Database Schema:

- 1. Definition: The database schema is like the blueprint or design of a database. It outlines how the data is organized, what types of data can be stored, and the relationships between different pieces of data.
- 2. Stability: Once designed, the schema doesn't change frequently. It's a stable framework that guides how data is stored and accessed.
- 3. Representation: A schema can be visually represented using a schema diagram. This diagram usually shows the names of different data entities (like tables) and their attributes.

Example: Schema Diagram for a Student Database

Student (Name, Student number, Class, Branch)

Course (Course name, Course number, Department)

Database Instances:

- 1. Definition: The data in the database at a specific moment is called a database state or snapshot. This represents the current set of data in the database.
- 2. Variability: Database states can change as we add, delete, or modify records. Each state reflects the current situation of the data.
- 3. Multiple States: Different actions, like inserting a new record or updating an existing one, lead to different states. So, you can have many states of the database while following the same schema.

Related posts:

- 1. What is database management system (DBMS)? What are the tasks performed by users in DBMS?
- 2. What are the advantages and disadvantages of DBMS?
- 3. What do you understand by database users? Describe the different types of database users.
- 4. Who are data administrators? What are the functions of database administrator? OR Discuss the role of database administrator.
- 5. What is data abstraction? Explain different levels of abstraction.
- 6. Explain the differences between physical level, conceptual level and view level of data abstraction.
- 7. Explain the difference between database management system (DBMS) and file system.
- 8. Discuss the architecture of DBMS. What are the types of DBMS architecture?
- 9. What are data models? Briefly explain different types of data models.
- 10. Describe data independence with its types
- 11. Describe the classification of database language. Which type of language is SQL?
- 12. Explain DBMS interfaces. What are the various DBMS interfaces?
- 13. What is ER model? What are the elements of ER model? What are the notations of ER diagram?
- 14. What do you understand by attributes and domain ?Explain various types of attributes used in conceptual data model.
- 15. Construct an ER diagram for University system.
- 16. Construct an ER diagram for the registrar's office
- 17. Explain the primary key, super key, foreign key and candidate key with example. OR Define key. Explain various types of keys.
- 18. What do you mean by a key to the relation? Explain the differences between super

- key, candidate key and primary key.
- 19. Explain generalization, specialization and aggregation. OR Compare generalization, specialization and aggregation with suitable examples.
- 20. What is Unified Modeling Language? Explain different types of UML.
- 21. What is relational model? Explain with example.
- 22. Explain constraints and its types.
- 23. Consider the following relations:
- 24. What are the additional operations in relational algebra?
- 25. Explain integrity constraints.
- 26. Explain the following constraints: i. Entity integrity constraint. ii. Referential integrity constraint. iii. Domain constraint.
- 27. Describe mapping constraints with its types.
- 28. Explain how a database is modified in SQL. OR Explain database modification.
- 29. Discuss join and types with suitable example. Define join. Explain different types of join.
- 30. Describe the SQL set operations