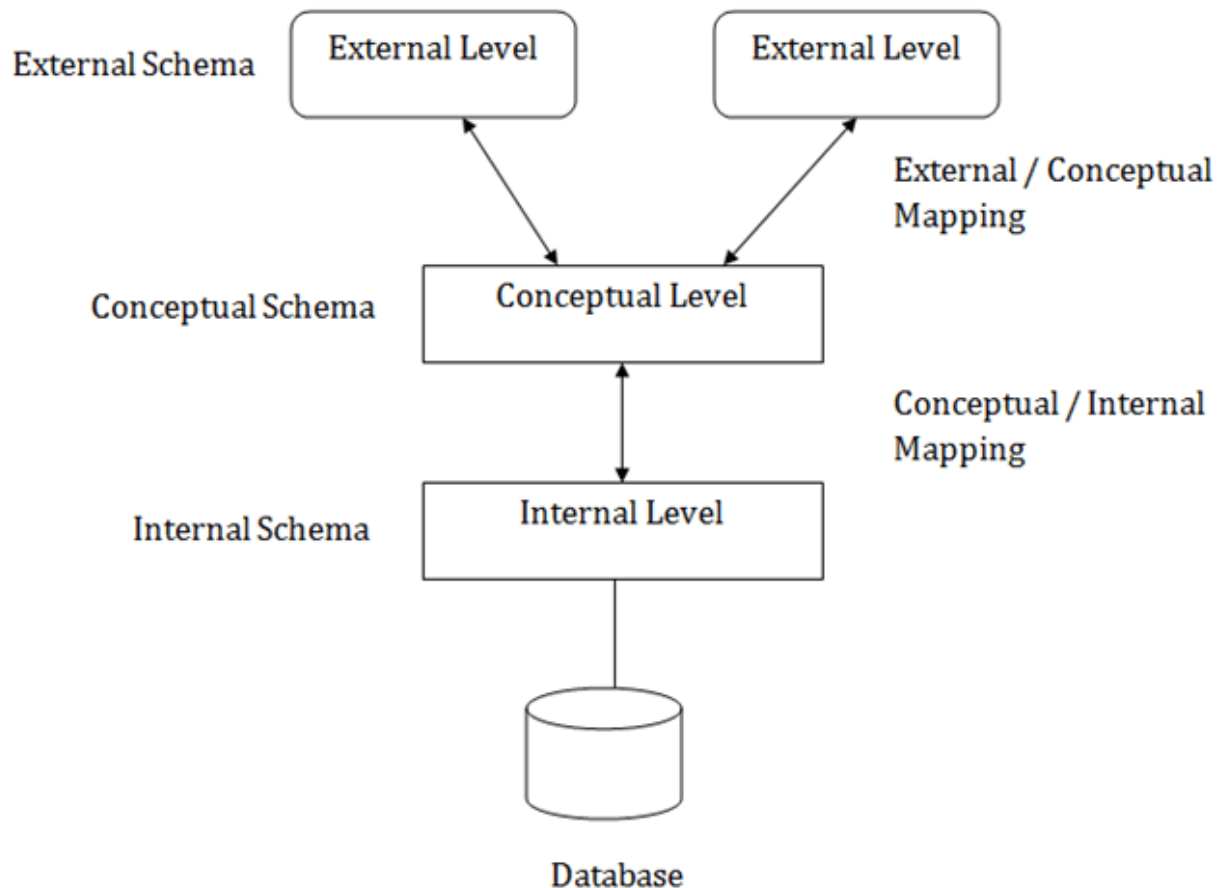


1. What is a database? Explain briefly
  - Database is a collection of data or information which are organized and structured and stored electronically in a computer system
2. Give example situations in which databases are used
  - In student management systems
  - In inventory management system
  - In payroll management system
  - In employee management systems
3. What is a database management system (DBMS)?
  - Database management system is a software which use to read, write, update, delete data.
  - It organizes and give access to manipulate data.
4. Give example DBMS available
  - MYSQL
  - MariaDb
  - Microsoft Server management studio
5. Compare and contrast different Data storage mechanisms.
6. a) What is known as the ANSI/SPARC model? Give another name for the ANSI/SPARC model.
  - Commonly known as 3 schema architecture
  - Conceptual framework that uses to develop DBMS
  - There are 3 levels of this: External level, conceptual level, internal level.
  - **External level** – user's view of data, which means how they are presented through applications and interfaces.
  - **Conceptual level** – Abstract view of entire database, which describes relationships between data and rules that govern them.
  - **Internal level/Physical Level/schema** – physical storage of data on the computer system, including file structure and access methods.

b) Draw the Three Schema Architecture. Name the three schemas.



c) Briefly explain the 3 schemas.

- **Explained them above.**

d) What is the advantage of having the three-schema architecture?

- Can achieve data independence which means can do modifications in some layers without affecting others.

e) What do you mean by logical data independence and physical data independence?

- **Logical Data Independence** – can modify conceptual level without affecting external level.
- **Physical Data Independence** – Can modify internal level without affecting conceptual.

7. 'Sri Lankan Airline is the national carrier'.

a) What is possible data required by an airline system?

- Arrival time of flights
- Departure time of flights
- Pilots Assign to flights
- Flight staff assign to flights

b) Is it necessary for them to use a DBMS?

- yes

8. Think of a DB of a bank.

a) What type of data would they store in their database?

- Employee details
- Customer account details
- Foreign bank details
- Current foreign currency value datils

b) In the three schema architecture where would you put details about above data?

- Employee details – external
- Customer account details - internal
- Foreign bank details - internal
- Current foreign currency value datils - internal

c) In the three schema architecture which schema describes details about the type of file organization used to store the above data?

- conceptual

d) What is the advantage of using a DBMS for a bank?

- Easy to manage user details by reducing data redundancy
- Easy to manage employee details and their salary
- Able to get any currency value quickly with related to Sri Lankan rupee price

**\*\*End of the Tutorial\*\***

