\*\*SQL Table Creation and Data Insertion:\*\*

```sql

-- Create the Employee table

CREATE TABLE Employee (

EmployeeID INT PRIMARY KEY,

FirstName VARCHAR(50),

LastName VARCHAR(50),

Department VARCHAR(50),

Salary DECIMAL(10, 2)

);

-- Insert 20 sample records into the Employee table

INSERT INTO Employee (EmployeeID, FirstName, LastName, Department, Salary)

VALUES

(1, 'John', 'Doe', 'HR', 50000.00),

(2, 'Jane', 'Smith', 'IT', 60000.00),

(3, 'Michael', 'Johnson', 'Finance', 55000.00),

(4, 'Emily', 'Brown', 'Marketing', 52000.00),

(5, 'David', 'Wilson', 'Sales', 55000.00),

(6, 'Sarah', 'Lee', 'IT', 62000.00),

(7, 'James', 'Anderson', 'Finance', 58000.00),

(8, 'Olivia', 'Martinez', 'HR', 52000.00),

(9, 'Daniel', 'Taylor', 'Sales', 56000.00),

(10, 'Sophia', 'Jackson', 'Marketing', 53000.00),

(11, 'Liam', 'Harris', 'IT', 61000.00),

(12, 'Ava', 'White', 'Finance', 57000.00),

(13, 'William', 'Miller', 'HR', 51000.00),

(14, 'Ella', 'Thompson', 'Marketing', 54000.00),

(15, 'Alexander', 'Walker', 'Sales', 57000.00),

(16, 'Mia', 'Clark', 'IT', 59000.00),

(17, 'Henry', 'Lewis', 'Finance', 59000.00),

(18, 'Sofia', 'Hall', 'HR', 53000.00),

(19, 'Jackson', 'Young', 'Sales', 58000.00),

(20, 'Luna', 'Wright', 'Marketing', 55000.00);

```

\*\*General Questions:\*\*

1. What is the structure of the Employee table?

2. How many columns are there in the Employee table?

3. What is the primary key of the Employee table?

4. Can you retrieve all the records from the Employee table?

5. How many records (rows) are there in the Employee table?

\*\*Data Retrieval:\*\*

6. Show me the first 5 records from the Employee table.

7. Display the names of all employees in the Marketing department.

8. Retrieve the highest salary in the Employee table.

9. List the employees whose salary is above $55,000.

10. Who has the lowest salary in the IT department?

11. Find the employee with EmployeeID 7.

\*\*Data Modification:\*\*

12. Update the salary of John Doe to $52,000.

13. Insert a new employee with EmployeeID 21, FirstName 'Isabella,' LastName 'Davis,' Department 'Sales,' and Salary $57,000.

14. Delete the record of employee with EmployeeID 9.

15. Change the department of employee with EmployeeID 14 to 'Finance.'

\*\*Aggregation and Statistics:\*\*

16. Calculate the average salary of all employees.

17. What is the total salary expenditure for the company?

18. Find the department with the highest average salary.

19. Count the number of employees in each department.

20. What is the sum of salaries for employees in the IT department?

\*\*Sorting and Filtering:\*\*

21. List employees in ascending order of their salaries.

22. Show the top 3 highest-paid employees.

23. Display employees with a salary between $50,000 and $60,000.

24. Sort employees by their last names in alphabetical order.

25. Find employees with names starting with 'A.'

\*\*Grouping and Aggregation:\*\*

26. Group employees by department and show the total count in each department.

27. Calculate the average salary for each department.

28. What is the highest salary in the Sales department?

29. List departments with more than 3 employees.

30. Find the department with the most employees.

\*\*Joins and Relationships:\*\*

31. Do you have any information about the managers of each department?

32. Show employees who do not belong to any department.

33. List employees along with their department names.

34. Retrieve employees who have the same last name.

35. Find employees with the same department and salary.

\*\*Advanced Queries:\*\*

36. Find the employee(s) with the second-highest salary.

37. Display the employee(s) with the longest first name.

38. Calculate the salary difference between employees with EmployeeID 3 and 6.

39. List employees who earn more than the average salary in their department.

40. Show the employees with the highest salary within each department.

# ADLC

1. What is the structure of the Employee table?

Ans 1.

Structure of the employee table is SQL columns and rows.

Ans 2.

There are 5 columns in the employee table.

Ans 3.

The primary key is EmployeeID INT.

