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## *Brief Overview of Data Base Creation in P.K. Kelker Library of IIT Kanpur*

**Rajani Sharma**Department of Library & Information Science  
M.P. Bhoj (Open) University  
Bhopal(M.P.) – India

*Abstract: A brief overview of Indian Institute of Technology Kanpur on full text database that provides online access to many important Science and Engineering subject as well as abstracting database services, together with discussions on the related strategic issues. Any software development effort pursues its challenges as the focal point to improve, enhance and substantiate the development effort.*

*Keywords: Database, Database Creation, Indian Institute of Technology, Library Automation, Library system, CDROM, Computerized Current Awareness Services (CAS), SDI and USS Services, Document Delivery Service (DDS), iit-KLAS.*

### I. INTRODUCTION

The Indian Institute of Technology Kanpur is a prestigious institute of higher learning producing meritorious students with excellent career growth and universal recognition. Highly scientific and innovative technology is used for teaching and carrying out research activities. The Institute awards Bachelor's, Master's and Doctoral degrees in various branches of technology and science. The most recent initiative of IIT Kanpur has been the Formation of a Strong Research Group in the areas of Nanoscience and Nanotechnology. IIT Kanpur covers 15 kilo miters (9.3 mi) west of Kanpur City and measures close to 420 hectares (1,000 acres). The Institute has about 2500 undergraduate and 850 postgraduate students, 316 faculty, and more than 1500 supporting staff.

### II. P.K.KELKAR LIBRARY – LIBRARY AUTOMATION

Purushottam Kashinath Kelkar(P.K. Kelker) was an Indian Scientist who is best remembered for being the founding director of the Indian Institute of Technology Kanpur, which was established. IIT Kanpur, in 2002 renamed its central library as the P. K. Kelkar Library. In any good institute of learning, one of the vital resources is a good library. When IIT Kanpur was started in 1959, great care was taken to see that the library would be one of the finest libraries of science and technology in India, and comparable to the best in the world. It is one of the best Library in the nation housed in three-storey building with the total 6973 sq. m. floor area. The Abstracting and Indexing periodicals, Microform and CD-ROM databases. Initial help to build the library was received from a consortium of nine American universities including MIT, Caltech and Purdue. Purdue built the essential basic collection of books and back volumes of journals for this library. Over the years, continuous new addition of reading materials has been steady and uncompromising. Today, the Central Library of IIT Kanpur is a modern, computerized academic library, housed in an imposing, centrally air- conditioned, three-storeyed architectural masterpiece. The software team of the Department of Computer Science and Engineering of the Institute is engaged to design and develop a comprehensive online integrated library information management system, which is UNIX, supported and written in "C" programming language with the following facilities:

- Computerized cataloging system;
- Computerized circulation system;
- Computerized acquisition system;
- Computerized serials control;
- Computerized management and queries;
- Computerized read mail; and
- Computerized print from facilities.

With modest beginning at PC platforms in late eighties, the library now has its own library application programme, named the IIT-Kanpur Library Automation System (iit- KLAS). This package is developed on Oracle 7.2.3 server and Forms 4.5 (there is also a Forms 3.0 version). It can be run both on character based terminals and Graphical User Interface (GUI) environment. Currently, the software is hosted on a Unix machine, DEC-Alpha-3000/600. With thirty terminals, a network CD-Server, twenty-five Pentium-based CD-ROM workstations, and many other new computing and peripheral technologies, the library has rightly been acclaimed as one of the front-line computerized libraries in the country.

The following sub- activity has been completed.

- IIT-KLAS is a fully integrated library automation package for computerizing the various functions of a library.
- IIT-KLAS has been designed and developed at IIT Kanpur by a team of library and software professionals from the Central Library and the Department of Computer Science and Engineering.
- Having been developed in a library environment, IIT-KLAS is a good package for all shades and sizes of academic libraries.
- The iit-KLAS package has six modules: Lekhya (The Acquisition Module), Suchi (The Cataloguing Module), Avartan (The Circulation Module), Patrika (The Serials Control Module), TBMS (The Text Book Management System) and AIC (Academic Information Centre).
- Creation of CD-ROMs database for the following categories using WINISIS is in progress:
  1. Accompanying material to books/journals
  2. Books only on CD-ROM
  3. Journal only on CD-ROM
  4. Conference Proceedings Submission of Theses.
- Automated 'Issue/Return' facility in Reserve Collection, predominantly used by undergraduates, is available in the library.
- Consultation facility of the library is extended to 798 external users including 214 NICEE programme participants.

The iit-Kanpur Library Automation Software (iit-KLAS) is a fully integrated library automation package for computerizing the various functions of a library, iit-KLAS has been in use at the IIT Kanpur Library for over six years. The major goal has been to make the system simple to operate and yet offer comprehensive functionality. It has recently procured LSPremia, a web centric software package for libraries from LibSys, and a dedicated server to meet the requirements of in-house library functionalities and services, more.

