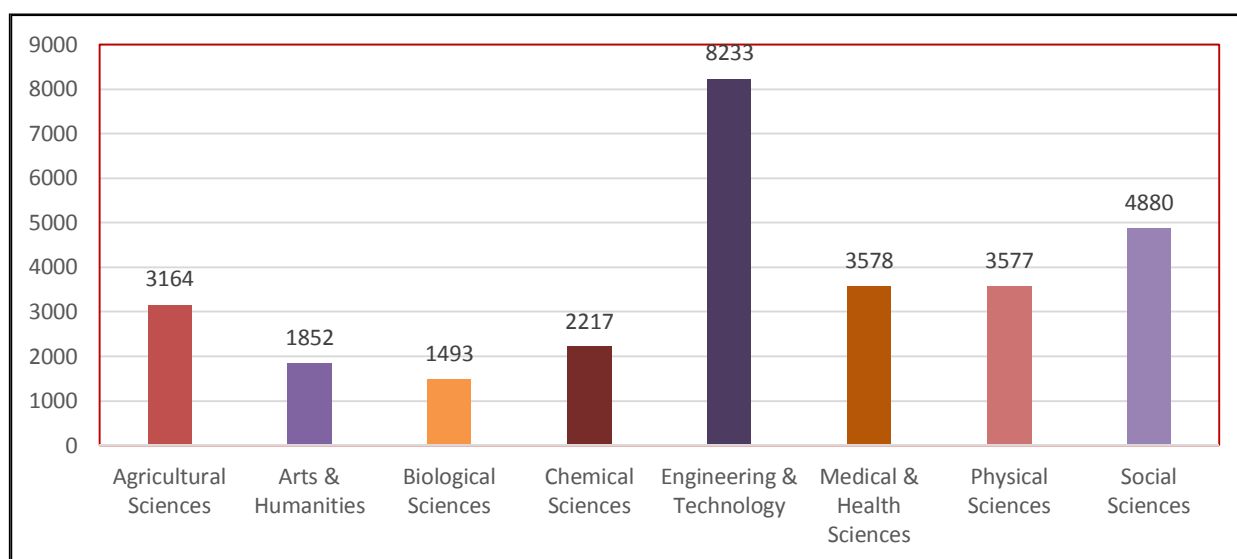


Fig. 40: Number of Experts Available in VIDWAN database under Web of Science Subject Categories

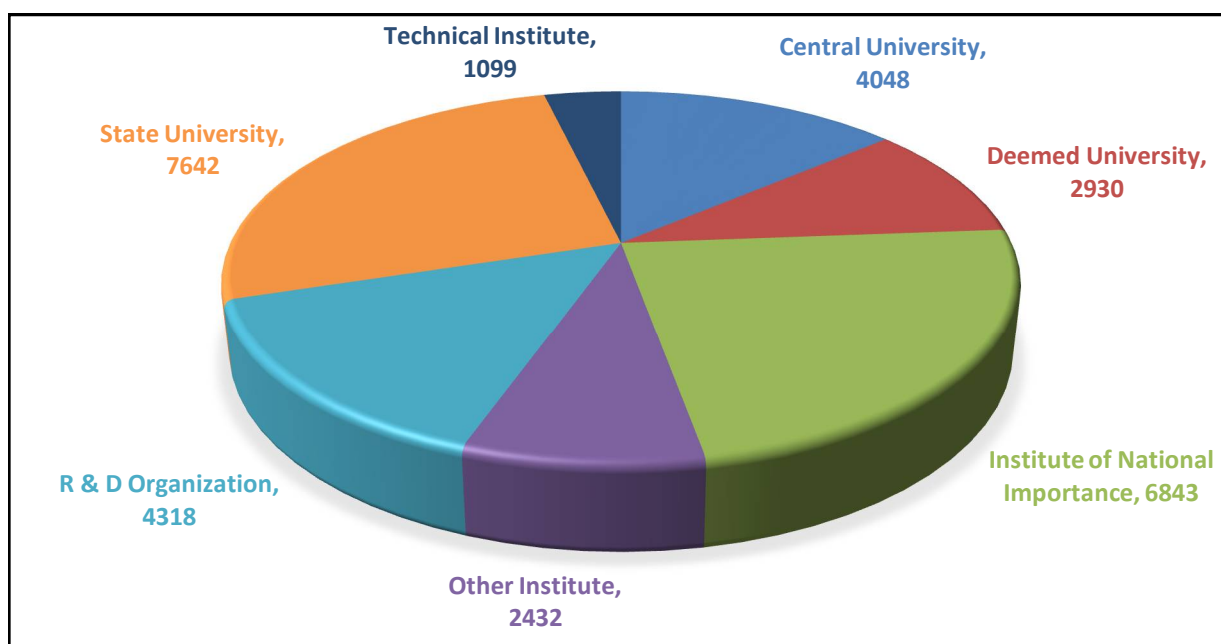


Fig. 41: Number Experts and their Organization Categories in VIDWAN Database

### 10.1.2. Features of New Interface of VIDWAN

The features and functionality of the web interface of Vidwan database were enhanced to enrich the user experience and to make the website accessible from different devices. The new interface supports the following features:

- ▶▶ Responsive user-friendly interface to access the site from a mobile, tablet as well as desktop;
- ▶▶ Generation of automatic VIDWAN Score for the expert based on completion of the profile in different parameters such as the area of expertise, academic identity, projects, experience, publication, honours & awards received and other academic contributions;
- ▶▶ Import publications in a standard format (BibTeX);
- ▶▶ Import project works, honours and awards from the pre-defined CSV files;
- ▶▶ Import publications using academic identities such as ORCID, Microsoft Academic Search ID, Google Scholar ID, Researcher ID and Scopus ID;
- ▶▶ Data indexed using Apache Solr for fast retrieval and access; and
- ▶▶ API to harvest citation information from various external sources.

### 10.2. Indian Research Information Network System (IRINS) (<http://irins.org/irins/>)

New initiative taken-up on behest of MHRD in 2017, IRINS is web-based Research Information Management (RIM) service that facilitates the academic, R&D organisations and faculty members,

scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network. In continuous with the profiling (including research output) of experts and department of the institutes, the Centre has proposed "Indian Research Information Management (IRINS)" to MHRD. Currently, the Centre has developed a platform for the same and the project has been approved by MHRD under NME-ICT Phase-II to be implemented for 150 Centrally funded Higher Educational institutions.

IRINS is web-based Research Information Management (RIM) service provided by the Centre to organize the research related information at the institute level. The portal facilitates the academic, R&D organizations and faculty members, scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network. The IRINS is available as free software-as-a-service to the academic and R&D organizations in India. The IRINS supports the integration of existing research repository with open and commercial citation databases, scholarly publishers, etc. It is integrated with academic identity such as ORCID ID, Scopus ID, Research ID, Microsoft Academic ID, Google Scholar ID for ingesting the scholarly contributions.

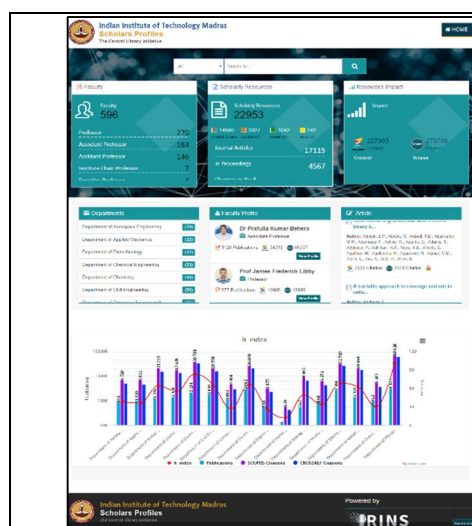


Fig. 42: IRINS Institute Home page with Department wise h-index graph

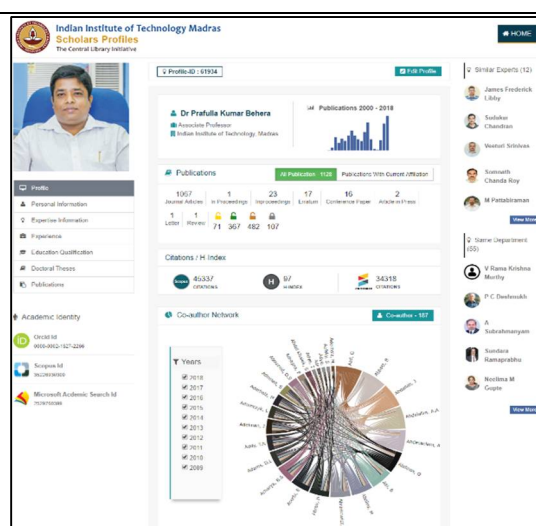


Fig. 43: IRINS Faculty Profiles with various Metrics

### 10.2.1. Key Features and Functionalities of IRINS

Key features and functionalities of IRINS are as follows:

- ▶▶ Graphical representation on research progress of departments and faculty members;
- ▶▶ Faceted search facility with many filters to find experts for the collaborative research project and project proposal review;
- ▶▶ Networking of faculty through co-author network, and discovery of scholarly article;
- ▶▶ Metrics from social media and citations from Scopus, CrossRef, h-index of faculty and department;

- ▶▶ BASE API to link the open-access article and colour code to each article based on the publication venue such as closed access, green open access, brown open access and gold open access; and
- ▶▶ Harvest cumulative citation for the whole institute, department, faculty members from Scopus and CrossRef.

### 10.2.2. IRINS: Instances

The IRINS is being offered as "software-as-service" during the year under report 18 instances were created, Table 32 depicts the institutes which are using IRINS. Implementation correspondence has been circulated to all the Directors, Vice-Chancellors of 142 centrally funded institutes to common forward in providing the institute's fraternity data for successful implementation of IRINS.

Sl. No.	Centrally funded institutes	Research & Development organizations	State & other private Universities
1	Indian Institute of Science (Bengaluru)	National Institute for Interdisciplinary Science and Technology (Thiruvananthapuram)	Alagappa University
2	Indian Institute of Technology (Madras)	National Aerospace Laboratories (Bengaluru)	Delhi Technological University
3	Indian Institute of Technology (Delhi)	National Brain Research Centre (Haryana)	Bharathidasan University
4	National Institute of Technology (Karnataka)		Panjab University
5	Indian Institute of Management (Trichy)		Gulbarga University
6	Central University of Pondicherry		KL University
7	Central University of TamilNadu		O P Jindal University
8	Central University of Punjab		

**Table 32: Number of IRINS instances**

## 11. Website Development and Maintenance

The Centre uses web technology to provide organized and structured access to its services and resources to the academic community through the Centre's Website as well as through websites of its individual services and products. The Centre's Website is designed to work as an integrated interface for all services and resources accessible to the academic community in the universities and colleges. The Web Development Team has especially been set-up for designing innovative web-based interfaces for effective and efficient delivery of services using the latest web-based tools and technologies. The Group undertakes all activities related to selection, organisation and presentation of services and resources in a meaningful way for the benefit of the user community.

## Technology Used

**Development Tools:** PHP, HTML, DTML, JSP, JavaScript

**Database:** MySQL Server, Postgres SQL Server and MS SQL Server

**Operating Systems:** Red Hat Linux Enterprise Server 4.0, Fedora 8.0/9.0

**Open Source Software:** phpChat, MediaWiki, phpBB, Dspace and WordPress

### 11.1. INFLIBNET Centre's Main Website (<http://www.inflibnet.ac.in/>)

The Centre maintains a comprehensive Website in English and Hindi as shown in Fig. 44. Several new additions were made to the new version of the Institute's website. RSS (Really Simple Syndication) technology is used to facilitate users and bloggers to harvest recent updates from the Centre's website. Web 2.0 features and functionalities, including Wiki, Blog, Chat and Discussion Forum, RSS feed, etc., were incorporated in the Website. The new website of the Centre has the following main features:

- ▶▶ Powerful search and browse interface;
- ▶▶ Dynamic calendar;
- ▶▶ Recent and new events;
- ▶▶ Download forms and documents;
- ▶▶ Online feedback mechanism;
- ▶▶ Mailing list, video gallery, webmail, etc.;
- ▶▶ Latest news, jobs, tenders, etc.; and
- ▶▶ Wiki, weblog, RSS feeds and online chat.

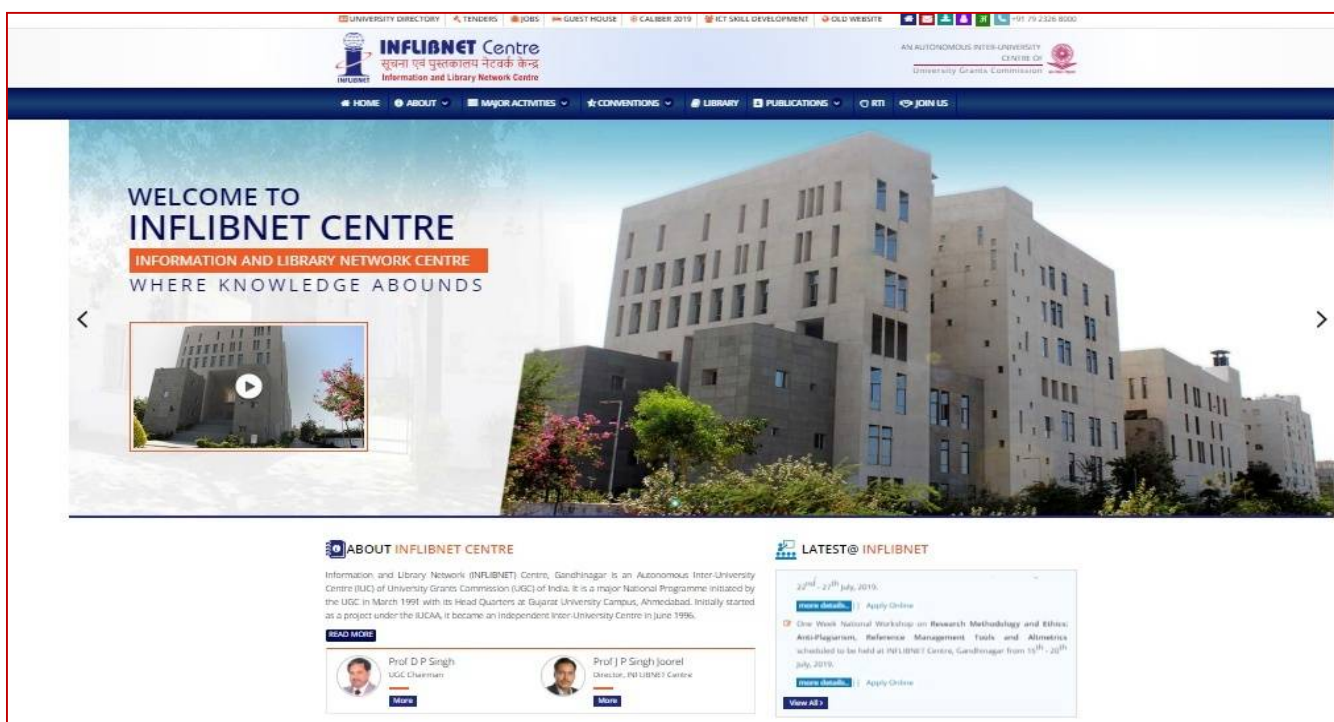


Fig. 44: INFLIBNET's Website

## 11.2. Intranet (<http://172.16.16.11/intranet/>; for INFLIBNET Staff Only)

A separate Intranet website is maintained for the internal staff of the Centre as shown in Fig. 45. The website provides detailed information to scientists and staff of the Centre to fulfil their following requirement:

- ▶▶ Rules and regulations of the Centre;
- ▶▶ MoA;
- ▶▶ All circulars;
- ▶▶ All types of forms in fillable pdf format;
- ▶▶ Committees and their constitutions;
- ▶▶ List of holidays; and
- ▶▶ Presentations on various activities and services of the Centre.

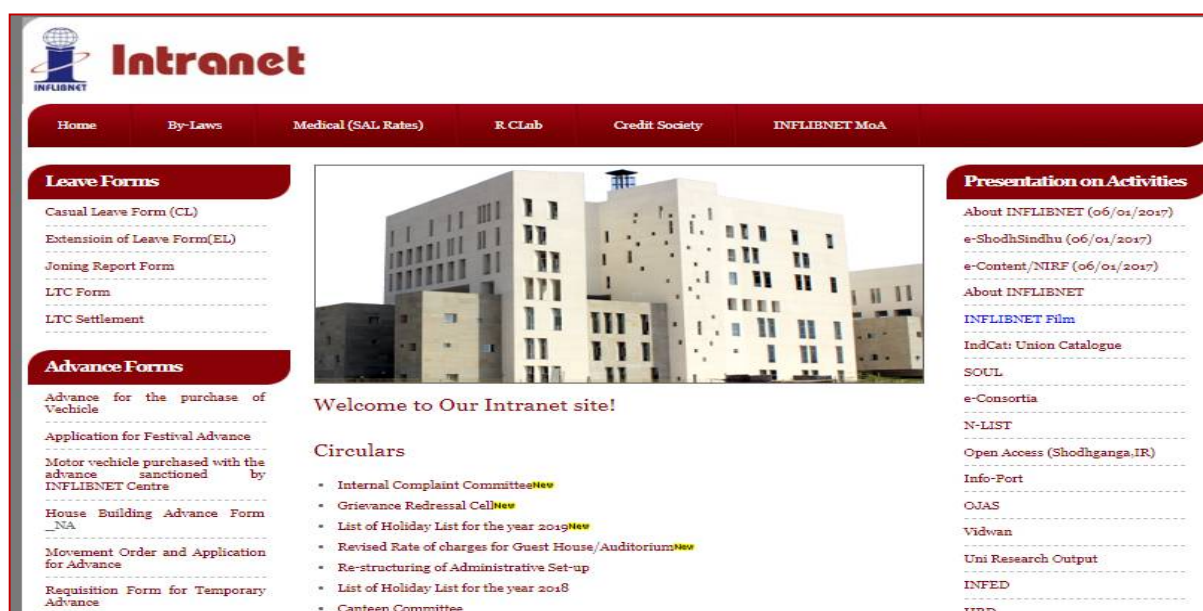


Fig. 45: INFLIBNET's INTRANET Website

## 11.3. Implementation of Web 2.0 Technologies at the Centre

The INFLIBNET Centre continued using Web 2.0 and Library 2.0 technology with the implementation of interactive and collaborative technological tools. All the Web 2.0 tools used are open-source software. Web 2.0/Library 2.0 technologies implemented at INFLIBNET Centre includes

- ▶▶ Chat (<http://www.inflibnet.ac.in/chat/>);
- ▶▶ Blogs (<http://www.inflibnet.ac.in/blog/>);
- ▶▶ Wiki (<http://www.inflibnet.ac.in/wiki/>);
- ▶▶ Streaming Media and Social Network (<http://in.youtube.com/inflibnet/>);
- ▶▶ RSS Feeds Aggregation Service (<http://www.inflibnet.ac.in/feed/>); and
- ▶▶ Library Toolbar.



## 12. Web Portals on Various Government Initiatives

### 12.1 Ek Bharat Shrestha Bharat (EBSB) / Unnat Bharat Abhiyan(UBA) (www.ekbharat.gov.in)

The MHRD assigned the task for creation of web portal of “Ek Bharat Shrestha Bharat” to INFLIBNET Centre. “Ek Bharat Shrestha Bharat” is a web-portal which is sub-set of MHRD project called “Unnat Bharat Abhiyan”, being executed by IIT Delhi. EBSB is made for the exchange of cultural events and activities among the state of India. The Centre has continued this project for this year also.



Fig. 46: Web Portal for Ek Bharat Shrestha Bharat (EBSB)

The scope of work for the Centre is:

- Maintenance of the EBSB portal;
- Creation of a different gallery for events/activities being organised by different States;
- As per current practice, content (once receive at INFLIBNET) upload on behalf of nodal officer of the state;
- Admin module to manage the content of paired states;
- Creation of youtube channel for the video gallery
- Upload facility to all nodal officers of different states
- Hosting of the website at MHRD cloud i.e. BAADAL server;
- Replica of the site at INFLIBNET server;

The Centre also created an online application for Institutes through which institute can join UBA and can opt the villages. In addition, the admin dashboard including score module was created by the Centre.

## 12.2. Study in India(SII) (www.studyinindia.gov.in)

The Centre is working on one of the important educational projects of MHRD which is being executed by the EdCIL. The EdCIL has assigned the task of design and development of the website and its web applications for "Study in India". This year also INFLIBNET continued this project.

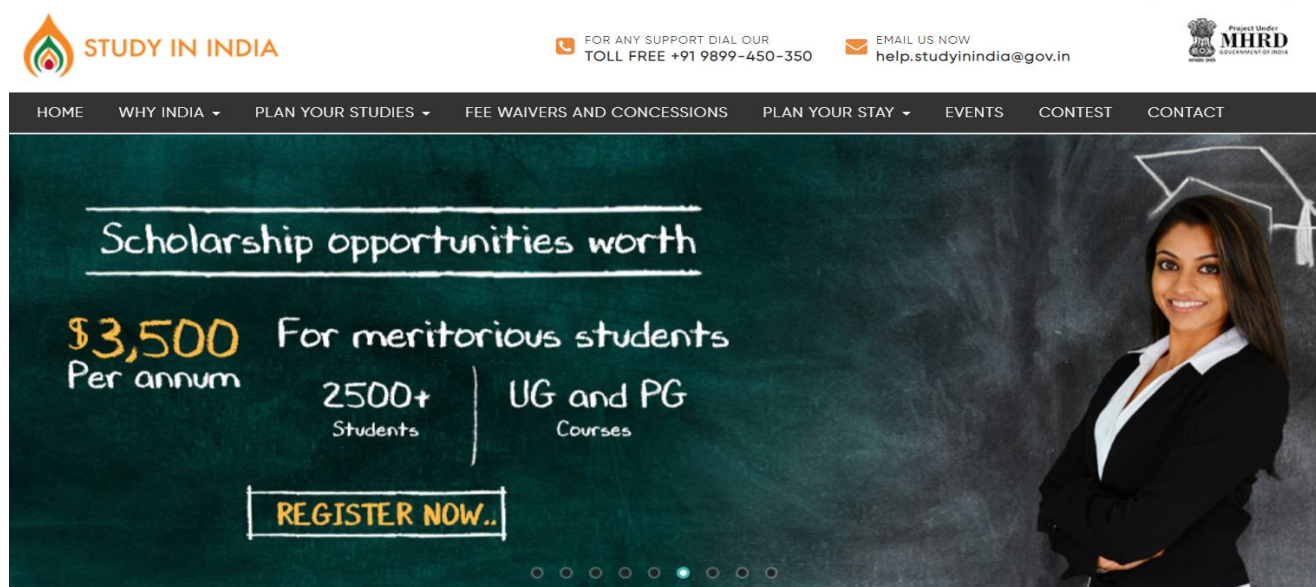


Fig. 47: Web Portal of Study in India

The INFLIBNET Centre has executed the following module of "Study in India":

- Website of SII (aesthetically designed portal with intuitive web interface populated with relevant; information, web applications to support dynamic maintenance of portal, features to support data analytics, search and browse interfaces);
- Institutional Module (online data capturing system to facilitate information flow from participating institutions, a dashboard for the nodal officer, statistics on counselling/admission);
- Learner Module (online registration of learners, courses offered [feature of choice-based filtration], dashboard);and
- Counselling module which includes online mock counselling, counselling and final admission matrix.

The Centre also prepares a platform to invite the video under "content page of SII".

## 12.3. Web applications for "NCTE Accreditation Management System (NAMS)"

The Centre has proposed to design and develop the web applications for "NCTE Accreditation Management System (NAMS)". The project is related to the accreditation of teacher education institutions. A system would be developed for the automation of accreditation workflow and its management. It would provide the automation process of accreditation starting from one-time registration to generation of accreditation report. The portal would comprise of three broader areas namely Registration & pre-qualifier, self-Assessment Report and Accreditation module. The feature and functionalities of the portal would be as follows:

- 
- Registration System;
  - Data Capturing System;
  - Feedback System;
  - Peer Review System
  - Scoring System;
  - Helpdesk for technical query and
  - Creation of dashboard for below-mentioned stakeholder of NCTE:
    - Institute Module
    - Regulatory (NCTE) Module
    - Peer / Expert Module
  - Add-on Module: Faculty Database of Teachers Institutes

The NCTE has agreed on in-principal for approval for the project with an outlay of Rs.94.08 Lakhs for the first year.

#### **12.4. SHREYAS (Scheme for Higher Education Youth in Apprenticeship and Skills)**

The Minister for Human Resources Development, Shri Prakash Javadekar has launched the Scheme for Higher Education Youth in Apprenticeship and Skills (SHREYAS) for providing industry apprenticeship opportunities to the general graduation on 27<sup>th</sup> February 2019. Its aim is to enhance the employability of Indian youth by providing 'on the job work exposure' and earning of stipend. The INFLIBNET Centre was assigned the task of developing a platform for SHREYAS.

#### **12.5 Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT)**

With reference to MHRD letters dated 28<sup>th</sup> Nov 2018, 20<sup>th</sup> Dec 2018 and Minutes of Meeting (between INFLIBNET and MHRD officials) held on 24<sup>th</sup> Jan 2019 at MHRD, the Centre proposed to design and develop a dedicated portal for the scheme Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT).

It was approved by the MHRD. The Centre is working on this project and working on following features and functionalities for its different stake-holders:

- a. Portal: All information related to PMMMNTT such as about scheme, list of Centres, program schedule, etc
- b. Call for Proposal
- c. User/stakeholder of the different components: A dashboard for each component with the following activities:
  - i. Centre (LEAP, ARPIT, NRC, HRDC, TLC, FDC, SoE, etc) Management
  - ii. Profile Management
  - iii. Program Management
  - iv. Content Repository
- d. Features cum analytics: The project cost is Rs 80.01 Lakhs for the first year and the same has been approved in Project Approval Board (PAB) of MHRD held on 1<sup>st</sup> Feb 2019 at MHRD.

