

# INFOSYS INTERNSHIP 6.0

## SQL TASK

### Prompt:

Hey, I need a set of important SQL tasks to complete. Please give me a list of commonly used SQL Queries that every learner should know and that are mostly asked in interviews. Also, include a short comment line for each part of the code or query explaining what it does.

### Solution:

#### 1. Create a table

```
CREATE TABLE Employees (  
    EmpID INT PRIMARY KEY,  
    Name VARCHAR(100),  
    Department VARCHAR(50),  
    Salary INT  
);
```

#### 2. Insert data into table

```
INSERT INTO Employees (EmpID, Name, Department, Salary)  
VALUES (1, 'Alice', 'HR', 50000),  
      (2, 'Bob', 'IT', 60000),  
      (3, 'Charlie', 'Finance', 55000);
```

#### 3. Select all records

```
SELECT * FROM Employees;
```

#### 4. Filtering with WHERE

```
SELECT * FROM Employees WHERE Department = 'IT';
```

#### 5. Sorting results

```
SELECT * FROM Employees ORDER BY Salary DESC;
```

#### 6. Count total employees

```
SELECT COUNT(*) AS TotalEmployees FROM Employees;
```

#### 7. Get average salary

```
SELECT AVG(Salary) AS AverageSalary FROM Employees;
```

**8. Find employees with salary greater than 55000**

```
SELECT Name FROM Employees WHERE Salary > 55000;
```

**9. Update salary**

```
UPDATE Employees SET Salary = Salary + 5000 WHERE Department = 'IT';
```

**10. Delete an employee**

```
DELETE FROM Employees WHERE EmpID = 3;
```

**11. Group by department (aggregation)**

```
SELECT Department, COUNT(*) AS CountDept, AVG(Salary) AS AvgSalary  
FROM Employees  
GROUP BY Department;
```

**12. Use of HAVING with GROUP BY**

```
SELECT Department, AVG(Salary) AS AvgSal  
FROM Employees  
GROUP BY Department  
HAVING AVG(Salary) > 55000;
```

**13. Find highest salary employee**

```
SELECT Name, Salary FROM Employees  
WHERE Salary = (SELECT MAX(Salary) FROM Employees);
```

**14. Use of LIKE operator**

```
SELECT * FROM Employees WHERE Name LIKE 'A%';  
-- Names starting with 'A'
```

**15. Create a join between two tables**

```
CREATE TABLE Departments (  
    DeptID INT PRIMARY KEY,  
    DeptName VARCHAR(50)  
);  
-- Example join  
SELECT e.Name, d.DeptName  
FROM Employees e  
JOIN Departments d ON e.Department = d.DeptName;
```

**16. Subquery example**

```
SELECT Name FROM Employees  
WHERE Salary > (SELECT AVG(Salary) FROM Employees);
```

**17. DISTINCT usage**

```
SELECT DISTINCT Department FROM Employees;
```

**18. BETWEEN operator**

```
SELECT * FROM Employees WHERE Salary BETWEEN 50000 AND 60000;
```

**19. IN operator**

```
SELECT * FROM Employees WHERE Department IN ('IT', 'HR');
```

**20. ALTER TABLE to add a new column**

```
ALTER TABLE Employees ADD JoiningDate DATE;
```