SQL Hero

Excel Interviews

200 Questions

Q1 | What is SQL?

SQL, or Structured Query Language, is a domain-specific programming language designed for managing and manipulating relational databases. It provides a standardized way to interact with databases, allowing users to define, manipulate, and query data.

Q2 | Explain the difference between SQL and MySQL.

SQL is a language, while MySQL is a relational database management system that uses SQL. MySQL is one of many databases that support SQL.

Q3 | What is a database and how is it different from a table?

A database is a collection of related data. A table, on the other hand, is a structured format within a database to organize and store data.

Q4 | Define 'Primary Key' in SQL.

A Primary Key is a unique identifier for each record in a table. It ensures that each record can be uniquely identified and helps in maintaining data integrity.

Q5 | Explain the purpose of the SELECT statement.

The SELECT statement is used to retrieve data from one or more tables in a database. It allows you to specify the columns you want to retrieve and the conditions for selecting the data.

Q6 What is normalization in the context of databases?

Normalization is the process of organizing data in a database to reduce redundancy and dependency. It involves dividing large tables into smaller ones and defining relationships between them.

Q7 Differentiate between INNER JOIN and LEFT JOIN.

INNER JOIN returns only the matching rows from both tables, while LEFT JOIN returns all rows from the left table and the matching rows from the right table.

Q8 Explain the purpose of the WHERE clause in a SQL query.

The WHERE clause is used to filter records based on specified conditions. It allows you to retrieve only the data that meets certain criteria.

Q9 What is the role of the GROUP BY clause?

The GROUP BY clause is used to group rows that have the same values in specified columns into summary rows. It is often used with aggregate functions like COUNT, SUM, AVG, etc.

Q10 Define the term 'Index' in the context of databases.

An index is a data structure that improves the speed of data retrieval operations on a database table. It is created on one or more columns of a table.

Q11 What is a stored procedure, and how is it different from a function?

An index is a data structure that improves the speed of data retrieval operations on a database table. It is created on one or more columns of a table.

Q12 Explain the purpose of the HAVING clause.

The HAVING clause is used in combination with the GROUP BY clause to filter the results based on conditions applied to aggregated data.

Q13 What is a foreign key, and how does it relate to a primary key?

A foreign key is a field that refers to the primary key in another table. It establishes a link between the two tables, enforcing referential integrity.

Q14 Describe the difference between CHAR and VARCHAR data types.

CHAR is a fixed-length string, while VARCHAR is a variable-length string. CHAR pads the data with spaces to the specified length, while VARCHAR stores only the actual data.

Q15 How is the SQL ORDER BY clause used?

The ORDER BY clause is used to sort the result set of a query in ascending or descending order based on one or more columns.

Q16 What is a view, and why would you use it?

A view is a virtual table based on the result of a SELECT query. It allows you to simplify complex queries and present specific data to users without giving them direct access to the underlying tables.

Q17 Explain the concept of a transaction in SQL.

A transaction is a sequence of one or more SQL statements that are executed as a single unit. It ensures that all operations within the unit are completed successfully or rolled back if any part fails.

Q18 What is the purpose of the UNION operator in SQL?

The UNION operator is used to combine the result sets of two or more SELECT statements. It removes duplicates and returns a single result set.

Q19 How does the SQL LIKE operator work?

The LIKE operator is used in a WHERE clause to search for a specified pattern in a column. '%' represents zero or more characters, and '_' represents a single character.

Q20 What is the significance of the SQL NULL value?

NULL represents the absence of a value in a database column. It is not the same as an empty string or zero; it indicates that the data is missing or unknown.

Q21 Explain the purpose of the TRUNCATE statement.

The TRUNCATE statement is used to quickly delete all rows from a table, but it does not log individual row deletions, making it faster than the DELETE statement.

Q22 What is a subquery, and how is it different from a JOIN?

A subquery is a query nested within another query. It is used to retrieve data that will be used by the main query. A JOIN combines columns from two or more tables based on related columns.

Q23 Describe the differences between a clustered and a non-clustered index.

A clustered index determines the physical order of data rows in a table, while a non-clustered index does not affect the physical order. A table can have only one clustered index but multiple non-clustered indexes.

Q24 What is the purpose of the SQL CASE statement?

The CASE statement is used to perform conditional logic in a query. It allows you to return different values based on specified conditions.