Online Information Retrieval

Course Code: **LIS-6210**

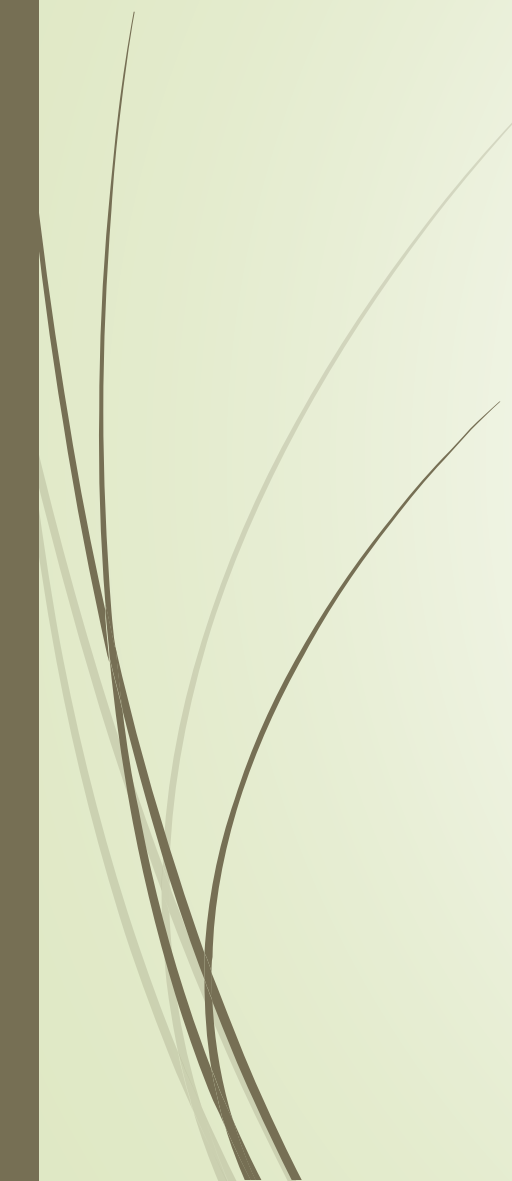**Course Instructor:**

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The development of databases in an information retrieval environment

- An IRS may contain various kinds of databases
- The data may be factual, information required for research, planning, management, and for all kinds of day-to-day activities.
- Information scientists attempt to devise and revise methods for designing factual databases as part of IRSs.
- Majority of databases in information retrieval environment are related to bibliographic or referral in nature.

IRS: basic considerations

- Steps have to follow in order to develop databases in an information retrieval environment.
- Basic considerations to design and develop a text retrieval system:
  - A software (text retrieval) package
  - A processor to execute the programs
  - Memory to hold intermediate working
  - Disk storage to hold the data files

IRS: basic considerations

- Devices for archiving data files to recover from accidental damage or loss of data

- Printer(s) to produce hard copy for different purposes, and

- Terminals for data input and or controlling the whole process

IRS: basic considerations

Factors to be considered while developing an IRS

- Functionality of the proposed system
- Objectives / purposes of the proposed system, is it;
  - An information retrieval system?
  - An online public access catalogue?
  - A system for resource sharing?
  - For any other specific purpose?

IRS: basic considerations

- Determine whether it will be a standalone system or will be working in a network environment.

Once certain about the functionality, the next concern;

   - The nature of the documents / records to be incorporated in the system,

   - The maximum number of documents / records to be incorporated in the system, and so on.

- Finally, to pay attention to the availability of resources, i.e., hardware, software, and necessary staff

Database Design

- Designing the database constitutes the first step of developing a text retrieval system.
- A text retrieval system may be used for;
  - Preparation of library catalogues,
  - bibliographies,
  - current awareness lists,
  - biographical lists, and so on.

Database Design

- The first step in database design relates to the different fields and subfields, their nature, content, length, and various other attributes.