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## 12.6 Atal Ranking of Institutions on Innovation Achievements (ARIIA)

The INFLIBNET Centre had proposed, on request from AICTE / MHRD, to create a platform to rank institutes as per the parameter defined in Atal Ranking of Institutions on Innovation Achievements (ARIIA) framework. The platform would enable institutes to register themselves for ranking and input data on various defined parameters. It was approved by AICTE and the MoU had been signed among AICTE, MIC and INFLIBNET Centre. Being a technical partner, INFLIBNET centre developed the following:

- The dedicated website of ARIIA
- Web applications :
  - o Registration module
  - o Data Capturing Module
  - o Feedback Mechanism Module
  - o Ranking / Scoring Module
  - o Analytical dashboard
  - o Patent related data retrieval from patent databases etc.

Created of administration panel/dashboard which will enable admin users to view detailed data of institutions records as well as reports on captured data. Deployment of Technical Helpdesk to address the technical queries from HEIs. The Centre also provided patent data for all the applicant institutes. ARIIA 2019 is being announced in the month of April 2019.

## 12.7 National Testing Agency (NTA) (<http://www.nta.ac.in>)

National Testing Agency (NTA) has been established as a premier, specialist, an autonomous and self-sustained testing organization to conduct entrance examinations for admission/fellowship in higher educational institutions, To improve equity and quality in education by administering research-based valid, reliable, efficient, transparent, fair and international level assessments. The best subject matter experts, psychometricians and IT delivery and security professionals will ensure that the current gaps in existing assessment systems are properly identified and bridged.

The INFLIBNET has proposed to develop the need-based web applications for the several activities of NTA.

The Centre has developed following modules for NTA:

- i) **Dedicated Website of NTA:** To handle Website dynamically through admin panel for various updated and changes.

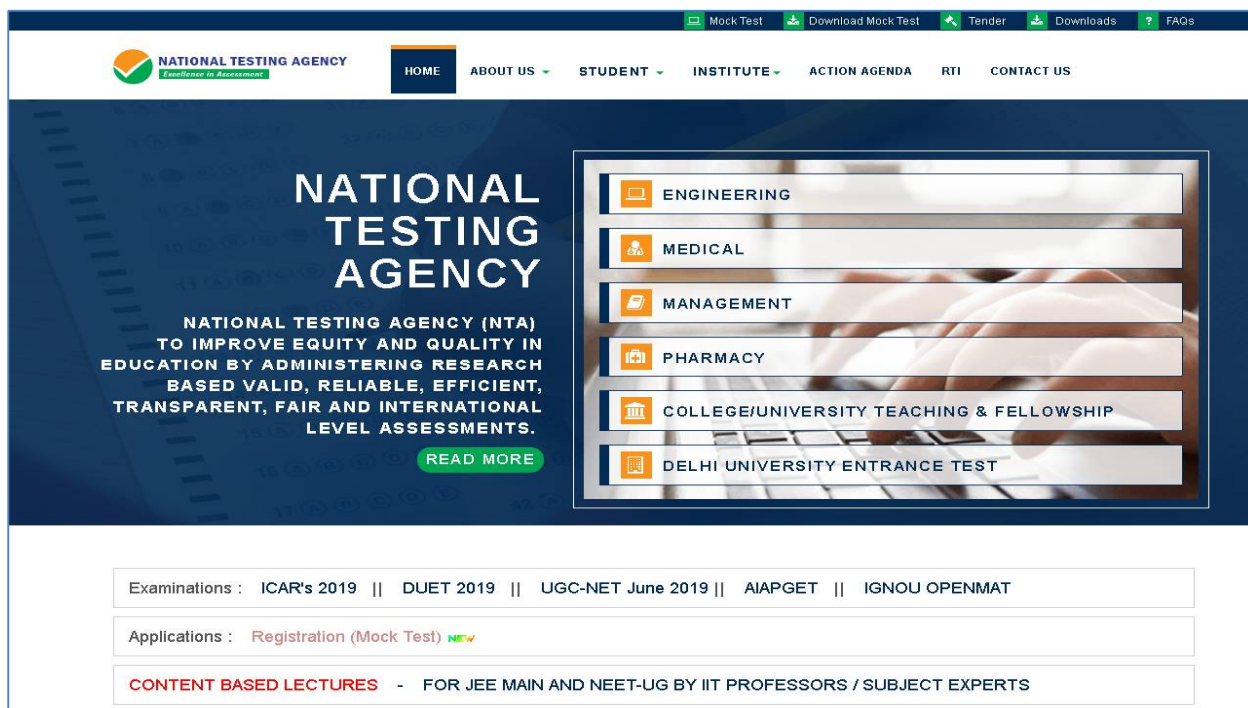


Fig. 48: Website of National Testing Agency

## ii) Test Practice Centre

The objective of TPCs is primarily to familiarize the candidate for taking the upcoming NTA examinations in Computer Based Test Mode by physically visiting the TPC in various places. TPC Portal is developed to centralize the TPC data for different activities.

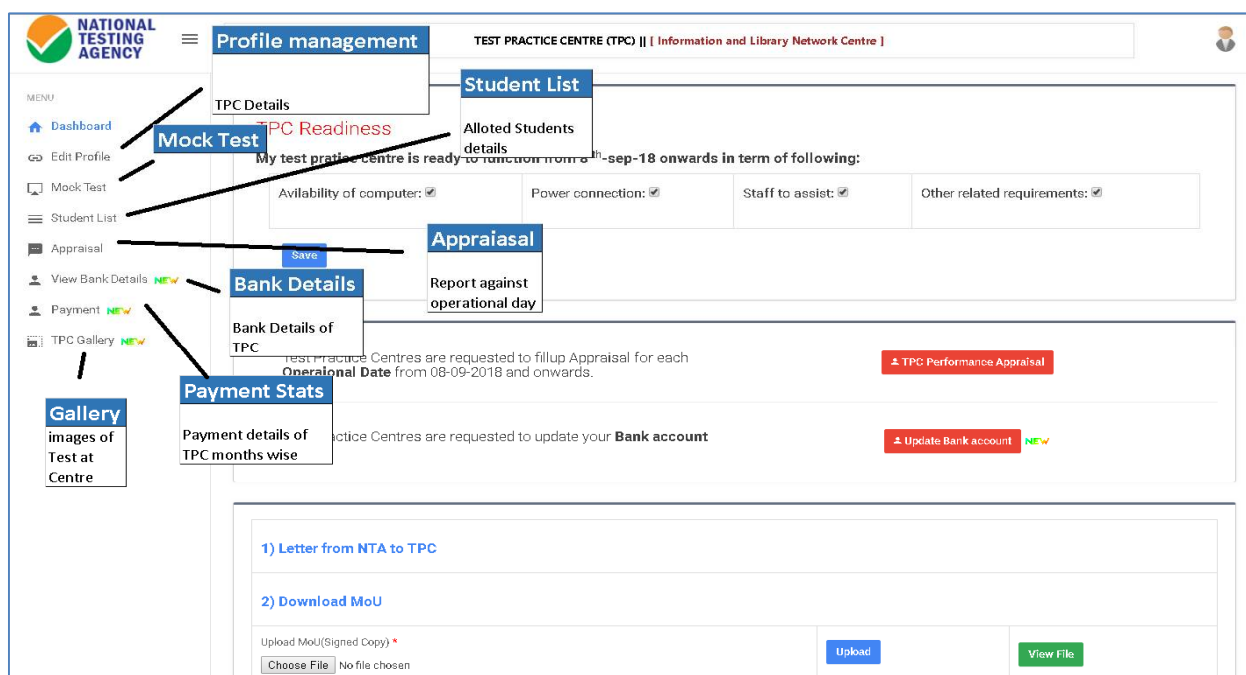


Fig. 49: Test Practice Centre Webpage

### iii) Admin Portal

The Admin Panel has been developed to provide admin access right for the various function of NTA web module. All detail regarding the TPC registration, student's allotment, payment is being handled through Admin panel. NTA website Notice Board and tender are handled through the admin portal.

Test Practice Centre Statistics		Test Practice Centre Statistics	
Total Registration for TPC	4347	Allotted Centres	989
Total School	2782	Appraisal Submitted by TPC	745
Total College	1292	Total Students allotted at TPC	125589
Total Other Gov. body	273	Mock Test (Offline) Total Download	695784
Approve Training Practice Centre	925	Mock Test (Online) Total Visits	22840362

Table 33: Test Practice Centre Statistics

### iv) Mock Test

The CBT Bases mock test has been designed for students to practice on various exam papers in different languages and there is no limit for the no. of attempts. Currently, we have developed the mock test in 9 Examination and total of 189 papers in different languages.

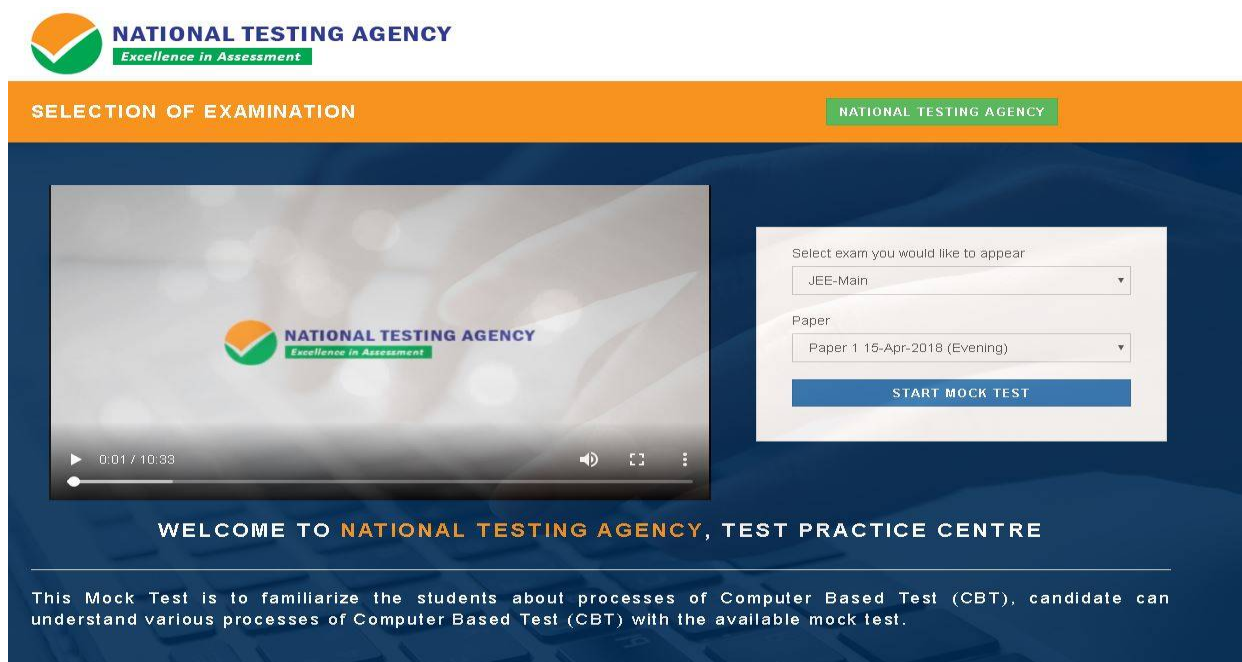


Fig.50: Mock Test Webpage

### v) Test Admin Portal

The Test Admin Portal is a portal for various academicians, school personals in a different part of India for the Conduct of various examination being conducted by National Testing Agency.

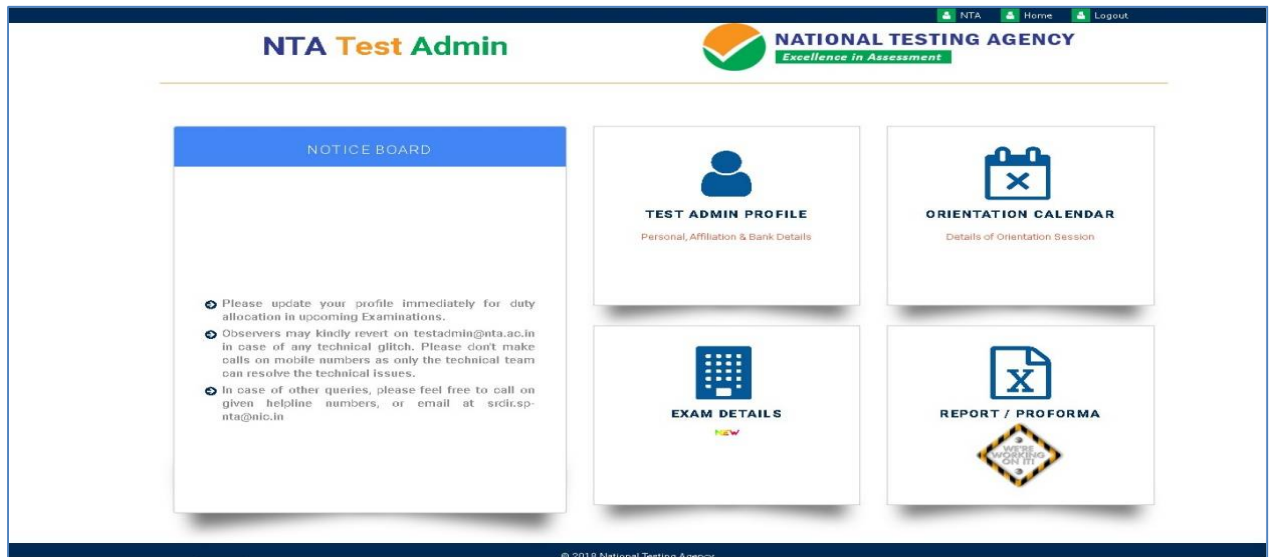


Fig. 51: Test Admin Portal

Test Admin can perform various operations through this portal.

**vi) Exam Centre**

Exam Centre portal has been developed for different activities and operation of centres mostly for OFFLINE EXAMINATIONS for reports, location and manpower details.

**vii) TA Admin Module**

Allotment panel, Exam operation, information, past exam details, centre details, deployment details, communication channel statistics and other data is handled through the admin portal.

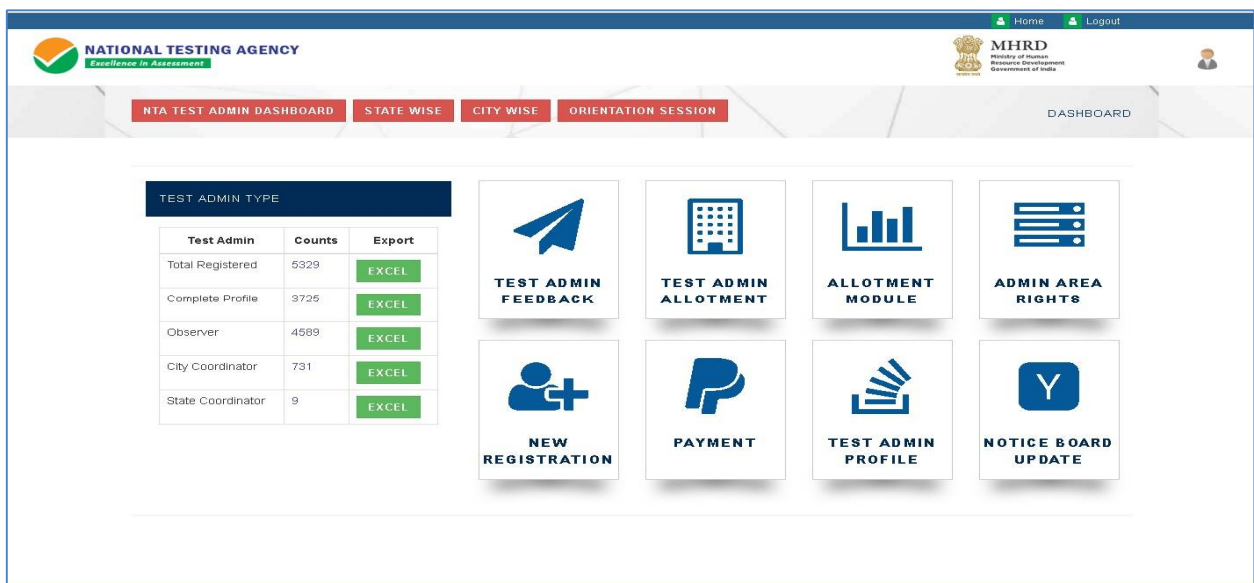


Fig. 52: TA Admin

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Real-Time Allotment Stats: Monitoring is done through the admin portal for real-time statistics

All the data regarding the previous examination can be accessed through Portal for payment purpose etc.

Real-Time Reports and Feedback are monitored through Portal:

### viii) Admit Card Module

We have developed a dynamic module to dispatch the Admit card for Various Examination through @NTA.

- Authorization is done through student application number and Date of Birth.
- No PDF is generated to reduce the time and space complexity of website performance.

### ix) Exam Result Module

We have developed a dynamic module to display the Exam result for Various Examination through @NTA.

- Authorization is done through student application number and Date of Birth.
- No PDF is generated to reduce the time and space complexity of website performance.

## 13. UGC Web Site and e-Governance @ University Grants Commission

The University Grants Commission gave the responsibility for development and maintenance of the website of the UGC as well as for automation of its various schemes, Grant Management System and e-Scholarship-Fellowship Award Registration Tracking System (e-SARTS). The Centre has created a new website of the UGC. Fig. 53 is a screenshot of the homepage of the UGC website.

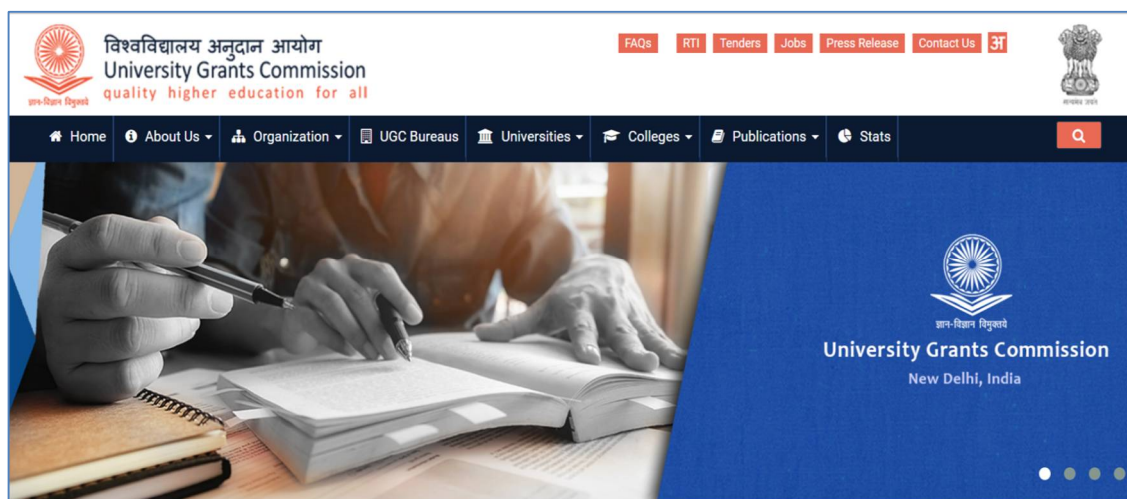


Fig.53: Homepage of UGC



The Web site of the UGC is being hosted on INFLIBNET Data Centre, Gandhinagar and is being mirrored at the BSNL Data Centre, Ahmedabad.

The Centre has also designed, developed and maintained online portals for automating more than 30 scholarships, fellowships and schemes for the UGC as given in Table 34.

Sl. No.	Name of Scheme Fellowship/ Scholarship
1	Maulana Azad National Fellowship for Minority Students
2	National Fellowship for Scheduled Caste Students
3	National Fellowship for Higher Education of Scheduled Tribe Students
4	Post Graduate Indira Gandhi Scholarship for Single Girl Child
5	Post Graduate Merit Scholarship for University Rank Holder
7	Post-Doctoral Fellowship to SC/ST Candidates
8	Post Graduate Scholarship for Professional Courses for SC/ST Candidates
8	Post-Doctoral Fellowship to Women Candidates
9	Emeritus Fellowship
10	National Fellowship for Persons with Disabilities
11	Dr S. Radhakrishnan Post-Doctoral Fellowship in Humanities and Social Sciences
12	Special Assistance Programme (SAP)
13	Swami Vivekananda Single Girl Child Scholarship for Research in Social Sciences
14	"Ishan Uday" For North Eastern Region
15	National Fellowship for OBC Candidate
16	Minor Research Project For UGC Regional Office
17	Major Research Project (MRP)
18	Research Awards for the Teachers
19	Raman Fellowship for Post Doctoral Research for Indian Scholars in the USA
20	Proposal for Deemed to be Universities and Proposals for establishing an off-campus centre

**Table 34: UGC Scholarship, Fellowships and Schemes Automated by INFLIBNET Centre**

The Centre has also developed new e-Governance portals and online Interfaces for UGC for its schemes as shown below in Table 35 and Fig.54.

Sl. No.	e-Governance Activities @ UGC
1	Online Students Grievance Redressal Portal
2	Academic Jobs Portal for NET/SET/PhD
3	Central University Portal (CUP)
4	UGC-approved List of Journals
5	Application for Recognition of HEI/ Programmes under Open and Distance learning mode (DEB)

6	Online Portal for Autonomous College (AU)
7	Online Education Portal (OEP)
8	University Activity Monitoring Portal (UAMP)
9	UGC New Hindi Website
10	Institutions of Eminence (IoE)
11	Deemed to be University Portal (DTBU)

Table 35: e-Governance Portals and Online Interfaces Developed by the INFLIBNET Centre for UGC

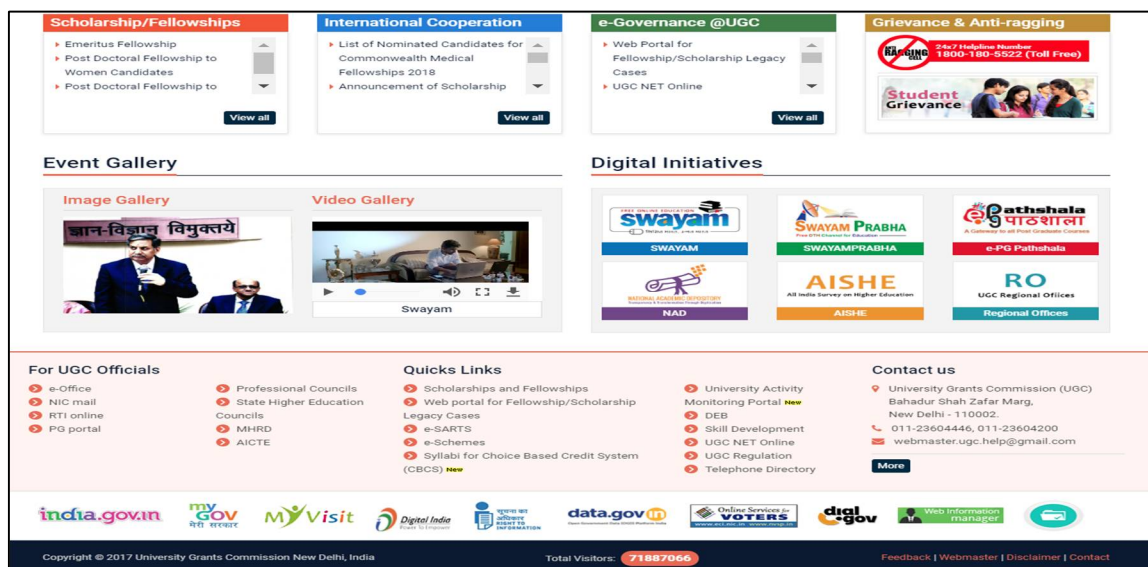


Fig. 54: e-Governance Portals and Online Interfaces Developed by the INFLIBNET Centre for UGC

#### 14. Human Resource Development & Consultancy

One of the important objectives of the Centre is to impart training in the use of ICT to library and information science professionals working in university and college libraries. Since the inception of the Centre in 1991, 798 programmes include annual conventions, training programmes, workshops and seminars focusing on the library automation, networking, e-resource awareness, these repositories, institutional repositories, etc. have been conducted by the Centre benefiting 60,708 participants. INFLIBNET Regional Training Programmes for Library Automation (IRTPLA) and User Awareness Programmes on e-resources, Shodhganga and plagiarism detection software were conducted across the country in collaboration with the universities and colleges. National and International Conventions called PLANNER in North-eastern regions and International CALIBER in various states of India are being organized bi-annually as part of the human resource development activities. Brief reports on every training programme organized during the period under report are given in Part III: National Conference, Workshops, Seminars and Training Programmes of this report. Table 36 given below provides no. of human resources development programmes conducted across the country and no. of participants who benefitted from these programmes during the year under report.

Sl. No.	Name of the Programme	Programmes	Total Participants
1	IRTPLA (INFLIBNET Regional Training Programme on Library Automation)	5	182
2	Special Training Programme and National Workshops at INFLIBNET	14	191
3	Collaborative Special Training Programme and National Workshops	6	213
4	PLANNER	1	100
5	Training Programme on SOUL 2.0	8	128
6	Shodhganga Awareness Programme/Anti Plagiarism	1	200
7	E-Content Development / Meeting /Workshop under e-PG Pathshala		
8	Orientation Workshop for SWAYAM (MOOCs) Coordinators of Universities	1	15
	<b>Total</b>	<b>36</b>	<b>1129</b>

**Table 36: Conferences, Training Programmes, Workshops and Seminars conducted by INFLIBNET Centre during 2018-19**

## 15. Publications

The INFLIBNET Centre has two major publications i.e. Quarterly Newsletter and Annual Report. Both publications were brought out and distributed across all academic institutions in India. The copies of the Newsletters and Annual Reports are downloadable in PDF format and the "Publications" on INFLIBNET website at <http://www.inflibnet.ac.in/publication/>. The copies of Annual Reports, PLANNER and CALIBER proceedings are also available through the Institutional Repository (IR) in PDF format. The course materials of various training programmes and workshops, lecture notes, presentations and newspaper clippings are also available in the IR of the Centre at <http://ir.inflibnet.ac.in>. List of Publications including articles published conference proceedings, user guides and manuals published by scientists and staff of the Centre is given as below:

### a. Conference Proceedings in Print

- i) Arora, Jagdish et al (eds.). Rejuvenate Academic Library as a Social Hub: Proceedings of the 11<sup>th</sup> PLANNER 2018 organised by INFLIBNET Centre, Gandhinagar, November 15-17, 2018. Gandhinagar: INFLIBNET Centre, 2018. 242 p.

