Python

Interview Questions

Q1. What is the difference between the RANK() and DENSE_RANK() functions?

Ans- The RANK () function in the result set defines the rank of each row within your ordered partition. If both rows have the same rank, the next number in the ranking will be the previous rank plus a number of duplicates. If we have three records at rank 4, for example, the next level indicated is 7.

The DENSE_RANK () function assigns a distinct rank to each row within a partition based on the provided column value, with no gaps. It always indicates a ranking in order of precedence. This function will assign the same rank to the two rows if they have the same rank, with the next rank being the next consecutive number. If we have three records at rank 4, for example, the next level indicated is 5.

Q2. What is a UNIQUE constraint?

The UNIQUE Constraint prevents identical values in a column from appearing in two records. The UNIQUE constraint guarantees that every value in a column is unique.

Q3. What is a Self-Join?

A self-join is a type of join that can be used to connect two tables. As a result, it is a unary relationship. Each row of the table is attached to itself and all other rows of the same table in a self-join. As a result, a self-join is mostly used to combine and compare rows from the same database table.

Q4. What is UNION, MINUS and INTERSECT commands?

Ans- The UNION operator is used to combine the results of two tables while also removing duplicate entries.

The MINUS operator is used to return rows from the first query but not from the second query.

The INTERSECT operator is used to combine the results of both queries into a single row.
Before running either of the above SQL statements, certain requirements must be satisfied –

Within the clause, each SELECT query must have the same number of columns.

The data types in the columns must also be comparable.

In each SELECT statement, the columns must be in the same order.

Q5. List the different types of relationships in SQL.

Ans- There are different types of relations in the database:

a) One-to-One – This is a connection between two tables in which each record in one table corresponds to the maximum of one record in the other.

b) One-to-Many and Many-to-One – This is the most frequent connection, in which a record in one table is linked to several records in another.

c) Many-to-Many – This is used when defining a relationship that requires several instances on each sides.

d) Self-Referencing Relationships – When a table has to declare a connection with itself, this is the method to employ.

Q6. What is SQL example?

SQL is a database query language that allows you to edit, remove, and request data from databases. The following statements are a few examples of SQL statements:

- SELECT
- INSERT
- UPDATE
- DELETE
- CREATE DATABASE
- ALTER DATABASE

Q7. What are basic SQL skills?

Ans- SQL skills aid data analysts in the creation, maintenance, and retrieval of data from relational databases, which divide data into columns and rows. It also enables users to efficiently retrieve, update, manipulate, insert, and alter data.

The most fundamental abilities that a SQL expert should possess are:

1. Database Management
2. Structuring a Database
3. Creating SQL clauses and statements
4. SQL System Skills like MYSQL, PostgreSQL
5. PHP expertise is useful.
6. Analyze SQL data
7. Using WAMP with SQL to create a database
8. OLAP Skills

Q8. What is schema in SQL Server?

Ans- A schema is a visual representation of the database that is logical. It builds and specifies the relationships among the database's numerous entities. It refers to the several kinds of constraints that may be applied to a database. It also describes the various data kinds. It may also be used on Tables and Views.

Schemas come in a variety of shapes and sizes. Star schema and Snowflake schema are two of the most popular. The entities in a star schema are represented in a star form, whereas those in a snowflake schema are shown in a snowflake shape.
Any database architecture is built on the foundation of schemas.

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Q11. How to install SQL Server in Windows 11?

Ans- Install SQL Server Management Studio In Windows 11

Step 1: Click on SSMS, which will take you to the SQL Server Management Studio page.

Step 2: Moreover, click on the SQL Server Management Studio link and tap on Save File.

Step 3: Save this file to your local drive and go to the folder.

Step 4: The setup window will appear, and here you can choose the location where you want to save the file.
Step 5: Click on Install.
Step 6: Close the window after the installation is complete.
Step 7: Furthermore, go back to your Start Menu and search for SQL server management studio.

Step 8: Furthermore, double-click on it, and the login page will appear once it shows up.

Step 9: You should be able to see your server name. However, if that's not visible, click on the drop-down arrow on the server and tap on Browse.

Step 10: Choose your SQL server and click on Connect.

