protégé
Neon
jQuery
Videos
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OWL-Full
Jena
e-journals
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e-books
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ORACLE

INFLIBNET

Newsletter

INFLIBNET

Recent Trends in Databases and New Technologies for providing
Online Library Services to create "Intelligent Libraries"

Manoj Kumar K, Scientist D (CS)

Editorial Board

Dr. Jagdish Arora
Mrs. Roma Asnani
Mr. Mohit Kumar

IndCat
http://indcat.inflibnet.ac.in/

SOUL Helpline
Tel. : +91-79-23268300

VIDWAN
http://vidwan.inflibnet.ac.in/

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Open Journal Access System (OJAS)
http://www.inflibnet.ac.in/ojs/

Shodhganga
http://shodhganga.inflibnet.ac.in/

From Director's Desk

The fag end of the year gives us an opportunity to review our performance during the year gone by and to plan activities and programmes for the year ahead. 2014 was one of the most eventful year wherein the UGC-Infonet Digital Library Consortium, dropped for XII plan period, was restored without any break. Moreover, the year witnessed N-LIST graduating from being a project funded by the Ministry of Human Resource Development under its National Mission on Education through Information and Communication Technology (NME-ICT) to a regular scheme of the UGC. The NLIST, thanks to huge response from colleges, was subsumed into the UGC-Infonet Digital Library Consortium as its college component.

The activity of content creation under e-PG Pathshala, funded by the NME-ICT and executed by the INFLIBNET Centre, continued throughout the year. The project envisages development of close to 45,000 e-modules in 77 subjects. A total amount of Rs.10.00 crores allocated to the Centre as first instalment was disbursed amongst 66 PIs for developing content in their respective subjects. The second instalment of Rs.33.60 lakhs was released to the PIs of respective subjects only after completion of number of e-modules. More than 1,000 modules are available in the e-PG Pathshala Learning Management Repository. As a policy, modules that are completed in all respect with all the four quadrants fully developed are being uploaded into the e-PG-Pathshala LMS.

Plagiarism detection software that was given to 90 universities during the first quarter of 2014 was extended to 20 additional universities who signed MoU with the INFLIBNET Centre on Shodhganga. Currently, 110 universities are getting access to two plagiarism detection software named "iThenticate and Turnitin". The number of universities who have signed MoU on Shodhganga with INFLIBNET Centre has increased to 186 universities and number of theses uploaded onto Shodhganga has grown to 28,873.

The Centre received funds for two important projects during the year, i.e. Integrated e-Content Portal and Vidwan from NME-ICT. Both the projects are progressing well. The contents have been received for 22 projects funded by the NME-ICT in the Integrated e-Content Portal that includes 7,000 e-modules. The platform for hosting of the content is under development and the beta site for Integrated e-Content Portal, named e-Acharya will be launched soon. The Vidwan Database is being populated with profiles of faculty and scientists from institutions of higher education as well as R&D organisations. The Ministry of HRD is actively supporting the project with the advice issued to all higher education institutions for registering with Vidwan Database. The Centre took the responsibility of designing and hosting Website of the Central University of Gujarat. The project was successfully completed and the website for the CUG is now hosted at INFLIBNET Centre.

9th PLANNER 2014 was organised at Dibrugarh University, Dibrugarh during September 2014 with an aim to continue activities in North-Eastern region in spite of budget constraints. The recommendations made during the PLANNER 2014 are being implemented. The Centre has requested allocation of funds to the UGC for continuing its services and activities in North-Eastern Region. I am happy to inform that the UGC is in the process of considering allocation of additional funds for continuing our activities and services in North-Eastern Region.

Coming to the last quarter of the year, the Centre continued to impart training to manpower working in colleges and universities in the use of ICT during the quarter under report. Two SOUL 2.0 training programmes were organized at the INFLIBNET Centre and User Awareness Programme on N-LIST was organised at Bilaspur University, Bilaspur. With allocation of funds to universities under Shodhganga project and access to plagiarism detection software, demand for user awareness programme on Shodhganga and use of plagiarism detection software has increased manifold. Three User Awareness Programmes on Shodhganga and Anti-plagiarism package were organised during the quarter under report, one each at Tezpur University, Tezpur, Bundelkhand University, Jhansi and Gauhati University, Guwahati.

The JSTOR continued to organise their "JSTOR India User's Forum" for the third consecutive year. Three JSTOR India User's Forum was organised during the quarter, one each at IUCAA, Pune, University of Hyderabad, Hyderabad and Jadavpur University, Kolkata. All the three programmes were well attended and were highly appreciated for their coverage.

During the quarter under report, the Centre organised four specialised National Workshops on various topics such as Attachment Training Programme for Practicing Library Professionals (from 27th October to 22nd November, 2014); 21 Days Advanced Training Programme on ICT Applications for Libraries (from 10th to 30th November, 2014); Three-day National Workshop on E-Learning: Content Creation and Hosting (from 3rd to 5th December, 2014); Two-day Workshop on Copy Cataloguing (from 6th to 7th December, 2014); and Three-Day Training Programme on E-Resources Management (from 15th to 17th December, 2014).

The Centre as one of its key mandates promotes open source software and has gained expertise in various open sources software including D-Space and PostgreSQL. The Indian Navy in their NASDO Centre, Goa, gave a project to the INFLIBNET Centre for upgrading D-Space installation and PostgreSQL data base to a new version for security enhancement. The project was successfully completed by the Scientists of the INFLIBNET Centre.

This issue of the Newsletter provides a detailed write-up on Evergreen Open Source Software and an article entitled "Recent Trends in Databases and new Technologies for providing Online Library Services to Create "Intelligent Libraries" by Mr. Manoj Kumar K., Scientist-D (CS), INFLIBNET Centre. The article elaborates on technological tools, web 2.0 / Web 3.0 technologies, DBMS, new gadgets, etc. that are being used increasingly in the libraries as well as by the new generation library users. I am sure you would enjoy reading this well-researched article. This issue of the Newsletter also provides Training Calendar for the year 2015 wherein 30 training programmes are listed for the year 2015 at INFLIBNET Centre. The Centre would of course continue to hold training programmes and Workshops in collaboration with universities and colleges at their own premises.

Wishing you a very happy, healthy and prosperous new year.

(Jagdish Arora)

Training Programme on SOUL 2.0, INFLIBNET Centre, Gandhinagar

The INFLIBNET Centre regularly conducts SOUL 2.0 Training Programmes to impart training on installation and operation of SOUL software for its users. The following two training programmes were organized at the INFLIBNET Centre, Gandhinagar during this quarter. The Programmes were coordinated by Mr. H G Hosamani, Scientist C (LS), INFLIBNET Centre. 43 participants attended these two training programmes as per the details given below:

Sl. No.	Name of the Programme	Date of the Programme	No. of Participants
1	116th Training Programme on SOUL 2.0	1st – 6th December, 2014	17
2	117th Training Programme on SOUL 2.0	8th – 12th December, 2014	26

Participants of 116th Training Programme on SOUL 2.0 with the Director and Technical Staff of the INFLIBNET Centre

Participants of 117th Training Programme on SOUL 2.0 with the Director and Technical Staff of the INFLIBNET Centre

User Awareness Programmes on Access to E-resources under N-LIST Programme

One-day User Awareness Programme on Access to E-resources under N-LIST Programme, Bilaspur University, Bilaspur, 17th October, 2014

Mr. Ashok Kumar Rai, Scientist D (CS), INFLIBNET Centre, Prof. G.D. Sharma, Vice-Chancellor, Dr. H. S. Hota, Associate Professor and Mr. Jeetendra Kumar, Assistant Professor, Dept. of Computer Science and Application, Bilaspur University, Bilaspur on the dais during User Awareness Programme on Access to e-resources under N-LIST Programme at Bilaspur University, Bilaspur

One-day User Awareness Programme on access to e-resources under UGC-INFONET Digital Library Consortium and N-LIST Programme were organized by Bilaspur University, Bilaspur in collaboration with INFLIBNET Centre on 17th October 2014 at Bilasa Auditorium, Bilaspur University, Bilaspur. It was a unique User Awareness Programme that was organized for the first time in the region with objective to encourage affiliated colleges of the University to avail the facility of e-resources through N-LIST programme, a college component of UGC-INFONET Digital Library Consortium. Prof. G.D. Sharma, Vice-Chancellor inaugurated the programme. Dr. H. S. Hota, Associate Professor and Mr. Jeetendra Kumar, Assistant Professor, Dept. of Computer Science and Application coordinated the programme. Dr. Hota welcomed the guests and participants and gave an introductory speech and pointed out objectives and benefits of the programme. Prof. B N Tiwari and Prof. Biswas,

Associate Professors, Dept. of Library and Information Science, Guru Ghasidas Central University, Bilaspur and Dr. Prashant Bopapurkar, Associate Professor, Dept. of Library and Information Science, K N College, Korba shared their views and experiences about accessing e-resources and SOUL Software. Mr. Ashok Kumar Rai, Scientist D (CS), INFLIBNET Centre briefly elaborated the theme of the programme with special reference to access of e-resources for the benefits of students as well as teachers and researchers from affiliated colleges. He also made a presentation on N-LIST programme followed by active interaction with participants. Mr. Jeetendra Kumar extended warm vote of thanks at the end of the programme. Principals and Librarians from 161 affiliated colleges attended the programme. N-LIST membership forms were distributed and collected from all participants. About 85 affiliated colleges were interested to become an active member of N-LIST programme.

User Awareness Programme on Shodhganga and Anti-Plagiarism Software

One-day Regional Training Programme cum Workshop on Shodhganga and Anti-Plagiarism Software, Tezpur University, Tezpur, 28th November, 2014

One-day Regional Training Programme cum Workshop on Shodhganga and Anti-Plagiarism Software was organized by Tezpur University in collaboration with INFLIBNET Centre, Gandhinagar on 28th November, 2014 at Central Library, Tezpur University, Tezpur. Prof. Amarjyoti Choudhury, Pro Vice-Chancellor, Chief Guest and Padma Shri Prof. Rajpal S. Sirohi, Professor of Eminence, Department of Physics, Tezpur University, Guest of Honour inaugurated the programme with lighting the traditional lamp in the presence of Prof. A. S Chandel, Professor Emeritus, DLIS, NEHU, Shillong, Mr. Manoj Kumar K, Scientist-D (CS), INFLIBNET Centre, Dr. M. Saikia, Librarian, Tezpur University, other dignitaries and participants. Dr. M. Saikia, Librarian, Tezpur University welcomed the delegates and dignitaries and described aims and objectives of the programme. Mr. Manoj Kumar K, Scientist-D (CS), INFLIBNET Centre spoke about Shodhganga, Shodhgangotri repository and Plagiarism. He stated that it was a unique opportunity for faculty members, researchers and students to gain knowledge of various facets of plagiarism and how to use anti-plagiarism software (iThenticate/Turnitin) for similarity test.