### b. Papers Published in Journals, Newsletters and Conference Proceedings

- i) Kumar, Abhishek. India Rankings 2018: At a Glance. INFLIBNET Newsletter, 25(2), p. 21-26, 2018.

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- ii) P Kannan, Kimidi, Siva Shankar and Arora, Jagdish. Federated Research Profile Management for Researchers in India: IndianResearch Information Network System (IRINS). INFLIBNET Newsletter, 25(3), p. 14-21, 2018.
  - iii) Pradhan, Pallab. Library Services Platform (LSP): An Overview. INFLIBNET Newsletter, 26(1), p.12-22, 2019.
  - iv) Kimidi, Siva Shankar and V, Raja. Cloud infrastructure and services for Library Phase Shift of library for the next decade: the cloud-based servicesIn: Rejuvenate Academic Library as a Social Hub: Proceedings of the 11<sup>th</sup> PLANNER 2018 organised by INFLIBNET Centre, Gandhinagar, November 15-17, 2018. (eds. Jagdish Arora [et.al.]). Gandhinagar: INFLIBNET Centre, p. 118-123, 2018.
  - v) Solanki H., Pradhan P., Jain S. (2018) Study of Research Productivity, Citation Patterns and Collaboration Networks in Publications of IISER Bhopal During 2011-2015. International Journal of Information Library and Society, 7(2), 67-74.
  - vi) Abhishek, K., Suchit, P., Savita, G., Kalgi, S., & Beena, K. S. (2018). Academic web tool for weightage determination of ranking parameters. ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, 42(5), p.1-8.

### c. Chapters in Books

- i) Kumar, Abhishek and Brahmabhatt, Shweta Nishad. Massive Open Online Courses (MOOCs), Features and Platforms. In: Library and Information Science in the Age of MOOCs (ed. Kaushik, A. ), p. 83-99, 2018
- ii) Kumar, Abhishek, Mittal, Pankaj and Brahmabhatt, Shweta Nishad. MOOCs Parameters: A Way Forward to Identify Best MOOCs Platform. In: Library and Information Science in the Age of MOOCs (ed. Kaushik, A. ), p. 132-145, 2018

## 16. Awards, Honours and Distinctions

### Prof J P Singh Joorel, Director

Prof J P Singh Joorel was invited as a Chief Guest for International Conference of Associations of Inventory Academicians and Practitioners on "Emerging Trends in Inventory Supply Chain and Reliability Modeling on 23<sup>rd</sup> December 2018 organized at Department of Operations Research, University of Delhi.

Prof Joorel continued to serve as : i) member of the Consortium for Academic and Research Ethics (CARE), appointed by the University Grants Commission, New Delhi; ii) member of the Committee of Inter-University Centre for Teacher Education (IUCTE); iii) member of the Court of Central University of Haryana.

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Prof Joorel delivered the following inaugural, keynote or invited talks during the period under report:

- i) invited talk on "Reliability Modelling and its importance in Engineering" during International Conference on Emerging Innovations in Statistics & Operations Research (EISOR) in conjunction with 38<sup>th</sup> Annual Convention of Indian Society for Probability and Statistics (ISPS) organized by Department of Statistics, Maharshi Dayanand University, Rohtak, Haryana on 30<sup>th</sup> December 2018.
- ii) Conferred as a Guest of Honour and delivered the inaugural lecture on "From e-books to e-learning" at Cochin University of Science & Technology, Cochin on 23<sup>rd</sup> January 2019 during Library Technology Conclave jointly organized Informatics, Bengaluru and by Cochin University of Science & Technology, Cochin
- iii) Conferred as a Guest of Honour and delivered the inaugural lecture during the National Seminar on "Transformation of Indian Rural Economy" at GH Patel Institute of Business Management, Sardar Patel University, Anand, Gujarat during 9<sup>th</sup> -10<sup>th</sup> February 2019
- iv) Delivered guest lecture in the "Inter-Disciplinary Refresher Course" organized by Human Resource Development Centre, University of Jammu, Jammu on 18<sup>th</sup> February 2019
- v) Conferred as a Guest of Honour and delivered the inaugural lecture during the National Seminar organized by Department of Statistics, Sardar Patel University, Anand, Gujarat during 1<sup>st</sup> – 2<sup>nd</sup> March 2019.
- vi) Delivered 'Prof S Dasgupta Memorial Lecture' titled "INFLIBNET: Role in Higher Education and Research in India" during 81<sup>st</sup> Foundation Day Celebration of Delhi Library Association at Delhi on 10<sup>th</sup> March 2019.
- vii) Delivered the inaugural lecture during the National Seminar on "The Role of Library and Information Services in the New Millennium" at Dr BabasahebAmbedkar Open University, Ahmedabad on 16<sup>th</sup> March 2019.

#### **Dr. Jagdish Arora (Former Director), INFLIBNET Centre**

Dr Jagdish Arora chaired the Meeting of Expert Committee, Ministry of Earth Science Consortium, held on 1<sup>st</sup> May 2018 at Prithvi Bhawan, New Delhi as its Chairman. He was invited to attend a Meeting on supplying of data on publications, citations, H Index and other bibliometric parameters by INFLIBNET Centre for institutions that are an applicant for NAAC accreditation 30<sup>th</sup> July 2018 at NAAC, Bangalore.

Dr Arora continued to serve as i) member of the Standing Committee on Notification on Journals, appointed by the University Grants Commission, New Delhi; ii) member of the National Steering Committee and National Advisory Committee (NAC) of e-ShodhSindhu; iii) member of the Advisory Committee on Documentation Centre of the National Institute of Public Finance and Policy; iv) member of the National Steering & Negotiation Committee of Consortium for e-Resources in Agriculture (CeRA); v) member of the Negotiation and Steering Committee of DELCON.

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Dr Arora received Lifetime Achievement Award for Distinguished Service in Library and Information Science. The award was presented to him during the International Conference on Digital Transformation: Preservation, Policy and Privacy, organized by National Law University, Delhi from 29<sup>th</sup> November to 1<sup>st</sup> December 2018.

Dr Arora delivered the following inaugural, keynote or invited talks during the period under report:

- i) an invited talk on "Developing World-Class Universities in India: Data Benchmarking", during "Developing World-Class Universities in India: Role of Data Benchmarking", organized by International Institute for Higher Education Research and Capacity Building (IIHEd), O.P. Jindal Global University, Sonapat and Times Higher Education (THE) on 2nd May, 2018 in India Habitat Centre, New Delhi.
- ii) invited to interact with participants during the Round-Table Meeting for India Rankings (NIRF) 2019 organized by the National Board of Accreditation (NBA) at the India Habitat Centre, New Delhi on 8<sup>th</sup> August 2018.
- iii) 4<sup>th</sup> Ranganathan Memorial Lecture on "Writing on the Wall: Future of Academic Libraries" at Pandit Ravishankar Shukla University, Raipur on 12<sup>th</sup> August 2018. The Lecture was jointly organized by Pandit Sundarlal Sharma Library and School of Studies in Library & Information Science, Pandit Ravishankar Shukla University, Raipur as one of the events in a series of events to be organized on occasion of 150<sup>th</sup> Birth Anniversary of Dr S R Ranganathan.
- iv) Invited talk on "Ranking of Indian universities" during Elsevier's Research Connect Forum held at Jaipur on 29<sup>th</sup> August 2018.
- v) Inaugural address on "Transformed Libraries: New Role of Librarians", during SALIS 2018: National Conference on Role of Libraries in Creating a Knowledge Society held at Alagappa University, Karaikudi, Tamil Nadu from 7<sup>th</sup> to 9<sup>th</sup> September 2018.
- vi) Invited talk on "Ranking of Universities: An Indian Perspective" during the National Seminar on "Ranking, Accreditation and Quest for Quality: International Scenario and the Indian Perspective" organized by NAAC, Bangalore on 19<sup>th</sup> September 2018.

#### **Mr Manoj Kumar K, Scientist D (CS)**

Mr Manoj Kumar K delivered the following invited talks, panel discussion and presentation during the period under report:

- i) a talk on "Shodhganga and Anti Plagiarism Tools" in U.G.C. sponsored "Refresher Course in Library Science for University and College Teachers" on 30<sup>th</sup> July 2018 at HRDC, Gujarat University, Ahmedabad.
- ii) a guest lecture on Shodhganga, Research Ethics and IRINS in the Academic Activity Series organized at the JSS Medical College by JSS Academy of Higher Education & Research on 24<sup>th</sup> January 2019.
- iii) As Panellist and spoke on NAAC's revised accreditation framework & NIRF pertaining to health science institution during National Conference on Quality Indicators and Benchmarks for Health

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Science Institutions organised by Chettinad Academy of Research and Education (CARE), Chennai on 15<sup>th</sup> December 2018.

- iv) As Plenary Speaker in a National Seminar on 'The Role of Library and Information Services in the New Millennium at Dr Babasaheb Ambedkar Open University, Ahmedabad on 16<sup>th</sup> March 2019.
- v) Paper presentation on "Shodhganga: a boon for research & its impact in Indian Universities" during the 2<sup>nd</sup> International Conference of Changing Landscape of Science & Technology Libraries (CLSTL 2019) held at Indian Institute of Technology Gandhinagar (IIT Gandhinagar) from 28<sup>th</sup> February to 2<sup>nd</sup> March 2019.

#### **Mr Ashok Kumar Rai, Scientist D (CS)**

Mr Ashok Kumar delivered the following invited talks and presentation during the period under report:

- i) a lecture on 'INFLIBNET Activities and its benefits in Research and MOOCs' during National Workshop on Academic Writing and Research Productivity at IK Gujral Panjab Technical University, Kapurthala, Panjab during 4<sup>th</sup> to 5<sup>th</sup> February 2019.
- ii) a lecture on e-Learning MOOCs during Training-cum-Workshop on E-learning in Higher Education at Iswar Saran Degree College, University of Allahabad, Prayagraj (UP) from 07<sup>th</sup>-13<sup>th</sup> February 2019.
- iii) presentation on e-ShodhSindu (eSS) status for the year 2019 during 2<sup>nd</sup> International Conference of Changing Landscape of Science & Technology Libraries (CLSTL 2019) held at Indian Institute of Technology Gandhinagar (IIT Gandhinagar) on 3<sup>rd</sup> March 2019.

#### **Mr Abhishek Kumar, Scientist C (CS)**

Mr Abhishek Kumar received "Open Education Awards 2018" for Open Education Excellence in recognition of INFLIBNET Repository "VIDYA-MITRA: An Integrated e-Content Portal" on 24<sup>th</sup> April 2018 at Delft, Netherlands. He also attended "OER Global Consortium conference" at Delft University, Delft, the Netherlands from 24-26th April 2018.

Mr Abhishek Kumar continued to serve as i) member of the Technical Advisory Committee on e-Governance, constituted by UGC, and ii) member of the expert committee for e-NBA project.

Mr Abhishek Kumar delivered the following invited talk and presentation during the period under report:

- i) a lecture on SWAYAM to all Deans / HoD of Aligarh Muslim University on 4<sup>th</sup> April 2018.
- ii) a lecture on e-Learning / MOOCs at the Central University of Rajasthan under Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT) on 7<sup>th</sup> May 2018.
- iii) a talk and presentation on UGC-MOOCs portal for course coordinator of SWAYM during the workshop of SWAYAM(PG Courses) on 10<sup>th</sup> May 2018 at UGC, New Delhi.
- iv) a lecture on INFLIBNET activities at VEL Tech University, Tamil Nadu on 21<sup>st</sup> July 2018.
- v) a lecture on e-Learning & MOOCs at HRDC, Gujarat University on 31<sup>st</sup> July 2018. On 18<sup>th</sup> August 2018

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- vi) a lecture on 'Digital Library' to the PG Students of Central University of Gujarat (CUG), Gandhinagar on 7<sup>th</sup> September 2018.
  - vii) a lecture on E-Learning & MOOCs at Punjab University, Chandigarh on 3<sup>rd</sup> October 2018 as a part of Rashtriya Uchchattar Shiksha Abhiyan (RUSA) programme on E-Learning.
  - viii) a video conference lecture on SWAYAM to all the teaching fraternity of Vellore Institute of Technology (VIT), Vellore Tamil Nadu on 18<sup>th</sup> December 2018.
  - ix) a presentation on E-Learning at Institute of Management, Nirma University, Ahmedabad on 21<sup>st</sup> December 2018.
  - x) a lecture on MOOCs at Sophia College, Mumbai on 25<sup>th</sup> January 2019.

#### **Dr Kruti Trivedi, Scientist B (LS)**

Dr Kruti Trivedi delivered the following invited talk and panel discussion during the period under report:

- i) a talk on "Research Impact Metrics: Calculation and Context" during the Refresher Course in Library and Information Science on "Academic Librarianship in New Millennium" at Gujarat University on 7<sup>th</sup> August 2018.
- ii) as Panellist at Research Connect Forum co-organized by Utkal University and Elsevier Science on 4<sup>th</sup> September 2018 in Bhubaneswar.

#### **Mr Dinesh Ranjan Pradhan, Scientist B (LS)**

Sh. Dinesh Ranjan Pradhan delivered the following invited talks during the period under report:

- i) a lecture on "Publication Ethics and Scientific Writing" held at Centre for Complementary and Integrative Health, Savitribai Phule Pune University, Pune from 5<sup>th</sup> to 7<sup>th</sup> July 2018.
- ii) a lecture on "Latest trends in e-resources management (procurement, access and evaluation)" for the U.G.C. sponsored "Refresher Course in Library Science for University and College Teachers" held during 30<sup>th</sup> July to 19<sup>th</sup> August 2018 at HRDC, Gujarat University, Ahmedabad, Gujarat.

#### **Dr Miteshkumar Pandya, Scientist B (LS)**

Dr Miteshkumar was invited to deliver lectures in National Workshop on SWAYAM organized by Arts College Bamkhede in collaboration with North Maharashtra University, Jalgaon on 28<sup>th</sup> February 2019 at Arts College Bamkhede, Ta. Shahada, Dist Nandurbar, Maharashtra.

#### **Mr Hiteshkumar Solanki, Scientist B (CS)**

Mr Hiteshkumar Solanki delivered the following invited talks during the period under report:

- i) a talk on "Data Handling in R" and "Statistical Methods in R" during Refresher Course in Information Communication Technology (ICT) organized by UGC-HRDC, Gujarat University, Ahmedabad on 17<sup>th</sup> July 2018.



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- ii) conducted “Hands-on” sessions on Statistical Analysis using R Programming during the Three-Day “Hands-on Training on Reference Management Tools, Statistical Analysis using R and Latex” for Full-time PhD Scholars under the MHRD scheme of Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT) organized by Coimbatore Institute of Technology, Coimbatore on 30<sup>th</sup> and 31<sup>st</sup> July 2018.
  - iii) lectures on ICSSR Data Repository, and INFLIBNET Activities and Services for Research during 47<sup>th</sup> Refresher Course: Advancement in Social Science from 12th November to 2nd December 2018 organised at Sardar Patel University, Vallabh Vidyanagar on 22<sup>nd</sup> November 2018.

### **Mr Pallab Pradhan, Scientist B (LS)**

Mr Pallab Pradhan delivered the following invited talks during the period under report:

- i) two lectures on ICSSR Data Service on 18<sup>th</sup> May 2018 during Two-week Capacity Building Programme for Social Science Faculty Members at Department of Education, Nagaland University, Kohima, Nagaland from 8<sup>th</sup> to 21<sup>st</sup> May 2018.
- ii) two lectures on Reference Management Tools: Zotero and Mendeley on 30<sup>th</sup> and 31<sup>st</sup> July 2018 during the Three-day “Hands-on training on Reference Management Tools, Statistical Analysis using R and Latex” for Full-Time Ph. D. Scholars held from 30<sup>th</sup> July to 1<sup>st</sup> August 2018 at Teaching Learning Centre (TLC), Coimbatore Institute of Technology (CIT), Coimbatore, Tamil Nadu.
- iii) a lecture on Reference Management Tools: Zotero and Mendeley during a one-day Programme on “Reference Management tools using Zotero & Mendeley” for Faculty Members of Technical Institutions held at Teaching Learning Centre (TLC), Coimbatore Institute of Technology (CIT), Coimbatore, Tamil Nadu on 25<sup>th</sup> October 2018.
- iv) A lecture on Research Ethics, and Reference Management Tools: Zotero and Mendeley during a one-day Programme on “Research Ethics and Reference Management Tools” held at Vinayaka Mission's Kirupananda Variyar Engineering College, VMRF-DU, Salem, Tamil Nadu on 26<sup>th</sup> October 2018.

### **Mr Raja V, Scientist B (CS)**

Mr Raja V was invited to participate in the Identity and Access Management (IAM) Workshop and Meetings held in conjunction with the 46<sup>th</sup> Asia Pacific Advanced Networking (APAN) Conference on Sunday 5<sup>th</sup>– 9<sup>th</sup> August 2018 at Auckland, New Zealand. He also presented the Indian Access Management Federation updates during the conference. He was one of the participants representing South-Asia in the ‘Identity and Access Management (IAM)’ workshop and meetings held in conjunction with the 47<sup>th</sup> Asia Pacific Advanced Networking (APAN) Conference held during 18<sup>th</sup> to 22<sup>nd</sup> February 2019 at Daejeon, South Korea. His conference presentation was on “Indian Access Management Federation (INFED)” updates and New initiatives about INFED.

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Mr Raja V delivered the following invited talks during the period under report:

- i) a talk on "Open Access Initiatives in India and Global and Digital Libraries Models and Theories" at Central University of Gujarat, Gandhinagar during 28<sup>th</sup>-31<sup>st</sup> August 2018.
- ii) a resource person for "One-day Awareness programme on INFLIBNET Activities" on 5<sup>th</sup> September 2018 held at Erode Arts College, Tamil Nadu.
- iii) delivered lecture on "Libraries on Cloud and Digital Library Design" in UGC Sponsored Course Refresher program for Library and Information Science at Bharathidasan University on 3<sup>rd</sup> September 2018
- iv) invited by JSS Academy of Higher Education & JSS Science and Technology University, Mysuru as a resource person on 11<sup>th</sup> January 2019 to deliver a guest lecture on 'Technology Platforms for Teaching-Learning Academic Tools from INFLIBNET' giving emphasis on Cloud-computing technology.
- v) a guest lecture on 'Role of INFED @ NID' at National Institute of Design (NID), Gandhinagar on 5<sup>th</sup> February 2019.
- vi) Video Conferencing presentation with IUCAA Technical Team, Pune for integrating LIGO-India Services with INFED On 19<sup>th</sup> March 2019.

**Mr. Siva Shankar Kimidi, Scientist B (LS)**

Mr Siva Shankar delivered the following invited talks and presentation during the period under report:

- i) a lecture on INFLIBNET activities at Andhra Loyola College, Vijayawada on 12<sup>th</sup> November 2018 as part of the Capacity building for Degree College Principals, Teachers and Librarians on ICT and Digital Initiatives.
- ii) a lecture on E-learning during Swayam E-Content Development Training Workshop for the faculty members at Vellore Institute of Technology, Vellore on 18<sup>th</sup> December 2018.
- iii) as a Co-author presented an abstract presentation titled 'Indian research information network system: research impact & analytics' from one of the conference themes 'Trends In Scholarly Communication: Open Science, Open Access & Open Data' during 2<sup>nd</sup> International Conference, "Changing Landscape of Science & Technology Libraries (CLSTL 2019)" organized by Indian Institute of Technology Gandhinagar from 28<sup>th</sup> February – 2<sup>nd</sup> March 2019. The presentation received the conference best abstract presentation.

**Mrs Hema V Cholin, STO (LS)**

Mrs Hema Cholin was invited to deliver a talk on "Digital Preservation" during the U.G.C. sponsored "Refresher Course in Library Science for University and College Teachers" held at HRDC, Gujarat University, Ahmedabad during 30<sup>th</sup> July to 19<sup>th</sup> August 2018.

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## **PART – III**

# **International, National Conference, Workshops, Seminars and Training Programme**

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## 1. 11<sup>th</sup> PLANNER 2018, Tripura University, Agartala, 15<sup>th</sup> -17<sup>th</sup> November 2018

The 11<sup>th</sup> Convention PLANNER 2018 was organised by Tripura University, Agartala in collaboration with INFLIBNET Centre, Gandhinagar at Maharaja Bir Bikram Satabarshiki Bhawan, Tripura University, Agartala during 15<sup>th</sup> to 17<sup>th</sup> November 2018 on the theme "Rejuvenate Academic Library as a Social Hub". The main theme of the convention was divided into four sub-themes i.e. Library as a Skill Development Centre; Preservation, Publication & Sharing of Knowledge; Next Generation Library Infrastructure; and Case Studies on North-East Libraries. 25 publishers participated in the exhibition arranged as part of the Convention. More than 100 delegates have participated in the Convention. Out of 102 submissions, 31 papers were selected for presentation and 7 papers were selected for abstract presentations.

### 1.1. Tutorials

Details of pre-convention tutorials delivered by experts during the Convention as mentioned in Table37:

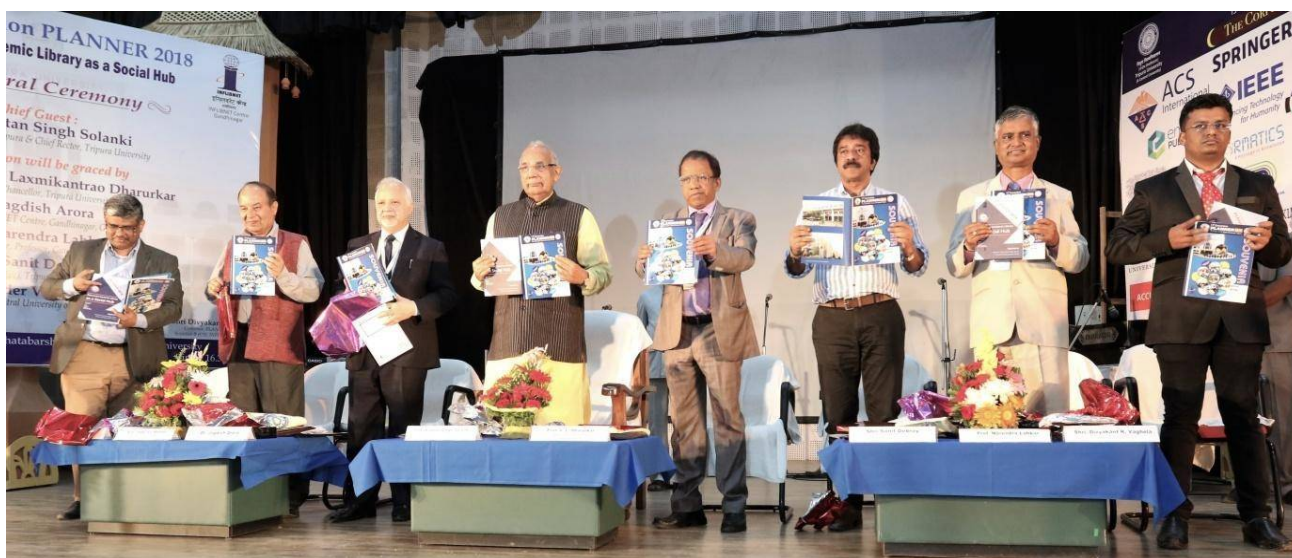
Tutorial	Topic	Chair	Invited Speaker
Tutorial-I	IRINS (Indian Research Information Network Services)	Dr.Arun Kumar Sharma, Librarian, Assam University, Silchar	Mr Kannan P., Deputy Librarian, Central University of Punjab, Bhatinda
Tutorial-II	INFED (INFLIBNET Access Management Federation)	Dr D. K. Singh, Deputy Librarian, Banaras Hindu University, Varanasi	Mr Yatrik Patel, Scientist D (CS), INFLIBNET Centre, Gandhinagar
Tutorial-III	MOOCs (SWAYAM)	Prof.Subarna Kumar Das, Professor, Jadavpur University, Kolkata	Prof. Uma Kanjilal, Professor, DLISc., IGNOU, New Delhi

Table37: Details of pre-convention tutorials

### 1.2. Inaugural Session

Dr B. Sanjay, Organising Secretary of the Convention welcomed all the dignitaries on the dais, speakers, delegates, guests and participants. Dr Sanjay briefly introduced the convention, the themes and objectives of the convention. Prof.NarendraLahakar, Conference Director spoke about the importance of library and its role in the society and appreciated the activities rendered by INFLIBNET Centre. Further, he set the path of and spoke about the importance of PLANNER for the library professionals in the North East Region of the country. Mr ShanitDebroy, Registrar, Tripura University, extended his good wishes to all the delegates and participants for a pleasant stay. He also anticipated

a good deliberation and fruitful outcome of the three days convention. Dr Jagdish Arora, Director, INFLIBNET Centre, in his special address, briefly presented the services and activities of the INFLIBNET Centre and recent initiatives pertaining to hosting of scholarly content and offering MOOC courses through SWAYAM portal.



**Fig. 55: Inaugural Ceremony during 11<sup>th</sup> PLANNER 2018 at Tripura University, Agartala**

Prof V L Dharurkar, Vice-Chancellor, Tripura University congratulated Organising Secretary and his team for putting great efforts in organizing such a wonderful event in Tripura University and cited fabulous illustration, “the one a beautiful garden and the other a beautiful library”. He also thanked INFLIBNET Centre for choosing Tripura University as a partner for organizing the Convention.

