Database Management System

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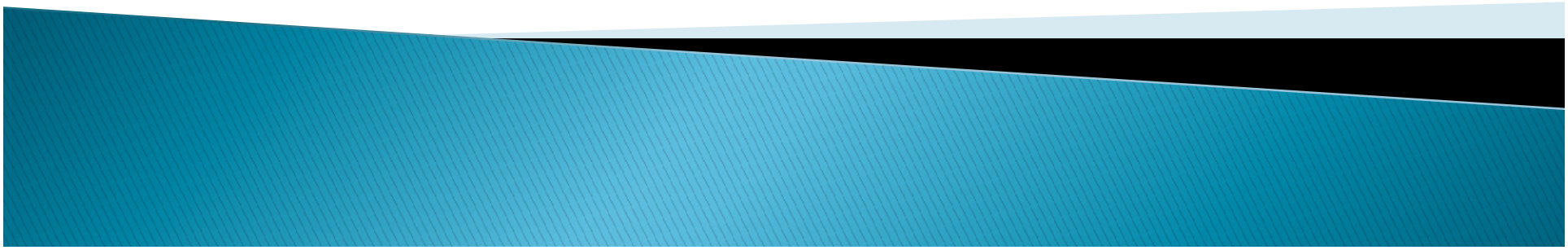
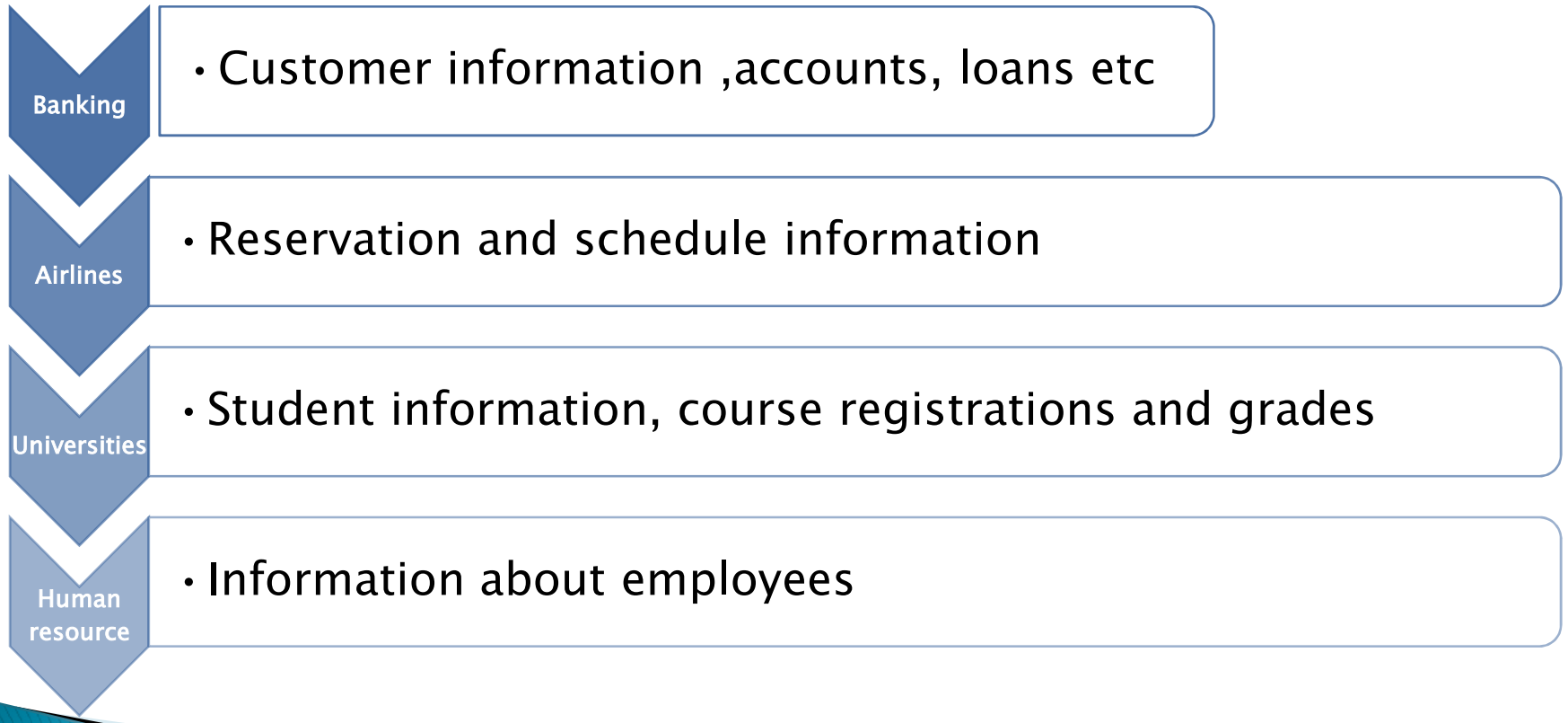


Introduction

- Database and database systems are become an essential component of everyday life in modern society.
- Database technology has a major impact in almost all areas where computers are used including business, electronic, commerce, engineering, medicine, law, education, library science and many more.

Area of application

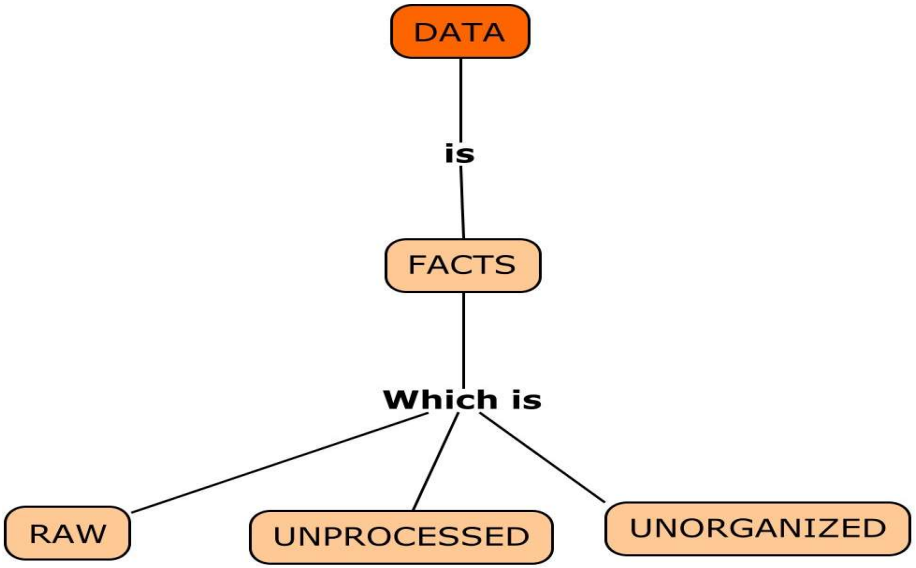


Area of application

Credit card transaction	• For purchases on credit card
Telecommunication	• Keeping records of call made, generating monthly bills etc
Manufacturing	• Tracking production of items

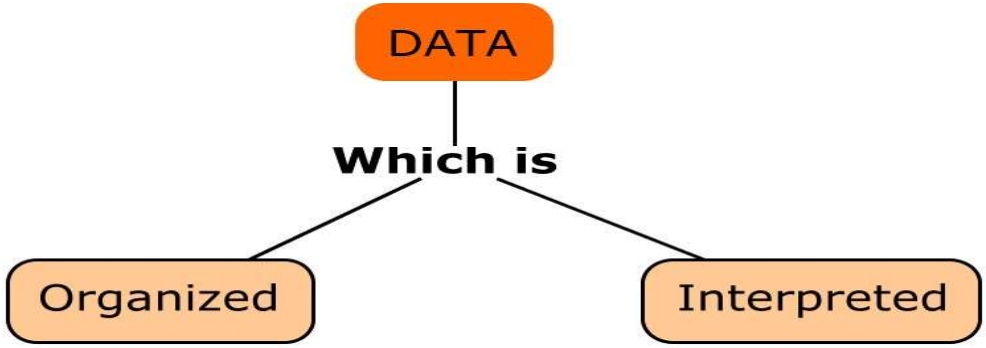
Basic concepts:

- Data :



- Facts that can be recorded in the form of text, numbers, videos, speech, images, audio etc.

- Information: It is a processed or meaningful data.



Summarize some key points:

- Data are the crucial raw material from which information is derived.
- Information is produced by processing data.
- Information is used to reveal the meaning of data.

Basic concepts cont.

