

## SQL 2<sup>nd</sup> Assignment

USE Employee;

INSERT INTO departments (department\_id, department\_name) VALUES

(1, 'Software Development'),  
(2, 'Marketing'),  
(3, 'Data Science'),  
(4, 'Human Resources'),  
(5, 'Product Management'),  
(6, 'Content Creation'),  
(7, 'Finance'),  
(8, 'Design'),  
(9, 'Research and Development'),  
(10, 'Customer Support'),  
(11, 'Business Development'),  
(12, 'IT'),  
(13, 'Operations');

INSERT INTO Location (location\_name) VALUES

('Chennai'),  
( 'Bangalore'),  
( 'Hyderabad'),  
( 'Pune');

INSERT INTO employees (employee\_id, employee\_name, gender, age, hire\_date, designation, department\_id, location\_id, salary) VALUES

(5001, 'Vihaan Singh', 'M', 27, '2015-01-20', 'Data Analyst', 3, 4, 60000),  
(5002, 'Reyansh Singh', 'M', 31, '2015-03-10', 'Network Engineer', 12, 1, 80000),

(5003, 'Aaradhya Iyer', 'F', 26, '2015-05-20', 'Customer Support Executive', 10, 2, 45000),  
(5004, 'Kiara Malhotra', 'F', 29, '2015-07-05', NULL, 8, 3, 70000),  
(5005, 'Anvi Chaudhary', 'F', 25, '2015-09-11', 'Business Development Executive', 11, 1, 55000),  
(5006, 'Dhruv Shetty', 'M', 28, '2015-11-20', 'UI Developer', 8, 2, 65000),  
(5007, 'Anushka Singh', 'F', 32, '2016-01-15', 'Marketing Manager', 2, 3, 90000),  
(5008, 'Diya Jha', 'F', 27, '2016-03-05', 'Graphic Designer', 8, 4, 70000),  
(5009, 'Kiaan Desai', 'M', 30, '2016-05-20', 'Sales Executive', 11, 3, 55000),  
(5010, 'Atharv Yadav', 'M', 29, '2016-07-10', 'Systems Administrator', 12, 4, 80000),  
(5011, 'Saanvi Patel', 'F', 28, '2016-09-20', 'Marketing Analyst', 2, 1, 60000),  
(5012, 'Myra Verma', 'F', 26, '2016-11-05', 'Operations Manager', 13, 2, 95000),  
(5013, 'Arnav Rao', 'M', 33, '2017-01-20', 'Customer Success Manager', 10, 3, 75000),  
(5014, 'Vihaan Mohan', 'M', 30, '2017-03-10', 'Supply Chain Analyst', 10, 2, 60000),  
(5015, 'Ishaan Kumar', 'M', 27, '2017-05-20', 'Financial Analyst', 7, 1, 85000),  
(5016, 'Zoya Khan', 'F', 31, '2017-07-05', 'Legal Counsel', 4, 4, 100000),  
(5017, 'Kabir Nair', 'M', 28, '2017-09-11', 'IT Support Specialist', 12, 2, 80000),  
(5018, 'Ishan Mishra', 'M', 25, '2017-11-20', 'Research Scientist', 9, 3, 75000),  
(5019, 'Ishika Patel', 'F', 29, '2018-01-15', 'Talent Acquisition Specialist', 4, 4, 55000),  
(5020, 'Aarav Nair', 'M', 32, '2018-03-05', 'Software Engineer', 1, 1, 90000),  
(5021, 'Advik Kapoor', 'M', 26, '2018-05-20', 'Finance Analyst', 7, 3, 85000),  
(5022, 'Aadhya Iyengar', 'F', 28, '2018-07-10', 'HR Specialist', 4, 4, 60000),  
(5023, 'Anika Paul', 'F', 30, '2018-09-20', 'Public Relations Specialist', 2, 2, 70000),  
(5024, 'Aryan Shetty', 'M', 27, '2018-11-05', 'Product Manager', 5, 1, 95000),  
(5025, 'Avni Iyengar', 'F', 31, '2019-01-20', 'Data Scientist', 3, 4, 100000),  
(5026, 'Vivaan Singh', 'M', 29, '2019-03-10', 'Business Analyst', 3, 2, 75000),  
(5027, 'Ananya Paul', 'F', 32, '2019-05-20', 'Content Writer', 6, 3, 60000),  
(5028, 'Anaya Kapoor', 'F', 26, '2019-07-05', 'Event Coordinator', 6, 1, 60000),  
(5029, 'Arjun Kumar', 'M', 33, '2019-09-11', 'Quality Assurance Analyst', 12, 2, 80000),  
(5030, 'Sara Iyer', 'F', 28, '2019-11-20', 'Project Manager', 5, 1, 90000);

```
/* -----Correcting Datas and Field -----  
----- */
```

```
/* Adding Designation Field into Employees Table */
```

```
ALTER TABLE employees  
ADD COLUMN Designation VARCHAR (80)  
AFTER hire_date;
```

```
ALTER TABLE employees  
ADD COLUMN Salary DECIMAL (10,2);
```

```
DESC Employees;  
SELECT * FROM Employees;
```

```
/* -----DISTINCT VALUES-----  
-*/
```

```
/* a query to retrieve distinct salaries from the Employees table. */
```

```
SELECT DISTINCT Salary FROM Employees;
```

```
/* -----Alias (AS)----- */
```

```
/* Provide aliases for the "age" and "salary" columns as "Employee_Age" and "Employee_Salary",  
respectively. */
```

```
SELECT age as Employee_Age,  
       Salary as Employee_Salary  
FROM Employees;
```

```
/* -----Where Clause & Operators-----  
-----*/
```

```
/* Retrieve employees with a salary greater than ₹50000 and hired before 2016-01-01 */
```

```
SELECT * FROM Employees  
WHERE Salary>50000 AND hire_date<'2016-01-01';
```

```
/* Find the employee whose designation is missing and fill it with "Data Scientist" */
```

```
SELECT * FROM Employees  
WHERE Designation IS NULL OR Designation="Data Scientist";
```

```
/* -----Sorting and Grouping Data-----  
-----*/
```

```
/* -----ORDER BY-----*/
```

```
/* Find employees sorted by department ID in ascending order and salary in descending order. */
```

```
SELECT * FROM Employees
```

