

```
mysql> CREATE DATABASE company_db;
Query OK, 1 row affected (0.03 sec)

mysql> USE company_db;
Database changed
mysql> CREATE TABLE departments(
    -> dept_id INT PRIMARY KEY,
    -> dept_name VARCHAR(50) NOT NULL UNIQUE
    -> );
Query OK, 0 rows affected (0.12 sec)
```

```
mysql> CREATE TABLE employees(
    -> emp_id INT PRIMARY KEY,
    -> emp_name VARCHAR(50) NOT NULL,
    -> salary DECIMAL(10,2) CHECK (salary > 0),
    -> dept_id INT,
    -> joining_date DATE,
    -> FOREIGN KEY (dept_id) REFERENCES departments(dept_id)
    -> );
Query OK, 0 rows affected (0.24 sec)
mysql> INSERT INTO departments VALUES
    -> (101,'HR'),
    -> (102,'IT'),
    -> (103,'Finance'),
    -> (104,'Marketing');
Query OK, 4 rows affected (0.02 sec)
Records: 4 Duplicates: 0 Warnings: 0

mysql> INSERT INTO employees VALUES
    -> (1,'AMIT',50000,102,'2024-01-10'),
    -> (2,'RIYA',45000,101,'2024-02-15'),
    -> (3,'KARAN',60000,102,'2023-12-01'),
    -> (4,'NEHA',55000,103,'2024-03-20'),
    -> (5,'ARJUN',40000,NULL,'2024-04-05');
Query OK, 5 rows affected (0.02 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT*FROM departments;
+-----+-----+
| dept_id | dept_name |
+-----+-----+
|      103 | Finance   |
|      101 | HR        |
|      102 | IT        |
|      104 | Marketing |
+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> SELECT*FROM employees;
+-----+-----+-----+-----+-----+
| emp_id | emp_name | salary | dept_id | joining_date |
+-----+-----+-----+-----+-----+
|      1 | AMIT     | 50000.00 |      102 | 2024-01-10   |
|      2 | RIYA     | 45000.00 |      101 | 2024-02-15   |
|      3 | KARAN    | 60000.00 |      102 | 2023-12-01   |
|      4 | NEHA     | 55000.00 |      103 | 2024-03-20   |
|      5 | ARJUN    | 40000.00 |     NULL | 2024-04-05   |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> SELECT emp_name,salary  
-> FROM employees  
-> ORDER BY salary DESC;
```

emp_name	salary
KARAN	60000.00
NEHA	55000.00
AMIT	50000.00
RIYA	45000.00
ARJUN	40000.00

5 rows in set (0.00 sec)

```
mysql> SELECT dept_id,COUNT(emp_id) AS total_employees  
-> FROM employees  
-> GROUP BY dept_id;
```

dept_id	total_employees
NULL	1
101	1
102	2
103	1

4 rows in set (0.01 sec)

```
mysql> SELECT dept_id, AVG(salary) AS avg_salary  
-> FROM employees  
-> GROUP BY dept_id  
-> HAVING AVG(salary)>50000;
```

```
+-----+-----+  
| dept_id | avg_salary |  
+-----+-----+  
|      102 | 55000.000000 |  
|      103 | 55000.000000 |  
+-----+-----+  
2 rows in set (0.01 sec)
```

```
mysql> SELECT*FROM employees  
-> LIMIT 3;
```

```
+-----+-----+-----+-----+-----+  
| emp_id | emp_name | salary | dept_id | joining_date |  
+-----+-----+-----+-----+-----+  
|      1 | AMIT    | 50000.00 |      102 | 2024-01-10 |  
|      2 | RIYA    | 45000.00 |      101 | 2024-02-15 |  
|      3 | KARAN   | 60000.00 |      102 | 2023-12-01 |  
+-----+-----+-----+-----+-----+  
3 rows in set (0.00 sec)
```

```
mysql> SELECT e.emp_name,d.dept_name
-> FROM employees e
-> INNER JOIN departments d
-> ON e.dept_id=d.dept_id;
```

emp_name	dept_name
NEHA	Finance
RIYA	HR
AMIT	IT
KARAN	IT

4 rows in set (0.00 sec)

```
mysql> SELECT e.emp_name,d.dept_name
-> FROM employees e
-> LEFT JOIN departments d
-> ON e.dept_id=d.dept_id;
```

emp_name	dept_name
AMIT	IT
RIYA	HR
KARAN	IT
NEHA	Finance
ARJUN	NULL

5 rows in set (0.01 sec)

```
mysql> SELECT e.emp_name,d.dept_name
-> FROM employees e
-> RIGHT JOIN departments d
-> ON e.dept_id=d.dept_id;
```

emp_name	dept_name
NEHA	Finance
RIYA	HR
AMIT	IT
KARAN	IT
NULL	Marketing

5 rows in set (0.00 sec)

```
mysql> SELECT e.emp_name,d.dept_name
-> FROM employees e
-> LEFT JOIN departments d
-> ON e.dept_id=d.dept_id
-> UNION
-> SELECT e.emp_name,d.dept_name
-> FROM employees e
-> RIGHT JOIN departments d
-> ON e.dept_id=d.dept_id;
```

emp_name	dept_name
AMIT	IT
RIYA	HR
KARAN	IT
NEHA	Finance
ARJUN	NULL
NULL	Marketing

6 rows in set (0.01 sec)

```
mysql> SELECT
-> A.emp_name AS Employee_1,
-> B.emp_name AS Employee_2,
-> A.dept_id
-> FROM employees A
-> JOIN employees B
-> ON A.dept_id=B.dept_id
-> AND A.emp_id<>B.emp_id;
```

Employee_1	Employee_2	dept_id
AMIT	KARAN	102
KARAN	AMIT	102

2 rows in set (0.00 sec)