(From left to right) Padma Shri Prof. Rajpal S. Sirohi, Professor of Eminence, Department of Physics, Prof. Amarjyoti Choudhury, Pro Vice-Chancellor, Tezpur University, Prof. A. S Chandel, Professor Emeritus, DLIS, NEHU, Shillong, Dr. M. Saikia, Librarian, Tezpur University and Mr. Manoj Kumar K, Scientist-D (CS), INFLIBNET Centre on the dais during Regional Training Programme cum Workshop on Shodhganga and Anti-Plagiarism Software at Tezpur University, Tezpur

Prof. A. S. Chandel, in his keynote address, deliberated upon various issues related to plagiarism and anti-plagiarism software tools provided by the INFLIBNET Centre. He explained the standardization of similarity checking and uniformity of anti-plagiarism tools. He also described the attitude of researchers towards plagiarism and ethical issues related to plagiarism and criticised the bad state of plagiarism which happened at the different levels of education in India. He stressed that the plagiarists should be exposed and strict action should be taken against them.

After that, Padma Shri Prof. Rajpal S. Sirohi, Guest of honour addressed the participants. He opined that the access to plagiarism detection software to all universities through INFLIBNET Centre is a good initiative. These anti-plagiarism software tools i.e. "Turnitin and iThenticate" should be used by the researchers to improve upon the quality of their research work. He highlighted the significance of awareness among the researchers and faculty members and students on the issue of academic conduct and ethics. He believed that the software cannot alone check plagiarism without human interference. He expressed that self-restrain is significant to avoid plagiarism. Researchers should judge their own work professionally and ethically.

Prof. Amarjyoti Choudhury, Pro Vice-Chancellor, Tezpur University appreciated Central Library for organizing one-day Regional Training Programme cum Workshop on Shodhganga and Anti-plagiarism software (ithenticate/turnitin) at Tezpur University for the benefit of researchers and academicians. He explained the plagiarism issues and challenges for academia and benefits of implementing the anti-plagiarism system and procedures in every university and institution. Prof. Choudhury also mentioned that there is no statutory form/organization in India to deal with the cases of plagiarism. In absence of such a body, plagiarism cases were dealt with in an adhoc fashion. He discussed how to ensure academic conduct as per the norms and ethics of the scholarly world. He also elaborated upon the reasons which led faculty, students, researchers and scientists to cut corners and plagiarize. He also emphasized on the importance of "Turnitin and iThenticate" software and elaborated that these services provide support to teachers/research scholars in identifying instances of plagiarism, but these certainly cannot replace human judgment. Similarity reports generated by these software tools should be interpreted properly in order to enhance the quality of academic or research work. Dr. M. Eqbal, Deputy Librarian, Tezpur University extended warm vote of thanks at the end of the inaugural session.

On this occasion, Chief Guest Prof. Amarjyoti Choudhury, Pro Vice-Chancellor, Tezpur University and Guest of Honour Padma Shri Prof. Rajpal S. Sirohi, Professor of Eminence, Department of Physics, Tezpur released book titled 'Library Management: New Trends and Challenges' edited by Dr. M. Saikia, Dr. Monawwer Eqbal and Mr. Devendra Pratap.

Technical Sessions

In the first technical session, Prof. D.K. Bhattacharyya, Dean, School of Engineering, Tezpur University elucidated an overview on plagiarism and described different types of plagiarism such as auto-plagiarism, self-plagiarism and cryptomnesia, intentional and unintentional plagiarism and major causes of plagiarism. He also cited some very interesting references and further reading resources.

After that, Mr. Manoj Kumar K, Scientist-D (CS), resource person from INFLIBNET Centre made a

detailed presentation on Shodhganga and Shodhgangotri. He discussed the work flow, technical process, creation of metadata and standards, submission of theses, authentication, backup of Shodhganga repository and briefed the role and responsibilities of University Coordinator. He also talked about UGC guidelines on submission of thesis and responsibilities of INFLIBNET Centre and University. He also discussed the benefits of implementing the anti-plagiarism system and procedures that should be adopted in universities.

In the second and third technical sessions, Mr. Bibin B. Daniel, Balani Infotech Pvt. Ltd, New Delhi made a detailed presentation on Turnitin & iThenticate software. He explained the procedure of testing a document for plagiarism using Turnitin & iThenticate software and clarified steps for uploading the theses and documents. He highlighted the differences between Turnitin & iThenticate software. The participants took great interest during the whole session and many questions were raised related to the Turnitin & iThenticate software.

More than 250 participants including faculty members, research scholars, and library professionals attended the programme. The programme was anchored by Mr Rajesh. R, Assistant Librarian. Dr. M. Saikia, Librarian, Tezpur University extended vote of thanks to all participants and speakers.

Panel Discussion and Recommendations

The panel discussion on the theme of the programme "Plagiarism: It's Issues and Challenges for Academia" was chaired by Prof. M. Bhuyan, Department of Electronics & Communication Engineering, Tezpur University. The panellists were Prof. Charu Lata Mahanta, Dean, Research & Development, Prof.

Subhrangshu Sekhar Sarkar, Dean, School of Management Sciences, Prof. Chandana Goswami, Department of Business Administration, Tezpur University, Mr. Manoj Kumar K, Scientist-D (CS), INFLIBNET Centre and Mr. Bibin B. Daniel, Balani Infotech Pvt. Ltd, New Delhi. Panel members discussed recent media reports about an online software tool which can be used to detect plagiarism in research papers and thesis. Panelist suggested that all educational institutions should constitute a committee to ensure compliance to ethics and norms of scholarly writing. They quoted the case of others organization which had formulated the guidelines for ensuring academic integrity.

The Panelist also discussed that scientists and faculty members are under pressure to publish in order to get promotions and grants. The panelist recommended that a policy is required for checking of plagiarism and similarity and standardization of software. Mr. Manoj Kumar K, Scientist-D (CS), INFLIBNET Centre agreed to put forward the recommendation regarding standardization of percentage of similarity check to Govt. of India and request Tezpur University to send the draft through VC to INFLIBNET Centre for necessary action. At the end of the discussion, the following recommendations were given:

- A guideline should be formulated by UGC for plagiarism issues for all academic institutions. All university should suggest UGC to formulate national level policy on plagiarism.
- A policy should be formulated by UGC about the percentage (%) of similarity checking by the software tools.
- Standardisation of anti-plagiarism software is required for all university.
- A committee should be constituted at the university

level which should be delegated with the responsibility of ensuring compliance to academic conduct.

• More programmes and workshops should be conducted on a regular basis in order to spread awareness and educate the researcher community on the issue of academic conduct and integrity.

One-day User Awareness Programme on Shodhganga & Anti-Plagiarism Software, Bundelkhand University, Jhansi, 6th December 2014

Prof. Avinash Chandra Pandey, Hon'ble Vice-Chancellor, Prof. Pankaj Atri, Pro Vice-Chancellor, Dr. Sridevi Jetty, Dy. Librarian, Bundelkhand University and Mr. Manoj Kumar, Scientist D(CS), INFLIBNET Centre on the dais during User Awareness Programme on Shodhganga & Anti-Plagiarism Software at Bundelkhans University, Jhansi

One-day User Awareness Programme on Shodhganga and Anti-Plagiarism Software was organized by Bundelkhand University in collaboration with INFLIBNET Centre, Gandhinagar on 6th December 2014 by Central Library, Bundelkhand University, Jhansi. Prof. Avinash Chandra Pandey, Hon'ble Vice-Chancellor inaugurated the programme with lighting the traditional lamp in front of Goddess of knowledge, Devi Saraswati along with Prof. Pankaj Atri, Pro Vice-Chancellor, Dr. Sridevi Jetty, Dy. Librarian, Bundelkhand University and Mr. Manoj Kumar, Scientist D(CS), INFLIBNET Centre. Dr. Sridevi Jetty coordinated the programme and welcomed the guests and participants of the programme and also gave a clear scenario regarding the status of digitized theses of the University and mentioned that 1,769 theses have been digitized and uploaded into Shodhganga, and the university stands at the fourth position in Shodhganga as far as no. of the theses are concerned. She also mentioned about various important services provided by INFLIBNET Centre to Bundelkhand University Library including UGC Infonet Digital Library Consortium journals, SOUL 2.0 software, etc. Mr. Manoj Kumar spoke about the importance of Shodhganga, anti-plagiarism software, utilization of software and participation of Indian universities in Shodhganga. Prof. Pankaj Atri, Pro Vice-Chancellor spoke about how the research become challenging in the current scenario and also how important it is to use the plagiarism checkers in Ph.D theses as well as in research papers / articles. Prof. Avinash Chandra Pandey, Hon'ble Vice Chancellor delivered presidential address and asked to improve quality of research with examples of snakes and ladders. 400 participants including faculty members and research scholars from various Departments of Bundelkhand University attended the programme. Representatives from IGroup Infotech India Pvt. Ltd. made detailed presentations about Turnitin and iThenticate software. Dr. Vinit Kumar, Assistant Professor, Dept. of Library & Information Science extended a warm vote of thanks to INFLIBNET Centre, University authorities and all the participants.