Q12. What is the case when in SQL Server?

Ans- The CASE statement is used to construct logic in which one column's value is determined by the values of other columns.

At least one set of WHEN and THEN commands makes up the SQL Server CASE Statement. The condition to be tested is specified by the WHEN statement. If the WHEN condition returns TRUE, the THEN sentence explains what to do.

When none of the WHEN conditions return true, the ELSE statement is executed. The END keyword brings the CASE statement to a close.

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CASE

WHEN condition1 THEN result1

WHEN condition2 THEN result2

WHEN conditionN THEN resultN

ELSE result

END;

Q13. What is the difference between NOW() and CURRENT_DATE()?

Ans- NOW() returns a constant time that indicates the time at which the statement began to execute. (Within a stored function or trigger, NOW() returns the time at which the function or triggering statement began to execute.

The simple difference between NOW() and CURRENT_DATE() is that NOW() will fetch the current date and time both in format 'YYYY-MM_DD HH:MM:SS' while CURRENT_DATE() will fetch the date of the current day 'YYYY-MM_DD'.

Let's move to the next question in this SQL Interview Questions.

Q14. What is BLOB and TEXT in MySQL?

Ans- BLOB stands for Binary Huge Objects and can be used to store binary data, whereas TEXT may be used to store a large number of strings. BLOB may be used to store binary data, which includes images, movies, audio, and applications.

BLOB values function similarly to byte strings, and they lack a character set. As a result, bytes' numeric values are completely dependent on comparison and sorting.

TEXT values behave similarly to a character string or a non-binary string. The comparison/sorting of TEXT is completely dependent on the character set collection.

Q15. How to create a stored procedure using SQL Server?

A stored procedure is a piece of prepared SQL code that you can save and reuse again and over.
So, if you have a SQL query that you create frequently, save it as a stored procedure and then call it to run it.
You may also supply parameters to a stored procedure so that it can act based on the value(s) of the parameter(s) given.

Stored Procedure Syntax

CREATE PROCEDURE procedure_name

AS

sql_statement

GO;

Execute a Stored Procedure

EXEC procedure_name;

Q16. What is Database Black Box Testing?

Black Box Testing is a software testing approach that involves testing the functions of software applications without knowing the internal code structure, implementation details, or internal routes. Black Box Testing is a type of software testing that focuses on the input and output of software applications and is totally driven by software requirements and specifications. Behavioral testing is another name for it.

Q17. Where MyISAM table is stored?

Prior to the introduction of MySQL 5.5 in December 2009, MyISAM was the default storage engine for MySQL relational database management system versions. It's based on the older ISAM code, but it comes with a lot of extra features. Each MyISAM table is split into three files on disc (if it is not partitioned). The file names start with the table name and end with an extension that indicates the file type. The table definition is stored in a.frm file, however this file is not part of the MyISAM engine; instead, it is part of the server. The data file's suffix is.MYD (MYData). The index file's extension is.MYI (MYIndex). If you lose your index file, you may always restore it by recreating indexes.

Q18. How to find the nth highest salary in SQL?

Ans- The most typical interview question is to find the Nth highest pay in a table. This work can be accomplished using the dense rank() function.

Employee table

employee_name	salary
A	24000
C	34000
D	55000
E	75000
F	21000
G	40000
H	50000

SELECT * FROM(

SELECT employee_name, salary, DENSE_RANK()

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OVER(ORDER BY salary DESC)r FROM Employee)

WHERE r=&n;

To find to the 2nd highest salary set n = 2

To find 3rd highest salary set n = 3 and so on.

Q19. What do you mean by table and field in SQL?

A table refers to a collection of data in an organised manner in form of rows and columns. A field refers to the number of columns in a table. For example:

Table: StudentInformation

Field: Stu Id, Stu Name, Stu Marks

Q20. What is the difference between CHAR and VARCHAR2 datatype in   SQL?

Both Char and Varchar2 are used for characters datatype but varchar2 is used for character strings of variable length whereas Char is used for strings of fixed length. For example, char(10) can only store 10 characters and will not be able to store a string of any other length whereas varchar2(10) can store any length i.e 6,8,2 in this variable.