- Functions to be considered at the stage of database design:

  - The nature of the data

  - The nature and number of fields and subfields

  - The nature of the database indexing

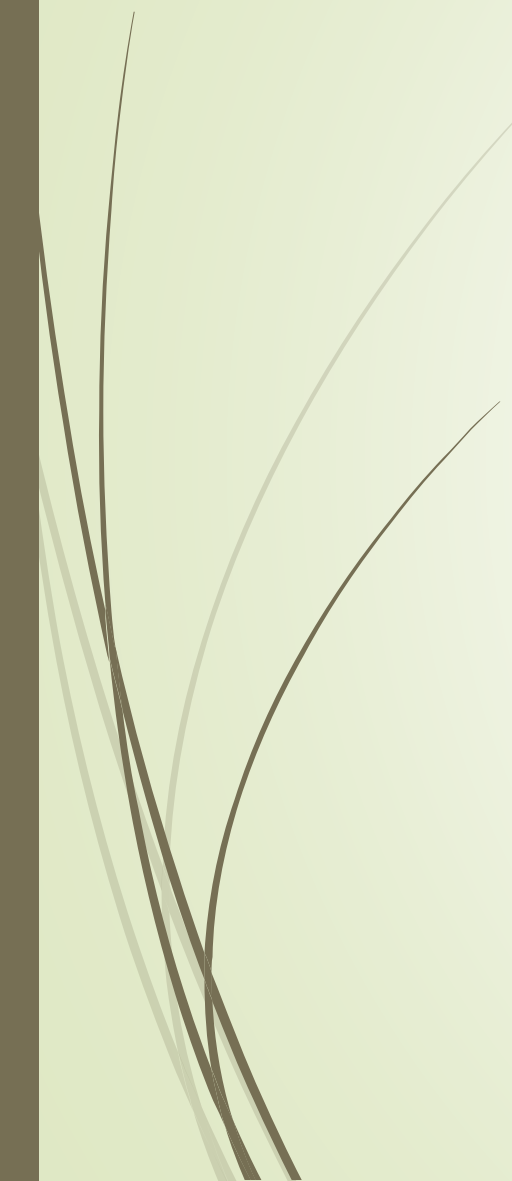 - The format for display and printing of data

Database Design

- The sorting of data while printing
- The entry / editing of data
- Fields for a simple library catalogue (example)
  - Author
  - Title of book
  - Publisher's name
  - Place of publication
  - Data of publication
  - Price
  - Call number
  - Accession number and keyworks

Database indexing

- An important step in any text retrieval system to generate the index file on which searches can be performed

- Different software packages have different mechanisms for the purpose

- Index file is generated and update as new records are added or deleted

- The process is software-dependent

Data entry form / worksheet

- Creation of the data entry form or worksheet; a blank form used for entering data in the database

- Depending on the retrieval packages;

  - The designer has to create a data entry worksheet, or

  - Software allows data to be entered directly without the need to create any form or worksheet.

Output format

- The database designer has to consider;
  - How the user will expect the records to be displayed when the database is browsed or searched?
  - Some software allows the designer to produce one or more output formats.

Data entry, searching and printing

- Database design ends with the output format design
- The next job is the creation of records
- The process involves entering data elements in the appropriate columns and worksheet or form for data entry.
  - Records can be created by keying-in the data elements in each field and subfield, or
  - Records can be downloaded from other, already existing databases.

Conclusion

- In this session, the various steps that one has to follow to develop a database using text retrieval software are described. That can be summarized as under:

  - The first step to an understanding of the functionality of the proposed system.

  - The next questions relate to the nature and number of the documents to be incorporated into the database, and the nature and number of target users.

Conclusion

- Some basic factures / issues to be considered while designing the IRS, design and decision regarding:
  - Database structure
  - Generation of the index file
  - Format of data display
  - Worksheet or form for data entry
  - Creation of records
  - Searching the database
  - Sorting and printing records, and
  - Monitoring the performance of the system