One-day User Awareness Programme on Shodhganga on Anti-Plagiarism Software, Gauhati University, Guwahati, 18th December, 2014

Dr. Mridul Hazarika, Hon'ble Vice-Chancellor, Mr. Wooma Sankar Dev Nath, Librarian, Gauhati University, Dr. Jagdish Arora, Director and Mr. Manoj Kumar K. Scientist D (CS), INFLIBNET Centre on the Dais during inaugural session of User Awareness Programme on Shodhganga & Anti-Plagiarism Software at Gauhati University, Guwahati

One-day User Awareness Programme on Shodhganga and Anti-plagiarism Software was organized by Gauhati University in collaboration with INFLIBNET Centre on 18th December 2014 at K. K. Handique Library, Gauhati University, Guwahati. Dr. Jagdish Arora, Director, INFLIBNET Centre inaugurated the ETD Lab along with Dr. Mridul Hazarika, Hon'ble Vice-Chancellor, Gauhati University and Mr. Manoj Kumar K. Scientist D (CS), INFLIBNET Centre on 17th December, 2014. Dr. Arora elaborated about Shodhganga Project, its aim and objectives and appreciated the Hon'ble V.C. for giving permission to organize such an event for the benefit of the research scholars in particular and academic community in general. He urged upon use of iThenticate and Turnitin for checking plagiarism and for improving quality of research output. He also expressed his satisfaction for the progress of work related to Shodhganga Project in K. K. Handique Library.

Manoj Kumar K, Scientist D (CS), INFLIBNET Centre deliberated upon the anti-plagiarism software 'iThenticate and Turnitin'. Dr. Mridul Hazarika, Hon'ble Vice-Chancellor, delivered presidential address. He thanked to the Director, INFLIBNET Centre for the initiative and he has taken by launching such projects like Shodhganga and Shodhgangotri for the benefit of academic fraternity. He also expressed his happiness for being a part of the project and ensured to extend full cooperation in future collaboration also.

Dr. H. P. Sarma, Rector, Gauhati University delivered concluding remarks. He appreciated help and support provided by the INFLIBNET Centre with financial grants and technical support. He opined that such type of awareness cum demonstration not only guides the research community in right direction but also helps in improving quality of research ultimately benefiting the society.

Mr. Wooma Sankar Dev Nath, Librarian, K. K. Handiqui Library, narrated his experience gathered during execution of the project in the Gauhati University and expressed his heartfelt thanks to Dr. Jagdish Arora, Director and Mr. Manoj Kumar K., Scientist D (CS), INFLIBNET Centre. He also assured that his team will continue in their endeavours to strengthen the Shodhganga project in the days to come.

E-Content Development under e-PG Pathshala

One-day Workshop cum Meeting on e-Content Development for the Paper 'Indian Culture', Sri Venkateswara University, Tirupati, 10th November 2014

Mr. Abhishek Kumar, Scientist C (CS), INFLIBNET Centre delivered a video lecture on E-PG Pathshala at Sri Venkateswara University, Tirupati through video conferencing

One-day Workshop cum Meeting on e-Content Development for the Paper 'Indian Culture' organised by Dept. of Ancient Indian History, Culture and Archaeology, Sri Venkateswara University, Tirupati. Mr. Abhishek Kumar, Scientist C (CS), INFLIBNET Centre delivered a lecture on importance and requirements of e-PG Pathashla project through video conference. Paper Coordinators and Content Writers attended the Workshop cum Meeting. The discussions and deliberations made in the conference enriched the understanding of the project.

Two-day Workshop on e-Content Development for the Paper 'Management of Library and Information Centres & Knowledge Centres', New Delhi, 19th-20th December, 2014

The INFLIBNET Centre organised Two-day Workshop on e-Content Development for the paper 'Management of Library and Information Centres & Knowledge Centres' during 19th to 20th December, 2014 at Event Production Company, New Delhi. The Workshop was the part of e-content development activities of e-PG Pathshala Project funded by MHRD under its National Mission on Education through ICT (NME-ICT). The purpose of the workshop was to assess the progress of e-content development, review the modules and voice recording of self-learn script by the content writers. Dr P K Bhattacharya & Dr Shantanu Ganguly, Fellows, The Energy and Resources Institute, Mrs C M Anand, Scientist F (Retd.), Dr R K Verma, Former Chief Scientist and Dr. G Mahesh, Principal Scientist, NISCAIR and Dr. Kshema Prakash, Deputy Librarian, IIT Jodhpur participated in the workshop. Voice narration of the individual content writer was recorded for the respective modules to prepare self-learn component. Mr. Kannan P, Scientist C (LS), INFLIBNET Centre coordinated the Workshop.

Workshop on e-Content Development for the Subject 'Food Technology', New Delhi, 19th December, 2014

The INFLIBNET Centre organised One-day Workshop on e-Content Development for the Subject 'Food Technology' on 19th December, 2014 at Event Production Company, New Delhi. Prof. Vijaya Khader,

Principal Investigator, Food Technology, e-PG Pathshala welcomed all the stakeholders/team members. Prof. Khader presented the work progress made in the Subject 'Food Technology' including overall status of all papers. She also appreciated the work done by the paper coordinators and their team and requested to all paper coordinators to complete their work by February 2015 in all respect in terms of qualitative benchmark of e-module. Mrs Shweta Brahmbhatt, Project Officer (LS), INFLIBNET Centre presented qualitative benchmark of e-module approved by the Standing Committee, e-PG Pathshala to all the members of Food Technology. She also presented remarks for improvement on each module of each paper with respect to guideline. Mr Sonal V, Event Production

Company presented the multimedia work done by his company under e-PG Pathshala and also discussed that how modules of the subject 'Food Technology' can be prepared with the integration of graphics / animation including new templates with logos.

Prof P. N. Raju, Prof. D. C. Saxena, Prof. Dibyakant Seth, Prof. K. K. Dash, Paper Coordinators for the Subject 'Food Technology' made presentation on their papers to showcase work progress made by them as well as timeline to complete the task of content creation. It was agreed that paper coordinators will provide revised modules as per qualitative benchmarks including missing component of modules as well as storyboard for multimedia.

JSTOR India User's Forum

JSTOR India User's Forum, Inter-University Centre for Astronomy and Astrophysics, Pune, 13th October, 2014

The JSTOR, in collaboration with INFLIBNET Centre, Gandhinagar and Inter-University Centre for Astronomy and Astrophysics organized JSTOR India User's Forum on 13th October 2014 at Library, IUCAA Pune. Ms. Kruti Trivedi, Scientist B (LS), INFLIBNET Centre welcomed the invitees and participants during the inaugural session. The forum was inaugurated by Prof. Ajit Kembhavi, Director, IUCAA, Pune in presence of Dr. Jagdish Arora, Director, INFLIBNET Centre and Dr. R. K. Chadha, Additional Secretary, Parliament of India, Lok Sabha Secretariat, New Delhi. Dr. Jagdish Arora, Director, INFLIBNET Centre thanked Inter-University Centre for Astronomy and Astrophysics, Pune and Mrs. Nirupama Bawdekar, Scientific Officer – E (Library) and her colleagues for organizing JSTOR Forum at a short notice and extending their infrastructural facility. Mr. John Lenahan, Associate Vice President, JSTOR could not attend this meeting due to unavoidable circumstances. However, he gave a brief introduction about the JSTOR database and answered questions by participants online via Skype. Mrs. Nirupama Bawdekar extended a warm vote of thanks to JSTOR, INFLIBNET Centre, authorities of IUCAA, Pune and participants at the end of inaugural session. 100 participants including librarian, information professionals and students from various colleges and universities attended the forum.

The following presentations were made during the technical session of the forum:

1. JSTOR Overview

2. Books at JSTOR

3. Preservation: Portico

    All the three presentations on JSTOR were made by Dr. Jagdish Arora, Director, INFLIBNET Centre on behalf of Mr. John Lenahan, Associate Vice President, JSTOR.

4. Preservation through Document Management and Digitization by Mrs. Suchitra S. Avachat, Associate Director, Armament Research and Development Establishment, Defence R&D Organisation.

5. SLIM 21: JSTOR Federated Search by Ms. Rashika Ajotikar, Algorhythms Consultants Pvt Ltd.

After presentations, discussions were held on different resources and services offered by JSTOR including JSTOR archive, current scholarship, books and portico.

JSTOR India User's Forum, University of Hyderabad, Hyderabad, 19th November, 2014

The JSTOR, in collaboration with INFLIBNET Centre, Gandhinagar and University of Hyderabad organized JSTOR India User's Forum on 19th November 2014 at University of Hyderabad, Hyderabad. Dr. N. Varatha Rajan, University Librarian, University of Hyderabad welcomed the invitees and participants during the inaugural session. The Forum was inaugurated by Prof. Mohan Ramanan, Former Dean, School of Humanities, University of Hyderabad. Dr. Jagdish Arora, Director, INFLIBNET Centre thanked Dr. N. Varatha Rajan for organizing JSTOR Forum at a short notice and extending their infrastructural facility. Mr. John Lenahan, Associate Vice President, JSTOR gave a brief introduction about the programme. Dr. (Mrs.) V. Uma, Deputy Librarian, University of Hyderabad extended

warm vote of thanks to JSTOR, INFLIBNET Centre, authorities of University of Hyderabad and the participants at the end of inaugural session. 125 participants including librarian, information professionals and students from various colleges and universities attended the forum.

The following presentations were made during the technical session of the forum:

1. JSTOR Overview
2. Books at JSTOR
3. Preservation: Portico

   All the three JSTOR presentations mentioned above were made by Mr. John Lenahan, Associate Vice President, JSTOR

4. Future of Librarianship by Dr. P. Divakar, Centre for Cellular and Molecular Biology (CCMB), Hyderabad

After presentations, discussions were held on different resources and services offered by JSTOR including JSTOR archives, current scholarship, books and portico.

JSTOR India User's Forum, Jadavpur University, 21st November, 2014

The JSTOR, in collaboration with INFLIBNET Centre, Gandhinagar and Jadavpur University, organized JSTOR India User's Forum on 21st November 2014 at Jadavpur University, Kolkatta. Prof. Rajib Bandyopadhyay, Dept. of Instrumental and Electronics Engineering, Jadavpur University welcomed the invitees and participants during the inaugural session. The forum was inaugurated by Prof. Sivaji Bandyopadhyay, Dean, FET, Jadavpur University. Dr. Jagdish Arora, Director, INFLIBNET Centre thanked Dr. Manilal Murmu, Librarian, Jadavpur University for organizing JSTOR Forum at a short notice and extending

their infrastructural facility. Mr. John Lenahan, Associate Vice President, JSTOR gave a brief introduction about the programme. Dr. Manilal Murmu extended warm vote of thanks to JSTOR, INFLIBNET Centre, authorities of Jadavpur University and participants at the end of inaugural session. 100 participants including librarian, information professionals and students from various colleges and universities attended the forum.

