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Guest Editorial

Open Source Software for Libraries

Open access to scholarly information is a burning issue in web-based education and research nowadays. Open access holds promise to remove both price and permission barriers to the scientific communication. While the concept of free software is old as software itself, there has been an explosion of academic and commercial interest in the topic since the coining of the term open source software (OSS). In 1969, the US Defense Advanced Research Project Agency (DARPA) established the ARPANET, the first transcontinental, high-speed computer network. This network eventually grew to link hundreds of universities, defence contractors and research laboratories. Later succeeded by the internet, it also allowed hackers to exchange software code and other information widely, easily and cheaply—and also enabled them to spread hacker norms of behavior. The communal hacker culture was very strongly present among a group of programmers—software 'hackers'—housed at the MIT's Artificial Intelligence Laboratory. In the 1980s, this group received a major jolt when MIT licensed some of the code created by its hacker employees to a commercial firm. This firm, in accordance with normal commercial practice, then promptly restricted access to the 'source code' of that software, and so prevented non-company personnel—including MIT hackers who had participated in developing it—from continuing to use it as a platform for further learning and development.

Richard Stallman, a brilliant programmer at the Artificial Intelligence Laboratory, was especially distressed and offended by this loss of access to communally developed source code and also by a general trend in the software world towards development of proprietary software packages and the release of software protected under licenses that prevented it from being studied or modified by others. Stallman viewed these practices as morally wrong impingements upon the rights of software users to freely learn and create. In response, he founded the Free Software Foundation in 1985, and set about to develop and diffuse a legal mechanism that could preserve free access for all to the software developed by software hackers. His pioneering idea was to use the existing mechanism of copyright law to this end. Software authors interested in preserving the status of their work as 'free' software could use their own copyright to grant licenses on terms that would guarantee a number of rights to all future users. They could do this by simply affixing a standard license to their software that conveyed these rights. The basic license developed by Stallman to implement this idea was the General Public License. Basic rights transferred to those possessing a copy of free software include the right to use it at no cost, the right to study its 'source code' to modify it, and to distribute modified or unmodified versions to others at no cost. Others developed licenses conveying similar rights, and currently a number of such licenses are used in the open source field. The free software idea did not immediately become mainstream, and industry was especially suspicious of it. In 1998, Bruce Perens and Eric Raymond agreed that a significant part of the problem resided in Stallman's term 'free' software, which might understandably have an ominous ring to the ears of business people. Accordingly they, along with other prominent hackers, founded the 'open source' software movement. Eric S. Raymond makes the distinction between two kinds of software development in his book 'The Cathedral and Bazaar'. The first is the conventional closed-source and second is the progressive open-source development.

Open source has become synonymous with the OSS, the source code of which is freely available to the users. There are additional requirements besides the availability of source code that a program must meet before it is considered open source including: the software must be free to redistribute; derivative works must be allowed; the license cannot discriminate against any persons; and the license cannot discriminate against any fields of endeavor. Software that is licensed under an open source license allows for a community of developers from around the world to improve the software by providing enhancements and bug fixes. Opinion on OSS tends to be quite polemic. On the positive side, we see those who point to OSS as the paradigm shift needed to solve the now decades-old software crises. These advocates highlight the quality and reliability of OSS products, the rapid release schedules of many OSS projects and reduced cost of OSS development and ownership. At the extreme, technology publisher Tim O'Reilly has identified OSS as the language of the networked community, suggesting that it will be dominant mode of work for knowledge workers in the information society.

Former President APJ Abdul Kalam said, "Open-source software offers developing nations such as India the best opportunity to modernise". The open source movement has become a boon to the libraries. Due to shrinking budgets and the increasing prices of journals, librarians have to look forward to a new alternative by which they can collect, store,

arrange and disseminate information to the users. The concept of open access and institutional repositories has evolved to find out the solutions. For building and developing the institutional repository the libraries can take the help of the OSS. The phenomenon of OSS is of great scholarly interest to many. It's robust functioning in the marketplace together with its novel modes of operation pose major and exciting new questions regarding fundamental theories and its applicability to libraries. In recognition of the interest and importance of this topic for libraries and information centers, the special issue of *DESIDOC Journal of Library and Information Technology (DJLIT) on* 'Open Source Software for Libraries' brings as a forum for some exciting new work and voices for further research. This special issue covers eight papers contributed by librarians, teachers, and scholars. The focus of these papers is to provide comprehensive information on OSS like GSDL, DSpace, Fedora, E-Prints, Ganesha, Koha, etc., for building digital library and also covers open source content management software like Moodle and two case studies.

