

Top 20

SQL

Interview Questions



Be the SQL Boss



Disclaimer

Everyone learns uniquely.

What matters is developing the
problem solving ability to solve new
problems.

This Doc will help you with the same.



Q1. What is SQL?

Ans. SQL (Structured Query Language) is a domain-specific language used to manage and manipulate relational databases.

Q2. What is a Database?

Ans. A database is a structured collection of data that is organized and stored for easy retrieval and management.

Q3. Which SQL command categories are you familiar with?

Ans.

- **Data Definition Language (DDL):** Used to define and modify the structure of a database.
- **Data Manipulation Language (DML):** Used to access, manipulate, and modify data in a database.
- **Data Control Language (DCL):** Used to manage user access to database data, granting or revoking privileges to individuals or groups.



- **Transaction Control Language (TCL):** Used to oversee transactions within a database.
- **Data Query Language (DQL):** Utilized for querying and extracting essential information from a database's data.

Q4. | Explain SELECT statement.

Ans. SELECT retrieves data from a database table. It's used to query and fetch specific data.

Q5. | What is a JOIN in SQL?

Ans. JOIN combines rows from two or more tables based on a related column to retrieve data from multiple tables.

Q6. | Differentiate between INNER JOIN and LEFT JOIN.

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



Q7. Explain the GROUP BY clause.

Ans. **GROUP BY** groups rows that have the same values into summary rows, typically to perform aggregate functions on the grouped data.

Q8. Can you name some SQL constraints?

Ans.

- **DEFAULT:** Sets a default value for a column.
 - **UNIQUE:** Ensures only distinct values are allowed.
 - **NOT NULL:** Requires values to be non-null.
 - **PRIMARY KEY:** Enforces uniqueness and non-null values (a combination of **NOT NULL** and **UNIQUE**).
 - **FOREIGN KEY:** Establishes connections between multiple tables using shared keys.
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Q9. Define Index in SQL.

Ans. An index is a database object used to improve the speed of data retrieval operations on a database table.



Q10.

Explain normalization and its types.

Ans. Normalization is the process of organizing data in a database to reduce redundancy. Types include 1NF, 2NF, and 3NF.

Q11.

What is an SQL injection?

Ans. SQL injection is a malicious technique where an attacker inserts malicious SQL code into a query, potentially compromising the database.

Q12.

How to update a table?

Ans. You can update records in a table using the **UPDATE** statement. Here's the basic syntax for updating data in a table:

SQL

```
UPDATE table_name  
SET column1 = value1, column2 = value2, ...  
WHERE condition;
```



Q13.

What is the difference between UNION and UNION ALL?

Ans. **UNION** combines and removes duplicate rows, while **UNION ALL** combines all rows, including duplicates.

Q14.

Explain ACID properties in the context of databases.

Ans. **ACID** stands for Atomicity, Consistency, Isolation, and Durability, ensuring the reliability of database transactions.

Q15.

What is the purpose of the HAVING clause?

Ans. **HAVING** is used in combination with the **GROUP BY** clause to filter grouped rows based on specified conditions.

Q16.

How do you perform a full database backup?

Ans. Use the **BACKUP DATABASE** statement to create a full backup of a SQL Server database.



Q17.

What is the **DISTINCT** statement and how do you use it?

Ans. The **DISTINCT** statement in SQL is used to retrieve unique values from a specific column or set of columns in a database table. It ensures that the result set only contains distinct (unique) values, eliminating duplicate entries.

Here's how you use the **DISTINCT** statement:

SQL

```
SELECT DISTINCT column1, column2, ...  
FROM table_name  
WHERE condition;
```

Q18.

What is a stored procedure?

Ans. A stored procedure is a precompiled collection of one or more SQL statements, stored for future execution.



Q19. What is an ALIAS command?

Ans. In SQL, the **ALIAS** command, often referred to as the **AS** keyword, is used to give a table or column a temporary name. It is primarily used for making column or table names more readable or for shortening lengthy names in query results. For example, you can use **AS** to create an alias like this:

SQL

```
SELECT first_name AS "First Name", last_name AS "Last Name" FROM employees;
```

In this query, "First Name" and "Last Name" are aliases for the first_name and last_name columns, respectively, making the result set more human-readable.

Q20. Explain the concept of a self-join.


Ans. A self-join is when a table is joined with itself, typically using aliases to distinguish between the two instances.





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