Prof I V Malhan, Dean and HOD, School of Mathematics, Computer & Information Sciences, Central University of Himachal Pradesh delivered the keynote address. He addressed the gathering and spoke about the importance of social media, mobile technology, and explained how these can be utilized for the good cause of society by illustrating examples. He also expressed how the library could go to the farmers in helping them and ease their life.

Prof Kaptan Singh Solanki, Hon’ble Governor of Tripura and the Chief Rector of Tripura University addressed the audience and pointed out that the role of the library, how the library store/hold the knowledge of the past that one get it from the library. He also opined that the library needs to accept the change according to the changing environment. He also gave emphasis that library should come forward to help the social community.

Mr Divyakant Vaghela, Convener & Scientist B (CS), INFLIBNET Centre expressed sincere thanks to all the dignitaries, invited speakers, publishers and participants. As part of the Convention, the Tripura University had organized a vibrant and memorable cultural evening and fiesta, the platform of folk and traditional dances of north-east which was presented by the students and staff of Department of Music & Dance, Tripura University.

### 1.3. Technical Sessions

31 papers were selected out of which 26 papers were presented by convention participants along with 8 invited presentations on sub-themes mentioned in Table 38.

Session	Theme	Chair	Co-Chair	Invited Sub-theme Speaker
I	Library as a skill development centre	Dr B. Sutradhar, Librarian, IIT, Kharagpur	Dr T. Temjen, Deputy Librarian, Nagaland University, Nagaland	Prof Bikika Laloo, Professor, Department of Library and Information Science, NEHU, Shillong
II	Preservation, publication & sharing of knowledge	Dr. Lalremsiami, Librarian, Mizoram University, Aizawl	Dr F R Sumer, Deputy Librarian, NEHU, Shillong	Prof Manoj Kumar Sinha, Professor, DLIS, Assam University, Silchar
III	Library as a skill development centre	Mr Ashok Kumar Rai, Scientist D (CS), INFLIBNET Centre, Gandhinagar	Prof Sanjay Kumar Singh, Professor, DLIS, Gauhati University, Guwahati	Prof P P Das, Professor, Department of Computer Science, IIT, Kharagpur; Prof Uma Kanjilal, Professor, DLISc., IGNOU, New Delhi
IV	Next-generation library infrastructure	Dr. Mukesh Saikia, Librarian, Tezpur University, Tezpur	Mr Champeswar Mishra, Deputy Librarian, Tripura University, Tripura	Dr N Vartharajan, Librarian, University of Hyderabad, Hyderabad
V	Case studies on north-east libraries	Prof. Rajani Kanta Barman, Professor, DLIS, Gauhati University, Guwahati	Dr D K Veer, Director, Knowledge Resource Centre, Dr B R Ambedkar University, Aurangabad	Prof Pravakar Rath, Professor, DLIS, Mizoram University, Aizawl; Mr. Yatrik Patel, Scientist D (CS), INFLIBNET Centre, Gandhinagar; Dr B Sanjay, Librarian, Tripura University, Agartala
VI	Case studies on north-east libraries	Mr Manoj Kumar K., Scientist D (CS), INFLIBNET Centre, Gandhinagar	Dr Maltesh Motebennur, University Librarian, Rajiv Gandhi University, Bengaluru	Dr Ibohal Singh, Assistant Professor, DLIS, Manipur University, Imphal

**Table 38: Details of Paper Presentations**

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#### 1.4. Panel Discussion

A panel discussion on the theme of the Convention "Rejuvenate Academic Library as a Social Hub" was organised prior to the valedictory session of the Convention. Dr.Jagdish Arora, Director, INFLIBNET Centre, Panel Chairman, Dr.Arun Kumar Chakraborty, Director, RRRLF, Prof. A. S. Chandel, Librarian, Sikkim University, Dr.Pawan Kumar Gupta, Former Professor, Rajasthan University, Mr Prem Chand, Librarian, Indian Institute of Advanced Studies, Shimla and Dr.(Mrs.) Moorttimatee Samantaray, Deputy Librarian, NCERT, New Delhi were the panellists for the session.

Dr.Jagdish Arora allotted various topics, based on the theme and sub-themes to the panellists and moderated the entire session.

Prof. A. S. Chandel discussed on Library as skill development Centre and the role Information Literacy (IL) in the LIS field. He emphasized two key aspects i.e. the capacity building of library professionals, and library visibility and value. Resources and services of the library must be promoted in order to attract wider stakeholders for maximum use. He opined that the sustainability and visibility of library can only be possible by enhancing the capacity of library professionals through proper training in order to effectively manage the libraries.

Dr.Pawan Kumar Gupta discussed on Library as a Social Hub where he emphasized how the increasing use of electronic resources has declining use of print resources and emerging of a technology-driven society. The trends of falling library gate counts have led to numerous claims of the impending death of the traditional academic library. Hence, he urged the library professionals to re-think their roles by adopting evidence-based innovative strategies such as installing "social" spaces like cafés, museums, and theatres; creating collaborative group study spaces; integration of library 2.0, developing "information commons" and bringing non-traditional functions like classrooms, event programming, and cafés into the library.

Dr Arun Kumar Chakraborty elaborated on the current scenario of preservation and conservation of library by National Library of India. He discussed how digital preservation and conservation is important in the knowledge society. He opined that the basic problem of libraries that need to be addressed as early as possible. He suggested that library science syllabus must integrate digital preservation and conservation as one of the components and adequate measures should be taken to teach the students about the role of preservation and conservation of resources for the future generation. Further, he emphasizes the role of the Institutional Repository in the context of digital preservation and conservation.

Dr Moorttimatee Samantaray discussed on Rejuvenate Academic Library as Social Hub. She talked about the four pillars of education of UNESCO and its relevance in the academic libraries. The libraries should transform themselves from "reading place" to "service place" by embracing new challenges, adopting new technologies, providing innovative services and facilitate quality resources. She

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highlighted that the academic library has an important role to play in the growth and development of “knowledge economy”.

Mr Prem Chand, Librarian, IAS discussed the Use of Social Media in Academic Library, where he shared that integration of social media will help in marketing and promoting library services and resources, and ultimately, library visibility can be enhanced in wider platforms. Most library activities unnoticed and get less attention. It is the right time where library professionals should use it extensively to showcase and promote their library activities. He urged the library professionals to be competent enough to grasp the opportunity of social media in library services. In the open question and answering session, the question was raised on how to erase the demarcation between public libraries and academic libraries. While clarifying on this, panellists suggested the preparedness is required to arrange collaborative programmes to involve the public in the knowledge sharing exercises.

On the basis of the entire discussion and deliberation, the following key aspects emerged:

- Library professionals must think about library sustainability and viability;
- The library should be treated as a service or happening place, rather than a mere physical place;
- Evidence-based innovative library services and resources must be developed and practised;
- Skills and competencies of Library professionals must be enhanced by the capacity building programmes;
- Evidence-based leadership is the need of the hour, which should emphasize by library professionals;
- Library for all must emphasize to reach for lifelong learning of the society;
- Information Literacy is a critical component which should be realized by each and every professional and be practised each activity of the library;
- Research visibility must be enhanced by orienting users about how to organize and manage research through various research citation tools;
- Library syllabus should integrate digital preservation and conservation as a component of its teaching and learning; and
- Integration of social media must be an emphasis in order to enhance the visibility of the library.

Strategic role and direction must be defined in order to stay tuned with the changes in the field. The panel discussion was followed by a live discussion on the topic between panel members and participants.

### **1.5. Valedictory Session**

During the valedictory function, Dr Miteshkumar Pandya, Co-convener presented an overview of the Convention and welcomed all the delegates in the valedictory session of the Convention. Dr R K Mahapatra, Rapporteur General of the Convention presented a brief report and major



recommendations of the Convention. Prof. Sukanta Banik, Dean, Tripura University congratulated all the paper presenters and participants for witnessing and actively participating in the wonderful event in Tripura University and taking away the fruitful outcomes of the three days deliberation and extended thanks to all the delegates and organisers. Mr Manas Ranjan Mahapatra, Chief Guest and Director, NE Council, Shillong addressed the audience on the issues of rejuvenating the academic library as a social hub. Mr Mahapatra emphasized the role to be played by the rich libraries sharing their expertise to the public libraries and cited some few remarkable examples. Prof. Narendra Lahkar, Professor, Gauhati University, Convention Director and Dr Jagdish Arora, Director INFLIBNET Centre presented their views on the achievements of the Convention. Memory mementoes were presented to the dignitaries on this occasion. Dr B. Sanjay, Organizing Secretary of the Convention sincerely thanked all the publishers, invited speakers, delegates and participants for making the Convention a grand success.



Fig.56: Valedictory Session during 11<sup>th</sup> PLANNER 2018 at Tripura University, Agartala

To sum up the three days presentation and deliberations, 26 papers were presented out of 31 selected papers; the response rate was 83 %, which was quite satisfactory. Almost all the papers were very relevant to the theme and sub-theme. Although paper contributions cover all parts of India most of the paper contribution was from Assam state 15(57%) more than half papers followed by Manipur, Mizoram, Tripura, and West Bengal. Female contributors were more 16 (62%) than the male 10 (38%).

#### 1.6. Recommendations

1. The demarcation between Academic libraries, Public libraries and Special libraries should be diminished. All the libraries should be recalibrated to take up the role to reach the new age society information needs.

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2. LIS professionals should rejuvenate their skills according to space and time, and all the stakeholders should be involved in defining the skills set of librarians for the new role.
  3. LIS being a professional course, LIS departments should design the course/syllabus as per the needs of the new age libraries.
  4. Ideation sessions should be conducted across the country covering different LIS professional groups, departments and users to make the library as a vibrant place to share knowledge and exchange information.
  5. Libraries should be enabled with the latest ICT Infrastructure. All the required technology should be made available free and easily accessible manner.
  6. Preservation of local culture and digitization should be the responsibility of the local library. All the necessary support should be extended by the State/Central Government to perform this task.
  7. Libraries should be strengthened by enacting and implementing library legislation in all the states.
  8. Libraries should be the learning hub and support information literacy, digital literacy, continuing education and skill development programme.

## **2. Training Programmes on Installation and Implementation of the SOUL Software at INFLIBNET Centre**

The INFLIBNET Centre provides Orientation Training Programme on Installation and Implementation of the SOUL Software. The programme is specially designed for imparting training to new users of SOUL software. The morning sessions of the programme are devoted to theoretical lectures and demonstrations, while the afternoon sessions are completely earmarked for “hands-on” practice. The “hands-on” practical sessions are conducted in a well-equipped computer laboratory under the guidance of trained staff members of the Centre. The course content of the programme is designed to cover the following topics:

- i) INFLIBNET: Major Activities and Services
- ii) SOUL – Administration and Overview
- iii) SOUL - Catalogue Module
- iv) SOUL - Acquisition Module
- v) SOUL – Circulation Module
- vi) SOUL – Serials Control Module
- vii) SOUL- OPAC, WebOPAC, Installation and Backup

Generally, two participants from every user institution of SOUL software are invited to join this training programme, one each with a computer and library science background. As on 31<sup>st</sup> March 2019, a total no. of 147 such training programmes were organized at the Centre. During the period under report, 8 training programmes were organized and training was imparted to 128 participants from different institutions as shown in Table 39 below.

Sl. No.	Name of Training Programmes	Period	No. of Participants
1	140 <sup>th</sup> Training Programme on SOUL 2.0	23 <sup>rd</sup> – 28 <sup>th</sup> April 2018	08
2	141 <sup>st</sup> Training Programme on SOUL 2.0	28 <sup>th</sup> May– 02 <sup>nd</sup> June 2018	16
3	142 <sup>nd</sup> Training Programme on SOUL 2.0	9 <sup>th</sup> – 14 <sup>th</sup> July 2018	15
4	143 <sup>rd</sup> Training Programme on SOUL 2.0	27 <sup>th</sup> August–01 <sup>st</sup> September 2018	20
5	144 <sup>th</sup> Training Programme on SOUL 2.0	8 <sup>th</sup> – 13 <sup>th</sup> October 2018	17
6	145 <sup>th</sup> Training Programme on SOUL 2.0	10 <sup>th</sup> – 15 <sup>th</sup> December 2018	21
7	146 <sup>th</sup> Training Programme on SOUL 2.0	28 <sup>th</sup> January– 02 <sup>nd</sup> February 2019	17
8	147 <sup>th</sup> Training Programme on SOUL 2.0	25 <sup>th</sup> – 30 <sup>th</sup> March 2019	14
	<b>Total</b>		<b>128</b>

**Table 39: SOUL Training Programmes Organized at the INFLIBNET Centre during 2018-19**

### **3. INFLIBNET Regional Training Programme on Library Automation (IRTPLA)**

#### **3.1. INFLIBNET Regional Training Programme on Library Automation (IRTPLA), Dr Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, 16<sup>th</sup>- 20<sup>th</sup> April 2018**

INFLIBNET Regional Training Programme on Library Automation (IRTPLA) was organized by the Department of Library and Information Science, Dr Babasaheb Ambedkar Marathwada University, Aurangabad in collaboration with the INFLIBNET Centre, Ahmedabad from 16<sup>th</sup> April to 20<sup>th</sup> April, 2018. 34 participants comprising of library & information professionals participated in the training programme. The Training programme was inaugurated by Prof. B A Chopade, Honourable Vice Chancellor, Dr. Babasaheb Ambedkar Marathwada University. Dr Vaishali Khaparde, Professor and Head and coordinator of the programme, welcomed the chief guest, resource persons, faculty and participants. Prof. Chopade, while inaugurating the training programme, appreciated the efforts of the INFLIBNET Centre for imparting such training programmes to educate the librarians in frontiers of technological development. Mr Swapnil Patel, Scientist B (CS), INFLIBNET Centre briefed the participants about IRTPLA training programmes. He also gave an overview of various modules of SOUL 2.0. Dr Shashank Sonwane extended a warm vote of thanks. Mrs Hema V Cholin and Mr Vijay Kumar Shrimali handled theoretical and practical sessions on various modules of SOUL software. Apart from theoretical and practical sessions on SOUL 2.0, the following lectures were delivered by external experts:

- i) Library Automation by Dr D K Veer, Director KRC library, Dr Babasaheb Ambedkar Marathwada University, Aurangabad; and
- ii) Web 2.0 by Dr Shashank Sonwane, Associate Professor, Dept. of Library and Information Science, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

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Prof. A. G. Khan, Director, Dr Babasaheb Ambedkar Marathwada University, Aurangabad was the Chief Guest for the valedictory session. Certificates of participation were distributed to the participants during the valedictory session. Prof. Vaishali Khaparde extended a warm vote of thanks to authorities at the university as well as at INFLIBNET Centre.

### **3.2. INFLIBNET Regional Training Programme on Library Automation (IRTPLA), Dibrugarh University, Dibrugarh, Assam, 25<sup>th</sup>-29<sup>th</sup> April 2018**

INFLIBNET Regional Training Programme on Library Automation (IRTPLA) was jointly organized by the INFLIBNET Centre, Gandhinagar in collaboration with Lakshminath Bezbaroa Library, Center for Library and Information Science Studies and College Development Council of Dibrugarh University, Dibrugarh from 25<sup>th</sup> to 29<sup>th</sup> April 2018 at Dibrugarh University, Dibrugarh. Prof. Alak Kumar Buragohain, Hon'ble Vice-Chancellor, Dibrugarh University, inaugurated programme, which was attended by a large number of invitees including deans, professors, faculty members and participants. Prof. Alak Kumar Buragohain, in his inaugural speech, stressed upon the importance of growing demands of library automation and application of ICT in the library management. Dr Maya Avasia, Librarian, Asiatic Society of Mumbai, participated as an expert as well as Chief Guest in the inaugural programme. She spoke on the importance of grooming up present-day library professional for ICT environment from the very beginning of their carriers as a library professional.

38 College librarians participated in the Workshop from different colleges of North Eastern Region of India. Experts from various universities in the North-eastern region and other parts of the country served as faculty to the training programme. Sri W. S. Dev Nath, Librarian, Gauhati University, Dr Mukesh Saikia, Librarian, Tezpur University, Dr Utpal Das, Deputy Librarian, Dibrugarh University, Dr F R Sumer, Deputy Librarian, North Eastern Hills University, Dr Tilak Hazarika, Assistant Professor, Gauhati University and Mr. Gunadeep Chetia, Programmer, Dibrugarh University participated in the training programme as faculty from the North Eastern Region. Moreover, Prof. Prabuddha Ganguli, Visiting Professor, IPR, IIT Kharagpur, joined along with experts from INFLIBNET Centre, i.e. Mr V Raja, Scientist C, Mr Kamlesh Vegad and Mr Anupam Goswami.

Besides training on SOUL 2.0 software, hands-on training was also imparted in other related fields of library automation and e-resource management using state-of-the-art facilities available in the LNB Library. Each participant was given a PC for effective and efficient training. Participants were given a programme kit consisting of study materials in CD/DVD format and printed lecture notes.

### **3.3. INFLIBNET Regional Training Programme on Library Automation (IRTPLA), Sido Kanhu Murmu University, Dumka, Jharkhand, 02<sup>nd</sup>-06<sup>th</sup> July 2018**

INFLIBNET Regional Training Programme on Library Automation (IRTPLA) was jointly organized by the INFLIBNET Centre, Gandhinagar in collaboration with Department of Library & Information Science, S.K.M. University, Dumka from 02<sup>nd</sup> to 06<sup>th</sup> July 2018 at Sido Kanhu Murmu University,

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Dumka, Jharkhand. Prof. Manoranjan Prasad Sinha, Hon'ble Vice-Chancellor, Sido Kanhu Murmu University, Dumka, inaugurated programme, which was attended by a large number of participants and invitees. Dr P.K. Verma, Programme Convener and Director, Department of Library and Information Science, S.K.M. University, Dumka, in his inaugural speech, briefed about INFLIBNET Centre and SOUL library automation software. 30 participants participated in the Workshop from different colleges. Mr. Abhishek Kumar, Scientist C (CS) and Mr. Kumar Gaurav, Project Officer from INFLIBNET Centre, Gandhinagar were the resource persons joined with Dr.P.K.Singh, Librarian, Central University of South Bihar, Bodh-Gaya, Dr. D.K. Singh, Deputy Librarian, Central University of BHU, Varanasi, Sri Punit Kumar Singh, College Librarian, CMPD College, Allahabad and Shri Anirban Maji, Technical Assistant, West Bengal Region served as faculty to the SOUL 2.0 software training programme. Handled all 13 technical sessions and they conducted "hands-on" technical sessions for 30 participants covering major topics involved in the SOUL software programme.

#### **3.4. INFLIBNET Regional Training Programme on Library Automation (IRTPLA), Mohanlal Sukhadia University, Udaipur, Rajasthan, 26<sup>th</sup>-30<sup>th</sup> November 2018**

INFLIBNET Regional Training Programme on Library Automation (IRTPLA) was organised by Mohanlal Sukhadia University, Udaipur in collaboration with INFLIBNET Centre, Gandhinagar from 26<sup>th</sup> to 30<sup>th</sup> November 2018 at Mohanlal Sukhadia University, Udaipur. Prof. J P Sharma, Vice-Chancellor inaugurated the programme in presence of Dr Hanuman Prasad, Professor, Faculty of Management Studies, Dr Ramkesh Meena, Deputy Librarian and Programme Coordinator, Dr P S Rajput, Assistant Librarian, Mohanlal Sukhadia University and Mr Swapnil Patel, Scientist B (CS), INFLIBNET Centre, Gandhinagar. Prof. J P Sharma, Vice-Chancellor addressed the participants, and he emphasized the importance of education and to gain knowledge through these type of training and workshops, and advised to be aware of the latest trends in the digital era along with library automation. He also inaugurated "Spiritual Centre and Competition Unit" in the Library. Mr Vijay Shrimali, STA (CS) and Ms Juhi Priyadarshi, SOUL Technical Assistant (CS), INFLIBNET Centre were resource persons, handled all the technical sessions and they conducted "hands-on" technical session for 50 participants covering major topics involved in the SOUL software programme.

#### **3.5. INFLIBNET Regional Training Programme on Library Automation (IRTPLA), Central University of Bihar, Gaya, Bihar, 3<sup>rd</sup> -7<sup>th</sup> December 2018**

INFLIBNET Regional Training Programme on Library Automation (IRTPLA) was organized by the Central Library of Central University of South Bihar (CUSB), Gaya in collaboration with INFLIBNET Centre, Gandhinagar from 3<sup>rd</sup> to 7<sup>th</sup> December 2018. Dr. Bhupendra Kumar Singh, Librarian, Allahabad University inaugurated the programme. In his address, he emphasized that libraries are the centric point in every University or an Institute. The libraries play an important role in empowering students, researchers, and people associated with academics. The collection of books and information available disseminated through the library altogether ensure the growth and development of any nation. Such workshops are very beneficial where the participants can discuss the new ideas and technological

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innovation happening in the discipline of the library. Further, Prof. Prabhat Kumar Singh, Registrar (Acting) of the Central University of South Bihar in his presidential address said that the library automation plays a vital role in preservation and conservation of historical literature and manuscripts, which are quite significant to carry forward the heritage to the future generations.

In the technical sessions, the participants from various colleges and institutions of Bihar were given hands-on training about the software used in libraries. Mr Abhishek Kumar, Scientist-C (CS) and Mr Kumar Gaurav, Project Officer (LS), INFLIBNET Centre, Gandhinagar and Mr Anir Manjhi were resource persons for the training programme. Hands-on technical sessions were conducted on various topics related to SOUL 2.0 software. Dr Gulnawaz Azam, Assistant Librarian, CUSB took a presentation on topics like DNS, IP Address and Network protocols, etc.

Prof. Harish Chandra Singh Rathore, Vice-Chancellor, CUSB was the chief guest during the valedictory session. He said that the University is altogether a unique entity in itself and the library is like its heart. A good library in an institute can play a big role in the development of positive mind-set among the users especially youth by encouraging them to gain knowledge from the available resources and services through the university library. Prof. Rathore said that the staff of the CUSB library would work with similar zeal and enthusiasm so that users can enhance their level of knowledge and skills.

#### **4. User Awareness Programmes**

##### **4.1. One-day User Awareness Programme on Plagiarism, Central University of Rajasthan, Bandar Sindri, 23<sup>rd</sup> April 2018**

One-Day User Awareness Programme on Plagiarism was in the Central University of Rajasthan, Bandar Sindri on 23<sup>rd</sup> April 2018. Dr Vijayakumar M, Librarian, Central University of Rajasthan coordinator of the programme, welcomed the guests and participants. Prof. Neeraj Gupta, Officiating Vice-Chancellor, Central University of Rajasthan inaugurated the Programme by lighting the ceremonial lamp along with Dr Ramesh Gaur, Director and Head, Indira Gandhi National Centre for the Arts (IGNCA), Mr Manoj Kumar K, Scientist-D (CS), INFLIBNET Centre and Dr Vijayakumar M, Librarian, Central University of Rajasthan. In his inaugural address, Prof Neeraj Gupta stressed upon the need and importance of having awareness amongst each and every student on plagiarism. He highlighted some of the examples of plagiarism by Indian scientists and its consequences.

Mr Manoj Kumar K., Scientist D (CS), INFLIBNET Centre, was the resource person. He delivered a talk on "Research Ethics and AntiPlagiarism Issues & Tools". The session was highly interactive with a number of questions from the audiences.

##### **4.2. One-day User Awareness Programme on Access to E-Resources, Central University of Tamil Nadu, Thiruvavur, 20<sup>th</sup> July 2018**

The Central Library, Central University of Tamil Nadu, Thiruvavur in collaboration with the INFLIBNET Centre, Gandhinagar, organised a One-day User Awareness Programme on Access to E-Resources on

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20<sup>th</sup> July 2018 in the Central Library for all the faculty members, research scholars, students of Central University of Tamil Nadu and the library professionals from across the country. Dr S.Dhanavandan, Deputy Librarian & Head, Central Library, welcomed participants and invitees and briefed about the development of library activities and its services. Prof S Ravi, Dean, School of Communication, delivered the thematic address. In his address, he emphasized the importance of e-resources especially the initiatives taken by the Government of India for development of higher education in India. The programme was inaugurated by Dr S. Bhuvaneswari, Registrar, Central University of Tamil Nadu. In her presidential address, she appreciated the initiatives taken by the Central Library for organising such kinds of programmes for the research scholars and all other participants. She emphasised that the supervisors and research scholars must utilize these e-resources through centrally funding by eShodhSindhu. She highlighted the usage of various databases such as SCOPUS, SciFinder, SIAM, EBSCO & IEEE, CSDL. She insisted that the users should make use of e-resources which are facilitated by the Central Library of the University. Prof. S. Nagarajan, Dean, Student's Welfare offered the felicitation in the inaugural function. He appreciated the initiatives taken by the Central Library staff in the interest of faculty, research scholars and students of the University.

Dr K. Elavazhagan, Librarian & Chief Knowledge Officer, Indian Institute of Management, Trichy, delivered the keynote address during the inaugural session. In his address, he emphasized that academic libraries should work towards developing a strong knowledge society. Mrs S. Esakkiammal, Information Scientist, Central Library, proposed a vote of thanks to all dignitaries and participants.

Post tea break, the first technical session commenced at 11.15 am with a talk by Mr Ashok Kumar Rai, in which he gave an overview of INFLIBNET, its activities and services, and various e-resources that are being provided to CUTN library through eShodhSindhu Consortium and how effectively these resources are being used. Mr Ashok Kumar Rai highlighted the advantages of e-resources over traditional information resources.

## **5. Specialized Training Programmes and National Workshops**

### **5.1. Three-day National Workshop on Research Ethics, Plagiarism and Reference Management, Mizoram University, Aizwal, 11<sup>th</sup>– 13<sup>th</sup> April 2018**

The three-day National Workshop on "Research Ethics, Plagiarism and Reference Management" organized by the Department of Library and Information Science, Mizoram University, Aizwal in collaboration with INFLIBNET Centre from 11<sup>th</sup> to 13<sup>th</sup> April 2018. Dr Manoj Kumar Verma, Workshop Coordinator and Assistant Professor of Department of Library & Information Science coordinated the programme. Prof. S. N. Singh, Head, Department of Library & Information Science welcomed the participants and guests. Prof K R S Sambasiva Rao, the Hon'ble Vice-Chancellor, inaugurated the programme by lighting the lamp with other dignitaries on the dais. In his inaugural address, he emphasized the importance of imparting training programmes on the research methodology and tools for conducting qualitative research. He emphatically condemned the current practices prevalent

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amongst researchers and research supervisors in Indian universities and suggested to strictly follow prescribed ethical practices in conducting research as well as in writing plagiarism-free research papers.

