

PRELUDE

- ✓ Data processing is any computer process that converts data into information or knowledge.
- ✓ The processing is usually assumed to be automated and running on a computer.
- ✓ Because data are most useful when well-presented and actually informative, data-processing systems are often referred to as information systems to emphasize their practicality.
- ✓ Data-processing systems typically manipulate raw data into information, and likewise information systems typically take raw data as input to produce information as output.

DATA VERSUS INFORMATION

- ✓ Data are plain facts. When data are processed, organized, structured or presented in a given context so as to make them useful, they are called Information.
- ✓ Data themselves are fairly useless. But when these data are interpreted and processed to determine its true meaning, they become useful and can be called Information.
- ✓ Data are assembled in a set order or format for further processing to produce a meaningful result that may support an existing theory or hypothesis or even help to formulate a new one.

Computer data is processed in two fundamental ways:

- i. File Processing
- ii. Database processing

FILE PROCESSING

- ✓ method of processing data in separate files
- ✓ consists of creating, storing, and/or retrieving the contents of a file to or from a recognizable medium, reading from and writing to files.
- ✓ has two types
 - Sequential File Processing
 - Direct Access File Processing

Sequential File Processing

- ✓ stores and accesses files in sequence using a tape or a disk storage.
- ✓ Records are sorted before they are processed
- ✓ Used where data can be processed in batches and where a substantial portion of a master file is changed with the processing of each batch.

Direct Access File Processing

- ✓ Data is accessed directly from any location on the disk
- ✓ Indexes are used to track the location of the file randomly.

PROBLEMS WITH FILE PROCESSING

- ✓ Duplication of data leads to wastage of disk space.
- ✓ If the same data is stored in two different places, an update is required in both the places. Otherwise, there would arise a data integrity problem.
- ✓ Difficult to relate records in one file to records in another. [Either a duplicate copy is to be created or a special program (query) is to be prepared to extract the records.]

DATABASE PROCESSING

- ✓ A database is a collection of integrated records which may contain multiple files specifically called tables.
- ✓ Records in the tables are processed by their relationship to one another
- ✓ The DBMS stores and processes the data so that data can be accessed via their relationships to other data.