The total records of the library which are manually manipulated for providing services to the staff and the users are given as under:

TABLE I  
Database Status of the Library

Sr.	Type of Record	Records to be created
1	Books(general & reference)	225,000
2	Bound volumes of periodicals	2755
3	Cartographic materials	550
4	Machine-readable databases	100
5	Periodicals(back volume)	190,000
6	Technical Reports	129,000
7	IIT Kanpur thesis	20,000
8	ISI standards	30,000
9	Periodicals on current subscription	1,200
10	Journals(back volumes)	176,675
11	Journals subscribed(1998)	960
12	Reprints	10,000
13	Microfilms etc	10,000
14	e-books	476
15	Volumes	3,00,000
16	Textbooks	37,788

IIT Kanpur has a rich digital library including CARS (Computer Aided Reference Service), OPAC, and providing Access to Online Services, online journals, database and CD collection.

The library has started sending weekly e-mail alerts to the academic staff and students for the books added to the library during the preceding week.

### III. CHALLENGES AND ISSUES

#### A. Computerised Current Awareness Services (CAS)

IIT Kanpur using abstract-based CD-ROM databases, the library provides Current Awareness Services (CAS) to its subscribers. Through this service, users are provided a quick view of the contents page of what is being published in journals worldwide on any particular area of interest. this service is currently available are Mathematics, Mechanical Engineering, Electrical & Electronics Engineering, Computer Engineering & Technology, Civil Engineering, Chemical Engineering and Psychology.

#### B. SDI and USS Services

The Indian Institute of Technology Kanpur has Selective Dissemination of Information and Retrospective Search Services cover information based on a user's exclusive interest profile. SDI and RSS services are available against payment of the fixed tariff.

#### C. Document Delivery Service (DDS) and Inter Library Loan

The Indian Institute of Technology Kanpur's library provides for the delivery of the copies of available documents against specific requests by external users. In keeping with its tradition of maintaining close cooperation with other academic libraries and sharing resources with them on a mutual basis, the library also borrows books for its users from other libraries for short durations.

#### D. Record Standardization

The IIT Kanpur's library has been building the collection of some information resources in CD-ROM and other magnetic media. Among them are some of the most important abstract-based databases. With its well-equipped CD workstations, information seeking and researching has become a great deal more fun and easier than ever before. The CD-ROM databases are available for remote access over Local Area network.

#### E. Data Preparation Activity

A data processing system is a combination of machines and people that for a set of inputs produces a defined set of outputs. The inputs and outputs are interpreted as data, facts, information, ... depending on the interpreter's relation to the system.

A data processing system may involve some combination of:

- Conversion converting data to another format.
- Validation – Ensuring that supplied data is "clean, correct and useful."
- Sorting – "arranging items in some sequence and/or in different sets."
- Summarization – reducing detail data to its main points.
- Aggregation – combining multiple pieces of data.
- Analysis – the "collection, organization, analysis, interpretation and presentation of data."
- Reporting – list detail or summary data or computed information.

#### F. Manpower Development and Training

Since India is facing a financial crunch, The Indian Institute of Technology Kanpur is also directly affected. The library has developed the necessary infrastructure, know-how and techniques to (a) impart advanced training in computer application, and (b) to convert any traditional library into a modern computerized system. The Library has so far conducted many short-term courses on computer application for library and information professionals.

#### G. Hardware Facilities

The choice and selection of the hardware required is no doubt a very tricky job which needs a high level discussion and deliberation with the hardware, software and library experts. The P.K.Kelkar Library of the Institute has already passed from this phase. Hardware installation is expected very soon. However, the work stations available in the Computer Services Center of the Institute are being utilized for giving the working demonstrations and data entry operation.

### IV. CONCLUSION

The above discussion briefs about some strategic issues involved in the database creation in light of the experiences and the exposures of IIT Kanpur Library. The Computer Centre is satisfied with the quality of service provided by the empanelled Internet Service Providers. IIT Kanpur is highly desirable to consider seriously the issued like data preparation and Computerized Current Awareness Services (CAS), SDI and USS Services, Document Delivery Service (DDS) and Inter Library Loan, Record Standardization, manpower planning and Hardware Facilities.

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#### AUTHOR(S) PROFILE



**Rajani Sharma** received her M.A (English) degree from G.A.C.C.Indore,(M.P.), India, M.Lib.I.sc degree from Sagar University(M.P.), India, and B.Sc. (Mathematics) degree from G. New Science College, Indore(M.P.), India. Her research interest includes "Collection Development" in Indian libraries. She has published 3 research papers in international journals.