Mr Manoj Kumar K, Scientist D (CS), INFLIBNET Centre, was the Guest of Honour and resource person along with Dr Miteshkumar Pandya, Scientist B (LS), INFLIBNET Centre. In his address, Mr Manoj Kumar K cited several examples of plagiarism by Indian scientists and its consequences. He stated the role that Shodhganga is playing in reducing duplication of research. He stressed upon the need to avoid plagiarism at any cost. He briefly informed the important aspects of plagiarism draft policy proposed by UGC which is being circulated to the Indian universities for comments. Dr Miteshkumar Pandya explained the importance of references in writing research papers and use of reference management tools. He elaborated upon steps to be followed for downloading and installing Zotero and Mendeley reference management tools along with plugins that are required.

More than 50 faculty members and research scholars participated in the programme. Dr Akhandanand Shukla, Co-coordinator of the National Workshop proposed a formal vote of thanks at the end of the inaugural session.

#### **5.2. Two-day National Workshop for MOOC Coordinators under the subject Library and Information Science, Central University of Himachal Pradesh, Dharmashala, 10<sup>th</sup> -11<sup>th</sup> May 2018**

INFLIBNET Centre organized National Workshop for MOOC Coordinators under the subject Library and Information Science in collaboration with the Central University of Himachal Pradesh from 10<sup>th</sup> to 11<sup>th</sup> May 2018 at Central University of Himachal Pradesh, Dharmashala. Prof. I V Malhan welcomed all the participants and explained the role of the Central University of Himachal Pradesh for transferring the credit to the course under the subject Library and Information Science. Dr Jagdish Arora, Director, INFLIBNET Centre in his talk discussed the importance of MOOC courses and their benefits to the academic community. Prof. Dinesh Gupt made a presentation on the role and responsibilities of the course coordinators to promote the MOOC courses among the academic community. Mr Kannan P, Scientist C made a presentation on the life cycle of the MOOC course and familiarisation of the MOOC Platform.

In the second day, MoU was signed between the Central University of Himachal Pradesh and INFLIBNET Centre by the VC of the Central University of Himachal Pradesh and Director, INFLIBNET Centre to transfer the MOOC course credit under the subject Library and Information Science. Also, the course content of the seven MOOC courses (Booklet and Digital version) released by Prof. Kuldip Chand Agnihotri, Vice-Chancellor, Central University of Himachal Pradesh. The two-day programme was coordinated by Mr Kannan, Scientist C, INFLIBNET Centre.

After the detailed discussion, the course coordinators recommended the following suggestions to improve the course delivery in all the MOOC Courses:



1. Since the student enrolment date differ from university to university, all the MOOC courses may uniformly start after 15<sup>th</sup> August (First Semester) and 1<sup>st</sup> December (Second Semester);
2. The course coordinators and host institute may send a communication to all the Universities about the MOOC courses;
3. A student may be allowed to enrol from 1<sup>st</sup> to 3<sup>rd</sup> semester to avoid delay in the final semester;
4. The National Coordinator should direct the course coordinators and host institute to consider the credit preferably in even number based on the number of modules and number of hours required by the student to complete the course, which is the regular practice in most of the Universities;
5. The SWAYAM portal does not have the option to change the assignment marks. The National Coordinator (NC) may request the SWAYAM developers to enable the option to change the assignment marks by the course coordinator; and
6. The UGC and MHRD should direct the participating university to conduct the examination to their own students and coordinate the examination for the lifelong learners.

**5.3. Five-day National Workshop on Research Data and Statistical Analysis using R Programming, INFLIBNET Centre, Gandhinagar, 14<sup>th</sup> - 18<sup>th</sup> May 2018**

Five-day National Workshop on Research Data and Statistical Analysis using R Programming was organized from 14<sup>th</sup> to 18<sup>th</sup> May 2018 at INFLIBNET Centre, Gandhinagar. Mr Hitesh Solanki and Mr DivyakantVaghela, Scientists B (CS) and Mr H G Hosamani, Scientist C (LS) coordinated the programme. Dr K. S. Dasgupta, Director, DA-IICT, Gandhinagar inaugurated the Workshop. The aim of this Workshop was to provide hands-on training in understanding the concepts in data science and statistical analysis using R programming to the participants. The R programming language is one of the most widely used programming languages among data scientists and researchers. Details of lectures delivered by experts during the training programme are as follows in Table 40:

Topics	Name of the Experts
INFLIBNET Activities and Services	Mr. Manoj Kumar K., Scientist D (CS), INFLIBNET Centre
Introduction to R Programming (Installation, getting Started R, RStudio)	Mr Vijay Shrimali, STA (CS), INFLIBNET Centre
Data Types in R (Constants, vectors, matrix, dataframes, lists)	Mr. DivyakantVaghela, Scientist B (CS), INFLIBNET Centre
Introduction to R Programming (Data Handling in R)	Ms Mitisha Vaidya Project Officer (CS), INFLIBNET Centre
Introduction to R Programming (Working with Functions, Summary Measures)	Mr DivyakantVaghela, Scientist B (CS), INFLIBNET Centre

Data Visualization using R: Base, lattice and ggplot packages	Mr Hitesh Solanki, Scientist B (CS), INFLIBNET Centre
Statistical Analysis using R (Hypothesis Testing -I (Parametric))	Mr Hitesh Solanki, Scientist B (CS), INFLIBNET Centre
Statistical Analysis using R (Simple and Multiple Regression Analysis)	Dr R. D. Chaudhari, Associate Professor, M G Science Institute
Statistical Analysis using R (Factor Analysis)	Dr DharmeshRaykundaliya, Assistant Professor, Sardar Patel University
Statistical Analysis using R (Analysis of Variance (One Way and Two Way ANOVA))	Dr R. D. Chaudhari, Associate Professor, M G Science Institute
Statistical Analysis using R (Logistic Regression)	Dr DharmeshRaykundaliya, Assistant Professor, Sardar Patel University
Statistical Analysis using R (Time Series Analysis)	Dr DharmeshRaykundaliya, Assistant Professor, Sardar Patel University
Statistical Analysis using R (Hypothesis Testing -II (Non-Parametric))	Dr R. D. Chaudhari, Associate Professor, M G Science Institute
Reproducible Research using Rstudio (knit and markdown packages, bookdown packages and blogs, website)	Dr R. D. Chaudhari, Associate Professor, M G Science Institute

**Table 40: Details of Lectures delivered by Experts**

Mr Vijay Shrimali, STA (CS) and Ms Mitisha Vaidya, Project Officer (CS) were resource persons in practical sessions of the training programme. The certificates of participation were distributed at the end of the programme. 34 participants including IT professionals, LIS professionals and research scholars attended the programme.

#### **5.4. Three-Day National Workshop on Metadata Standards: Retrospective Conversion, Preservation and Migration, INFLIBNET Centre, Gandhinagar, 6<sup>th</sup>-8<sup>th</sup> June 2018**

Three-Day National Workshop on Metadata Standards: Retrospective Conversion, Preservation and Migration were organized by the INFLIBNET Centre, Gandhinagar from 6<sup>th</sup> to 8<sup>th</sup> June 2018. Mrs Vaishali Shah, Scientist-B (LS) and Dr Miteshkumar Pandya, Scientist B (LS), INFLIBNET Centre coordinated the Workshop. Dr G.K. Manjunath, Director of Libraries, Ahmedabad University was invited as a Chief Guest. He thanked Director, INFLIBNET Centre for inviting him for inaugurating the workshop. He shared his technical experience in data conversion especially CCF to MARC21 with participants. Mr Manoj Kumar K, Scientist – D (CS) presided over the function. Mrs Vaishali Shah gave brief details of the workshop and talked about the importance of standards in the library. 9 participants attended the workshop. Dr Mitesh Kumar Pandya extended a warm vote of thanks to authorities. The National Workshop covered theoretical and practical sessions on Metadata Standards. Details of lectures delivered by INFLIBNET Centre’s Scientists during the training programme are as follows in Table 41:

Topics	Name of the Experts
INFLIBNET Activities and Services	Mr Ashok Kumar Rai, Scientist – D (CS)
Importance of Metadata and Overview of Metadata Standards	Mr Dinesh Pradhan, Scientist - B (LS)
Understanding MARC21, MARCXML and Dublin Core	Mrs Vaishali Shah, Scientist – B (LS)
Hands-On Demonstration: Copy Cataloguing and XL2MARCXML Utility Developed by the INFLIBNET Centre	Mr Vijay Kumar Shrimali, STA-I (CS)
Retrospective Conversion: Introduction, Need, Scope, Planning, Method & Steps: Hands-on Practice	Mrs Vaishali Shah, Scientist – B (LS)
Insights for Converting Multilingual Bibliographic Data	Mr Yatrik Patel, Scientist - D (CS)
Retrospective Conversion of Metadata (Books and Journal Articles) using ISISMARC	Dr Miteshkumar Pandya, Scientist – B (LS)
Data Migration using MARCEdit	Smt. Vaishali Shah, Scientist – B (LS)
Understanding Metadata Harvesting & Preservation	Dr Miteshkumar Pandya, Scientist - B (LS)

**Table 41: Details of Lectures delivered by Experts**

#### 5.5. Three-Day National Workshop on Federated Identity and Access Management (INFED), INFLIBNET Centre, Gandhinagar, 13<sup>th</sup> - 15<sup>th</sup> June 2018

Three-Day National Workshop on Federated Identity and Access Management (INFED) was organized at the INFLIBNET Centre, Gandhinagar from 13<sup>th</sup> to 15<sup>th</sup> June 2018. Mr Ashok Kumar Rai, Scientist D (CS), Mr Yatrik Patel, Scientist D (CS) and Mr Raja V, Scientist B (CS) coordinated the Workshop. Mr Yatrik Patel, Scientist D (CS) welcomed the participants and gave an overview of the programme. Mr Manoj Kumar K, Scientist D (CS), INFLIBNET Centre, inaugurated the Workshop. Mr. Raja V. extended a warm vote of thanks at the end of the inaugural session. 9 participants from various part of India attended the programme. Details of lectures delivered by INFLIBNET Centre’s technical staff during the training programme are as follows in Table 42:

Topics	Name of the Experts
eShodhSindhu and INFISStats- Overview	Mr Dinesh Pradhan, Scientist B(LS)
Internet Security	Mr Gaurav Prakash, Scientist B(CS)
Introduction to INFED	Mr Ashok Kumar Rai, Scientist D (CS)
Virtualization and Linux: basic commands	Mr Hitesh Solanki, Scientist B (CS)
SSL Overview	Ms. Vaishali Prajapati, Project Assistant

Shibboleth IdP Installation and configuration, LDAP Installation, LDAP Account Manager Configuration and INFEDStats Features	Mr Raja V, Scientist B (CS)
LDAP User Management via LAM	Mr. Siva Shankar K, Scientist B (LS)
IdP Backup and Restore	Mr Swapnil Patel, Scientist B (CS)

**Table 42: Details of Lectures delivered by Experts**

#### 5.6. Three-day Training Programme on E-resources Management, INFLIBNET Centre, Gandhinagar, 20<sup>th</sup> to 22<sup>nd</sup> June 2018

Three-day Training Programme on E-resources Management was organized at INFLIBNET Centre, Gandhinagar from 20<sup>th</sup> to 22<sup>nd</sup> June 2018. Mr Ashok Kumar Rai, Scientist D (CS) and Mr Dinesh Ranjan Pradhan, Scientist – B (LS) coordinated the Workshop. Mr Ashok Kumar Rai, Scientist D (CS) welcomed the participants and gave an overview of the programme. Mr Manoj Kumar K, Scientist D (CS), INFLIBNET Centre, inaugurated the Workshop. Mr Dinesh Ranjan Pradhan extended a warm vote of thanks at the end of the inaugural session. 25 participants from various part of India attended the programme. Details of lectures delivered by experts during the training programme were as follows in Table 43:

Topics	Experts
Electronic Resources Management: Life Cycle, Licensing, Negotiation and more...	Dr T S Kumbar, Librarian, IIT Gandhinagar
Overview ERM Software with Special Reference to CORAL	Mr Pallab Pradhan, Scientist B(LS), INFLIBNET Centre
Access Management of e-Resources (off-campus & on-campus)	Mr Yatrik Patel, Scientist D (CS), INFLIBNET Centre
CORAL ERM Installation, Organization & Management Module	Mr Hitesh Solanki, Scientist B(CS), INFLIBNET Centre
Discovery Services for e-resources	Dr G K Upadhyaya, EBSCO Information Services
CORAL: Resources Module	Dr Miteshkumar Pandya, Scientist B(LS), INFLIBNET Centre
Understanding License Agreements for the subscription of e-Resources & Negotiation Skills	Mr Ashok Kumar Rai, Scientist D(CS), INFLIBNET Centre
CORAL: Licensing Module	Dr. Kruti J Trivedi, Scientist B(LS), INFLIBNET Centre
Economics of e-resources & Evaluation	Dr. Kruti J Trivedi, Scientist B(LS), INFLIBNET Centre

**Table 43: Details of Lectures delivered by Experts**

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### 5.7. Three-day Training Programme on Bibliometric Analysis using R, INFLIBNET Centre, Gandhinagar, 04<sup>th</sup> - 06<sup>th</sup> July 2018

Three-day Training Programme on Bibliometric Analysis using R was organized from 04<sup>th</sup> July to 06<sup>th</sup> July 2018 at INFLIBNET Centre, Gandhinagar. Dr Kruti Trivedi, Scientist B (LS), Mr Hitesh Solanki, Scientist B (CS) and Mr H G Hosamani, Scientist C (LS) coordinated the programme. Dr Jagdish Arora, Director, INFLIBNET Centre, Gandhinagar inaugurated the programme. The aim of this training programme was to give an overview of bibliometric methods, bibliometric data sources, data processing and performance indicators related to bibliometric analysis and mapping to the participants. Special emphasis was given to perform bibliometric analysis and building data metrics for co-citation, bibliographic coupling, scientific collaboration analysis and co-word analysis using R Language.

Mrs Deepti Pandey, Project Officer (LS), Ms Anita Kushwaha, Project Associate (LS), Mr Sudam Sahoo, Project Associate (LS), Ms Shivani Thakur, Project Assistant (LS) and Ms Vichitra Adidraida, Project Assistant (LS) were resource persons in practical sessions of the training programme. The certificates of participation were distributed at the end of the programme. 10 participants including LIS professionals, scientists and research scholars attended the programme. Details of lectures delivered by INFLIBNET Centre's Scientists during the training programme were as follows in Table 44:

Topics	Name of the Experts
Research Performance Metrics: Calculation & Context	Dr Kruti Trivedi, Scientist B (LS)
Advanced Search Techniques of WoS	Dr Kruti Trivedi, Scientist B (LS)
Advanced Search Techniques of Scopus	Dr Kruti Trivedi, Scientist B (LS)
RStudio: Installation and Operations	Mr Hitesh Solanki, Scientist B (CS)
Bibliometrics: Descriptive Analysis using R	Mr Hitesh Solanki, Scientist B (CS)
Bibliometrics: Network Analysis using R	Mr Hitesh Solanki, Scientist B (CS)
Altmetrics using R	Mr Hitesh Solanki, Scientist B (CS)
Indian Research Information Network System	Mr K. Siva Shankar, Scientist B (LS)

Table 44: Details of Lectures delivered by Experts

### 5.8. Three-day National Workshop on Research Impact Evaluation and Altmetrics, INFLIBNET Centre, Gandhinagar, 18<sup>th</sup>-20<sup>th</sup> July 2018

Three-day National Workshop on Research Impact Evaluation and Altmetrics was organized at INFLIBNET Centre, Gandhinagar from 18<sup>th</sup> to 20<sup>th</sup> July 2018. Mr Pallab Pradhan, Scientist-B (LS) coordinated the Workshop. He welcomed the participants and highlighted regarding the Workshop. Two participants attended the programme. Details of lectures delivered by experts during the Workshop were as follows in Table 45:

Topics	Name of the Expert
INFLIBNET Activities and Services	Mr Manoj Kumar, Scientist D (CS)
Bibliometrics/Scientometrics Indicators for Assessing Research Altmetrics: An Overview	Ms Kruti Trivedi, Scientist B (LS)
Research Impact Evaluation: Different Aspects	Mr Pallab Pradhan, Scientist B (LS)
Altmetrics: An Overview	Mr Pallab Pradhan, Scientist B (LS)
R Basics + rAltmetric: Installation	Ms. Mitisha Vaidya, Project Officer (CS)
Researcher Tools: Altmetric Explorer for Institutions, Altmetric Bookmarklet & Badges	Mr Pallab Pradhan, Scientist B (LS)
Altmetric Explorer for Institutions	Mr Pallab Pradhan, Scientist B (LS)
Webometric Analyst 2.0: Installation and Practice	Mr Pallab Pradhan, Scientist B (LS)
Webometric Analyst 2.0: Retrieval of Altmetrics Data from Altmetric.com	Mr Pallab Pradhan, Scientist B (LS)
Webometric Analyst 2.0: Creating Twitter Conversation Networks	Mr Pallab Pradhan, Scientist B (LS)
Retrieval of Mendeley Readership Statistics from Mendeley	Mr Pallab Pradhan, Scientist B (LS)
Anti-Plagiarism & Urkund Software	Mr Manoj Kumar, Scientist D (CS)

**Table 45: Details of Lectures delivered by Experts**

**5.9. One-week National Workshop on Creation and Management of IR using DSpace Open Source Software and Library Automation Using SOUL 2.0, B.B.K.KRC, Shivaji University, Kolhapur, 24<sup>th</sup> - 29<sup>th</sup> July 2018**

Commemorating the 55 Foundation Day Celebrations of DLISc and Barr. Balasaheb Khardekar Knowledge Resource Center at Shivaji University, Kolhapur, "One-week National Workshop and Training Course on "Creation and Management of IR using DSpace Open Source Software and Library Automation Using SOUL 2.0" was organized in collaboration with INFLIBNET Centre, Gandhinagar, Gujarat during 24<sup>th</sup> to 29<sup>th</sup> July 2018 at Shivaji University, Kolhapur. Hon'ble Pro-Vice-Chancellor Prof. (Dr.) D.T. Shirke inaugurated the workshop, during the presidential address he emphasized on the use of latest IT techniques which help in providing better and enhanced services to the library users. He elaborated the importance of the use ICT, consortium-based resource sharing, networking libraries, institutional repositories, digital library developments etc., Dr Suresh Jange, Deputy Librarian, University of Gulbarga and Sh H G Hosamani, Scientist-C (LS), INFLIBNET Centre were present in the inauguration ceremony. Dr S R Lihitkar, HOD, Professor of DLISc, Shivaji University gave introductory remarks and briefed the objectives of the workshop.

Dr Suresh Jange, Deputy Librarian, University of Gulbarga took the first technical session and delivered a talk about 'Institutional Repositories in India'. Mr H G Hosamani, Scientist-C (LS), briefed in his presentation about the INFLIBNET activities and services. Mr Swapnil Patel, Scientist-B (CS) and Mr Vijaykumar Shrimali, STA-I (CS) from INFLIBNET Centre handled all 20 technical sessions and they conducted "hands-on" technical sessions for 39 participants covering major topics involved in DSPACE and SOUL software.

#### **5.10. Three-day National Workshop on Creating and Managing Digital Libraries using EPrints, INFLIBNET Centre, Gandhinagar, 08<sup>th</sup>-10<sup>th</sup> August 2018**

Three-day National Workshop on Creating and Managing Digital Libraries using EPrints was organized at INFLIBNET Centre, Gandhinagar from 8<sup>th</sup> to 10<sup>th</sup> August 2018. Mrs Vaishali Shah, Scientist-B (LS) and Mr K Siva Shankar, Scientist-B (LS), INFLIBNET Centre coordinated the Workshop. Dr Jagdish Arora, Director, INFLIBNET Centre inaugurated the Workshop. During the inthe augural Session, Mrs. Vaishali Shah briefed about the Workshop and about Eprints. Mr K Siva Shankar extended a formal vote of thanks. Ten Participants from Karnataka, Bihar, Maharashtra and Madhya Pradesh attended the programme including six students from Sarojini Naidu Government Girls PG College, Bhopal. The National workshop covered theoretical and practical sessions on EPrints. Ms Vaishali Prajapati and Mr Vijay Shrimali were resource persons during practical sessions. Details of the lecture delivered by experts during the Workshop were as follows in Table 46:

<b>Topics</b>	<b>Name of the Experts</b>
INFLIBNET Activities and Services	Sh Manoj Kumar K, Scientist-D (CS)
Institutional Repositories a Primer	Sh Yatrik Patel, Scientist-D (CS)
Metadata Standards and Institutional Repositories	Smt Vaishali Shah, Scientist-B (LS)
Introduction to Linux and Understanding File System Layout, Creation of User and Group, and Basic Commands	Sh Vijaykumar M. Shrimali, STA – I (CS)
Understanding EPrints (Features, Statistics, Bazaar, Altmetrics etc.)	Sh K Siva Shankar, Scientist-B (LS)

**Table 46: Details of Lectures delivered by Experts**

#### **5.11. Three-day National Workshop on Creating and Managing Digital Libraries using EPrints, Department of Library, Vellalar College for Women(Autonomous), Erode, Tamil Nadu, 6<sup>th</sup> - 8<sup>th</sup> September 2018**

Three-day National workshop on "Creating and Managing Digital Libraries using EPrints" was organized by the Department of Library, Vellalar College for Women, Erode in collaboration with INFLIBNET Centre, Gandhinagar, Gujarat from 6<sup>th</sup> to 8<sup>th</sup> September 2018. 40 participants participated in the Workshop from various institutions. Dr N Maragatham, Principal, Vellalar College for Women

delivered the welcome address. Dr R Sarangapani, University Librarian, Arignar Anna Central Library, Bharathiar University, Coimbatore delivered the inaugural address. In his address, he stated that the Workshop will serve as a platform for the library professionals to get exposed to the new ideas and share their knowledge, experience and perspectives. Mr V Raja, Scientist-B (LS), INFLIBNET Centre, Gandhinagar, made a presentation on the theme of the Workshop. Ms Sivamani, the Librarian and the Organizing Secretary, Vellalar College for Women, thanked the participants and invitees. Dr R. Sarangapani, University Librarian, Arignar Anna Central Library, Bharathiar University, Coimbatore elaborated on the role of plagiarism in higher education and Dr N. Subramanian, University Librarian, Periyar University, Salem spoke about the role of INFLIBNET Centre for digital library initiatives. He also elaborated on e-ShodhSindhu and e-resources made accessible to Universities and Colleges through e-ShodhSindhu.

Mr V. Raja, Scientist-B (CS), INFLIBNET Centre and Coordinator of the National Workshop described the importance and role of institutional repositories in his presentation entitled 'Institutional Repositories: A Primer'. He explained about open source software EPrints and its features comprising of various plugin tools via Usage Statistics, EPrints Bazaar, Altmetrics, etc. He also imparted "hands-on" training session of IR using EPrints and its Installation, Administration, Submission of records in the repository and Advanced Configuration. Mr B. Karthick, IISc, Bengaluru, illustrated the steps involved in taking and maintaining the database backup and how to recoup the Institutional Repository from the backup.

#### **5.12. Two-day National Workshop on Organising Research with Reference Management Tools, INFLIBNET Centre, Gandhinagar, 04<sup>th</sup>-05<sup>th</sup> October 2018**

Two-day National Workshop on Organising Research with Reference Management Tools was organized at INFLIBNET Centre, Gandhinagar from 04<sup>th</sup> to 05<sup>th</sup> October 2018. Mr Pallab Pradhan, Scientist B (LS) coordinated the Workshop. Dr Arora, Director, INFLIBNET Centre inaugurated the Workshop. Mr Pallab Pradhan briefed about the importance of different types of Reference Management Tools used in organizing the research. 04 participants attended the programme. Details of lectures delivered by Scientists of the INFLIBNET Centre during the training programme were as follows in Table 47:

<b>Topics</b>	<b>Name of the Expert</b>
INFLIBNET Activities and Services	Mr Abhishek Kumar, Scientist C (CS)
Research Ethics, Referencing and Plagiarism (Demo on Use of URKUND Anti-Plagiarism s/w)	Mr Manoj Kumar K, Scientist D (CS)
Reference Management Tools	Mr. Pallab Pradhan, Scientist B (LS)
Zotero: Theory & Practical Sessions	Mr Pallab Pradhan, Scientist B (LS)
Mendeley: Theory & Practical Sessions	Mr Pallab Pradhan, Scientist B (LS)
EndNote: Theory & Practical Sessions	Mr Pallab Pradhan, Scientist B (LS)

**Table 47: Details of Lectures delivered by Experts**



**5.13. One-day UGC Orientation Workshop on “Adoption, Promotion & Production of MOOCs courses for SWAYAM Platform”, Gujarat Forensic Science University, Gandhinagar, 12<sup>th</sup> October, 2018**

One-day UGC orientation Workshop on Adoption, Promotion & Production of MOOCs courses for Swayam Platform was organised at Gujarat Forensic Science University, Gandhinagar on 12<sup>th</sup> October, 2018. Dr. J.M Vyas, Director General, Gujarat Forensic Science University, Gandhinagar delivered welcome address. Prof. Rajnish Jain, Secretary, University Grants Commission, New Delhi inaugurated the Workshop. Dr. (Mrs) Pankaj Mittal, Additional Secretary, UGC delivered a presentation on Adoption of MOOCs courses by Universities for SWAYAM Platform. Mr. Parameswaran N, Advisor, MHRD, New Delhi delivered a presentation on Promotion of MOOCs courses by Universities/colleges for SWAYAM Platform. Dr. Jagdish Arora, Director & Mr. Abhishek Kumar, Scientist-C (CS), INFLIBNET Centre, Gandhinagar delivered presentation on Production of MOOCs courses by Universities/Colleges for SWAYAM Platform. The sessions were highly interactive with many questions and answers among participants and experts. Dr. Gopu Kumar, Joint Secretary, Western Regional Office (WRO), UGC extended vote of thanks at the end of Workshop.