The following presentations were made during the technical session of the forum:

1. JSTOR Overview
2. Books at JSTOR
3. Preservation: Portico

   All the three JSTOR presentations mentioned above were made by Mr. John Lenahan, Associate Vice President, JSTOR

4. Building eBook Collections in Academic Libraries: an Indian Perspective by Dr. Swati Bhattacharya, Librarian, Indian Institute of Management, Kolkata

After presentations, discussions were held on different resources and services offered by JSTOR including JSTOR archives, current scholarship, books and portico.

National Workshops

Attachment Training Programme for Practicing Library Professionals, INFLIBNET Centre, Gandhinagar, 27th October - 22nd November, 2014

The Centre organized Attachment Training Programmes (ATP) from 27th October to 22nd November 2014 at INFLIBNET Centre, Gandhinagar where-in working library professionals from university/institutions availed the training from experienced INFLIBNET staff. The objective of ATP is to train the LIS professionals on ICT applications in libraries at various levels from basic to advance. Mr. Des Raj Kapoor, Library & Information Assistant, Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, New Delhi took the benefit of ATP at all the four levels.

21 Days Advanced Training Programme on ICT Applications for Libraries, INFLIBNET Centre, Gandhinagar, 10th-30th November, 2014

The Centre organised 21 Days Advanced Training Programme on ICT Applications in Libraries for the benefit of LIS professionals. The objective of programme was to provide an exposure of latest ICT applications to LIS professionals and to impart 'hands-on' training in ICT applications, including RFID, surveillance applications, license, IPR and copyright and networks & cloud computing for resource sharing. The contents covered under this course were as follows:

- New Generation ILMS software
- Changing role of librarianship
- Creation and managing digital library using open source software
- Creation and managing institutional repository
- Web technology
- Networks & cloud computing
- Knowledge discovery tools and techniques
- Inter personnel skills for LIS professionals
- Capacity building on library automation and digital library
- Managing and licensing of e-resources
- Use of Anti- plagiarism software
- RFID Technology
- E-learning management system
- Information literacy
- Latest trends in LIS

Dr. Jagdish Arora, Director, INFLIBNET Centre inaugurated the programme. Dr. Anil Kumar H, Librarian, IIM-Ahmedabad, Dr. T S Kumbar, Librarian, IIT, Gandhinagar, Dr. Shailesh Yagnik, Librarian, MICA, Ahmedabad, Dr. Lalitha Poluru, Librarian, Nirma University, Ahmedabad, Dr. M Kognuramath, Prof & Head, DLIS, Central University of Gujarat, Gandhinagar, Mr. Dhaval Kochar, Rapid Radio Pvt Ltd, Ahmedabad, Mr. G K Upadhyaya, EBSCO Representative were invited as external resources persons along with INFLIBNET technical staff. 8 Participants participated in the programme. Mr. H G Hosamani, Scientist-C (LS) coordinated the programme.

Three-day National Workshop on E-Learning: Content Creation and Hosting, INFLIBNET Centre, Gandhinagar, 3rd -5th December, 2014

Participants of E-Learning: content creation and hosting with the Director and Technical Staff of the INFLIBNET Centre

The INFLIBNET Centre organized three-day Training Programme on E-Learning: Content Creation and Hosting during 3rd-5th December, 2014 at INFLIBNET Centre, Gandhinagar. Mr. Abhishek Kumar, Scientist C (CS) and Coordinator of the Workshop, welcomed the participants and gave an overview of the two-day Workshop. Dr. Jagdish Arora, Director, INFLIBNET Centre inaugurated the programme. The aim of the training programme was to provide exhaustive information on e-learning, electronic content creation and hosting of electronic content. Details of lectures delivered by experts during the three-day training programme were as follows:

Mr. Hitesh Solanki, Scientist B (CS), Mrs. Shweta Brahmbhatt, Project Officer (CS) and Mr. Parth M. Viroja, Project Associate (CS) were resource persons in practical sessions of the training programme. The certificates of participation were distributed at the end of programme. 12 participants including LIS professionals and research scholars attended the programme. Mr. H. G. Hosamani, Scientist C (LS) extended a warm vote of thanks to participants, faculty and publishers.

Two-day Workshop on Copy Cataloguing, INFLIBNET Centre, Gandhinagar, 6th-7th December, 2014

The INFLIBNET Centre organized Two-day Workshop on Copy Cataloguing during 6th to 7th December, 2014 at INFLIBNET Centre, Gandhinagar. Mr. Abhishek Kumar, Scientist C (CS) and Coordinator of the Workshop welcomed the participants and gave an

Topics	Name of Expert and Institution
e-Learning in current context & Learning Management System (LMS) (ATutor / Moodle)	Mr. Abhishek Kumar, Scientist-C (CS), INFLIBNET Centre
Tools, Technique and Standards to Create e-Content	Mr. Kannan P, Scientist-C (LS) , INFLIBNET Centre
e-Content Projects in India and Integrated e-Content Portal	Mr. Yatrik Patel, Scientist-D (CS) , INFLIBNET Centre
E-PG Pathshala: Conceptual framework and Content Creation	Prof. Debal Dasgupta, Head, Dept of Russian Studies, The M S University of Baroda
MOOCs & e-Module: Case Study	Prof. Ambuja Salgaonkar, University of Mumbai

overview of the two-day Workshop. Dr. Jagdish Arora, Director, INFLIBNET Centre inaugurated the Workshop. The aim of the training programme was to provide extensive training on installation, configuration as well as work flow of the OCS (Online Copy Catalogue System). Resource persons from INFLIBNET Centre made detailed presentations including i) IndCat by Mr. Abhishek Kumar, Scientist C (CS), ii) Bibliographic Standards by Mr. Dinesh Ranjan Pradhan, Scientist B (LS), iii) Introduction to Copy Cataloguing & its Tools & Techniques and Overview of OCS: Work Flow and Creation of Records by Mr. Mitesh Kumar Pandya, Scientist-B (LS) iv) Installation and Basic Configuration of OCS by Mr. Dharmesh Shah, STA (CS). Ms. Seema Chavda, Project Officer (LS), Ms. Alpa Acharya, Project Associate (LS), Ms. Sonal Vaghela, Project Assistant (LS) were resource persons in practical sessions of the training programme. 8 Library Professionals from various university libraries attended the workshop.

Three-Day Training Programme on E-Resources Management at INFLIBNET Centre, Gandhinagar, 15th-17th December, 2014

The INFLIBNET Centre organized three-day Training Programme on E-Resources Management from 15th to 17th December, 2014 at INFLIBNET Centre, Gandhinagar. Mr. Dinesh Ranjan Pradhan, Scientist B (LS) and Coordinator of the Workshop, welcomed the participants and gave an overview of the three-day Workshop. Sh. Yatrik Patel, Scientist - D(CS) inaugurated the Workshop. Ms. Hema Cholin, STO (LS) extended a warm vote of thanks at the end of inaugural session. The three-day training programme covered introduction to e-resources management and its life cycle, e-resources search and discovery services by Dr. T S Kumbar, Librarian, IIT Gandhinagar. Mr. Jit-Kwang Han, Elsevier delivered lecture on e-books and its models in publishing industry. Mr. Nihar K Patra, Dy. Librarian, NIFTEM delivered a lecture on various E-resources management software available its comparison. Dr. Shailesh Yagnik, Librarian, MICA, Ahmedabad described various economics and methods of evaluation of e-resources. Mr. Yatrik Patel, Scientist – D (CS) delivered a lecture on various access mechanism of e-resources. Mr. Kannan P, Scientist C (LS), Mr. Dinesh Ranjan Pradhan, Scientist B (LS), Mr. Miteshkumar Pandya, Scientist B (LS), Mr. Saroja Kumar Panda, STA (LS) and Mrs. Roma Asnani, STA (LS) were resource persons for theory and practice sessions on CORAL e-resources management software. 15 participants from various academic and research institutes attended the workshop.

Participants of E-Resources Management with Mr. Nihar K Patra, Dy. Librarian, NIFTEM, Sonepat and Technical Staff of the INFLIBNET Centre

DSpace and PostgreSQL Up-gradation with Security Enhancement at NASDO, Indian Navy, Goa

The INFLIBNET Centre supports academic and research institutions to establish Institutional Repository using DSpace. Extending this service to defence establishment, the Centre has executed the DSpace and PostgreSQL up-gradation with security enhancement of project DIGITAP at NASDO, Indian Navy, Goa.

Naval Aircraft Servicing Development Organisation (NASDO), Goa is a premier organisation in the Indian Navy which looks after the servicing development issues of the entire naval aviation. The organisation undertakes maintenance evaluation, documentation etc of naval aircrafts. The project DIGITAP, based on DSpace software, was initiated in the year 2005 to digitize aircraft publications and documentation of naval aircraft which can be accessed by all the Naval Aviation Units.

Mr. Swapnil Patel, Scientist-B (CS), INFLIBNET Centre visited NASDO, to execute the version up-gradation task during 10th to 14th November, 2014. He upgraded version of DSpace and PostgreSQL to the latest version, restored data and applied security features to several repository of aircraft which is running on several servers with the help of Mr. Pradeep Chauhan, MCAM II, NASDO (Goa).

The entire project was successfully executed under technical guidance of Mr. Yatrik Patel, Scientist-D (CS), INFLIBNET Centre. The services rendered by the INFLIBNET Centre was appreciated by the Captain and Officer-in-Charge , NASDO(Goa).

Evergreen Open Source Software

Evergreen library software an open source Integrated Library Management System (ILMS) that is being used by different types of libraries around the world for automating their library routines. The software is used by libraries not only to provide access to their online public access catalogue (OPAC) for search and browsing but also for managing house-keeping operations such as circulation (check-outs and check-ins), acquisition of library materials, cataloguing of library materials, serials management, etc.

The Evergreen Project was initiated by the Georgia Public Library System in 2006 to serve their need for a scalable catalogue shared by more than 275 public libraries in the state of Georgia (USA). Ever since, it has been adopted by a number of library consortia in the US and Canada as well as by various individual libraries in & outside North America as an open source software.

The software is an open source library automation package designed to meet the needs of the smallest to the largest libraries. Through its staff interface, it facilitates the management reporting system, cataloguing, and circulation of library materials. All types of bibliographic structures and different types of digital resources as well as administrative data can be managed by Evergreen software. The software is designed using Perl as a scripting language and PostgreSQL as backend database. The catalogue interface is primarily constructed using template toolkit with some JavaScript, and the staff client user interface is written in Mozilla's XUL (XML + JavaScript). The user interface for staff client i.e. house-keeping operations is built using Dojo Toolkit JavaScript framework.

