

WORKSHEET 6 SQL

ANS.1 A, C, D

ANS2. A, C, D

ANS3. B

ANS4. C

ANS5. C

ANS6. B

ANS7. A

ANS8. C

ANS9. D

ANS10. A

Q11 to Q15 are subjective answer type questions, Answer them briefly.

11. What is denormalization?

Ans. Denormalization is a technique used in database design and data management to improve performance by intentionally adding redundancy to one or more tables in a database. It involves intentionally violating one or more of the normal forms in a database schema in order to optimize certain types of queries and operations.

In a normalized database schema, each table is designed to represent a single entity or concept, and the data is stored in a way that avoids data duplication and inconsistencies. However, this can sometimes result in more complex queries and slower performance, especially for complex joins or aggregations that require data from multiple tables.

Denormalization involves duplicating data across multiple tables or adding redundant columns to a table in order to simplify or speed up certain types of queries. For example, if a database application frequently needs to display a report that requires data from multiple tables, denormalization can be used to create a single table that includes all of the required data. This can speed up the query and reduce the complexity of the code required to generate the report.

While denormalization can improve performance, it can also increase the risk of data inconsistencies and update anomalies, as changes to one table may not be reflected in all of the duplicated data. It's important to carefully consider the trade-offs and risks before denormalizing a database schema.

12. What is a database cursor?

Ans. In the context of database management, a cursor is a programming construct that enables traversal over the records in a database table or result set, one record at a time. It is often used in database applications to enable users or programs to iterate over a large set of data and perform operations on each record in turn.

A cursor is essentially a pointer to a specific location within a database table or result set, along with some additional metadata that describes the current position and state of the traversal. Cursors are typically used in conjunction with queries or stored procedures that return large result sets, where it is impractical to retrieve all of the records at once.

A database cursor provides a way to iterate over the result set, retrieve the current record, and perform operations on it. The cursor can be moved forward or backward through the result set, and can also be used to update or delete records in the underlying table.

Cursors can be implemented in different ways depending on the specific database system and programming language being used. They can be either server-side cursors, which are executed on the database server, or client-side cursors, which are executed on the client application. Cursors can also be either static or dynamic, depending on whether they reflect changes to the underlying table during the traversal.

13. What are the different types of the queries?

Ans. In the context of database management, there are several types of queries that can be used to retrieve and manipulate data from a database. Here are some common types of database queries:

A) SELECT queries: SELECT queries are used to retrieve data from one or more tables in a database. They can be used to retrieve all records in a table, or to filter records based on specific criteria.

B) INSERT queries: INSERT queries are used to insert new data into a table in a database. They can be used to insert a single record, or to insert multiple records at once.

C) UPDATE queries: UPDATE queries are used to update existing records in a table in a database. They can be used to update a single record, or to update multiple records at once.

D) DELETE queries: DELETE queries are used to delete records from a table in a database. They can be used to delete a single record, or to delete multiple records at once.

E) JOIN queries: JOIN queries are used to retrieve data from two or more related tables in a database. They can be used to combine data from multiple tables based on common fields.

F) SUBQUERY queries: SUBQUERY queries are used to retrieve data from one table that depends on the outcome of a second query.

G) AGGREGATE queries: AGGREGATE queries are used to perform mathematical operations on data in a database, such as sum, average, or count.

14. Define constraint?

ANS. In database management, a constraint is a rule or restriction that is applied to a database table in order to enforce data integrity and ensure the accuracy and consistency of the data stored in the table.

Constraints can be applied to one or more columns in a table, and can be used to enforce a variety of different rules, such as:

Primary key constraints: A primary key constraint ensures that each record in a table is uniquely identified by a specific column or set of columns. This constraint helps to ensure data integrity by preventing duplicate records from being entered into the table.

Foreign key constraints: A foreign key constraint ensures that data entered into a column in one table matches data in a primary key column in another related table. This constraint helps to maintain referential integrity and prevent orphaned records.

Unique constraints: A unique constraint ensures that the values in a specific column or set of columns in a table are unique. This constraint helps to prevent duplicate data from being entered into the table.

Check constraints: A check constraint ensures that the values in a specific column meet a specified condition or range of values. This constraint helps to ensure that the data entered into the table is valid and consistent.

Not-null constraints: A not-null constraint ensures that a specific column cannot contain null values. This constraint helps to ensure that the data entered into the table is complete and accurate.

By enforcing these and other types of constraints, database designers can ensure that the data stored in a database is accurate, consistent, and complete, which in turn helps to ensure the reliability and effectiveness of the database.

15. What is auto increment?

Ans Auto increment is a feature in databases that automatically generates a unique numerical value when a new record is inserted into a table. This numerical value is typically used as the primary key of the record, which uniquely identifies the record within the table.

When a column in a table is marked as an auto-increment column, the database system automatically increments the value of that column for each new record inserted into the table. This ensures that each record has a unique identifier without requiring the user to manually specify it.

Auto increment is a useful feature because it simplifies the process of managing primary keys in a database. It also helps to ensure data integrity by preventing the creation of duplicate primary keys.