

```
create table dept(  
    dept_id int,  
    dept_name varchar(20),  
    primary key (dept_id)  
);  
  
create table employee (  
    emp_id int,  
    first_name varchar(20),  
    last_name varchar(20),  
    dept_id int,  
    primary key(emp_id),  
    foreign key(dept_id) references dept(dept_id)  
  
);  
  
insert into dept values  
    (10,"HR"),  
    (20,"Sales"),  
    (30,"IT"),  
    (40,"Marketing");  
  
insert into employee values  
    (1,"jhon","doe",10),  
    (2,"jane","smith",20),  
    (3,"mike","jhonson",30),  
    (4,"emily","davis",10);
```

INNER JOIN: Retrieves only the rows that have matching values in both tables.

```
select * from employee
```

```
INNER JOIN dept on employee.dept_id = dept.dept_id;
```

```
+-----+-----+-----+-----+-----+
| emp_id | first_name | last_name | dept_id | dept_id | dept_name |
+-----+-----+-----+-----+-----+
| 1 | jhon | doe | 10 | 10 | HR |
| 2 | jane | smith | 20 | 20 | Sales |
| 3 | mike | jhonson | 30 | 30 | IT |
| 4 | emily | davis | 10 | 10 | HR |
+-----+-----+-----+-----+-----+
```

LEFT OUTER JOIN: Retrieves all rows from the left table and the matching rows from the right table. If there is no match, the right side will show NULL.

```
select * from employee
```

```
LEFT OUTER JOIN dept on employee.dept_id = dept.dept_id;
```

```
+-----+-----+-----+-----+-----+
| emp_id | first_name | last_name | dept_id | dept_id | dept_name |
+-----+-----+-----+-----+-----+
| 1 | jhon | doe | 10 | 10 | HR |
| 2 | jane | smith | 20 | 20 | Sales |
| 3 | mike | jhonson | 30 | 30 | IT |
| 4 | emily | davis | 10 | 10 | HR |
+-----+-----+-----+-----+-----+
```

RIGHT OUTER JOIN: Retrieves all rows from the right table and the matching rows from the left table. If there is no match, the left side will show NULL.

```
select * from employee
```

RIGHT OUTER JOIN dept on employee.dept_id = dept.dept_id;

emp_id	first_name	last_name	dept_id	dept_id	dept_name
1	jhon	doe	10	10	HR
4	emily	davis	10	10	HR
2	jane	smith	20	20	Sales
3	mike	jhonson	30	30	IT
NULL	NULL	NULL	NULL	40	Marketing

FULL OUTER JOIN: Retrieves all rows from both tables, showing NULL where there is no match in either table

select * from employee

FULL OUTER JOIN dept on employee.dept_id = dept.dept_id;

emp_id	first_name	last_name	dept_id	dept_id	dept_name
1	jhon	doe	10	10	HR
2	jane	smith	20	20	Sales
3	mike	jhonson	30	30	IT
4	emily	davis	10	10	HR
NULL	NULL	NULL	NULL	40	Marketing

SELECT first_name, COUNT(*)

FROM Employee

GROUP BY first_name

HAVING COUNT(*) > 1;

+-----+-----+

| first_name | COUNT(*) |

+-----+-----+

| John | 2 |

+-----+-----+

SELECT email, COUNT(*)

FROM Employee

GROUP BY email

HAVING COUNT(*) > 1;

+-----+-----+

| email | COUNT(*) |

+-----+-----+

| john.doe@example.com | 2 |

+-----+-----+

SELECT first_name, last_name, COUNT(*)

FROM Employee

GROUP BY first_name, last_name

HAVING COUNT(*) > 1;

+-----+-----+-----+

| first_name | last_name | COUNT(*) |

+-----+-----+-----+

| John | Doe | 2 |

+-----+-----+-----+

```
SELECT first_name, email, COUNT(*)
```

```
FROM Employee
```

```
GROUP BY first_name, email
```

```
HAVING COUNT(*) > 1;
```

```
+-----+-----+-----+
```

```
| first_name | email | COUNT(*) |
```

```
+-----+-----+-----+
```

```
| John | john.doe@example.com | 2 |
```

```
+-----+-----+-----+
```