The Evergreen software is freely licensed under the GNU General Public License. It is free to download, use, view, modify, and share. It has an active development and user community, as well as several companies offering migration, support, hosting, and development services. The software is browser independent and enables users to perform in-house operations as well as search and retrieval.

Moreover, Evergreen is a member of Software Freedom Conservancy, a not-for-profit organization that provides administrative & financial services for Open Source projects. Conservancy assists by handling all matters other than software development and documentation, so the community can focus on what is the best for improving the software.

Pre-requisites

The following software should be pre-installed on the server before installation Evergreen software:

- Linux (For Server)
- Apache
- Perl
- PostgreSQL
- Java
- OpenSRF & Ejabberd (Instant messaging server)

The staff client requires minimum: Windows (XP, Vista, or 7), Mac OS X 10 or later, or Linux operating system, 4GB RAM or greater, Dual Core CPU or greater.

Broadband Internet connection is required to access server and staff client outside LAN. The staff client uses the TCP protocol on ports 80 and 443 to communicate with the Evergreen server.

Technical Features

- Uses Perl as scripting language, PostgreSQL as backend database and Apache as web server;

- Uses MARC21 standard for bibliographic records;

- Supports Z 39.50 protocol for information retrieval;

- Export/import of bibliographic records in ISO 2709 format;

- Web based interface for in-house operations as well as OPAC;

- Supports copy cataloguing of records from different catalogues;

- Facilitates automation of day-to-day tasks such as acquisition of books, cataloguing, circulation, serials management, e-journals management, management reporting system, OPAC, etc.;

- Enables users to provide SDI and CAS services;

- Supports Unicode standard for multi-lingual contents;

- Enables users to generate barcode labels and spine labels;

- Uses SIP2 (Standard Interchange Protocol) for self-service circulation that enables libraries to extend RFID based self-circulation services;

- Facilitates attachment of table of content with specific records which make the software compliant with digital library;

- Facilitates building library portal as well as OPAC;

- Provides facility to extract various reports in textual format;

- Facilitates simple search as well as advanced search for end users;

- Statistical report generation of any defined set of variables in the databases; and

- Facilitates multiple database management and cross database searching, uses OpenSRF & ejabberd server for instant messaging.

User Forum and Support

The Evergreen development community is still growing, with about eleven active members and roughly 65 individuals who have contributed patches. However, the Evergreen community is also marked by a high degree of participation by the librarians who use the software and contribute documentation, bug reports, and organizational energy.

Evergreen, first launched in 2006, now powers over 544 libraries of every type – public, academic, special, school, and even tribal and home libraries in over a dozen countries worldwide to automate their housekeeping operations. The software is based on MARC21 standards, solutions are offered for various problems through list forum. User can register themselves at http://libmail.georgialibraries.org/mailman/listinfo/open-ils-general and raise their questions to get possible solution of the query. Community also provides real time chat facility to get instant solution to queries from users.

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5. Evergreen Integrated Library System. (2014, December 17). In Wikipedia, the free encyclopedia. Retrieved from http://en.wikipedia.org/w/index.php?title=Evergreen_(software)&oldid=638547768

Training Calendar- 2015

Sl No	Date	Subject	Coordinators	Email Address
1	7-9 January	Bibliometrics and Research Output Analysis	Ms. Kruti Trivedi	kruti@inflibnet.ac.in
2	19-21 January	Advance Training Programme on DSpace	Mr. Yatrik Patel/ Mr Swapnil Patel	yatrik@inflibnet.ac.in swapnil@inflibnet.ac.in
3	22-23 January	National Conference on ETD	Mr. Manoj Kumar K	manoj@inflibnet.ac.in
4	29- 30 January	Research Methodology & Academic Writing	Mr. Manoj Kumar K	manoj@inflibnet.ac.in
5	16-21 February	SOUL Training Programme	Mr. H G Hosamani/ Mr. Yatrik Patel	hosamani@inflibnet.ac.in yatrik@inflibnet.ac.in
6	12-14 March	CALIBER-2015 at Shimla	Mr. Ashok Kumar Rai	ashok@inflibnet.ac.in
7	23-25 March	Workshop on KOHA	Mr. Yatrik Patel/ Mr. Divyakant Vaghela	yatrik@inflibnet.ac.in divyakant@inflibnet.ac.in
8	8-10 April	CMS using Joomla	Mr. Mitesh Kumar Pandya	mitesh@inflibnet.ac.in
9	13-18 April	SOUL Training Programme	Mr. H G Hosamani / Mr. Yatrik Patel	hosamani@inflibnet.ac.in yatrik@inflibnet.ac.in
10	29-30 April	Workshop on Ethical Issues & Use of Anti- Plagiarism for Research Integrity	Mr. Manoj Kumar K	manoj@inflibnet.ac.in
11	6-8 May	E-Learning : Content Creation and Hosting	Mr. Abhishek Kumar	abhishek@inflibnet.ac.in
12	11-15 May	Establishing Digital Library using DSpace	Mr. Yatrik Patel/ Mr. Swapnil Patel	yatrik@inflibnet.ac.in swapnil@inflibnet.ac.in
13	1-6 June	SOUL Training Programme	Mr. H G Hosamani/ Mr. Yatrik Patel	hosamani@inflibnet.ac.in yatrik@inflibnet.ac.in
14	06 June	Workshop on Copy Cataloguing	Mr. Abhishek Kumar/ Ms Vaishali Shah	abhishek@inflibnet.ac.in vaishali@inflibnet.ac.in
15	15-20 June	Advanced Bibliometrics and Research Output Analysis	Ms. Kruti Trivedi/ Mr. Hitesh Solanki	kruti@inflibnet.ac.in hitesh@inflibnet.ac.in
16	15-17 July	Advanced CMS using Drupal	Mr. Kannan P	Kannan@inflibnet.ac.in
17	20-24 July	National Workshop on Cloud Computing, Virtualization and Network Management	Mr. Manoj Kumar K Mr. Gaurav Prakash	manoj@inflibnet.ac.in gaurav@inflibnet.ac.in
18	24 July	SOUL User Meet	Mr. H G Hosamani / Mr. Yatrik Patel	hosamani@inflibnet.ac.in yatrik@inflibnet.ac.in
19	3-8 August	SOUL Training Programme	Mr. H G Hosamani/ Mr.Yatrik Patel	hosamani@inflibnet.ac.in yatrik@inflibnet.ac.in
20	12-14 August	E-Resources Management	Mr. Dinesh Pradhan	dinesh@inflibnet.ac.in

Sl No	Date	Subject	Coordinators	Email Address
21	26-28 August	Workshop on Creation of IR using Open Source Software	Mr. Manoj Kumar K	manoj@inflibnet.ac.in
22	2-4 September	Workshop on Open Data	Mr. Yatrik Patel	yatrik@inflibnet.ac.in
23	7-27 September	Advanced Training Programme on ICT for Libraries	Mr. H G Hosamani	hosamani@inflibnet.ac.in
24	12-17 October	SOUL Training Programme	Mr. H G Hosamani / Mr. Yatrik Patel	hosamani@inflibnet.ac.in yatrik@inflibnet.ac.in
25	17 October	Workshop on Copy Cataloguing	Mr. Abhishek Kumar/ Ms Vaishali Shah	abhishek@inflibnet.ac.in vaishali@inflibnet.ac.in
26	23-25 November	VIVO : Researcher's Profile Management and Discovery	Mr. Kannan P	Kannan@inflibnet.ac.in
27	30 Nov-2 December	Advance Training Programme on DSpace	Mr. Yatrik Patel Mr. Swapnil Patel	yatrik@inflibnet.ac.in swapnil@inflibnet.ac.in
28	7-12 December	SOUL Training Programme	Mr. H G Hosamani / Mr. Yatrik Patel	hosamani@inflibnet.ac.in yatrik@inflibnet.ac.in
29	14-15 December	Advanced Training on ShodhGanga	Mr. Manoj Kumar K	manoj@inflibnet.ac.in
30	16-18 December	Statistical Analysis Using Open Source Software (OpenStat)	Ms. Kruti Trivedi/ Mr. Hitesh Solanki	kruti@inflibnet.ac.in hitesh@inflibnet.ac.in

Recent Trends in Databases and New Technologies for providing Online Library Services to create "Intelligent Libraries"

Manoj Kumar K, Scientist D (CS)

Library services have gone through phenomenal changes in providing information services by adopting proven technologies for dissemination of information to the users. Due to the fundamental shift in accessing information, latest tools and technologies are developed for meeting the versatility of platform for sharing of information over Internet. Over past few decades, databases played major roles in storing and indexing information in a structured way. Relational databases became important software for storage and management of data in conventional libraries. Various commercial as well as open source database management software have been introduced for various purposes. These software are having structured architecture to query and retrieve information through standard SQL. The compulsion to handle voluminous and structures data such as audios and videos has given birth to unstructured query languages like NoSQL databases. Similarly for the user interfaces, simple HTML and CSS have been replaced with more sophisticated tools like JSP, JSON, XML, XHTML & HTML 5, J-Query, DOM, AJAX, HTML5, built-in Java/PHP framework, etc. Device and browser independent applications are in demand due to the penetration of smartphones, tablets and other hand-held wireless devices amongst masses. These kinds of latest devices are widely used by academic community and users also demand for the applications which can easily run on these devices. Android, Windows Phone, Palm WebOS, Blackberry etc. are commonly used by students and academic community who look for the library services to run on these devices. To reach services and applications to the all strata of the society, the services should be available in vernacular languages also. This paper discussed evolution of databases and library automation software, trends in technological changes in application development, innovation in providing services, semantic web, ontology, recent front-end tools for user interface design and strategies to be adopted to choose such trends and tools.

Evolution of Technologies in Libraries

In 1960s, on demand batch searching (offline) was used in MEDLARS systems for search service by using computer and later dialogue and chemical abstract services developed. Online services start with introduction of packet-switched data communications network. In 1970s more than 300 public access databases were available. This kinds of services like MEDLARS, MEDLINE, Dialogue, ORBIT, LEXIS etc. led to the inclusion of Online Public Access Catalogue (OPAC) in library automation packages.