**5.14. Three-day National Workshop on Federated Identity and Access Management (INFED), INFLIBNET Centre, Gandhinagar, 15<sup>th</sup>-17<sup>th</sup> October 2018**

Three-day National Workshop on Federated Identity and Access Management (INFED) was organized at INFLIBNET Centre, Gandhinagar from 15<sup>th</sup> to 17<sup>th</sup> October 2018. Mr Raja V, Scientist B (CS) coordinated the Workshop. Dr Jagdish Arora, Director INFLIBNET Centre inaugurated the Workshop. Mr Raja briefed about the Workshop. 13 participants attended the programme. Details of lectures delivered by Scientists of the INFLIBNET Centre during the training programme were as follows in Table 48:

<b>Topics</b>	<b>Name of the Expert</b>
INFLIBNET Activities and Services	Mr Manoj Kumar K, Scientist D (CS)
eShodhSindhu and INFISTATS - Overview	Mr Dinesh Ranjan Pradhan Scientist B (LS)
Internet Security	Mr Gaurav Prakash, Scientist B (CS)
Introduction to INFED	Mr Raja V, Scientist B (CS)
Virtualization and Linux most used basic commands (Hands-On)	Mr Hitesh Solanki, Scientist B (CS)
Shibboleth IdP Installation and configuration (Hands-On)	Mr Raja V, Scientist B (CS) & Ms Vaishali P, Project Associate (CS)
LDAP User Management via LAM (Hands-On)	Mr Siva Shankar K, Scientist B (LS)
IRINS-Overview	Mr Siva Shankar K, Scientist B (LS)
User Guide and INFEDStats Features (Monitoring user activities)	Mr Raja V, Scientist B (CS)
Backup and Restore	Mr Swapnil Patel, Scientist B (CS)

**Table 48: Details of Lectures delivered by Experts**

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**5.15. Five-day Workshop on Creation and Management of Digital Collections (IR) Using Open Source Software, Indian Institute of Advance Studies (IIAS), Shimla, 15<sup>th</sup>- 19<sup>th</sup> October 2018**

Five-day Workshop on Creation and Management of Digital Collections (IR) Using Open Source Software was organised by Indian Institute of Advance Study (IIAS), Shimla in collaboration with INFLIBNET Centre, Gandhinagar at Indian Institute of Advance Study, Shimla from 15<sup>th</sup> to 19<sup>th</sup> October 2018. Mr Premchand, Librarian and Secretary, IIAS coordinated the programme and welcomed the guests and participants. Prof. Chaman Lal Gupta, Chief Guest and Vice Chairman, Governing Body, IIAS, Shimla inaugurated the Workshop. In his inaugural address, he highlighted the importance of the library in academic institutions. He shared his experiences and emphasized the role of libraries in the digital era. Prof I V Malhan, Dean and HOD, School of Mathematics, Computer & Information Sciences, Central University of Himachal Pradesh delivered the keynote speech. He addressed key issues and importance of digitization besides major digitization project in India and abroad. Mrs Neeraj Sharma, Assistant Librarian, IIAS extended vote of thanks.

In the technical sessions, Prof I V Malhan delivered a lecture on 'Digital Library Initiatives in India and Abroad'. He discussed details about the major digital library projects including Guttenberg project and Google books. Prof P K Ahluwalia, Former Professor, Department of Physics, University of Himachal Pradesh spoke on 'Library as a Window for Massive Open Online Courses (MOOCs)'. Dr P. Visakhi, Librarian, IISER Mohali delivered a lecture on 'Introduction to Koha Open source software: A case study of IISER Mohali'. Dr Rakesh Mani Sharma, Assistant Chief Technical Officer & In-charge (Library & Documentation), CPRI, Shimla delivered a lecture on 'User Study in Digital Environment'.

Mr Yatrik Patel, Scientist D (CS), INFLIBNET Centre, Gandhinagar demonstrated about DSpace Software. Dr. Rupak Chakravarty, Associate Professor, Department of Library and Information Science, Panjab University delivered a lecture on 'Open Source Softwares'. Dr Jatinder Kumar, Librarian, Lovely Professional University, Jalandhar, Punjab demonstrated about 'Koha – ILS'. Mr Vijay Shrimali, STA (CS) from INFLIBNET Centre was the resource person taking care of all the practical sessions. 40 participants from Delhi, Uttar Pradesh, Chandigarh, Jammu and Kashmir, and Himachal Pradesh attended and participated in the Workshop.

**5.16. Five-Day Advanced Training Programme on Bibliometric and Research Output Analysis, INFLIBNET Centre, Gandhinagar, 3<sup>rd</sup>-7<sup>th</sup> December 2018**

Five-day Advanced Training Programme on Bibliometric and Research Output Analysis was organised at INFLIBNET Centre, Gandhinagar from 3<sup>rd</sup> to 7<sup>th</sup> December 2018. Dr Kruti Trivedi Scientist B (LS) and Mr Hitesh Solanki, Scientist B (CS) coordinated the programme. Mr Manoj Kumar K, Scientist D (CS) inaugurated the programme. The aim of the training programme was to give an overview of Bibliometric methods, Bibliometric data sources, data processing and performance indicators related to Bibliometric analysis and mapping. Also, the R language was introduced for the analysis of various

Bibliometric indicators. Details of lectures delivered by Scientists of the INFLIBNET Centre and experts during the training programme were as follows in Table 49:

<b>Topics</b>	<b>Name of Expert and Institution</b>
INFLIBNET Activities and Service	Mr. Manoj Kumar K., Scientist D (CS)
Research Impact Metrics: Calculation & Context	Dr Kruti Trivedi, Scientist B (LS)
Graph Theory: Fundamentals	Mr Hitesh Kumar, Scientist B (CS)
Tool and Techniques Part I (BibExcel) (Demonstration & Practical )	Mr Hitesh Kumar, Scientist B (CS)
Advanced Search Technique of Web of Science (Demonstration & Practical )	Dr Kruti Trivedi, Scientist B (LS)
Scopus & SciVal	Ms Shikha Gupta, SCOPUS
Advanced Search Techniques of Scopus (Demonstration & Practical )	Dr Kruti Trivedi, Scientist B (LS)
Web of Science & InCites	Mr Vishav Sharma, Scientific and Academic Research, Clarivate Analytics
Co-authorship Analysis using BibExcel (Demonstration & Practical )	Mr Hitesh Kumar, Scientist B (CS)
Co-Citation Analysis using BibExcel (Demonstration & Practical )	Mr Hitesh Kumar, Scientist- B (CS)
Bibliographic Coupling and H Index using BibExcel	Mr Hitesh Kumar, Scientist- B (CS)
Advanced Network and Cluster Analysis using BibExcel	Mr Hitesh Kumar, Scientist -B (CS)
Network Analysis in BibExcel using Alternative Data Sources (Demonstration & Practical )	Dr Kruti Trivedi, Scientist B (LS)
Advanced Citation Analysis and Visualization using VOS Viewer (Demonstration & Practical)	Dr Kruti Trivedi, Scientist B (LS)
Bibliometrics: Descriptive Analysis using R (Demonstration & Practical )	Mr Hitesh Kumar, Scientist -B (CS)
Network Analysis and Visualization using R (Demonstration & Practical )	Mr Hitesh Kumar, Scientist -B (CS)
Altmetrics	Mr Pallab Pradhan, Scientist B (LS)
Academic Identity with reference to Orchid ID and IRINS	Mr Siva Shankar K, Scientist B (LS)

**Table 49: Details of Lectures delivered by Experts**

Ms Shivani Thakur, Ms Vichitra Venkatesan, Ms Anita Kushwaha and Mr. Sudam Sahu, Project Associates (LS), Mr Divyanshu Jain and Ms Siddhita Parouha, Project Assistants (LS) were resource

persons in the practical sessions. 19 participants, including Dean, Scientist, IT professionals, LIS professionals and research scholars attended the programme. The Certificates of Participation were distributed to the participants at the end of the programme. Dr H. G. Hosamani, Scientist C (LS) extended vote of thanks.

#### 5.17. Three-day Advanced Training Programme on Shodhganga, INFLIBNET Centre, Gandhinagar, 26<sup>th</sup>-28<sup>th</sup> December 2018

Three-day Advanced Training Programme on Shodhganga was organised at INFLIBNET Centre, Gandhinagar from 26<sup>th</sup> to 28<sup>th</sup> December 2018. Mr Manoj Kumar K, Scientist D (CS) and Ms SuboohiSiddhiqui, STO (LS) coordinated the training programme. Mr Manoj Kumar welcomed guests and participants. Prof.Jagdish S. Joshi, Professor & Director, UGC-Human Resource Development Centre (UGC-ASC), Gujarat University, Ahmedabad inaugurated the training programme by lighting the traditional lamp. In his Inaugural address, he spoke about the importance of research and Electronic Thesis and Dissertations (ETDs) with a focus on Shodhganga and use of anti-plagiarism tools. Ms Suboohi S., STO (LS) gave an overview of the programme. Dr H G Hosamani extended vote of thanks at the end of the inaugural session. 39 participants including LIS professionals and University coordinators from different Universities attended the programme. Details of lectures delivered by Scientists of the INFLIBNET Centre and experts during the training programme were as follows in Table 50:

Topics	Name of the Experts
Introduction to Shodhganga/ Shodhgangotri	Mr Manoj Kumar K., Scientist D (CS),
ETD Programs/Projects at National/ International Level: an Overview	Dr.LalithaPoluru, I/C Head, KMC, NID, Gandhinagar
Introduction to DSpace and Building IR/Back up/Archive	Mr Swapnil Patel, Scientist B (CS)
Anti-Plagiarism Tools and Services and Hands-on for Using Anti Plagiarism Software URKUND	Mr Manoj Kumar K., Scientist D (CS)
Roles and Privileges of University Coordinators in Shodhganga	Mrs SuboohiSiddhiqui, STO (LS)
Standards and Formats for Digitization	Mr Manoj Kumar K., Scientist D (CS)
Introduction to Library Standards, Metadata and Dublin Core	Mrs Vaishali Shah, Scientist B(LS)
Hands-on Session on Shodhganga	Ms RajeshriMakwana and Mr.KuldeepMatedia, Project Officers (LS)

**Table 50: Details of Lectures delivered by Experts**

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### **5.18. Five-Day National Workshop on Creation and Management of Digital Libraries Using Open Source Software, Panjab University, Chandigarh, 07<sup>th</sup> -11<sup>th</sup> January, 2019**

Five-day National Workshop on Creation and Management of Digital Libraries Using Open Source Software was organised by Panjab University, Chandigarh in collaboration with INFLIBNET Centre, Gandhinagar at A.C. Joshi Library, Panjab University, Chandigarh from 7<sup>th</sup> to 11<sup>th</sup> January 2019. Prof. Raj Kumar, Vice-Chancellor inaugurated the Workshop. He said creation and management of digital library are important keeping in mind the shifts to the virtual world. He said that there was abundant data material available with the library and for maximum utilization of services by all stakeholders, the efforts for digitization have been initiated by the Panjab University library and would soon extend to the other parts of the university. Dr Mritunjay Kumar, Assistant Archivist and the Organizing Secretary of the Workshop introduced and welcomed the guests on the dais as well as other participants and invitees for the inaugural session. Dr Rashmi Yadav, University Librarian welcomed all delegates and guests. She briefed about the Workshop. Prof. Shankarji Jha, Dean of University Instructions said that in the age of information and technology digitization plays a great role in learning. He suggested the participants be disciplined and how discipline can be obtained that is through self-control. Prof Sanjay Kaushik, Dean of College Development Council & Director of ICSSR said that open source technology and open source thinking benefit both programmers and non-programmers. He also spoke in detail about Cloud Computing that has become an important day with the expansion of internet connected devices. Prof. Preeti Mahajan was the Keynote Speaker. She talked on the shift of traditional library to digital library keeping in mind that the digital library provided 24X7 information, user-friendly interface, multimedia resources, advanced search operations, solve reservation policy and unlimited storage space. She elaborated why, who, what, when and how of the digitization keeping in mind the users, the repository, planning, budgeting, software, timeline and evaluation of usability.

Prior to the technical sessions, Mr. Manish Chhabra, Director, Vikmans Multimedia (India) Pvt. Ltd., New Delhi gave the presentation on 'Use of Scanners and Other Digital Equipment in Archives'. He explained special features of a wide range of scanners along with their applications in different areas. In the technical sessions, Prof. Anu Gupta, Department of Computer Science and Applications delivered a presentation on Open Source Software: An Overview. She defined very systematically its history, licensing, structure, driving factors. Prof. Harish Kumar, University Institute of Engineering and Technology delivered a presentation on 'Information retrieval'. The various facets of information retrieval were discussed along with types of users and their diverse information needs. Mr Swapnil Patel, Scientist B (CS) INFLIBNET Centre delivered presentations on 'Meta Data and Metadata Standards for Interoperability in Information Retrieval and 'DSpace: an overview' and 'DSpace: Workflow & Submissions'. Theoretical lectures were followed by "hands-on" practical sessions on the same modules by the participants. Mr Swapnil Patel, Scientist B (CS) and Vijay Shrimali STA (CS), INFLIBNET Centre was a resource person for practical sessions. Dr Jatinder Kumar Samyal, BUEST, baddi Solan delivered the lecture on Koha: an Overview. He gave information about the Koha Software, its modules and functioning. Dr Parminder Singh, Associate Professor, Department of English, Dev Samaj College for Women, Chandigarh delivered a lecture 'Technology used in

Digitization of Heritage Materials in Punjab and North-West Region: An Overview'. Dr Rupak Chakravarty, DLIS, Panjab University delivered lecture on "When Cloud meets Open Source: Building Institutional Repositories". Dr Naveen Aggarwal, Associate Professor, UIET, PU delivered a lecture on the topic "Digital archiving: DSpace'. About 40 participants attended the Workshop.

In the Valedictory session, Dr Rashmi Yadav, University Librarian and Conference Director thanked all the dignitaries on the dais for their presence. Dr Mritunjay Kumar, Assistant Archivist and the Organizing Secretary introduced the guests on the dais and thanked there for the administrative help and cooperation for the workshop. Prof. Shankarji Jha, Dean, Chief Guest emphasized that recorded human knowledge is key to development which is deposited in the libraries and also, in this digital world library professionals should come up with innovative ideas to disseminate the knowledge to the society. Ms Nirupma Chohda, Assistant Librarian presented overview report of the Workshop and thanked the Resources Persons, dignitaries on the dice, vendors, staff, ICSSR and INFLIBNET Centre for support and cooperation. Prof. Karamjeet Singh, Registrar said that libraries are the lamp for the educational society. In addition, Prof. Rajesh Gill, Dept of Sociology spoke that there is a huge responsibility on libraries to provide authentic information. Dr. Jivesh Bansal, Deputy Librarian extended vote of thanks at the end of the Workshop.

**5.19. Five-day National Workshop on Libraries on Cloud, INFLIBNET Centre, Gandhinagar, 11<sup>th</sup>-16<sup>th</sup> March, 2019**

Five-day National Workshop on Libraries on Cloud was organised at INFLIBNET Centre, Gandhinagar from 11<sup>th</sup> to 16<sup>th</sup> March 2019. Mr Divyakant Vaghela, Scientist B (CS), Dr Miteshkumar Pandya, Scientist B (LS), Mr Raja V, Scientist B (CS) and Mr H G Hosamani, Scientist C (LS), INFLIBNET Centre coordinated the Workshop. The workshop aimed to equip participants in cloud computing technology. Mrs Hema Cholin, STO (LS) welcomed all the dignitaries and participants. Dr Miteshkumar Pandya briefed about the Workshop. Prof J P Singh Joorel, Director inaugurated the Workshop. Mr Divyakant Vaghela extended the vote of thanks at the end of the Workshop. Details of lectures delivered by Scientists of the INFLIBNET Centre during the national workshop were as follows in Table 51:

Topics	Name of the Expert
INFLIBNET Activities and Services	Mr Manoj Kumar K, Scientist D (CS)
Introduction to cloud computing & Public Cloud An overview and AWS Features and Demonstration, Understanding EPrints (Features, Statistics, Bazaar, Altmetrics etc.), Creation of IR using EPrints and Installation, Advanced configuration	Mr Raja V, Scientist B (CS)

Met Registration on Cloud with special reference to Azure, Installation and Configuration of Joomla on Cloud, Modules, Components and Menu Configuration & Creating and Managing User Forum and Online Form and Koha: Acquisition Module	Dr Miteshkumar Pandya, Scientist B (LS)
Virtualization and Linux Basic Commands	Mr Hitesh Solanki, Scientist B (CS)
Overview of KOHA and Administration Module	Mr Vijay Shrimali, STA (CS)
KOHA Installation in Ubuntu on Cloud, Catalogue & Circulation Module	Mr Divyakant Vaghela, Scientist B (CS)
EPrints Administration, Record Submission, Maintenance, Backup and Restore	Mr Siva Shankar, Scientist B (LS)

**Table 51: Details of Lectures delivered by Experts**

Mr Divyakant Vaghela, Scientist B (CS), Dr Miteshkumar Pandya, Scientist B (LS), Mr Raja V, Scientists B (CS), Mr Vijay Shrimali, STA (CS), Mr Gaurav Kumar and Ms Vaishali Prajapati, Project Associates served as resource persons for the Workshop. 09 participants participated in the Workshop Dr H. G. Hosamani, Scientist (LS) chaired the valedictory session and invited participants to share their feedback & views about the workshop content and other arrangements. Participants appreciated the efforts of coordinators for organizing such a content enriched workshop. Certificate of Participation distributed to the participants at the end of the Workshop.

#### **5.20. Five-day National Workshop on Trends in LIS Research: Approaches and Methods, Mizoram University, Aizawl, 11<sup>th</sup> -15<sup>th</sup> March, 2019**

Five-day National Workshop on "Trends in LIS Research: Approaches and Methods" organized by DLIS, Mizoram University in collaboration with INFLIBNET Centre, Gandhinagar, Gujarat and sponsored by Defence Research and Development Organisation (DRDO), New Delhi and ICSSR-NERC, Shillong at Mizoram University, Aizawl from 11<sup>th</sup> to 15<sup>th</sup> March 2019. The workshop started with lighting the lamp in front of the portrait of Dr S. R. Ranganathan, Father of Library Science in India followed by offering of bouquet and memento to the invited guests sitting on the dais. At the outset, Prof. S. N. Singh, Head, DLIS, Mizoram University welcomed the dignitaries and participants. He highlighted the achievement of department and dedication towards conducting such kind of seminar and workshops for the betterment of students and professionals of the field. Prof. Pravakar Rath, Senior Professor, DLIS, Mizoram University, Aizawl pointed out the recent trends in LIS curriculum as well as the impact of research in an online environment. Prof. NVR Jyoti Kumar, Dean, SEMIS, Mizoram University was Guest of Honour. In his brief speech, he pointed out the achievements of the Department on various aspects, highlighted the achievements of BHU Library as well as achievements of Mizoram University. Further, he stressed upon to conduct such kind of workshop for increasing the academic integrity. Prof. H. N. Prasad, Senior 2 Faculty Member of DLIS as well as Librarian of Sayaji

Rao Gaekwad Central Library, BHU, Varanasi was the Guest of Honour. In his brief speech, he pointed out the importance of research in the current scenario. Further, he elaborated the historical account of Library & Information Science since the days of Melvil Dewey to the days of S. R. Ranganathan. He also stressed upon the qualitative and quantitative assessment of LIS research conducted in India in the current changing scenario. Prof. KRS Sambasiva Rao, Vice-Chancellor of Mizoram University, Aizawl and Chief Guest of the function welcomed the guests. In his brief speech, he stressed upon the requirement of the recent trends in LIS and focused upon the digitization of ancient books for better preservation and access to the user community. He stressed upon the use of the latest technologies like a virtual library, gamification, library finds graphs, virtual learning systems, and social media applications in the library sector. Dr Manoj Kumar Verma, Coordinator of the National Workshop extended vote of thanks at the end of the inaugural session. A total number of 44 registered participants comprising of library professionals, faculty members and research scholars from Assam, Manipur, Meghalaya, Tripura, Uttar Pradesh and Mizoram, as well as research scholars of the Department, participated in the workshop. Details of lectures delivered by experts during the national workshop were as follows in Table 52:

<b>Topics</b>	<b>Name of the Expert</b>
Research in Library & Information Science: Trends, Problems and Issues; Research Methodology for Library & Information Science; Information Users', Information Need and Information Seeking Behaviour	Prof H N Prasad, Senior Faculty Member and University Librarian, Banaras Hindu University, Varanasi
Statistical Methods for Research	Prof L S K Sharma, Department of Management, Mizoram University, Aizawl
Academic Integrity and Prevention of 3 Plagiarism	Prof Pravakar Rath, Senior Professor, DLIS, Mizoram University, Aizawl
Framing and Testing of Hypothesis	Prof C Lalfamkima Varte, Department of Psychology, Mizoram University, Aizawl
Application of Library 2.0 in Library Cataloguing	Prof S N Singh, Head, DLIS, Mizoram University, Aizawl
Research Trends in Public Library and Copyright and IPR in Research	Prof R K Ngurtinkhuma, DLIS, Mizoram University, Aizawl
Data Analysis with SPSS	Prof L S K Sharma, Department of Management, Mizoram University, Aizawl
Research Impact Matrices: Calculation and Context and Advanced Search Techniques of Web of Science and Scopus	Dr Kruti J Trivedi, Scientist B(LS), INFLIBNET Centre, Gandhinagar



Network Analysis and Visualizations using R (demonstration-cum-hands on)	Mr Hitesh Solanki, Scientist B(CS), INFLIBNET Centre, Gandhinagar
Webometric Research Trends and Evaluation Methods of Blog Content	Dr Akhandanand Shukla, Assistant Professor, DLIS, Mizoram University, Aizawl
Significance of Information Literacy in LIS Research	Dr F Chanchinmawia, Assistant Librarian, Academy of Integrated Christian Studies, Aizawl

**Table 52: Details of Lectures delivered by Experts**

In the valedictory session, Dr Manoj Kumar Verma, Workshop Coordinator, welcomed and felicitated the guests sitting on the dais by offering the of bouquet and memento. Prof. S. N. Singh, Head, DLIS, Mizoram University welcomed the guests on the dais and of the dais including resource persons, participants, and invited guests. Dr Akhandanand Shukla, Workshop Co-coordinator presented the report of the workshop in detail. Prof. NVR Jyoti Kumar, Dean, School of Economics, Management and Information Science and Invited Guests for the function, in his, speech, highlighted the importance of library and suggested to increase the reading culture within the premises of the library. Prof Vanlalchhawna, Finance Officer, Mizoram University, Aizawl and Chief Guest of the function, in brief, shared his views on reading and suggested to increase the reading habits for the betterment of personal growth in life. Further, he stressed upon to reduce the use of electronic gadgets during reading and research work that may cause a barrier in the concentration of the work; and lastly congratulated to the department and organizers for having such kind of workshop. Prof. R. K. Ngurtinkhuma, in brief, shared his concluding remarks to the audience with positive comments and suggested to develop reading habits and consult the library for getting the new information resources for research work. Dr M K Verma, Workshop Coordinator, extended vote of thank at the end of the session.

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**Part - IV**

**Infrastructure Facilities,  
Distinguished Visitors, Other  
Important Activities  
and  
Financial Status**

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## 1. Central Facilities

### 1.1. Library (<http://www.inflibnet.ac.in/library/>)

The INFLIBNET Centre has a specialized library having a unique collection on library and information science, computer science, communication and information technology. The library is fully computerized using SOUL 2.0 integrated library management software. The library has around 2,000 documents including books, journals and magazines. The collection of the library is available online through the web OPAC at <http://www.inflibnet.ac.in/library/>. Fig. 57 shows a library of the INFLIBNET Centre.



Fig. 57: INFLIBNET Centre's Library

The INFLIBNET Library plays a vital role in the collection development and dissemination of scientific and technical information to meet the present and future needs of the Centre. The Library maintains databases of i) participants who have attended various training programmes at INFLIBNET Centre; ii) Institutions having SOUL installations; and iii) Universities and its contact details including e-mail and website addresses. These databases are accessible through the INFLIBNET Website.

#### 1.1.1. Library Services

The library provides the following services to its users:

- ▶▶ Reference Service
- ▶▶ Document Delivery Service
- ▶▶ Current Awareness Service
- ▶▶ InterLibrary Loan Service
- ▶▶ Electronic Information Service
- ▶▶ Reprographic Service

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### **1.1.2. Access to Online Database**

The Centre subscribes to the web edition of the Ulrich's International Periodical Directory, a web-based bibliographic database of periodicals that are being used for authentication of bibliographic records in union catalogues and for other activities. The database accessible on INFLIBNET's IPs is also accessible to visiting users. Besides, the Centre, as executing and monitoring agency for e-ShodhSindhu has access to all e-journals, e-books and bibliographic database subscribed under this programme.

### **1.2. IR @ INFLIBNET (<http://ir.inflibnet.ac.in>)**

The Centre has established an institutional repository called IR@INFLIBNET using DSpace, open-source software accessible at <http://ir.inflibnet.ac.in>. The papers published in the proceedings of the CALIBER and PLANNER are uploaded into the repository. The repository also includes course materials, newspaper clippings, etc. The repository has 1,810 full-text articles.

