Task-5

JOINS:

Inner join:

```
mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> join department on employee.departmentId=department.departmentId;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Khushi  | Rajkot    | marketing      |
| Ram     | Ahemedabad | sales          |
| Krishna | Bangluru  | sales          |
| Janvi   | Mumbai    | testing        |
| lukky   | Delhi     | devloping      |
| Umi     | Delhi     | marketing      |
+---------+-----------+----------------+
6 rows in set (0.28 sec)

mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> inner join department on employee.departmentId=department.departmentId;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Khushi  | Rajkot    | marketing      |
| Ram     | Ahemedabad | sales          |
| Krishna | Bangluru  | sales          |
| Janvi   | Mumbai    | testing        |
| lukky   | Delhi     | devloping      |
| Umi     | Delhi     | marketing      |
+---------+-----------+----------------+
6 rows in set (0.00 sec)

mysql>
```

Left join (Left outer join):

```
mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> left join department on employee.departmentId=department.departmentId;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Khushi  | Rajkot    | marketing      |
| Ram     | Ahemedabad | sales          |
| Krishna | Bangluru  | sales          |
| Janvi   | Mumbai    | testing        |
| lukky   | Delhi     | devloping      |
| Umi     | Delhi     | marketing      |
+---------+-----------+----------------+
6 rows in set (0.07 sec)

mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> left join department on employee.departmentId=department.departmentName;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Khushi  | Rajkot    | NULL           |
| Ram     | Ahemedabad | NULL           |
| Krishna | Bangluru  | NULL           |
| Janvi   | Mumbai    | NULL           |
| lukky   | Delhi     | NULL           |
| Umi     | Delhi     | NULL           |
+---------+-----------+----------------+
6 rows in set, 5 warnings (0.30 sec)

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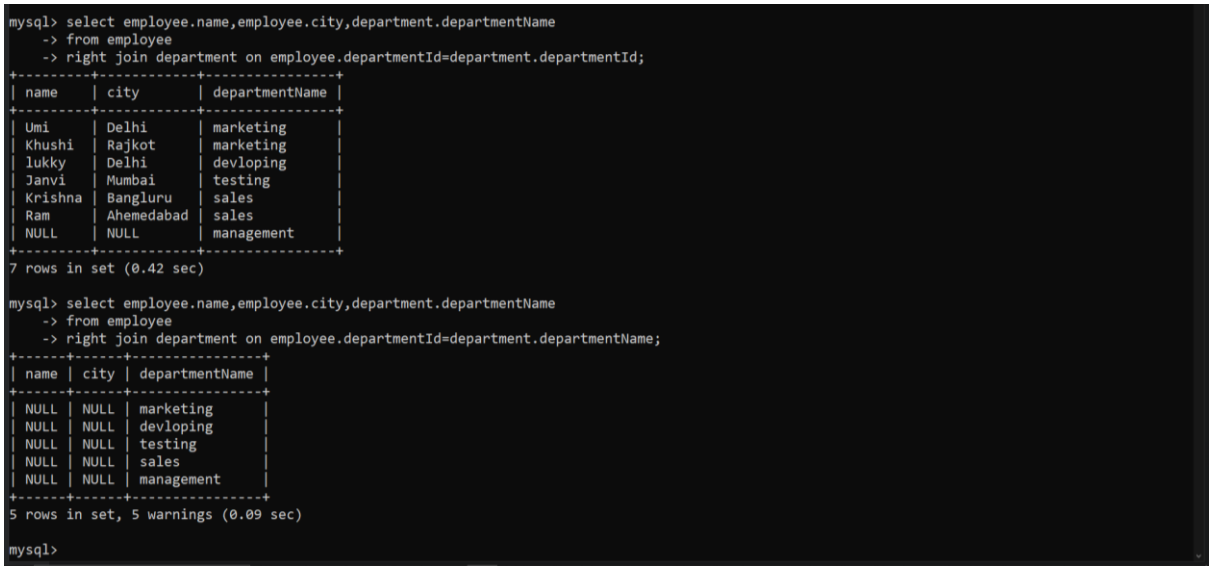
Right join (Right outer join):



```
mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> right join department on employee.departmentId=department.departmentId;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Umi     | Delhi     | marketing      |
| Khushi  | Rajkot    | marketing      |
| lukky   | Delhi     | devloping      |
| Janvi   | Mumbai    | testing        |
| Krishna | Bangluru  | sales          |
| Ram     | Ahemedabad| sales          |
| NULL    | NULL      | management     |
+---------+-----------+----------------+
7 rows in set (0.42 sec)

mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> right join department on employee.departmentId=department.departmentName;
+------+------+----------------+
| name | city | departmentName |
+------+------+----------------+
| NULL | NULL | marketing      |
| NULL | NULL | devloping      |
| NULL | NULL | testing        |
| NULL | NULL | sales          |
| NULL | NULL | management     |
+------+------+----------------+
5 rows in set, 5 warnings (0.09 sec)

mysql>
```

Full join:

```
select
employee.name, employee.city,
department.departmentName
from employee
 full outer join department on
employee.departmentId=department.departmentId;
```

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Full join using union:

```
mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> left join department on employee.departmentId=department.departmentId
    -> union
    -> select employee.name,employee.city,department.departmentName
    -> from employee
    -> right join department on employee.departmentId=department.departmentId;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Khushi  | Rajkot    | marketing      |
| Ram     | Ahemedabad | sales          |
| Krishna | Bangluru  | sales          |
| Janvi   | Mumbai    | testing        |
| lukky   | Delhi     | devloping      |
| Umi     | Delhi     | marketing      |
| NULL    | NULL      | management     |
+---------+-----------+----------------+
7 rows in set (0.49 sec)
```