Modernisation of libraries start with introduction of the automation of routine activities of library functions. Acquisition, technical processing of the collections in the library which includes cataloguing, classification and accessioning, circulation (issue, return, fine calculation and reservation), user management and administration, serial control management, budgeting,

stock verification, binding process, OPAC, etc. are major activities of any library. The technological evolution has also reached to a level where the fundamental way of managing the library activities should be changed. Use of electronic devices and computers has transformed manual activities of libraries into modernised way by using relevant software. SOUL, Koha, NewGenLib, ABCD, Evergreen, e-granthalaya, Alice for Windows, Libsys are some of the major software used in Indian libraries for automating the activities in new era. Internet and allied services have given birth to formulate new methodologies and technologies to disseminate the information into various forms and formats. Static web i.e. web 1.0 is introduced to provide information on a web page to the user and services like WebOPAC etc. are introduced a decade back in libraries. These services are accessed by the users not only with PCs but also with latest gadgets such as smartphones, tablets, phablets, iPads, etc.

Library Management Software using Latest Trends

The libraries are using the software mentioned above for its automation activities. The evolution of such software has adopted the tools and technologies available during the period of development and migrated to latest version depending on further development. WebOPAC is an implementation of web 1.0 technologies in library management software. Many of the software is redesigned to equip with web technologies and migrated to web based automated services. The client server model is shifted to web server/browser model on Internet platform.

Recent trends in technologies and gadgets are challengingly forcing the libraries to adopt latest communication tools for effective delivery of knowledge and information to the user in cost effective

manner. Web 2.0 tools and technologies are playing a major role in libraries for the interactive model for the exchange of information with user satisfaction. The web 2.0 tools such as social networking, social bookmarking, blogs, weblogs, folksonomies, RSS feeds, wikis, mashups, widgets, on-demand video streaming, video sharing sites, hosted services, podcasting etc. are integrated with existing library technologies for providing hybrid services to the user in desired interactive way. Customised web services with its simple architecture is using the HTTP protocol with XML serialisation in conjunction with other web related standards for the representation of web resources using a uniform set of stateless operations (REST) in libraries now.

Web API (Application Programme Interface) is a new development in web service. Web enabled REST based communications are used as shown in figure 1. RESTful APIs is based on stateless architecture which do not always demand XML based web services protocols (SOAP & WSDL) to support their interface. Web APIs are required for exchanging data over Internet when two different software systems are used. The software system that requests data is called service requester and the system that provide data for the required system is
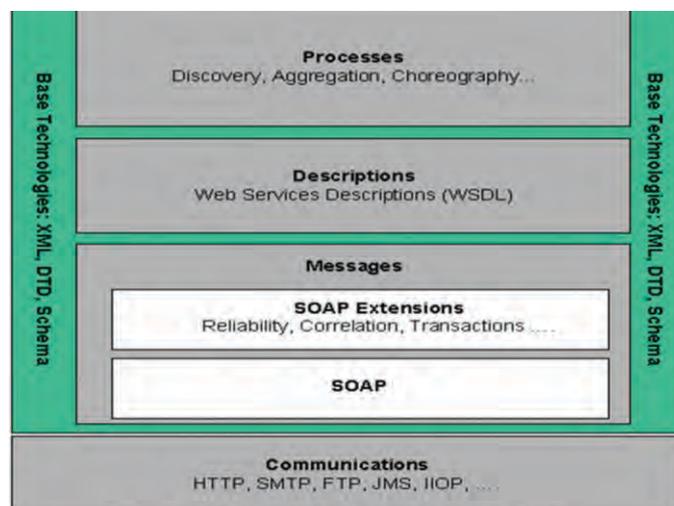

Fig. 1. Web Services Architecture Stack

called service provider. The service provider sends a WSDL file (Web Services Description Language) to a central directory called UDDI (Universal Description, Discovery and Integration). UDDI defines which software system should be contacted for the type of data requested. After finding out the software system, it uses a special protocol called SOAP (Simple Object Access Protocol) and sends structured data in an XML file using SOAP protocol. The XML file would be validated again by service requester using an XSD (XML Schema definition). Modern library management software is exploring the possibility of including this model of web services in its designs. The web services that used markup languages are:

- Representational State Transfer (REST)
- JSON-RPC/WSP (Java script Object Notation Web Service Protocol)
- WSDL
- WSCL (Conversional Language)
- WS-Metadata Exchange
- XML RPC (Remote Procedure Call)

Web services based technologies enable the libraries to host their services in cloud and flexibility of building the software as well as platform as service. The libraries are redefining the software with a new design pattern as Service-Oriented Architecture. This kind of service orientation is independent of any vendor, product or technology. Such adaptation of web services in libraries will change the conventional style of automation of libraries in future.

Building Digital Libraries

Along with automation of libraries, digitisation is also considered as one of the major task of modern libraries. Collaborative content creation is the mantra of web 2.0 technologies. Scanning and preserving the content is primary objective of the libraries in modern era. OCR based searchable content is required to be created for the effective search and indexing of the content in libraries. Academic materials, research resources, manuscripts, institutional documents, publications etc. are to be digitised for preservation and sharing.

In the current era, all documents are almost digitally born and digitisation is as simple as converting into open standard document such as searchable PDFs, TIFF, etc. Old documents and manuscripts are to be scanned digitally to create digital fingerprints. Scanning hundreds of thousands of bound volumes and books without damaging them is a challenging task. Latest scanners have ability for creating scanned books at a rate of 250 pages per minute. The slow manual scanning is replaced with technologically advanced high speed non-destructive scanning of the book in its original format by robotic book scanner. As the pages flip for scanning a pair of high definition cameras scans the pages and laser lights provide information about the page's 3D topography. 3D topography allows the robot to map the pages 3D deformation and using a real-time algorithm it restores the image to a flat view without curling as well as guarding against skipped pages. Thus, practically, 1.2 lakh pages can be scanned in a day. If the books are available as unbind volume with loose papers, flatbed scanners or automatic document feeder (ADF) can be used for scanning. Pages with a riffled edging or curving due to a non-flat binding can be difficult to scan using ADF. ADF is designed to scan pages of uniform shape and size, and variably sized or shaped pages can lead to improper scanning. Latest ADF scanners have the ability to scan in colour/greyscale/monochrome with 200-300 dpi at the rate of 80 pages per minutes or 160 images per minute. These kinds of scanners are widely used in universities for digitisation of theses. Digitised contents can be aggregated into a digital library or Institutional

Repositories (IRs) for the benefit of user based on policy of the institute. Copyright and IPR should be checked before making it available for the users.

Content Creation and Management of Repositories (IR and OR)

After creation of digital scanned PDFs, the repositories are to be created for searching the scanned documents. The structure of the digital content, communities, collection and metadata are to be created and assigned for each document. The conventional database has its own limitation for storage and retrieval of huge digitised achieves. There are many open source software which are available to address these issues with built-in architecture and data models. DSpace, Greenstone, e-Prints are such popular open source software which can be used for creation of Institutional repositories and digital libraries. Many of the software have web 2.0 built-in features for the dissemination of digitised content for the users. The metadata has to be created as per the international standards such as Dublin Core, MARC21 etc. Modified Dublin Core can be used, if the collections are specific to any document type. Customisation of the user interface may be done with the help of scripting language such as JSP, Java Script,

PHP, Perl, etc. A database is also required for storing the content in an effective and systematic manner by auto indexing the content. There are several open source databases available which will be discussed in next section. Normally the design of any digital library software is divided into 3 layers i.e. storage layer, business logic layer and application layer. A sample architecture used in DSpace is given in Figure 2.

Open repositories can be created with handle IDs which is the unique and persistent identity for the digital objects as defined by CNRI's Digital Object Architecture. There are global handle registries for maintaining the handles and generally, handle services are being run by national libraries, national laboratories, universities, government agencies, research groups and federations. For example Shodhganga is having handle identifier at URI: http://hdl.handle.net/10603 which is registered with CNRI. The theses in the repositories are having unique identification number which is numerically coded i.e. http://hdl.handle.net/10603/17937 is ID assigned to one of the thesis hosted in Shodhganga.

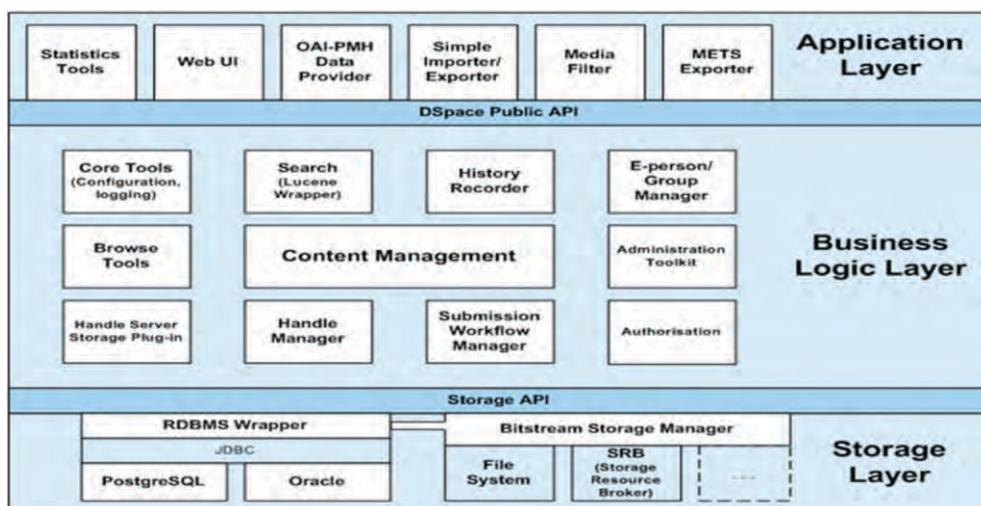Now a days, each researcher is identified by a unique global research identity which will help to create a transparent method of linking research activities and research output linked to these identifiers. ORCID ID, Google Scholar ID, Researcher ID, Scopus ID etc. are some of the popular researchers ids used globally. Libraries can promote their researcher to create IDs in any or all of these global registries. ORCID also provide APIs to support system to system communication and

Fig. 2: Dspace Architecture

authentication under open source licence. Vidwan database of INFLIBNET Centre, which is national database of experts in various disciplines integrated with ORCID ID for publication details to populate in the user profile. Likewise RingGold is a Cetral registry of that maintain a unique ID for Institutions and organisations.