The first article, by Anand Salve, Dr S.R. Lihitkar and Dr R.S. Lihitkar entitled 'Open Source Software as Tools for Libraries: An overview' focuses on the general and specific features of some of the popular software packages of integrated library management software, content management system, and digital library. The second article by Dr V.T. Kamble, Hans Raj and Dr Sangeeta on 'Open Source Library Management and Digital Library Software' provides an overview of open source library management and digital library software like Greenstone Digital Library, DSpace, Koha, E-Prints, NewGenlib, PhpMyLibrary, OpenBiblio, Avanti, etc., which are useful for developing digital library and institutional repositories and also highlight the initiatives taken in India to make use of open source library management software for developing their digital library.

The third article by Dr S.R. Lihitkar and Dr R.S. Lihitkar on 'Open Source Software for Developing Digital Library: Comparative Study' highlights the comparison of features, functions and usability of OSS, i.e., GSDL, DSpace, Fedora, E-Prints, Ganesha, Invenio, XTS, Dienst, and VuDL, NewGenlib. They have done the ranking of the 10 open source software based on the assigned points for each criteria. As a result of the study, GSDL software scored maximum points i.e.,47, followed by VuDL which scored 43 points. Dr Sunita Barve and Dr N.B. Dahibhate, in paper titled 'Open Source Software for Library Services' discussed the benefits of OSS for providing library services. Also enumerates the open source digital library software, audio-video recording, content, citation, and conference management software and open journal and archiving, and wiki management software.

Dr Sadanand Y. Bansode, and Dr Rajendra Kumbhar in paper entitled 'E-learning Experience using Open Source Software: Moodle' narrates the experience of designing, development and implementation of e-learning course for the 'information technology' paper of the MLISc curriculum and also highlights the efforts made by Department of Library and Information Science, University of Pune to use an OSS, viz., Moodle for the promotion of e-learning in the department. They desrcibe various utilities of the Moodle such as development of the course, blogs, wiki, question banks, notification to the students, etc. Dr Nanaji Shewale in his paper entitled 'Building Digital Library using Open Source Software DSpace: Case Study of GIPE's Dhananjayarao Gadgil Digital Library' discusses the initiative taken by GIPE library for building digital library and shared the experiences and procedure involved while developing digital library using DSpace.

Dr Sunil Kumar Satpathy and Rabindra K. Maharana in their paper entitled 'Awareness and Adoption of Open Source Software among LIS Professionals of Engineering Colleges of Odisha' evaluate the awareness and adoption of OSS by the LIS professionals working in various engineering colleges of Odisha. Based on survey method, it finds that although the LIS professionals of engineering colleges of Odisha have knowledge on OSS, their uses in libraries are in budding stage. They also suggest that for the widespread use of OSS in engineering college libraries of Odisha, a cooperative and participatory organisational system, positive attitude of authorities and LIS professionals, proper training provision for LIS professionals need to be developed. The last article by Shamkant Deshmukh, Sonia Bhavsar and Sandeep Bhavsar entitled 'Open Source Software for Federated Search' explain the concept of federated search and demarcate the difference between federated search and other search engines. The OSS available for federated search and federated search applications of public domain are also given.

I am deeply grateful to Dr A.L. Moorthy, the former Director, DESIDOC for inviting me as Guest Editor for this special issue. I am also thankful to all the learned contributors for their scholarly contributions which have enabled me to bring out this special issue in time. It is hoped that this special issue would be useful to the LIS professionals, researchers, teachers as well as for the students.

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