### **1.3. Institutional Members**

The Centre has institutional membership of following national and international organizations:

- ▶▶ American Library Association (ALA)
- ▶▶ National Information Standards Organization (NISO)
- ▶▶ Indian Library Association (ILA)
- ▶▶ Indian Association of Special Libraries and Information Centres (IASLIC)
- ▶▶ ADINET (Ahmedabad Library Network)
- ▶▶ British Library, Ahmedabad

## **2. ICT Infrastructure@INFLIBNET Centre**

The main objective of the Centre is to provide proactive help to the universities in library automation and to mediate resource sharing amongst them. The computing and network infrastructure are the main assets of the Centre, which is designed and planned based on the requirements of schemes, projects and activities of the Centre, its scientists and staff. Basic infrastructural facilities such as Computer Laboratories, Walk-in User's Facility and Data Centre are being maintained to support all its essential computing activities.

### **2.1. Servers, Desktops and Laptops**

The Centre has added more PCs, Laptops, gadgets and other equipment with high configuration in 2018-2019 with total no. of 199 PCs, 47 laptops and 26 servers for scientists, project staff, walk-in User's Facility, Training Laboratories, etc. 26 servers include servers that are installed at the Data Centre of INFLIBNET Centre either as staging servers for hosting services such as Web services,

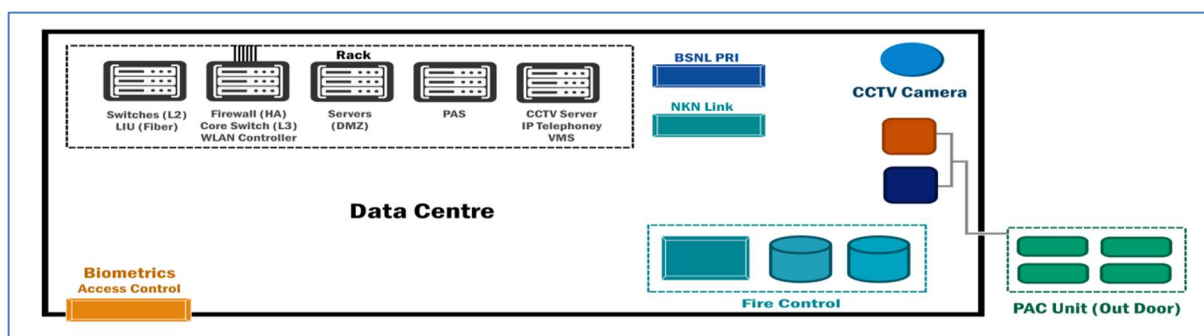
INFLIBNET Website, Shodhganga, OJAS, N-LIST, N-LIST Proxy Server, InfoPort, e-PG Pathshala, IndCat, DNS server, Intranet server, UGC website, e-SARTS, etc or as development servers as well as servers that are co-hosted at BSNL Data Centre for mirroring mission-critical services.

The IT infrastructure at INFLIBNET is being upgraded to cope-up with the cutting edge technology as well as to meet the requirements of high-ended, storage-intensive and mission-critical computing. During the year under report, the Centre acquired the following addition computing and network infrastructure:

Sl. No	Computer and Network Equipment	Quantity
1	Server with in-built Storage	2
2	Desktop	9
3	Laptops	10

**Table 53: Computing and Network Infrastructure Acquired During 2018 - 2019**

Fig. 58 depicts the thematical representation of Data Centre at the INFLIBNET Centre, Gandhinagar.



**Fig. 58: Thematical Representation of Data Centre at INFLIBNET Centre**

The Centre also uses services of BAADAL Cloud maintained by IIT Delhi as an NMEICT initiative of the MHRD. Table 55 is a screenshot showing replication of schemes, projects and services of INFLIBNET Centre on Virtual Machines (VMs) of BAADAL.

Name of Website / Portal	Owner	Private IP	Public IP	RAM	cCPUs
e-Acharya-Mobile	INFLIBNET	172.16.111.13	14.139.13.25	64 GB	32 CPU
inflibnet_master	INFLIBNET	172.16.111.11	14.139.13.12	64 GB	16 CPU
inflibnet-window	INFLIBNET	172.16.111.14	14.139.13.26	16 GB	16 CPU
e-Acharya_test_server	INFLIBNET	172.16.111.12	14.139.13.13	64 GB	16 CPU
e-Acharya-Mobile-DB	INFLIBNET	172.16.111.20	NA	64 GB	32 CPU
E-Acharya-Mobile-App	INFLIBNET	172.16.111.19	NA	64 GB	16 CPU
e-Acharya-Mobile-Application	INFLIBNET	172.16.111.18	14.139.13.46	32 GB	16 CPU

INFLIBNET_APPLICATIONS	INFLIBNET	172.16.111.17	14.139.13.45	16 GB	8 CPU
SWAYAM-PRABHA	INFLIBNET	172.16.111.22	14.139.13.48	64 GB	16 CPU
IndCat-win	INFLIBNET	172.16.111.15	NA	16 GB	16 CPU
IndCat-lin	INFLIBNET	172.16.111.28	14.139.13.82	16 GB	16 CPU
inflibnetTest	INFLIBNET	172.16.111.25	14.139.13.79	64 GB	16 CPU
eGPPathshala_Portal	INFLIBNET	172.16.111.39	14.139.13.93	16 GB	16 CPU
Smanindia	INFLIBNET	172.16.111.34	14.139.13.88	16 GB	16 CPU
Ekbharath	INFLIBNET	172.16.111.43	14.139.13.117	16 GB	16 CPU

**Table 54: Schemes, Projects and Services of INFLIBNET on Virtual Machines (VMs) of BAADAL**

## 2.2. Campus-LAN and Internet Connectivity

The Centre provides most of its services through the Internet on 24\*7\*365 basis. The network infrastructure is one of the most important components providing efficient and effective services to remote and local academic users. The Centre has upgraded network infrastructure that connects all its offices and laboratories with National Knowledge Network (NKN) that provides 1 Gbps MPLS (Multi-Protocol Layer Switching) connectivity to all universities in India. The bandwidth is currently used within a limit of 100-150 Mbps, but it can be increased on-demand based on bandwidth-intensive applications up to 1 Gbps. INFLIBNET Centre is having two Internet connections, i.e. one from NKN and other from BSNL for redundancy. Access to e-resources is enabled on all sets of IP addresses used by the Centre. STM (Synchronous Transfer Mode) equipment at Centre is connected through Optical Fibre to Gandhinagar node of NKN on ring topology. This gives redundancy of NKN links and the architecture of the NKN is enabled to reach all universities with minimum hops. Any university can be reached with minimum hops on NKN and this gives INFLIBNET an advantage of serving the universities with good speed and higher data transfer.

The network is running over managed L3 switches and managed L2 switches with 40 Gbps ready network with structured cabling, rack, I/Os, jack panels, etc as shown in Fig. 59. A dedicated firewall appliance is purchased with a subscription to anti-virus, anti-spam and intrusion detection system. PCs and laptops used in the Centre are protected against attack and other vulnerability by Gateway level-filtering and intrusion detection system using Fortinet UTM. User-level antivirus protection is also enabled for end-user protection. On average, the INFLIBNET Website and the national union databases attract more than 15,000 visitors per month.

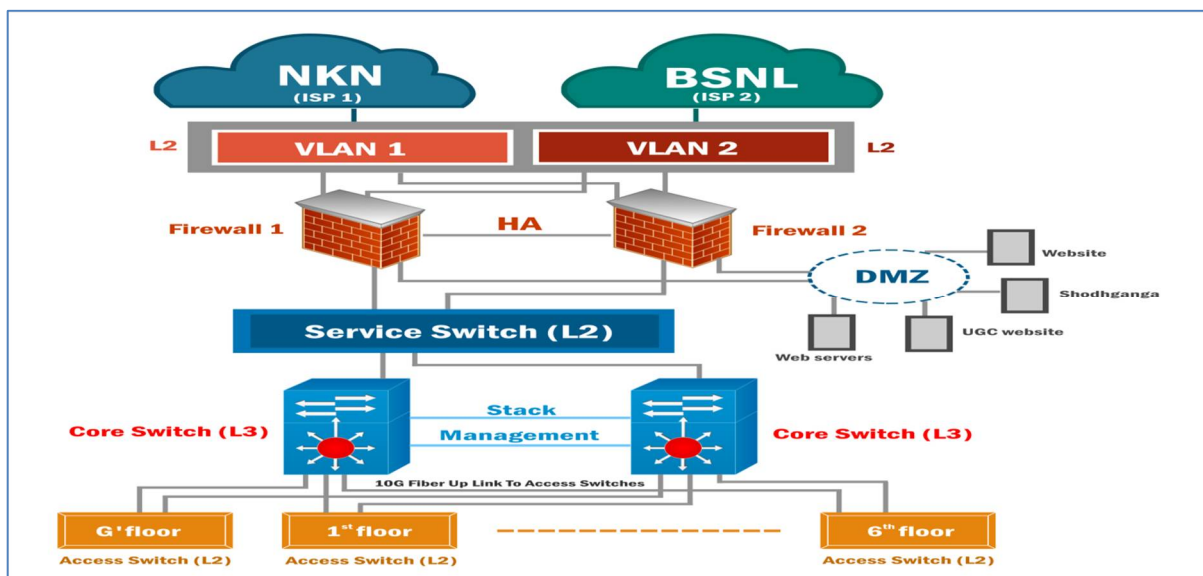


Fig. 59: Thematical Diagram Showing L-2 and L-3 Switches Connected to NKN /BSNL, Firewall and Other Computing Infrastructure in INFLIBNET

During the year under report, one L3 switch and eight L2 switches were procured and commissioned for extending the network services and Wi-Fi connectivity throughout the Campus of INFLIBNET Centre.

### 2.3. Integration of Data Centre and other IT Services

The Data Centre established at INFLIBNET Centre is having the most robust setup that is to host mission-critical servers and computer systems, with fully redundant subsystems. All components are fully fault-tolerant including uplinks, storage, chillers, HVAC systems, servers, etc. The INFLIBNET Centre uses HP Blade System C 3000 Enclosure for hosting Web Services, INFLIBNET website, Shodhganga, OJAS, N-LIST, InfoPort, e-PG Pathshala, IndCat, DNS server, Intranet server, etc. IBM Blade Centre S chassis is used for Web co-location services at BSNL, which host mirror sites of services such as UGC website, N-LIST Proxy Server, Online UGC's e-SARTS and other important services.

Building Management System (BMS) integrates the mechanical and electrical equipment used for various services such as ventilation, lighting, power system, fire system and security system. HVAC (Heating, Ventilation and Air Conditioning) is used for indoor environmental comfort based on the principle of thermodynamics, fluid mechanics and heat transfer, ensuring maximum levels of efficiency and economy. Honeywell Trend is used for BMS Solutions. Smart Visitor Management Software is used for storing data and generating a gate-pass for visitors.

26 CCTV cameras from M/s. Honeywell is used as Surveillance System by categorizing into three types. PTZ security cameras allow controlling the Pan, tilt and zoom operations of the camera lens remotely or through programming. Other two cameras are Box type's cameras and Dome type cameras. All cameras are IP-based, advanced and PoE (Power on Ethernet) enabled. Telephony

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services in the Centre are established using IP Telephony system in the Local Area Network itself which is based on Internet Protocol phones. Three different categories of phones i.e. Siemens Open Stage 60 for Scientists and Open Stage 40 are used for other staff member and Open Stage 15 for security & residences. The Centre also has 60 “Open Stage 15” IP phones to extend IP Telephony services in 39 Guest Rooms and staff in the office.

A dedicated ISDN PRI line is used for Video Conferencing Facility with high definition resolution camera with codec, multipoint control unit and HD LCD/LED TV for display. Public Addressing System (PAS) is in place for playing soothing music in the background in the premises of a building to give pleasant ambience for working professionals. The entire building is divided into various zones and a zone-wise announcement is also possible with centralized control. The boardroom is equipped with facilities that can be controlled with a wireless touchpad/iPad. The auditorium with 380 seating capacity is well equipped with professional sound system, advanced dynamic mixer and state-of-art mic preamps with DSP with 100 presets including reverb, chorus, flanger, delay, pitch shifter and various multi-effects with at least 12 channels for audio devices like mics (i.e. collar, hand-help, audio mike, cordless and vocal-instrumental), laptop, CD/DVD player or music instruments, media players, etc. The mixer is connected with sufficient amplifiers for Base (Woofers), FOH (Front of the House), surround speakers, crossover amplifier for balancing the gain of audio and stage monitor speaker with plug and play facility. The entire campus is equipped with Wi-Fi hotspot including guesthouses, residences and Plaza area.

#### **2.4. Training Laboratories**

The Centre conducts training programmes including SOUL Training Programmes on a regular basis. One of the two Training Laboratories is equipped with 42 PCs with projection system and other equipment for this purpose. All PCs in the Laboratory are connected to the Centre’s LAN, which is connected to the Internet. All PCs are set-up in dual operating system mode, i.e. Windows and Linux. All the PCs and network equipment are backed-up with Uninterrupted Power Supply (UPS).

#### **2.5. SOUL Support Centre**

The SOUL software, developed by the Centre, has more than 3,500+ installations across the country. SOUL Support Cell is equipped with 5 PCs, scanner and printer. A facility has been created to provide support to the users of the SOUL Software with a dedicated telephone line, fax and manpower special earmarked for this purpose.

#### **2.6. Walk-in User’s Facility for Researchers**

The Centre has 16 Internet-enabled all-in-one PCs with Internet connectivity earmarked for students, scholars and faculty from neighbouring institutions for accessing e-resources subscribed under the e-ShodhSindhu. The license agreements signed with the publishers of e-resources provides for access



to e-resources to “walk-in” users. More than 400 users availed this facility during the period under report.

## 2.7. Uninterrupted Power Supply (UPS)

Centre has two 40 kVA each UPS for dedicated power supply to DataCentre and network equipment installed at different locations of the Centre. During the period under report, the Centre has procured two UPSs of 40 KVA each to meet the demand of uninterrupted power supply of new IT equipment.

## 3. Academic Interaction with Universities and other Research Institutions

Although the Centre receives a large number of applications from engineering colleges in Gujarat and neighbouring states for training at the INFLIBNET, the Centre selects limited student trainees. Many students had undergone practical training at the INFLIBNET Centre during the year under report. Facilities are also extended to the library science students of Gujarat University, Ahmedabad to avail library internship at the Centre. A number of students who availed internship at INFLIBNET and their institutional affiliation are given below in Table 55.

Sl. No.	Name of the Institute	Degree	No. of students
1	Sarojini Naidu Govt. Girls P.G.(Auto.) College, Bhopal	MLISc	06
2	Charutar Vidya Mandal's Natubhai V. Patel College of Pure & Applied Sciences under Sardar Patel University, Vallabh Vidyanagar	MSc(IT)(Integrated)	01

Table 55: No. of Students who Availed Internship at INFLIBNET and their Institutional Affiliation

## 4. Other Notable Activities and Events

### 4.1. Independence Day

The INFLIBNET Centre celebrated India’s 72<sup>nd</sup> Independence Day on 15<sup>th</sup> August 2018, to pay tribute and remember all the freedom fighters who had contributed and fought for the Independence of India. The National Flag was hoisted by Mr Manoj Kumar K, Scientist D (CS), INFLIBNET Centre. He addressed the staff members and their families about the activities of the Centre. Mr H G Hosamani, Scientist C (LS) and Mr Abhishek Kumar, Scientist C (CS) were also present in the ceremony.

### 4.2. Navratri

The INFLIBNET Centre celebrated Garba festival with great enthusiasm. The Garba night was organized for its employees and their families on 12<sup>th</sup> October 2018. The function started with Durga

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Puja and everyone from the campus, staff members and their families participated. The employees and their families turned out in their best traditional attire. Dr. Jagdish Arora, Director, INFLIBNET Centre distributed the prizes for the best dance performers, best-dressed persons and children. The function concluded with the ceremonial dinner.



**Fig. 60: Navratri Celebration at INFLIBNET Centre, Gandhinagar**

### **4.3. Republic Day**

The INFLIBNET Centre celebrated 70<sup>th</sup> Republic Day on 26<sup>th</sup> January 2019 at INFLIBNET Centre, Infocity, Gandhinagar. The National Flag was hoisted by Mr Yatrik Patel, Scientist D (CS), INFLIBNET Centre. Mr Yatrik Patel, Dr H G Hosamani, Scientist C (LS) and Mr Swapnil Patel, Scientist B (CS) addressed the staff members and their family members of INFLIBNET Centre.

### **5. Visitors**

The Centre had privileged of welcoming the following important visitors.

1. Prof Dhirendra Pal Singh, Chairman, UGC, New Delhi
2. Dr Braj Bihari Kumar, Chairman, New Delhi
3. Prof M P Poonia, Vice Chairman, AICTE, New Delhi
4. Prof Yogesh Singh, Vice-Chancellor, Delhi Technical University, Delhi
5. Mr P K Thakur, Finance Adviser, UGC, New Delhi
6. Prof Dileep Malkhede, Adviser –I (RIFD), AICTE, New Delhi
7. Prof S K Singh, Vice-Chancellor, Lalit Narayan Mithila University, Darbhanga
8. Dr Anand Byrappa, Librarian, IISc, Bengaluru
9. Prof B K Tripathi, Director, IUCTE for Teacher Education, BHU, Varanasi
10. Prof Kamlesh P Joshipura, Former VC, Saurashtra University, Rajkot

- 
11. Prof Pratosh Bansal, Institute of Engineering & Technology, Devi AhilyaVishwavidyalaya, Indore
  12. Mr Gurinder S Malik, Senior Consultant, MHRD, New Delhi
  13. Dr K S Dasgupta, Director, DA-IICT, Gandhinagar
  14. Dr G K Manjunath, Director of Libraries, Ahmedabad University, Ahmedabad

As a part of curriculum industrial visits, 90 students and 3 faculty members of Computer Engineering and Information Technology, Shankersinh Vaghela Bapu Institute of Technology, Gandhinagar visited INFLIBNET Centre, Gandhinagar on 2<sup>nd</sup> January 2019. 100 students and 3 faculty members of Shri Mahila BCA College, Junagadh visited INFLIBNET Centre, Gandhinagar on 4<sup>th</sup> January 2019. 12 students and 3 faculty members of the Dept. of Library and Information Science, Maharshi Dayanand Saraswati University, Ajmer visited INFLIBNET Centre, Gandhinagar on 13<sup>th</sup> March 2019. The centre also witnessed the below dignitaries as our esteemed visitors from 14<sup>th</sup> to 15<sup>th</sup> March 2019.

## **6. Right to Information (RTI) Act**

In accordance with the provisions of Section 4(1) (b) of this Act, the INFLIBNET has put information and guidance of the stakeholders and the general public and hosted the same on the website of the Centre at <http://www.inflibnet.ac.in>. In terms of section 5(2) of the Right to Information Act 2005, the Director of the INFLIBNET Centre is designated as Appellate Authority / Nodal Officer for all matters concerning the Centre. The detailed information about RTI and responsible officers appointed for are available on the Centre's website at <http://www.inflibnet.ac.in>.

## **7. Financial Status**

The Audited Annual Accounts of INFLIBNET Centre for the financial year 2018-2019 is given in Appendix X.

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# Appendices

## Council

## Ex. Officio Members

<b>President</b>		
<b>Prof D P Singh</b> Chairman University Grants Commission Bahadur Shah Zafar Marg, New Delhi		
<b>Members</b>		
<b>Dr Bhushan Patwardhan</b> Vice- Chairman University Grants Commission Bahadur Shah Zafar Marg, New Delhi <b>(September 27<sup>th</sup> 2018 onwards)</b>	<b>Prof Anil D Sahasrabudhe</b> Chairman All India Council for Technical Education	<b>Dr Braj Bihari Kumar</b> Chairperson ICSSR
<b>1 Dr Shekhar C Mande</b> Director General & Secretary, DSR CSIR, AnusandhanBhavan 2, Rafi Marg, New Delhi <b>(October 16<sup>th</sup> 2018 onwards)</b>	<b>1 Mr Shravan Kumar</b> Director-General, National Library Belvedere, Kolkatta <b>(December 2018 onwards)</b>	<b>2 Dr Arun Kumar Chakraborty</b> Director-General, National Library Belvedere, Kolkatta <b>(August 2017 to December 2018)</b>
<b>2 Dr Girish Sahni</b> Director General & Secretary, DSR CSIR, AnusandhanBhavan 2, Rafi Marg, New Delhi <b>(April 1st 2018 to August 23rd 2018)</b>	<b>1 Prof J P Singh Joorel</b> Director, INFLIBNET Centre <b>(December 17th 2018 onwards)</b>	<b>Prof Vinay Kumar Pathak</b> Vice-Chancellor Dr A P J Abdul Kalam Technical University Lucknow, Uttar Pradesh
<b>2 Dr Jagdish Arora</b> Director, INFLIBNET Centre <b>(April 1<sup>st</sup> 2018 to December 16<sup>th</sup> 2018)</b>	<b>1 Dr Ramesh C Gaur</b> Director, Indira Gandhi Centre for Arts New Delhi	<b>Prof M P Poonia</b> Vice-Chairman AICTE, New Delhi

**All Members of the Governing Board are the Member of the Council**

## Governing Board

### Ex.Officio Members

<b>Chairman</b>	
<b>Prof Yogesh Singh</b> Vice-Chancellor Delhi Technological University, Delhi	
<b>Vice Chairperson, UGC</b>	
<b>Dr Bhushan Patwardhan</b> Vice- Chairman University Grants Commission Bahadur Shah Zafar Marg, New Delhi <b>(September 27<sup>th</sup> 2018 onwards)</b>	
<b>Secretary, UGC</b>	
<b>Prof Rajnish Jain</b> Secretary University Grants Commission Bahadur Shah Zafar Marg, New Delhi	
<b>Members</b>	
<b>Prof S A Bari</b> Vice-Chancellor Central University of Gujarat Gandhinagar	<b>Prof A P Mittal</b> Member Secretary All India Council for Technical Education Vasanth Kunj, New Delhi
<ol style="list-style-type: none"> <li>1 <b>Prof J P Singh Joorel</b> Director, INFLIBNET Centre <b>(December 17<sup>th</sup> 2018 onwards)</b></li> <li>2 <b>Dr Jagdish Arora</b> Director, INFLIBNET Centre <b>(April 1<sup>st</sup> 2018 to December 16<sup>th</sup> 2018)</b></li> </ol>	<b>Prof R C Kuhad</b> Vice-Chancellor Central University of Haryana Mahendergarh, Haryana
<ol style="list-style-type: none"> <li>1 <b>Prof S K Singh</b> Vice-Chancellor Lalit Narayan Mithila University Kameshwaranagar, Darbhanga <b>(March 1<sup>st</sup> 2019 onwards)</b></li> <li>2 <b>Prof S B Ray Chaudhury</b> Vice-Chancellor Rabindra Bharati University, Kolkata <b>( April 31<sup>st</sup> 2018 to December 31<sup>st</sup> 2018)</b></li> </ol>	<b>Prof Anurag Kumar</b> Director Indian Institute of Science Bengaluru  <b>Dr R K Chadha</b> Former Additional Secretary Lok Sabha Parliament House, New Delhi
<b>Prof Kamlesh Joshipura</b> Former Vice-Chancellor Saurashtra University Rajkot, Gujarat	<b>Prof Pratosh Bansal</b> Professor of IT Institute of Engineering and Technology Devi Ahilya Vishwavidyalaya, Indore
<b>Dr B K Tripathi</b> Director IUC for Teacher Education Banaras Hindu University, Varanasi	<b>Representative of MHRD (e-ShodhSindhu)</b>

## Finance Committee

## Ex. Officio Members

<b>Chairman</b>	
<b>Prof Yogesh Singh</b> Vice-Chancellor Delhi Technological University, Delhi	
<b>Members</b>	
<b>Prof Rajnish Jain</b> Secretary University Grants Commission Bahadur Shah Zafar Marg, New Delhi	<b>Mr P K Thakur</b> Financial Advisor University Grants Commission Bahadur Shah Zafar Marg, New Delhi
<b>Prof Kamlesh Joshipura</b> Former Vice-Chancellor Saurashtra University Rajkot, Gujarat	<b>Dr (Mrs) Manju Singh</b> Joint Secretary (IUC) University Grants Commission Bahadur Shah Zafar Marg, New Delhi
<b>1 Prof J P Singh Joorel</b> Director, INFLIBNET Centre (December 17th 2018 onwards)	<b>1 Mr Ashok Kumar Rai</b> Member, Scientist-D (CS) INFLIBNET Centre (July 2018 onwards)
<b>2 Dr Jagdish Arora</b> Director, INFLIBNET Centre (April 1 <sup>st</sup> 2018 to December 16 <sup>th</sup> 2018)	<b>2 Mr Yatrik Patel</b> Scientist-D (CS) & In-Charge (P&A) INFLIBNET Centre (Non-member Secretary) (April 1 <sup>st</sup> 2017 to March 31 <sup>st</sup> 2018)
<b>Mr Harish Chandra</b> Non-Member Secretary Admin. Officer (PA & F) INFLIBNET Centre	

**Building Committee**  
**January 02<sup>nd</sup> 2019 onwards**

<b>Chairman</b>	
<b>Prof Himanshu Pandya</b> Vice-Chancellor Gujarat University, Ahmedabad	
<b>Prof R C Kuhad</b> Vice-Chancellor Central University of Haryana Jant-Pali, Mahendragarh	<b>Prof J P Singh Joorel</b> Director, INFLIBNET Centre <b>(December 17<sup>th</sup> 2018 onwards)</b>
<b>Prof S C Sharma</b> Director NAAC, Bengaluru	<b>Prof Asutosh Trivedi</b> Dean, IRD Delhi Technological University Delhi
<b>Mr A K Jain</b> Assistant Engineer CPWD, Gandhinagar	<b>Prof Utpal Kumar Sharma</b> Director Institute of Architecture Nirma Univerity, Ahmedabad
<b>Mr N K Ojha</b> <b>University Engineer</b> The M S Univerity of Baroda Vadodara	<b>Mr Rajeev Kathpalia</b> Vastu-Shilpa Consultants Ahmedabad
<b>Dr Nilesh Shah</b> Advocate, Vadodara	<b>Mr Manoj Kumar K</b> Scientist D(CS) INFLIBNET Centre, Gandhinagar
<b>Mr Harish Chandra</b> Admin. Officer (PA & F) INFLIBNET Centre, Gandhinagar	