```
mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> left join department on employee.departmentId=department.departmentName
    -> union
    -> select employee.name,employee.city,department.departmentName
    -> from employee
    -> right join department on employee.departmentId=department.departmentName;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Khushi  | Rajkot    | NULL           |
| Ram     | Ahemedabad | NULL           |
| Krishna | Bangluru  | NULL           |
| Janvi   | Mumbai    | NULL           |
| lukky   | Delhi     | NULL           |
| Umi     | Delhi     | NULL           |
| NULL    | NULL      | marketing      |
| NULL    | NULL      | devloping      |
| NULL    | NULL      | testing        |
| NULL    | NULL      | sales          |
| NULL    | NULL      | management     |
+---------+-----------+----------------+
11 rows in set, 10 warnings (0.08 sec)
```

Difference between inner join and left outer join:

```
mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> join department on employee.departmentId=department.departmentName;
Empty set, 5 warnings (0.53 sec)

mysql> select employee.name,employee.city,department.departmentName
    -> from employee
    -> left join department on employee.departmentId=department.departmentName;
+---------+-----------+----------------+
| name    | city      | departmentName |
+---------+-----------+----------------+
| Khushi  | Rajkot    | NULL           |
| Ram     | Ahemedabad | NULL           |
| Krishna | Bangluru  | NULL           |
| Janvi   | Mumbai    | NULL           |
| lukky   | Delhi     | NULL           |
| Umi     | Delhi     | NULL           |
+---------+-----------+----------------+
6 rows in set, 5 warnings (0.04 sec)

mysql>
```

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Nested join (Multi-Table joins):

```
mysql> select employee.name,department.departmentId,salary.salary
    -> from employee
    -> join department on employee.departmentId=department.departmentId
    -> join salary on employee.salary=salary.salary;
+---------+--------------+--------+
| name    | departmentId | salary |
+---------+--------------+--------+
| Khushi  |            1 |  15000 |
| Ram     |            4 |  25000 |
| Krishna |            4 |   5000 |
| Janvi   |            3 |  35000 |
| lukky   |            2 |  50000 |
| Umi     |            1 |  60000 |
+---------+--------------+--------+
6 rows in set (0.22 sec)

mysql> select employee.name,department.departmentName,salary.salary
    -> from employee
    -> join department on employee.departmentId=department.departmentId
    -> join salary on employee.salary=salary.salary;
+---------+----------------+--------+
| name    | departmentName | salary |
+---------+----------------+--------+
| Khushi  | marketing      |  15000 |
| Ram     | sales          |  25000 |
| Krishna | sales          |   5000 |
| Janvi   | testing        |  35000 |
| lukky   | devloping      |  50000 |
| Umi     | marketing      |  60000 |
+---------+----------------+--------+
6 rows in set (0.07 sec)
```

Here we have join 3 tables (employee,department,salary)

Cross join:

```
Command Prompt - mysql -u root -p
| Umi     | marketing      |  60000 |
+---------+----------------+--------+
6 rows in set (0.07 sec)

mysql> select department.departmentName,employee.name
    -> from department
    -> cross join employee;
+----------------+---------+
| departmentName | name    |
+----------------+---------+
| management     | Khushi  |
| sales          | Khushi  |
| testing        | Khushi  |
```

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```
Command Prompt - mysql -u root -p
    -> cross join employee;
+----------------+---------+
| departmentName | name    |
+----------------+---------+
| management     | Khushi  |
| sales          | Khushi  |
| testing        | Khushi  |
| devloping      | Khushi  |
| marketing      | Khushi  |
| management     | Ram     |
| sales          | Ram     |
| testing        | Ram     |
| devloping      | Ram     |
| marketing      | Ram     |
| management     | Krishna |
| sales          | Krishna |
| testing        | Krishna |
| devloping      | Krishna |
| marketing      | Krishna |
| management     | Janvi   |
| sales          | Janvi   |
| testing        | Janvi   |
| devloping      | Janvi   |
| marketing      | Janvi   |
| management     | lukky   |
| sales          | lukky   |
| testing        | lukky   |
| devloping      | lukky   |
| marketing      | lukky   |
| management     | Umi     |
| sales          | Umi     |
| testing        | Umi     |
| devloping      | Umi     |
| marketing      | Umi     |
+----------------+---------+
30 rows in set (0.03 sec)
```

Natural join:

```
Command Prompt - mysql -u root -p
Query OK, 0 rows affected (1.14 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select * from dept_n;
+------------+
| deptname   |
+------------+
| devloping  |
| testing    |
| sales      |
| management |
+------------+
4 rows in set (0.00 sec)

mysql> select * from dept;
+--------+------------+
| deptId | deptname   |
+--------+------------+
|      2 | devloping  |
|      3 | testing    |
|      4 | sales      |
|      5 | management |
|      6 | management |
+--------+------------+
5 rows in set (0.00 sec)

mysql> select deptId,deptname
    -> from dept
    -> natural join dept_n;
+--------+------------+
| deptId | deptname   |
+--------+------------+
|      2 | devloping  |
|      3 | testing    |
|      4 | sales      |
|      5 | management |
|      6 | management |
+--------+------------+
5 rows in set (0.05 sec)

mysql>
```

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Joining a table which have no primary key and reference key: