

Presentation Name

Database system



BASIC CONCEPTS

1. What is a database?

A database is a collection of interrelated data which can be used:

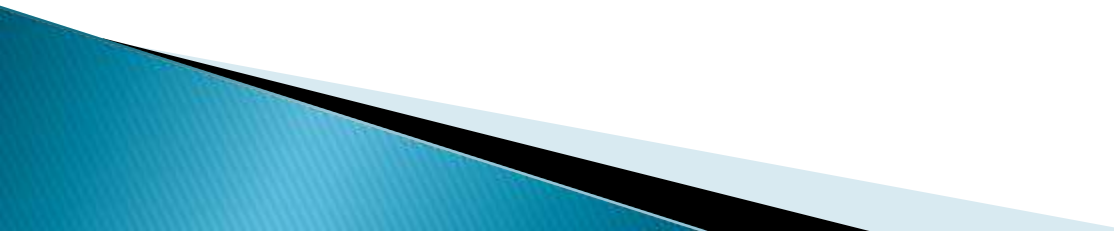
- alone, or
- combined / related to other data

to provide answers to the user's question.

2.What is Database Management System?

A database management system (DBMS) is system software for creating and managing databases. The DBMS provides users and programmers with a systematic way to create, retrieve, update and manage data.

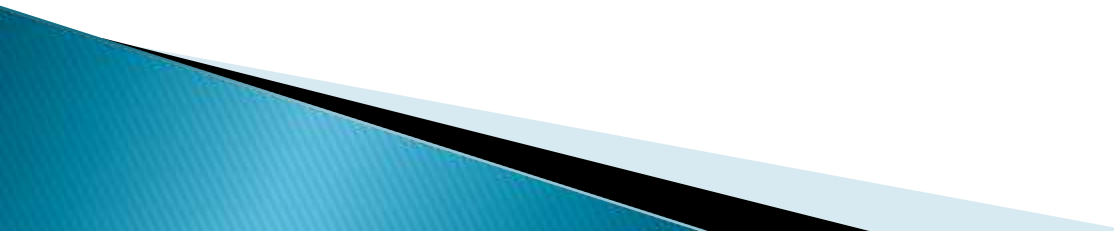
Goals of DBMS

1. Retrieve data that are both convenient and efficient
 2. Safety of information stored in DBMS .
 3. Avoid possible anomalous result.
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APPLICATION

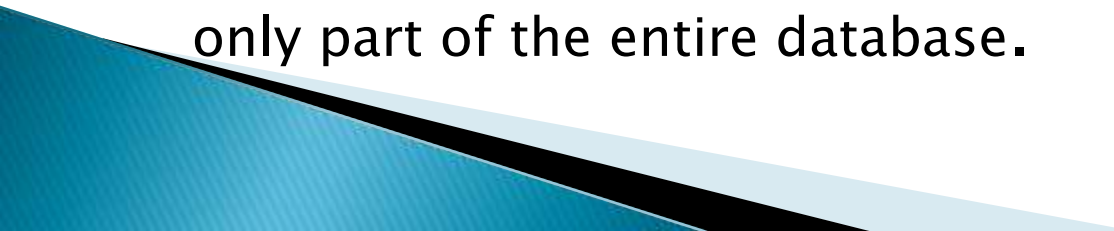
- a) **BANK** :For customer ,informaion , account,and loans, and transaction.
- b) **Airline**: For reservation and schedule information. Airline were among the first to use database in a geographically distributed manner terminals situated around the world accessed the central database system through phone lines and other data network.
- c) **Universities**: For students information, course registration, and grades.
- d) **Credits card transaction**: For purchases on credits cards and generation of monthly statements.
- e) **Sales**: For customer, product, and purchase information.
- e) **Human resources**: For information about employees, salaries, payroll taxes and benefits, and for generation of paychecks.

DBMS vs FILE SYSTEM

- a) **Data redundancy and inconsistency**
 - b) **Difficulty in accessing data**
 - c) **Data isolation**
 - d) **Integrity problems**
 - e) **Atomicity problems**
 - f) **Concurrent-access anomalies**
 - g) **Security problems**
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VIEW OF DATA

DATA ABSTRACTION

- **Physical Level:** The lowest level of abstraction describes how the data are actually stored.
 - **Logical Level:** The next –higher level of abstraction describes what data are actually stored in the database, and what relationship exist among those data.
 - **View Level:** The highest level of abstraction describes only part of the entire database.
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View of data

View 1

View 2

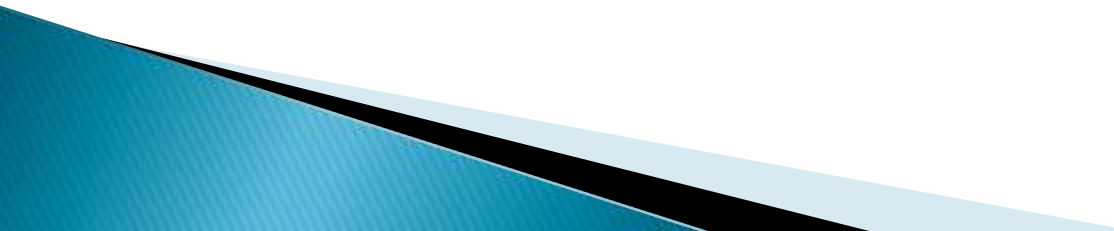
View n

Logical level

Physical level



Advantages of DBMS

- * **Reduction of Redundancies**: Centralized control of data by the DBA avoids unnecessary duplication of data and effectively reduces the total amount of data storage required.
 - * **Elimination of Inconsistencies**: The main advantage of avoiding duplication is the elimination of inconsistencies that tend to be present in redundant data files.
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* **Integrity:** Centralized control can also ensure that adequate checks are incorporated in the DBMS to provide data integrity.

* **Data Independence:** Data independence is usually considered from two points of view: physical data independence and logical data independence.

* **Shared Data:** A database allows the sharing of data under its control by any number of application programs or users

