Constraints Overview:

- Definition: Constraints are rules used for optimizing databases and ensuring data integrity during updates, deletes, or inserts into a table.
- Purpose: Maintain data integrity by setting limits on data or types of data that can be manipulated in a table.

Types of Constraints:

1. NOT NULL:

- Purpose: Ensures a column cannot have NULL values.
- Example: If a column has a NOT NULL constraint, it means you cannot leave it empty when adding a new record.

2. UNIQUE:

- Purpose: Requires a column or set of columns to have unique values.
- Example: If a column has a UNIQUE constraint, no two records in the table can have the same value in that column.

3. DEFAULT:

- Purpose: Provides a default value to a column if none is specified during an insert.
- Example: If a DEFAULT constraint is set for a column with a default value of 0, if no value is provided during an insert, it will automatically be set to 0.

4. CHECK:

- Purpose: Defines a range of acceptable values for a column.
- Example: If a CHECK constraint is set for a column with a range of 1 to 100, any value outside this range will be rejected.

5. Key Constraints:

a. Primary Key:

- Purpose: Uniquely identifies each record in a table.
- Conditions: Must have unique values and cannot contain NULL.
- Example: Social Security Number in an employee database.

b. Foreign Key:

- Purpose: Establishes a link between tables by referencing the primary key of another table.
- Example: If there's a foreign key in an "Orders" table pointing to the "CustomerID" in a "Customers" table, it creates a relationship between them.

6. Domain Constraints:

- Purpose: Enforces the data type for each column.
- Example: If a column is set to store only integers, it won't accept values like text or dates.

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 adinistrator.
5. What is data abstraction ? Explain different levels ofabstraction.
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 schema and instances.
11. Describe data independence with its types
12. Describe the classification of database language. Which type of language is SQL ?
13. Explain DBMS interfaces. What are the various DBMS interfaces ?
14. What is ER model ? What are the elements of ER model ? What are the notations of ER diagram ?
15. What do you understand by attributes and domain ?Explain various types of attributes used in conceptual data model.
16. Construct an ER diagram for University system.
17. Construct an ER diagram for the registrar’s office
18. Explain the primary key, super key, foreign key and candidate key with example. OR Define key. Explain various types of keys.

19. What do you mean by a key to the relation ? Explain the differences between super key, candidate key and primary key.
20. Explain generalization, specialization and aggregation. OR Compare generalization, specialization and aggregation with suitable examples.
21. What is Unified Modeling Language ? Explain different types of UML.
22. What is relational model ? Explain with example.
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