Ans 4.

SELECT \* FROM Employee;

Ans 5

There are 20 rows in the table.

Ans 6.

SELECT \*

FROM employee

LIMIT 5;

Ans 7.

SELECT FirstName, LastName

FROM employee

WHERE Department = 'Marketing';

Ans 8.

SELECT MAX(Salary) AS HighestSalary

FROM employee;

Ans 9.

SELECT \*

FROM employee

WHERE Salary > 55000.00;

Ans 10.

SELECT FirstName, LastName, Salary

FROM employee

WHERE Department = 'IT'

ORDER BY Salary

LIMIT 1;

Ans 11.

SELECT \*

FROM employee

WHERE EmployeeID = 7;

Ans 12.

UPDATE employee

SET Salary = 52000.00

WHERE FirstName = 'John' AND LastName = 'Doe';

Ans 13.

INSERT INTO employee (EmployeeID, FirstName, LastName, Department, Salary)

VALUES (21,'Isabella','Davis','Sales',57000.00)

Ans 14.

DELETE FROM employee

WHERE EmployeeID = 9;

Ans 15.

UPDATE employee

SET Department = 'Finance'

WHERE EmployeeID = 14;

Ans 16.

SELECT AVG(Salary) AS AverageSalary

FROM employee;

Ans 17.

SELECT SUM(Salary) AS TotalSalaryExpenditure

FROM employee;

Ans 18.

SELECT Department, AVG(Salary) AS AverageSalary

FROM employee

GROUP BY Department

ORDER BY AverageSalary DESC

LIMIT 1;

Ans 19.

SELECT Department, COUNT(\*) AS NumberOfEmployees

FROM employee

GROUP BY Department;

Ans 20.

SELECT SUM(Salary) AS TotalSalary

FROM employee

WHERE Department = 'IT';

Ans 21.

SELECT \*

FROM employee

ORDER BY Salary ASC;

Ans 22.

SELECT \*

FROM employee

ORDER BY Salary DESC

LIMIT 3;

Ans 23.

SELECT \*

FROM employee

WHERE Salary BETWEEN 50000 AND 60000;

Ans 24.

SELECT \*

FROM employee

ORDER BY LastName ASC;

Ans 25.

SELECT \*

FROM employee

WHERE EmployeeID LIKE 'A%';

Ans 26.

SELECT Department, COUNT(\*) AS TotalEmployees

FROM employee

GROUP BY Department;

Ans 27.

SELECT Department, AVG(Salary) AS AverageSalary

FROM employee

GROUP BY Department;

Ans 28.

SELECT MAX(Salary) AS HighestSalary

FROM employee

WHERE Department = 'Sales';

Ans 29.

SELECT Department, COUNT(\*) AS EmployeeCount

FROM employee

GROUP BY Department

HAVING COUNT(\*) > 3;

Ans 30.

SELECT Department, COUNT(\*) AS EmployeeCount

FROM employee

GROUP BY Department

ORDER BY EmployeeCount DESC

LIMIT 1;

Ans 31.

There is no information about managers.

Ans 32.

SELECT \*

FROM employee

WHERE Department IS NULL OR Department = '';

Ans 33.

SELECT E.EmployeeID, E.FirstName, E.LastName, D.DepartmentName

FROM employee AS E

JOIN DepartmentTable AS D ON E.Department = D.DepartmentID;

Ans 34.

SELECT LastName, COUNT(\*) AS NumberOfEmployees

FROM employee

GROUP BY LastName

HAVING COUNT(\*) > 1;

Ans 35.

SELECT Department, Salary, COUNT(\*) AS EmployeeCount

FROM employee

GROUP BY Department, Salary

HAVING COUNT(\*) > 1;

Ans 37

SELECT FirstName

FROM employee

WHERE LENGTH(FirstName) = (

SELECT MAX(LENGTH(FirstName))

FROM employee

);

Ans 38

SELECT (SELECT Salary FROM employee WHERE EmployeeID = 6) - (SELECT Salary FROM employee WHERE EmployeeID = 3) AS SalaryDifference;

Ans 39

SELECT AVG(Salary) AS AverageSalary

FROM employee

GROUP BY Department

ORDER BY Salary DESC

LIMIT 1;

Ans 40

SELECT MAX(Salary) AS higheshsalary

FROM employee

GROUP BY Department

ORDER BY Salary DESC;