**Building Committee**  
**(April 1<sup>st</sup> 2018 to January 1<sup>st</sup> 2019)**

<b>Chairman</b>	
<b>Prof S K Khanna</b> Chief Advisor Sharda University Plot No.32-34, Knowledge Park III, Greater Noida	
<b>Mr Rajeev Kathpalia</b> Vastu-Shilpa Consultants "Sangath" Thaltej Road, Ahmedabad	<b>Dr Jagdish Arora</b> Director INFLIBNET Centre, InfoCity, Gandhinagar <b>(April 1<sup>st</sup> 2018 to December 16<sup>th</sup> 2018)</b>
<b>Mr Manoj Kumar K</b> Scientist-D(CS) INFLIBNET Centre, InfoCity, Gandhinagar	<b>Prof Dharendra Pal Singh</b> Director NAAV, Bangalore
<b>Mr Harish Chandra (Convener)</b> Admin. Officer INFLIBNET Centre InfoCity, Gandhinagar	<b>Dr R K Chadha</b> Former Additional Secretary Lok Sabha, New Delhi



## Technical, Administrative and Supporting Staff

Scientific & Technical Staff		
Sl. No.	Name of the employee	Designation
1.	Prof J P Singh Joorel	Director (from 17.12.2018 onwards)
2.	Dr Jagdish Arora	Former Director (till 16.12.2018)
3.	Mr Manoj Kumar K	Scientist-D (CS)
4.	Mr Ashok Kumar Rai	Scientist-D (CS)
5.	Mr Yatrik R. Patel	Scientist-D (CS)
6.	Dr H. G. Hosamani	Scientist-C (LS)
7.	Mr Abhishek Kumar	Scientist-C (CS)
8.	Mr Kannan P	Scientist-C (LS) (on lien w.e.f.01.06.2018)
9.	Mr Swapnil P Patel	Scientist-B (CS)
10.	Mr Divyakant Vaghela	Scientist-B (CS)
11.	Mr Gaurav Prakash	Scientist-B (CS)
12.	Mrs Vaishali A Shah	Scientist-B (LS)
13.	Dr Kruti J Trivedi	Scientist-B (LS)
14.	Mr Dinesh Ranjan Pradhan	Scientist-B (LS)
15.	Dr Miteshkumar Pandya	Scientist-B (LS)
16.	Mr Hitesh H. Solanki	Scientist-B (CS)
17.	Mr Pallab Pradhan	Scientist-B (LS)
18.	Mr Raja V	Scientist-B (CS)
19.	Mr Kimidi Siva Shankar	Scientist-B (LS)
20.	Mrs Hema Cholin	S.T.O - I (LS)
21.	Ms Suboohi Siddiqui	S.T.O - I (LS)
22.	Mr Dharmeshkumar A. Shah	STA (CS)
23.	Mr Mohit Kumar	STA (CS)
24.	Mr Vijaykumar M Shrimali	STA (CS)
25.	Mrs Roma Yogesh Asnani	STA (LS)
Administrative & Support Staff		
26.	Mr Harish Chandra	Administrative Officer (F&A)
27.	Mr Sanjay R Shah	Section Officer (since 28.11.2018)
28.	Mrs S M Munshi	Section Officer (P&S) (till 27.11.2018)
29.	Mrs Yamini J Dave	Office Assistant-II
30.	Mrs R B Pendharkar	Office Assistant-II (till 11.07.2018)
31.	Mr Ankur B Parikh	Office Assistant-II
32.	Mr Devang Roy	Office Assistant.-II
33.	Mr Shyam T Yadav	Assistant
34.	Mr Vinod B Dantani	Helper
35.	Mr Bakul M Parmar	Lab Attendant
36.	Mr Manish R Bhoi	Helper/Auxiliary Staff-I

## State-wise List of SOUL Installations

Sr. No.	Name of the State	Installations	1 <sup>st</sup> April 2018 to 31 <sup>st</sup> March 2019	Total
1	Andhra Pradesh	292	4	296
2	Arunachal Pradesh	-	1	1
3	Assam	84	4	88
4	Bihar	17	1	18
5	Chhattisgarh	40	1	41
6	Daman	2	2	4
7	Goa	3	0	3
8	Gujarat	946	27	973
9	Haryana	122	7	129
10	Himachal Pradesh	70	1	71
11	Jammu & Kashmir	79	8	87
12	Jharkhand	8	1	9
13	Karnataka	31	0	31
14	Kerala	131	0	131
15	Madhya Pradesh	283	9	292
16	Maharashtra	480	19	499
17	Manipur	1	1	2
18	Meghalaya	3	0	3
19	Mizoram	33	1	34
20	Nagaland	6	0	6
21	Nepal	4	0	4
22	New Delhi	41	1	42
23	North Easter States	296	42	338
24	Orissa	11	0	11
25	Pondicherry	5	0	5
26	Punjab	131	1	132
27	Rajasthan	61	4	65
28	Sikkim	0	3	3
29	Tamil Nadu	34	0	34
30	Telangana	3	2	5
31	Uttar Pradesh	109	7	116
32	Uttarakhand	20	2	22
33	West Bengal	146	4	150
<b>Total</b>		<b>3492</b>	<b>153</b>	<b>3645</b>

## National Advisory Committee, e-Shodh Sindhu

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(December 17<sup>th</sup> 2018 onwards)

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(April 1<sup>st</sup> 2018 to December 16<sup>th</sup> 2018)

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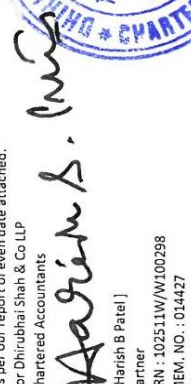
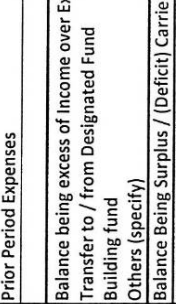
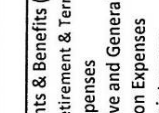
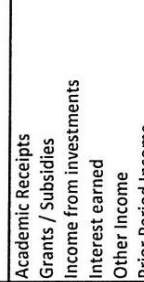
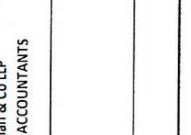
University Librarian, Jamia Millia Islamia, New  
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**Dr Debal C Kar**

Librarian, Ambedkar University, Delhi (Member  
from State University)

Dhirubhai Shah & Co LLP CHARTERED ACCOUNTANTS		4th Floor, Aditya Building Mithakhali Six Road, Ahmedabad Telephone No.:079-26403325/26	
INFLIBNET CENTRE Information and Library Network Centre (An Autonomous Inter-University centre of UGC) Infocity, Gandhinagar - 382 007			
BALANCE SHEET AS AT 31 <sup>st</sup> MARCH, 2019			
SOURCES OF FUNDS		Current Year 2018-2019	Previous Year 2017-2018
CORPUS/CAPITAL FUND		50,78,46,623.59	48,35,30,297.55
DESIGNATED/ EARMARKED / ENDOWMENT FUNDS		63,11,47,094.60	13,71,42,131.40
CURRENT LIABILITIES & PROVISIONS		8,38,61,871.08	7,30,12,318.27
TOTAL		1,22,28,55,589.27	69,36,84,747.22
APPLICATION OF FUNDS			
FIXED ASSETS		Current Year 2018-2019	Previous Year 2017-2018
Tangible Assets		30,44,38,903.87	33,55,90,941.01
Intangible Assets		17,776.01	51,996.46
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS		-	-
Long Term		-	-
Short Term		7,43,53,014.00	4,76,40,728.00
INVESTMENTS - OTHERS		-	-
CURRENT ASSETS		77,92,79,894.71	21,30,09,122.84
LOANS, ADVANCES & DEPOSITS		6,47,66,000.68	9,73,91,958.91
TOTAL		1,22,28,55,589.27	69,36,84,747.22
SIGNIFICANT ACCOUNTING POLICIES			
CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS			
As per our report of even date attached.			
For Dhirubhai Shah & Co LLP Chartered Accountants			
 [ Harish B Patel ] Partner FRN : 102511W/W100298 MEM. NO. : 014427 Place : Gandhinagar Date : 18.07.2019		 [ Harish Chandra ] Administrative Officer-PA&F	
 Place : Gandhinagar Date : 18.07.2019		 [ Prof. J P Singh Joorel ] Director	
The above Balance Sheet to the best of our belief contains a true account of the Funds and Liabilities and Properties & Assets of the Institution.			
Information and Library Network Centre, (An IUC of UGC)		Page No. : 01	



Dhirubhai Shah & Co LLP CHARTERED ACCOUNTANTS		4th Floor, Aditya Building Mithakhali Six Road, Ahmedabad Telephone No.-079-26403325/26	
INFLIBNET CENTRE Information and Library Network Centre (An Autonomous Inter-University centre of UGC) Infocity, Gandhinagar - 382 007			
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED ON 31 <sup>st</sup> MARCH, 2019			
Particulars	Schedule	Current Year 2018-2019	Previous Year 2017-2018
Amount in Rupees			
<u>INCOME</u>			
Academic Receipts	9	-	3,86,670.18
Grants / Subsidies	10	10,56,68,912.00	5,21,60,906.00
Income from investments	11	47,48,861.00	75,64,989.00
Interest earned	12	5,82,976.00	69,96,081.00
Other Income	13	2,19,12,829.50	1,04,07,558.80
Prior Period Income	14	74,87,404.60	-
<b>TOTAL (A)</b>		<b>14,04,00,983.10</b>	<b>7,75,16,204.98</b>
<u>EXPENDITURE</u>			
Staff Payments & Benefits (Establishment expenses)	15	5,80,57,386.00	3,82,37,449.00
Employees Retirement & Terminal Benefits	15 A	2,65,16,623.00	-
Academic Expenses	16	30,99,378.85	39,85,926.82
Administrative and General Expenses	17	2,48,72,961.86	2,39,54,999.50
Transportation Expenses	18	6,82,388.70	7,50,629.26
Repairs & Maintenance	19	30,00,817.70	25,28,415.90
Finance costs	20	6,605.23	40,717.28
Depreciation	4	-	-
Other Expenses	21	3,43,23,235.72	4,05,17,932.55
Prior Period Expenses	22	-	-
<b>TOTAL (B)</b>		<b>15,05,59,397.06</b>	<b>11,00,16,070.31</b>
Balance being excess of income over Expenditure (A-B)		-1,01,58,413.96	-3,24,99,865.33
Transfer to / from Designated Fund			
Building fund			
Others (specify)			
<b>Balance Being Surplus / (Deficit) Carried to Capital Fund</b>		<b>-1,01,58,413.96</b>	<b>-3,24,99,865.33</b>
Significant Accounting Policies	23		
Contingent Liabilities and Notes to Accounts	24		
As per our report of even date attached.			
For Dhirubhai Shah & Co LLP Chartered Accountants			
 [ Harish B. Patel ] Partner FRN : 102511W/W100298 MEM. NO. : 014427 Place : Gandhinagar Date : 18.07.2019		 DHIRUBHAI SHAH & CO LLP * SINJINDO ACCO 102511W/W100298 AHMEDABAD CHARTERED ACCOUNTANTS	
 [ Harish Chandra ] Administrative Officer-PA&F		 INFLIBNET 2007	
The above Balance Sheet to the best of our belief contains a true account of the Funds and Liabilities and Properties & Assets of the Institution.			
		 [ Prof. J. P. Singh Joberi ] Director	
		Place : Gandhinagar Date : 18.07.2019	
Information and Library Network Centre, (An IUC of UGC)			
			Page No. : 02

Dhirubhai Shah & Co LLP CHARTERED ACCOUNTANTS		INFLIBNET CENTRE Information and Library Network Centre										4th Floor, Aditya Building Mithakhali Six Road, Ahmedabad Telephone No.:079 -2640325/26	
SCHEDULE - 2 DESIGNATED/ EARMARKED/ ENDOWMENT FUNDS :												Amount in Rupees	
Project Development Fund	D-Space	Swayam Pradha Project	North Eastern Region	E-NBA	UGC Website Maintenance	UGC Grants for Shodhganga	CUG Project	Integrated E-Content Portal					
a) Opening balance of the funds	24,500.00	2,00,621.00	78,34,690.16	1,06,58,455.00	8,65,351.90	0.00	34,79,677.15	10,58,853.60	8,001.49				
b) Additions during the year	0.00	0.00	0.00	0.00	0.00	0.00	1,50,00,000.00	0.00	0.00				
c) Income from investments made of the funds	0.00	31,884.00	11,46,854.00	11,51,344.00	73,930.00	0.00	93,153.00	0.00	0.00				
d) Accrued Interest on investments/Advances	0.00	0.00	0.00	0.00	0.00	0.00	1,98,632.00	0.00	0.00				
e) Interest on Savings Bank a/c	0.00	0.00	0.00	0.00	0.00	0.00	1,35,796.60	0.00	0.00				
f) Other additions (Specify nature)	0.00	2,77,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
g) To be recovered from UGC/MHRD	0.00	0.00	0.00	0.00	0.00	3,72,729.11	0.00	0.00	0.00				
<b>TOTAL (a+b)</b>	<b>24,500.00</b>	<b>5,09,505.00</b>	<b>89,81,544.16</b>	<b>1,18,09,799.00</b>	<b>9,39,281.90</b>	<b>3,72,729.11</b>	<b>1,89,07,258.75</b>	<b>10,58,853.60</b>	<b>8,001.49</b>				
B. Utilisation/Expenditure towards objectives of funds													
ii) Capital Expenditure	0.00	0.00	16,40,037.00	0.00	0.00	0.00	0.00	0.00	0.00				
ii) Revenue Expenditure	0.00	28,317.78	10,83,498.84	90,94,419.00	6,29,381.67	3,72,729.11	1,29,71,588.56	10,58,853.60	0.00				
<b>TOTAL (c)</b>	<b>0.00</b>	<b>28,317.78</b>	<b>27,23,535.84</b>	<b>90,94,419.00</b>	<b>6,29,381.67</b>	<b>3,72,729.11</b>	<b>1,29,71,588.56</b>	<b>10,58,853.60</b>	<b>0.00</b>				
<b>NET BALANCE AS AT THE YEAR END (a+b-c)</b>	<b>24,500.00</b>	<b>4,81,187.22</b>	<b>62,58,008.32</b>	<b>27,15,380.00</b>	<b>3,09,900.23</b>	<b>0.00</b>	<b>59,35,670.19</b>	<b>0.00</b>	<b>8,001.49</b>				
Represented by													
Cash and Bank Balances													
Investments													
Interest accrued but not due													
<b>TOTAL</b>													



**INFLIBNET CENTRE**  
Information and Library Network Centre

**SCHEDULE - 2 DESIGNATED/ EARMARKED / ENDOWMENT FUNDS :**

	Vidwan Expert Database	UGC Scheme SA-III	E-Shodh Sindhu AICTE	E-Shodh Sindhu	ICSSR	NIRF	N-LIST
a) Opening balance of the funds	9,82,168.96	0.00	35,45,546.00	7,20,93,404.46	21,62,626.57	72,22,042.40	2,52,74,637.12
b) Additions during the year	0.00	0.00	8,72,02,868.00	1,99,57,00,000.00	22,50,000.00	0.00	0.00
c) Income from investments made of the funds	1,12,141.00	0.00	0.00	16,92,120.00	3,51,111.00	11,56,317.00	40,16,657.01
d) Accrued Interest on investments/Advances	0.00	0.00	0.00	0.00	0.00	0.00	0.00
e) Interest on Savings Bank a/c	0.00	0.00	17,01,003.00	1,07,40,256.00	0.00	0.00	3,05,773.00
f) Other additions (Specify nature)	0.00	0.00	0.00	0.00	0.00	1,18,73,383.00	1,94,77,630.20
g) To be recovered from UGC/MHRD	6,89,199.27	6,89,199.27					
<b>TOTAL (a+b)</b>	<b>10,94,309.96</b>	<b>6,89,199.27</b>	<b>9,24,49,437.00</b>	<b>2,08,02,25,782.46</b>	<b>47,63,737.57</b>	<b>2,02,51,742.40</b>	<b>4,90,74,657.33</b>
<b>B.</b>							
Utilisation/Expenditure towards objectives of funds							
ii) Capital Expenditure	0.00	0.00	0.00	7,22,120.00	0.00	0.00	0.00
ii) Revenue Expenditure	1,46,035.53	6,89,199.27	5,86,88,647.00	1,57,58,31,737.25	40,32,360.77	1,43,28,817.48	19,56,071.72
<b>TOTAL (c)</b>	<b>1,46,035.53</b>	<b>6,89,199.27</b>	<b>5,86,88,647.00</b>	<b>1,57,58,31,737.25</b>	<b>40,32,360.77</b>	<b>1,43,28,817.48</b>	<b>19,56,071.72</b>
<b>NET BALANCE AS AT THE YEAR END (a+b-c)</b>	<b>9,48,274.43</b>	<b>0.00</b>	<b>3,37,60,790.00</b>	<b>50,36,71,925.21</b>	<b>7,31,376.80</b>	<b>59,22,924.92</b>	<b>4,71,18,625.61</b>
<b>Represented by</b>							
Cash And Bank Balances	-	-	-	-	-	-	-
Investments	-	-	-	-	-	-	-
Interest accrued but not due	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>



INFLIBNET CENTRE  
Information and Library Network Centre

SCHEDULE – 2 DESIGNATED/ EARMARKED / ENDOWMENT FUNDS :

	MGCUB	FSKAN A/c.	CUH	Atal Ranking Project	Ek Bharat Shreshtha Bharat Pro	IRINS Project	NAAC Project Expenses
a) Opening balance of the funds	2,38,531.59	13,08,509.00	1,84,515.00	0.00	0.00	0.00	0.00
b) Additions during the year	0.00	0.00	0.00	50,66,400.00	10,00,000.00	88,50,000.00	14,79,000.00
c) Income from investments made of the funds	69,703.00	1,36,760.00	21,485.00	1,64,185.00	1,24,413.00	2,75,559.00	418.00
d) Accrued Interest on investments/Advances	0.00	0.00	0.00	0.00	0.00	0.00	0.00
e) Interest on Savings Bank a/c	0.00	0.00	0.00	0.00	0.00	0.00	0.00
f) Other additions (Specify nature)	11,58,000.00	0.00	0.00	0.00	0.00	0.00	0.00
g) To be recovered from UGC/MHRD	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL (a+b)</b>	<b>14,66,234.59</b>	<b>14,45,269.00</b>	<b>2,06,000.00</b>	<b>52,30,585.00</b>	<b>11,24,413.00</b>	<b>91,25,559.00</b>	<b>14,79,418.00</b>
<b>B.</b>							
Utilisation/Expenditure towards objectives of funds							
ii) Capital Expenditure	0.00	35,242.00					
ii) Revenue Expenditure	6,65,258.44	2,39,950.89	1,62,519.00	10,16,917.02	67,237.90	18,546.00	58,115.13
<b>TOTAL (c)</b>	<b>6,65,258.44</b>	<b>2,75,192.89</b>	<b>1,62,519.00</b>	<b>10,16,917.02</b>	<b>67,237.90</b>	<b>18,546.00</b>	<b>58,115.13</b>
<b>NET BALANCE AS AT THE YEAR END (a+b-c)</b>	<b>8,00,976.15</b>	<b>11,70,076.11</b>	<b>43,481.00</b>	<b>42,13,667.98</b>	<b>10,57,175.10</b>	<b>91,07,013.00</b>	<b>14,21,302.87</b>
Represented by							
Cash and Bank Balances	-	-	-	-	-	-	-
Investments	-	-	-	-	-	-	-
Interest accrued but not due	-	-	-	-	-	-	-
<b>TOTAL</b>							



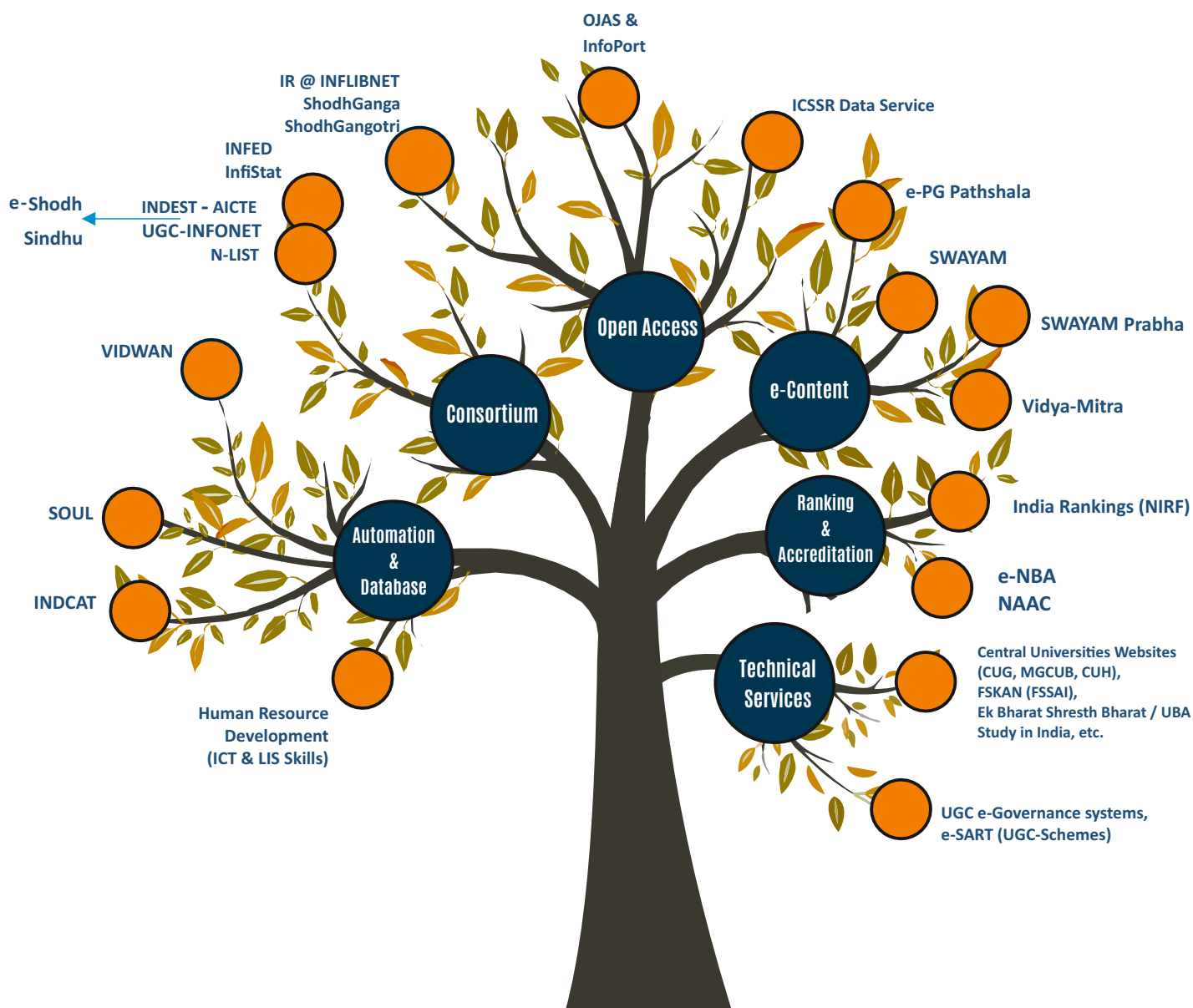
INFLIBNET CENTRE

Information and Library Network Centre

SCHEDULE - 2 DESIGNATED/ EARMARKED/ ENDOWMENT FUNDS :

	Amount in Rupees				
	NTA Project Fund	PMMINIT Project Fund	Study in India Project	TOTALS Current Year 2018-2019	Previous Year 2017-2018
a) Opening balance of the funds	0.00	0.00	0.00	13,71,42,131.40	45,70,28,537.21
b) Additions during the year	16,96,000.00	36,00,000.00	0.00	2,12,18,44,288.00	1,48,82,68,269.71
c) Income from investments made of the funds	1,14,238.00	0.00	1,71,246.00	1,09,03,518.01	16,75,548.00
d) Accrued interest on investments/Advances	0.00	0.00	0.00	1,98,632.00	5,88,783.00
e) Interest on Savings Bank a/c	0.00	0.00	0.00	1,28,82,830.60	10,61,326.00
f) Other additions. (Specify nature)	0.00	0.00	35,34,432.00	3,63,70,495.20	4,66,99,900.00
g) To be recovered from UGC/IM-HRD	0.00	0.00	0.00	10,61,928.38	3,28,638.79
<b>TOTAL (a+b)</b>	<b>18,10,238.00</b>	<b>36,00,000.00</b>	<b>37,55,728.00</b>	<b>2,32,04,03,823.59</b>	<b>1,99,88,51,022.71</b>
B. Utilisation/Expenditure towards objectives of funds				0.00	0.00
ii) Capital Expenditure	0.00	0.00	5,20,390.00	29,17,779.00	7,61,895.00
ii) Revenue Expenditure	4,88,355.46	1,931.00	27,08,431.57	1,68,63,38,949.99	1,85,79,46,976.31
<b>TOTAL (c)</b>	<b>4,88,355.46</b>	<b>1,931.00</b>	<b>32,28,841.57</b>	<b>1,68,92,56,728.99</b>	<b>1,85,87,08,871.31</b>
<b>NET BALANCE AS AT THE YEAR END (a+b-c)</b>	<b>13,21,882.54</b>	<b>35,98,069.00</b>	<b>5,26,886.43</b>	<b>63,11,47,094.60</b>	<b>13,71,42,131.40</b>
Represented by					
Cash and Bank Balances	-	-	-	-	-
Investments	-	-	-	-	-
Interest accrued but not due	-	-	-	-	-
<b>TOTAL</b>					





## Information and Library Network Centre

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