Management of Data and Storage

The demand to store voluminous data in libraries requires sophisticated database management systems (DBMS). There are more than 200 different database systems that can be use as backend storage systems. Traditionally relational DBMS are used to store data in a structured and organised manner. RDBMS is the basis for Structure Query Language (SQL) and other modern database systems like MSSQL, MySQL, PostgreSQL, Oracle, IBM DB2, Sybase ASE and Microsoft access. Data in RDBMS stored in database objects called 'tables'. Though RDBMS is adequate for data which is in simple tabular structure, it is difficult to model for complicated and complex data structure which is having multiple levels of nesting. This can be resolved by using Open Source Database NoSQL (Not Only SQL) which is used in Big Data and real time web applications.

NoSQL and New Data Models

NoSQL is a new approach to data management and database design which is useful for very large set of distributed data. Since NoSQL supports a wide range of technologies and architecture, it is preferred to solve the scalability and big data performance. NoSQL is widely used to manage huge unstructured data which are stored on multiple virtual servers in the cloud. The benefits of using NoSQL over relational databases are its capabilities to handle large volumes of structured, semi-

structured and unstructured data and support object oriented programming and scale-out architecture.

The most popular NoSQL database is Apache Cassandra which was Facebook's proprietary database and MongoDB is also growing rapidly. The other NoSQL implementation includes SimpleDB, Google BigTable, Apache Hodoop, MapReduce, MemcacheDB and Voldmort. Some of the popular social networking sites which use NoSQL include Twitter, Linkedin, NetFlix, etc. NoSQL database types are document databases which can contain (i) different key value pairs, key-array
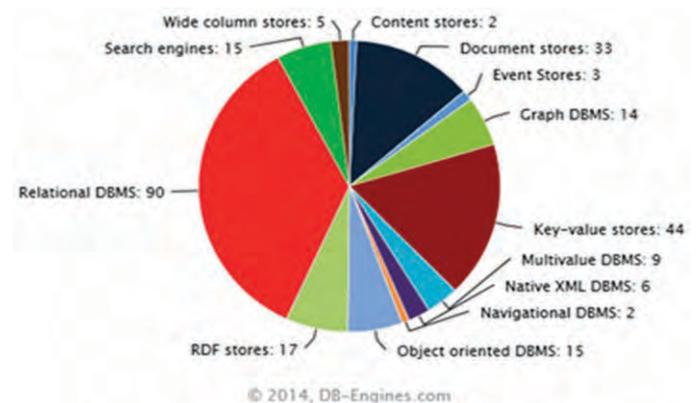

Fig. 3 : Ranking by Database Model

pairs or even nested documents, (ii) graph stores-to-store information about networks such as social connections which include Neo4J and HyperGraphDB (iii) key-value stores-to-store attribute names with its values, eg. Riak and Voldmort. (iv) wide-column stores such as Cassandra and HBase which are optimised for queries over large datasets and store columns together. The distribution of RDBMS as well as NoSQL Database types is shown in the pie-chart.

User Interface & its Development Tools

The storage issue is being address by modern open database like NoSQL and old RDBMS for databases.

Properly trained Database Base Administrators (DBAs) along with strict policy enforcement for maintenance of database is required. Stack overflow, SPOF (Single Point of Failure) which is potential risk posed by flow in the design, implementation and configuration of database systems and networks is to be planned during the design of the system where big data is used. The word 'Big Data' stands to describe massive volume of structured and unstructured data. The big data is not only used to refer to the volume of data but also the technology i.e. tools and processors that a library requires to handle the large amount of data and storage facilities. The data size may be petabytes-PB (1024TB) or exabytes (1024 PB) of data.

In such a situation, to deal with 'Big Data', distributed indexing, replication and load balanced querying, automated failover and recovery with fast search interfaces are required. These kinds of challenges are resolved by advanced search server with a REST like API as mentioned above. Then unstructured documents are indexed with latest tools such as JSON (JAVA Script Object Notation), XML, CSV or Binary over HTTP. Solr is an example of open source search platform from Apache Lucene project which include all the features mentioned above and also support hit highlighting, faceted search, dynamic clustering, database integration with NoSQL feature, rich document handling etc.

For programmers, customised interface can be made by using programming languages/tools such as PHP, Perl, cross-platform JavaScript Library like J-Query, DOM (Document Object Model), AJAX, HTML5 etc. AJAX is very popularly used as a interrelated web development techniques used on client side to create asynchronous web application. It is also a preferred script for exchanging data with server and updating a small portion of webpage without reloading the whole page. HTML 5 addresses the issues of scalability in HTML 4 and have introduced additional features to support semantics nature of web, innovative connectivity, offline and storage, Open web multimedia, diverse range of presentation options for 2D/3D graphics and its effects, allowing for the usage of various input and output devices and styling.

Ontology and Semantic Web

The introduction of web technologies and World Wide Web in 1990s has given innumerable opportunities for many services and platform for sharing of resources. New services like Email, FTP, Search Tools, and HTML for web, discussion groups, hosting of various services in a single server are introduced in the initial phase of Web 1.0. From the static nature of web document and read only web, the interactive and social web is introduced for collaborative content creation and user interaction. Read-Write-Modify-Distribute applications and contents became the heart of the Web 2.0 technologies. Search and retrieval of content was part of the visible web.

Retrieving the content from multiple sources and intelligently analysing the data is challenging task. Creation of knowledge from hyperlinked documents and semantically linking the useful and related documents is a research topic in the modern web. Semantic web (coined by Tim Berners-Lee) is collaborative movement by international standards bodies like World Wide Web Consortium (W3C) for converting the convert web which is dominated by unstructured and semi structured documents into a "meaningful web". As per W3C, semantic web provides common framework of semantic web stack which is built on W3C Resource Description Framework (RDF) to allow data to be shared and reused across applications, institutions and communities. The

technology enables computers and people to work in cooperation. Since digital library is an interconnected library of documents by creating hypermedia of links which retrieves data from distributed databases, syntactic web cannot give desired result to the focused users. Semantic web using the concept of human deductive reasoning and inference logic based on new technologies like RDF, Ontology Languages, XML etc. can produced meaningful result and help computers to perform automated information gathering and research. Ontological model of data and description is required for relating different pieces of data to another. Ontology is a standard way of modelling the ways different pieces of data relate to one another. This help machine to understand the data and relations by adding meaning to metadata. Thus knowledge can be represented as a set of concept with a domain and relationships between those concepts. Ontologies are nothing but explicit specification of shared conceptualisation. Modern well designed databases tends to deal with lots of relationship between different elements of data. Ontology vocabulary with RDF, XML, Unicode, URI with trust proof and logic (rules of modern Web) becomes the semantics web vision for knowledge retrieval. Web Ontology Language (OWL) extends RDF and RDFS (Schema) for interpretation of web content with the above technologies for mission interpretation. OWL-Lite, OWL-DL, OWL-Full or DAML (DARPA Agent Markup Language) along with reasoning tools such as Jena, RacerPro, FaCT++, HermiT, Pellet, etc. and ontology interface layer is used for retrieval of 'Web of Knowledge' from the deep or

invisible web. Modern query languages like SPARQL, DL Query, nRQL, RDQL, OWL-QL, SWARL could be used for extracting exact meaningful content from the semantic web.

Strategies for Choosing Trends and Tools

Technologies are changing every day and new techniques / tools are introduced every day. Many of such technologies get obsolete after creating a small hype (eg. Pager). It is absolutely difficult to realise the impact of technology or tool in short time. Social networking also plays a major role in dissemination of information by connecting to respective users. The strategies are to be chosen by learning and observing the changes that the technology is making in society. It is suggested to follow the trends in following in order to choose tools:

1) Hardware trends

2) Networking trends

3) Development and changes in programming languages

4) Trends in web technology

5) User feedback about using a new tool

6) Percentage of growth of technology and tool (Google trend analysis can be used to find out) an example of trends of two NoSQL databases mongoDB and Cassandra given below
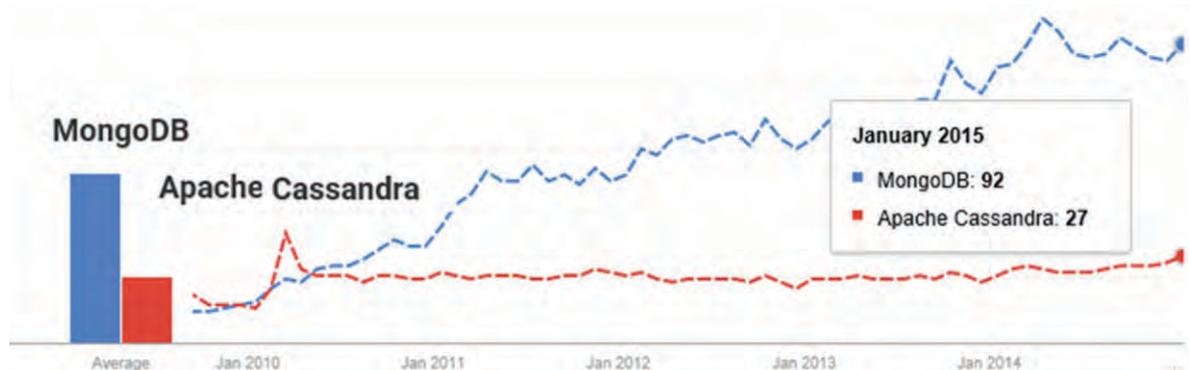

Fig. 4 : Analysis by Google Trend for two new Databases

Conclusion

Libraries are going under radical changes due to quick technological development. The online resources are created in libraries to provide hybrid services to the users. Online contents such as e-journals, e-books, e-scripts, e-questionnaires, videos, audios, animations, play major role in providing content to the users for academic needs. Conventional databases, programming languages, scripting tools are being replaced with advanced tools and software. Reliability and scalability need to be assured for the progression growth of contents with multi formatted e-content. The three layer logic for designing a system replaced with entire model by liberation of the data from the logical and interface design. Speed and accessibility of content, where bandwidth is not a barrier, is directly proportional to the technologies used behind solution used for providing online services. Traditional RDBMS like MS SQL, ORACLE, MySQL, PostgreSQL are been replaced with NoSQL like MongoDB, Cassandra, etc. Since the user access is from various gadgets like PC, tablets, mobile devices, interface should be neutral to any technology which creates bottleneck. The conventional OS and browsers will be replaced by Android, iOS for management of the user applications. Semantic web will be used increasingly for creation of meaningful content by relating document with the help of standards like RDF and RDFS (Schema) and ontology tools like OWL-Lite, OWL-DL, OWL-Full or DAML (DARPA Agent Markup Language) along with reasoning tools such as Jena, RacerPro, FaCT++, HermiT, Pellet etc. and modern query languages like SPARQL, DL Query, nRQL, RDQL, OWL-QL, SWARL etc. The modern libraries are envisaged as "Intelligent libraries" by introducing the trends and technologies discussed in this article.

