1. What are Scalar functions and write a query?

Scalar functions are functions in SQL Server that return a single value based on the input parameter. They are useful for performing calculations, manipulating data, and returning a result based on a condition.

CREATE FUNCTION dbo.GetOrderTotal(@OrderID INT)

RETURNS MONEY

AS

BEGIN

DECLARE @Total MONEY

SELECT @Total = SUM(Quantity \* Price)

FROM OrderDetails

WHERE OrderID = @OrderID

RETURN @Total

END

2. Explain joins with example and output.

Joins in SQL are used to combine rows from two or more tables based on a related column between them. The most common type of join is an inner join, which returns only the rows that have matching values in both tables.

Table 1: Orders

|  |  |  |
| --- | --- | --- |
| OrderID | CustomerID | OrderDate |
| 1 | 1001 | 2021-01-01 |
| 2 | 1002 | 2021-01-02 |
| 3 | 1001 | 2021-01-03 |
| 4 | 1003 | 2021-01-04 |

Table 2: Customers

|  |  |  |
| --- | --- | --- |
| CustomerID | CustomerName | City |
| 1001 | John Smith | New York |
| 1002 | Jane Doe | Boston |
| 1003 | Bob Johnson | San Diego |

SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate

FROM Orders

INNER JOIN Customers ON Orders.CustomerID = Customers.CustomerID;

|  |  |  |
| --- | --- | --- |
| OrderID | CustomerName | OrderDate |
| 1 | John Smith | 2021-01-01 |
| 2 | Jane Doe | 2021-01-02 |
| 3 | John Smith | 2021-01-03 |
| 4 | Bob Johnson | 2021-01-04 |

3. Write a SQL query to Rename the column name.

EXEC sp\_rename 'Employees.EmpName', 'FullName', 'COLUMN';

4. Write a SQL query to find duplicate records

SELECT column\_name, COUNT(\*)

FROM table\_name

GROUP BY column\_name

HAVING COUNT(\*) > 1;

5. How do we use the DISTINCT statement? What are its use?

In SQL distinct statement is used to return only unique value from a query result.

It eliminates the duplicate values from the query result and returns only the distinct value.

The Disctinct statement is mostly used in SELECT clause.

SELECT DISTINCT column\_name FROM table\_name;

6. Remove duplicate from the table

To remove duplicates from a table we can use distinct statement with SELECT query so that we can get only unique rows.

CREATE TABLE MyTable\_NoDuplicates (

Column1 datatype,

Column2 datatype,

Column3 datatype,

Column4 datatype

);

INSERT INTO MyTable\_NoDuplicates (Column1, Column2, Column3, Column4)

SELECT DISTINCT Column1, Column2, Column3, Column4

FROM MyTable;

Using the above code we created a new table with the name MyTable\_NoDuplicates and with same column names as MyTable. Then we are inserting only the Distinct rows into the new table using SELECT DISTINCT statement.

7. Print max salary for a particular department

To print the maximum salary for a particular department in SQL, you can use the MAX() function along with the WHERE clause to filter the results by the department.

SELECT MAX(Salary) AS MaxSalary

FROM Employees

WHERE Department = 'Sales';

Using the above query we are retrieving the Maximum salary from Employees table from sales department and displaying it as MaxSalary.

8. Use different operators in SQL

Types of operators used in SQL:

Arithematic operators(+,-,\*,/,%)

SELECT OrderID, ItemName, Price \* Quantity AS TotalCost

FROM Orders;

Comparison operators(<,>,<=,>=,<>,=)

SELECT OrderID, ItemName, Price \* Quantity AS TotalCost

FROM Orders

WHERE Price \* Quantity > 100;

Logical operators(AND,OR,NOT)

SELECT OrderID, ItemName, Price \* Quantity AS TotalCost

FROM Orders

WHERE Price \* Quantity > 100 AND Quantity > 10;

9. What is Query to display first 5 Records from  
Employee table?

To display the first 5 records from the Employee table, you can use the SELECT statement with the LIMIT clause in SQL.

SELECT \* FROM Employee

LIMIT 5;

10. What is Query to display last 5 Records from  
Employee table?

To display the last 5 records from the Employee table, you can use the SELECT statement with the ORDER BY and LIMIT clauses in SQL.

SELECT \* FROM Employee

ORDER BY EmployeeID DESC

LIMIT 5;

In this query, the SELECT statement retrieves all columns (\*) from the Employee table. The ORDER BY clause orders the records by the EmployeeID column in descending order using the DESC keyword, so that the most recent records appear first. The LIMIT clause limits the number of rows returned to 5.

11. How to fetch 3rd highest salary using Rank Function

To fetch the 3rd highest salary using the Rank function, you can follow these steps:

* Write a SQL query to select all distinct salaries from the employee table in descending order.
* Use the Rank function to assign a rank to each distinct salary in the order of their descending values.
* Filter the query by selecting the salary where the rank is equal to 3.

SELECT salary FROM (

SELECT salary, RANK() OVER (ORDER BY salary DESC) as rank

FROM employee

GROUP BY salary

) as ranks

WHERE rank = 3;

12. How Can i create table with same structure with data   
of Employee table?

To create a new table with the same structure and data as an existing Employee table in SQL, you can use the CREATE TABLE statement with the AS keyword.

CREATE TABLE new\_employee\_table AS

SELECT \* FROM employee;

13. Find Query to get information of Employee where   
Employee is not assigned to the department.

To get information about employees who are not assigned to any department, you can use a LEFT JOIN or NOT EXISTS clause in the SQL query.

SELECT e.\*

FROM employee e

LEFT JOIN department d ON e.department\_id = d.department\_id

WHERE d.department\_id IS NULL;