iNeuron

Python

Interview Questions

1. What is the difference between TRUNCATE and DELETE?

The truncate command is used when you want to delete all rows and values from a table. It is a DDL type of command which is faster. While the DELETE command is used when you want to delete a specific row in a table. It is a DML command type and less efficient than the truncate statement.

2. What is a cursor?

A cursor is a temporary memory allocated by the server when performing any DML queries. They are used to store Database Tables. Basically a cursor in sql is an object in database code that allows processes to process rows one by one. While in other programming languages sets of data is processed individually through a loop, in SQL, data is processed in a set through a cursor.

Two types of cursors are Implicit cursors and Explicit cursors.

Implicit Cursors: They are Default Cursors of SQL SERVER. Allocated when the user performs DML operations.

Explicit Cursors: They are created by users in need. They are used for Fetching data from Tables in Row-By-Row Manner.

3. Define normalization.

Normalization is a method of breaking down larger, complex data into smaller tables. It helps in filtering unnecessary, redundant data and leaves only unique values.

4. What is ETL?

ETL is an acronym for Extract, Transform, and Load. It is a process where you extract data from different sources, transform the data quality, and finally load it into the database.

5. What is the difference between Local and Global variables?

Local variables are used inside a function and can’t be reused by other functions, whereas global variables can be accessed and used throughout the program.

6. What is a subquery?

A subquery is a query that is found in another query. Usually referred to as an inner query, its output is typically used by another query.

7. What is ACID?

ACID in SQL refers to a set of properties that guarantee the reliable and consistent processing of database transactions. It is an acronym where each letter stands for one of the properties:

Atomicity: Ensures that a transaction is either fully completed or not executed at all. If any part of a transaction fails, the entire transaction is rolled back, and the database remains unchanged.

Consistency: Guarantees that the database transitions from one consistent state to another upon the completion of a transaction. All data must adhere to predefined rules and constraints.

Isolation: Provides a degree of separation between concurrent transactions, ensuring that they do not interfere with one other. It helps maintain data integrity by controlling the visibility of changes made by one transaction to another.

Durability: Guarantees that after a transaction has been committed, the modifications made to the database become permanent, even if a system failure or crash occurs.

ACID properties are vital in maintaining data integrity and consistency in relational database management systems (RDBMS) and ensuring the robustness of transactions.

8. Define stored procedure.

A stored procedure is a function that contains a group of query statements that can be reused. They are stored inside a named

object in the database and can be executed anytime they are required.

9. What are triggers in SQL?

Triggers are special stored procedures that run when there's an event in the database server, such as changing data in a table. A trigger is different from a regular stored procedure as it cannot be directly called like a regular stored procedure.

10. Define an ER.

An Entity Relationship (ER) diagram is a visual representation of the relationship tables found in the database. It displays the table structures and primary and foreign keys.

11. When are Triggers used?

Triggers in SQL are used to automatically enforce business rules or maintain data integrity by executing predefined actions in response to specific database events, such as INSERT, UPDATE, or DELETE. Common use cases include data validation, data auditing, and maintaining referential integrity or complex relationships between tables.

12. What are Sparse Columns?

Sparse columns are columns that provide optimized storage for null values. They reduce space that is usually taken up by null values and can be defined by using CREATE or ALTER statements.

13. Define Check Constraints.

Check constraints are used for checking and ensuring that values in a table follow domain integrity. Users can apply Check constraints to single and multiple columns.

14. What is Collation?

In SQL, collation refers to a set of rules that govern the proper ordering, comparison, and representation of characters in a particular character set or encoding. Collation influences how text data in a database is sorted, searched, and compared. It typically accounts for various linguistic considerations such as case sensitivity, accent sensitivity, and specific language-based conventions.

15. Write a SQL query for the salespeople and customers who live in the same city.

To write a SQL query that shows salespeople and customers who live in the same city, you need to have information about both salespeople and customers. Here's an example SQL query assuming you have two tables: salespeople and customers.

In this query, we're selecting the salesperson name, customer name, and city from two tables (salespeople and customers) using an INNER JOIN to connect them based on the condition that the city in the salespeople table equals the city in the customers table.

16. Write a SQL query to find orders where the order amount exists between 1000 and 5000.

To find orders with an order amount between 1000 and 5000, you can use the following SQL query:

In this query, replace "orders" with the actual name of your orders table, and "order_amount" with the appropriate column name representing the order amount in your table. This query will return all rows where the order amount falls between 1000 and 5000, inclusive.

17. What is a Filtered Index?

A filtered index is a non-clustered index that comes with optimized disk restore. It is created when a column has few values for queries. The purpose of a filtered index is to optimize query performance by reducing the size of the index and the number of index pages that need to be read. It helps in improving performance, storage reduction, and index maintenance.

18. What is a Clause?

A clause is one of the SQL query statements that filters or customizes data for a query. It allows users to limit the results by providing a conditional statement to the query. It is typically used when a large amount of data is in the database.

19. What is a Case Function?

A case function is a SQL logic that uses the if-then-else statements. It evaluates the conditions of a table and returns multiple result expressions.

20. Define a VIEW.

A view is a virtual table containing values in one or multiple tables. Views restrict data by selecting only required values to make queries easy.