Explain the primary key, super key, foreign key and candidate key with example. OR Define key. Explain various types of keys.

In the context of a Database Management System (DBMS), a “key” refers to a field or combination of fields that is used to uniquely identify a record in a database table. Keys play a crucial role in organizing and managing data within a database. There are different types of keys in a DBMS, and each serves a specific purpose:

Primary Key:

- Definition: Uniquely identifies each record in a table.
- Example (Employee Table): Choose either `Employee ID` or `SSN` as a primary key.
- Note: Must be unique and cannot be null.

Super Key:

- Definition: A set of one or more attributes whose combined value uniquely identifies an entity.
- Example (Employee Table): `(Employee ID, Full Name)` or `(Employee ID, Full Name, Dept ID)` can be a super key.

Candidate Key:

- Definition: A column or set of columns that can uniquely identify any record in a table.
- Example (Employee Table): `Employee ID` and `SSN` are candidate keys.
- Note: Minimal super keys are called candidate keys.

Composite Key:

- Definition: A combination of two or more columns used to uniquely identify each row.
- Example (Employee Table): A primary key made by the combination of more than one attribute.

Alternate Key:

- Definition: Candidate keys not chosen as the primary key.
- Example (Employee Table): If `Employee ID` is the primary key, then `SSN` could be the alternate key.

Foreign Key:

- Definition: Represents a relationship between tables, ensuring referential integrity.
- Example (Employee and Project Tables):
    - `Employee ID` in the `Project` table points to the `Employee ID` in `Employee` table.
    - `Employee ID` in `Project` is a foreign key.
    - `Employee ID` in `Employee` is the primary key.

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.

Explain the primary key, super key, foreign key and candidate key with example. OR Define key. Explain various types of keys.

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. 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