- Database : A database is an organized, shared, integrated, computer structure that stores a collection of:
  - End-user data
  - Metadata

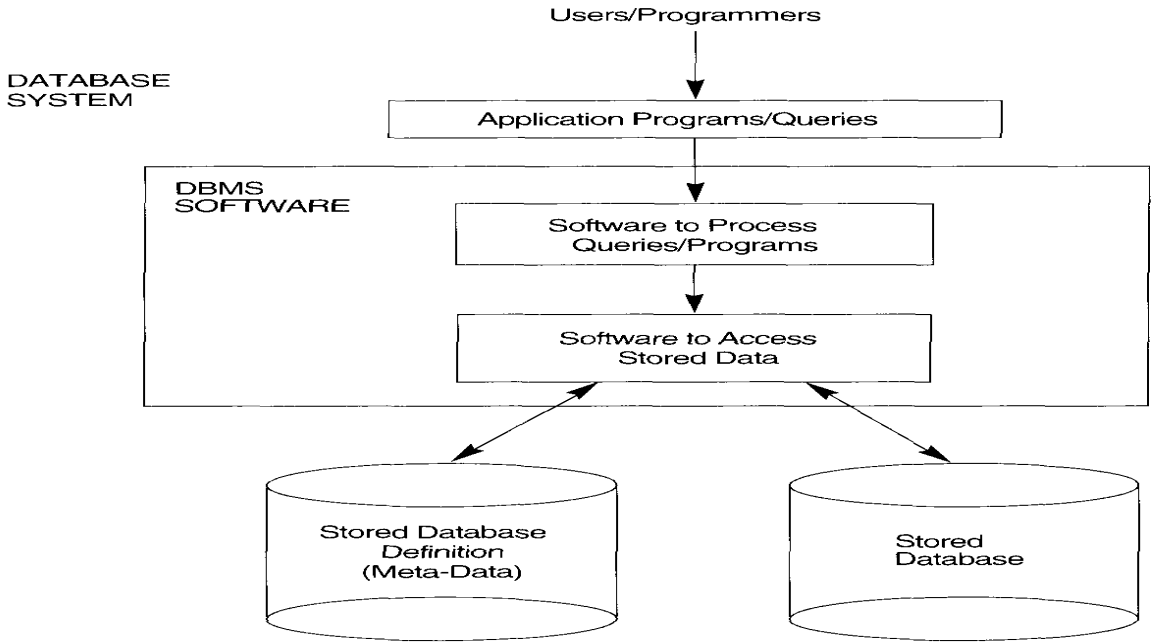
  - Example: University database → Stores data about students, faculty, courses, researches etc.
  - Purpose : To keep an accurate track of the academic activities of the university.

Database management System(DBMS):

- It is a collection of interrelated data and a set of programs to access those data.

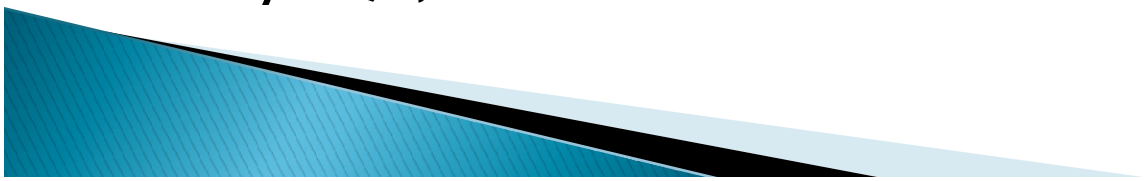
- A general purpose software system facilitates the processes of defining, constructing, manipulating and sharing databases among various users and applications.

A simplified database system environment :



Role of DBMS:

- DBMS serves as the intermediary between the user and the database .
- It receives all application request and translate them into the complex operations.
- It hides much of the database's internal complexity from the application programs and users.
- The application program might be written by a programmer using Visual Basic , .NET, Java, MySQL, Oracle



Advantages:

- Controlling Redundancy
- Restricting Unauthorized access
- Providing storage structures for efficient query processing.
- Providing Multiple User interfaces
- Increased end-user productivity

Types of database:

- Databases can be classified according to :
  - Number of user
    - Single user database
    - Desktop database
    - Multiuser database
    - Workgroup database
    - Enterprise database

Cont.

- Database location(s)
  - Centralized database
  - Distributed database
- Expected type and extent of use
  - Operational database
  - Transactional or production database
  - Data warehouse