Introduction to Database Management system
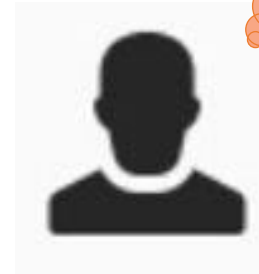
Lecture-1

DATA and INFORMATION

- To understand what is database, first we need a brief understanding of about DATA and INFORMATION

- What is DATA?

Data: In simple words data is raw, isolated facts about an entity or an object which is stored in recorded form. For example, text, audio, image, video etc.

- What is INFORMATION

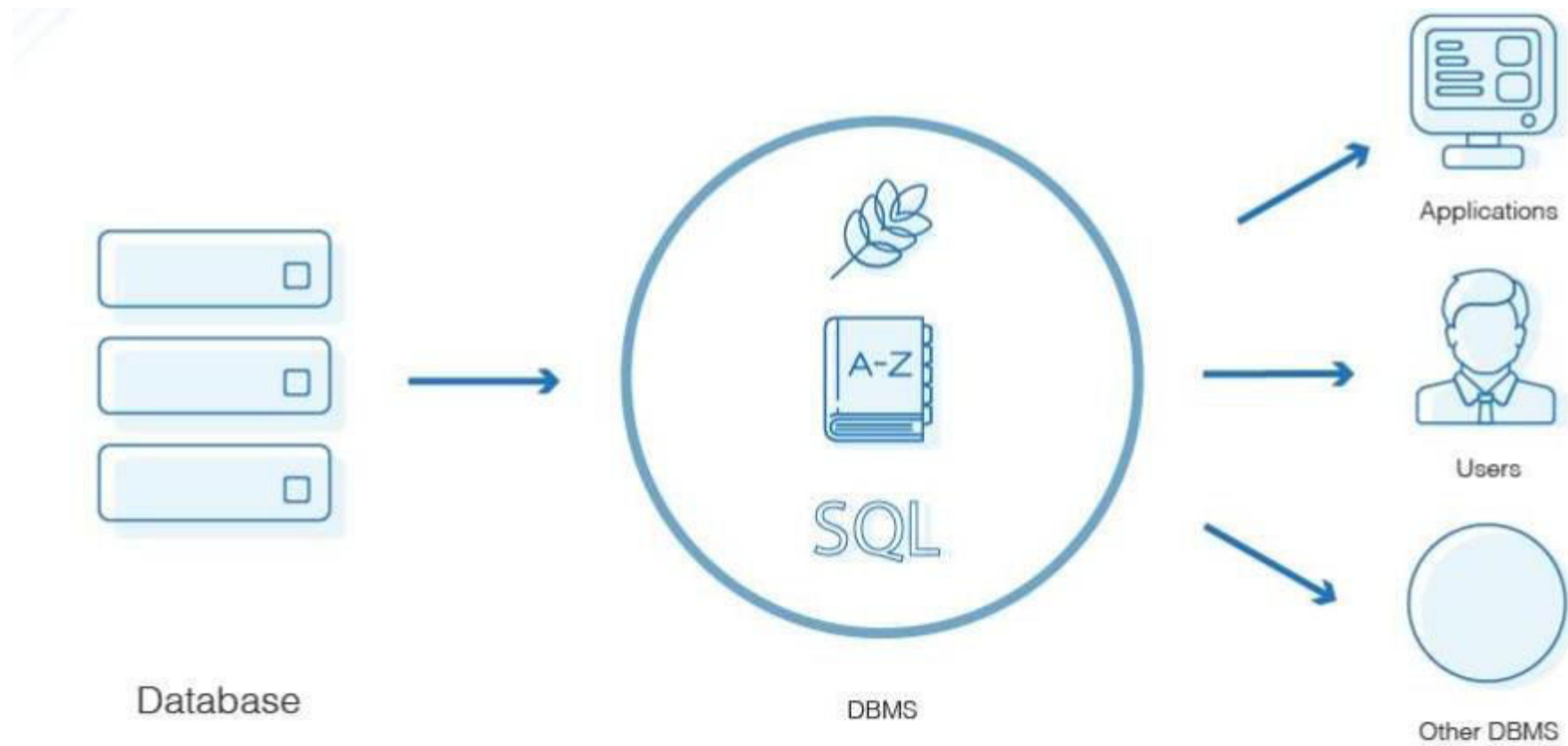**Information:** It is a processed, meaningful and usable data.

5 is a DATA or INFORMATION

DATABASE and DBMS

- **Database:** It is a systematic collection of similar or related data. If the data is not related, we cannot extract the relevant information from it. Database makes data management easy. For example, video is data, but YouTube is a database. Image is data but Instagram is a database.

- **Database Management System:** It is a program which enables the user to create, manipulate and delete database. It is also used for controlled access to database.

Database Management System

Why we need database management system?

Because there are disadvantages of using file system

Data Redundancy	Data Inconsistency	Difficulty in accessing data
Atomicity Problem		Data Isolation
Concurrent access anomalies		Security Problems

Operations on Database

- To add new information
- To view or retrieve the stored information
- To modify or edit the existing
- To remove or delete the unwanted information
- Arranging the information in a desired order etc.

Components of Database system

- There are five major components of database system
  - Hardware
  - Software
  - Data
  - Users
  - Procedures

Applications of Database

- Banking: transactions
- Railway: reservations and schedules
- Online retailing: order submit, order tracking, customized recommendations etc.
- Manufacturing: Inventory, productions, etc.

And so on

QUIZ time

- University Management System (UMS) is an application of Database
  - Yes
  - No