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Visitors

Prof. Debal Dasgupta, Head, Dept of Russian Studies, M S University of Baroda, Vadodara

Prof. Ambuja Salgaonkar, University of Mumbai, Mumbai

Dr. T S Kumbar, Librarian, IIT Gandhinagar

Mr. Jit-Kwang Han, Elsevier

Mr. Nihar K Patra, Dy. Librarian, NIFTM, Sonipat

Dr. Shailesh Yagnik, Librarian, MICA, Ahmedabad

Dr. Anil Kumar H, Librarian, IIM Ahmedabad

Dr. Lalitha Poluru, Librarian, Nirma University, Ahmedabad

Dr. M Kognuramath, Prof. & Head, DLIS, Central University of Gujarat, Gandhinagar

Mr. Dhaval Kochar, Rapid Radio Pvt Ltd, Ahmedabad

Mr. GK Upadhyaya, EBSCO Representative

Prof. M Anandakrishnan, Chairman, Standing Committee, e-PG Pathshala

Prof. Pradeep Varma, Programme Director, Natonal MOOCs Deployment, IIT, Mumbai

Dr. D. K. Singh, Professor, Dept of French Studies, BHU, Varanasi

Prof. C. G. Mahajan, IISER, Mohali

Prof. R. C. Panda, Faculty of Sanskrit Learning, BHU, Varanasi

Prof. Uma kanjilal, Director (ACIIL), IGNOU, New Delhi

Dr. S. B. Deshpande, Dept of Physiology, Institute of Medical Science, BHU, Varanasi

Dr. Jayashree Shinde, Head, Department of Educational Technology, SNDT Women's University, Mumbai

Besides, 24 Colleges Librarian as participants of refresher course 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad visited the Centre.

Staff News

Dr. Jagdish Arora, Director

Dr. Jagdish Arora was nominated Member of the First Court of the Central University of Gujarat, Gandhinagar and a Member of the Committee on Curriculum in Library Science, University of Kota, Kota, Rajasthan for a period of three years, i.e. from 2014 to 2016. He was Member of the Steering Committee for Master Degree Programme in Library Science at Central University of Jammu for the years 2014 – 2015 and a Member of the School Board, School of Information Science and Technology, Babasaheb Bhimrao Ambedkar University, Lucknow, UP for the years 2014-2017. He continued to the member of the Finance Committee of the Central University of Gujarat.

Dr. Arora was nominated as a member of the Core Committee for Setting-up Data Repository at ICSSR in collaboration with Ministry of Statistics and Programme Implementation. During the quarter under report, Dr. Jagdish Arora delivered the following invited lectures at various workshops, training programmes and conferences:

i)   "Open Access Initiatives at INFLIBNET Centre", Presentation made in the SAARC Documentation Centre's Conference on Open Access, URDiP, Pune, 13th and14th October, 2014.

ii) "Overview of JSTOR and Long-term Preservation of Digital Resources", Presentation made in the SAARC Documentation Centre's Conference on Open Access, URDiP, Pune, 13th and14th October, 2014.

iii) "Media and Information Literacy: Initiatives at INFLIBNET Centre", invited talk at the UNESCO-led National Consultation on Media & Information Literacy, 11th-13th, November, 2014, India International Centre, New Delhi.

iv) "e-Resource Management and their Life Cycle", keynote address delivered in the National Conference on Management of e-Resources and Institutional Repositories (NACMEIR-2014), University of Hyderabad, 14th and15th November, 2014.

v)   "Providing Access to Scholarly Content to Institutions of Higher Education using NKN Infrastructure: Major Initiatives of the INFLIBNET Centre", invited talk delivered during the 3rd NKN Annual Workshop, IIT Guwahati, 15th - 17th December 2014.

Mr. Manoj Kumar K., Scientist D (CS)

Mr. Manoj Kumar K., Scientist D (CS) delivered an invited lecture on anti-plagiarism software Turnitin & iThenticate at M S University of Baroda, Vadodara on 10th October 2014. He attended a meeting for NAAC & subscribing of e-resource for 12th Plan UGC Grant and demonstrated Dspace Tutorial at Gujarat University, Ahmedabad on 15th November 2014. He also demonstrated pre-conference tutorial on Institutional repository using Dspace during International Conference on the Convergence of Libraries, Archives and Museums at Indira Gandhi National Centre for the Arts on 26th November, 2014. He was also invited to deliver a lecture on Shodhganga and Anti-Plagiarism Software at Gujarat University, Ahmedabad on 4th December, 2014. He also delivered an invited lecture on use of current trends, gadgets, technology in modern libraries during refresher course 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad on 11th and 12th December, 2014 respectively. He also attended 3rd NKN Annual Workshop at IIT Guwahati on 15th and 16th December, 2014.

Mr. Ashok Kumar Rai, Scientist D (CS)

Mr Ashok Kumar Rai, Scientist D (CS) delivered a lecture on consortium initiatives in India during refresher course on 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad on 9th December, 2014. Mr. Rai attended CeRA Monitoring and Negotiation Committee at ICAR, New Delhi on 15th December, 2014. He also delivered a lecture on INFLIBNET: ICT based services to Academic Institutions in India during seven-day National Workshop for Physical Educationalist on Use of Computer Application organised by Swarnim Gujarat Sport University and H L College of Commerce, Ahmedabad on 17th December, 2014.

Mr. Yatrik Patel, Scientist D (CS)

Mr. Yatrik Patel, Scientist D (CS) delivered an invited lecture on Information Security and Institutional Repository during refresher course 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad on 16th December 2014.

Mr. Abhishek Kumar, Scientist C (CS)

Mr. Abhishek Kumar, Scientist C (CS) delivered an invited lecture on e-Learning: E-content for E-user and Network and virtual learning environment during training programme on Librarianship in Modern Times organised by Sardar Patel Institute of Public Administration (SPIPA) on 26th and 28th November, 2014 respectively. He also delivered a lecture on e-Learning during refresher course 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad on 9th December 2014. He also delivered a lecture on e-Learning in Current Context including MOOCs during seven-day National Workshop for Physical Educationalist on Use of Computer Application organised by Swarnim Gujarat Sport University and H L College of Commerce, Ahmedabad on 21st December, 2014.

Ms. Kruti Trivedi, Scientist B (LS)

Mr. Kruti Trivedi, Scientist B (LS) delivered an invited lecture on Bibliometric and Research Output Analysis during refresher course 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad on 25th December 2014.

Mr. Dinesh Ranjan Pradhan, Scientist B (LS)

Mr. Dinesh Ranjan Pradhan, Scientist B (LS) delivered an invited lecture on e-resource management during refresher course 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad on 10th December 2014.

Mr. Miteshkumar Pandya, Scientist B (LS)

Mr. Miteshkumar Pandya, Scientist B (LS) delivered an invited lectures on copy Cataloguing and Reference Management Software-Mendeley during refresher course 'Use and Importance of Current Trends and Technologies in Modern Library' organised by Dept of Library and Information Science and Academic Staff College, Gujarat University, Ahmedabad on 10th and 11th December 2014 respectively.

चोरी से थीसिस जमा की तो पकड़े जाओगे

एंटी प्लेगियरिज्म सॉफ्टवेयर कर रहा ऐसे लोगों का पर्दाफाश

कॉपी-पेस्ट की कहानी का किया सजीव प्रदर्शन

झांसी | निज संवाददाता

अथण्टिक व टर्मिनेटिंग सॉफ्टवेयर थीसिस की करेगा जांच

● छात्र-छात्राओं को वरती होगी अधिक मेहनत

जनता जूनियन, झांसी, रविवार, 7 दिसम्बर 2014

अब सॉफ्टवेयर बताएगा शोध निबंध की सच्चाई

जीदू ने इनफ्लीबनेट से लिया सॉफ्टवेयर

गुजरात युनि માં આજે એન્ટિ પ્લેગેરિઝ્મ વિષય પર સેમિનાર

અમદાવાદ:

નવ ગુજરાત સમય | અમદાવાદ | ગુ

ગ્રાઉન્ડ ધ સિટી

अब शोध की सॉफ्ट कॉपी भी देनी होगी

● बुंदेलखंड विवि के अन्य शोध हुए डिजिटल
● पीएचडी की थीसिस ऑन लाइन करने में बुंदेलखंड विवि देश में चौथे स्थान पर

સુવિધા યુનિવર્સિટીની લાઈબ્રેરીની વેબસાઈટ લોન્ચ

ભાસ્કર ન્યૂઝ અમદાવાદ

યુનિ. લાઈબ્રેરી દ્વારા એન્ટિ પ્લેગરિઝ્મ અંગે સેમિનાર

ભાસ્કર ન્યૂઝ, અમદાવાદ

યુનિવર્સિટી લાઈબ્રેરી, યુજીસી ઈન્ફલીબનેટ ગુ. યુનિ.ના જ્ઞ્યોલોજી વિભાગ ખાતે એન્ટિ પ્લેગરિઝ્મની જાગૃતિ-ઈટીડી બાબતે બુધવારે એક દિવસ યોજાયો હતો. સેમિનાર કુલપતિ ડો.એમ.એન.પટેલ તેમજ યુજીસી-ઈન્ફલિબ નેટના સાયન્ટિસ્ટ મનોજકુમારે કર્યું હતું. આ પ્રસંગે ગુજરાત યુનિવર્સિટી વેબસાઈટનું ઉદ્ઘાટન કરાયું હતું. આ સેમિનારમાં 158 જેટલા સંશોધકો- વિભાગીય વડા-અધ્યાપકો જોડાયેલા હતા.

Information and Library Network Centre

(An Autonomous Inter-University Centre of UGC)

Infocity, Gandhinagar - 382007, Gujarat, INDIA
Email: director@inflibnet.ac.in

http://www.inflibnet.ac.in