ORDER BY Department\_id ASC, Salary DESC;

/\* -----LIMIT----- \*/

/\* Display the first 5 employees hired in the year 2018. \*/

SELECT \* FROM Employees

WHERE YEAR(Hire\_date)='2018'

LIMIT 5;

/\* -----Aggregate Functions-----  
-----\*/

/\* Calculate the sum of all salaries in the Finance department. \*/

SELECT DISTINCT Designation FROM Employees;

SELECT designation, department\_id, salary from employees Order BY department\_id ASC;

SELECT SUM(Salary) FROM Employees

WHERE Department\_id=7;

/\* Find the minimum age among all employees. \*/

SELECT MIN(Age) AS Minimum\_Age FROM Employees;

/\* -----GROUP BY----- \*/

/\* List the maximum salary for each location. \*/

```
SELECT location_id, MAX(salary) AS Maximum_Salary
FROM employees
GROUP BY location_id;
```

/\*

```
SELECT e.location_id, l.location_name, MAX(e.salary) AS Maximum_Salary
FROM employees e
INNER JOIN Location l ON e.location_id=l.location_id
GROUP BY e.location_id; */
```

/\* Calculate the average salary for each designation containing the word 'Analyst'. \*/

```
SELECT Designation, AVG(Salary) FROM Employees
WHERE Designation LIKE '%Analyst%'
GROUP BY Designation;
```

/\* -----HAVING----- \*/

/\* Find departments with less than 3 employees. \*/

```
SELECT Department_ID, COUNT(*) AS Employees_Count
FROM employees
GROUP BY Department_ID
```

HAVING COUNT(\*) < 3;

/\* Find locations with female employees whose average age is below 30. \*/

Select \* from Employees;

```
SELECT Location_id, Gender, AVG(Age) AS Average_Age
FROM Employees
WHERE Gender="F"
GROUP BY Location_id
HAVING AVG(Age)<30;
```

/\* -----JOINS----- \*/

/\* -----INNER JOINS----- \*/

/\* List employee names, their designations, and department names where employees are assigned to a department \*/

Select \* from Employees;

Select \* from Location;

Select \* from departments;

```
SELECT e.employee_name, e.designation, d.department_name
FROM Employees e
INNER JOIN Departments d ON e.department_id=d.department_id;
```

/\* -----LEFT JOIN----- \*/

/\* List all departments along with the total number of employees in each department, including departments with no employees. \*/

Select \* from Employees;

Select \* from Location;

Select \* from departments;

```
SELECT d.department_id, d.department_name, COUNT(e.employee_ID) AS  
Total_Number_of_Employees_in_each_department  
FROM Departments d  
LEFT JOIN employees e ON e.department_id=d.department_id  
GROUP BY d.department_name;
```

/\* -----RIGHT JOIN----- \*/

/\* Display all locations along with the names of employees assigned to each location. If no employees are assigned

to a location, display NULL for employee name. \*/

Select \* from Employees;

Select \* from Location;

Select \* from departments;

```
SELECT l.location_name, e.employee_name  
FROM Location l  
RIGHT JOIN Employees e ON e.location_id=l.location_id  
ORDER BY l.location_name;
```



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