CREATE TABLE TEACHER(id INT PRIMARY KEY,name VARCHAR(20),salary INT);

Insert into TEACHER(id,name,salary) values
    -> (1,"Mayuri",57000),
    -> (2,"Sakshi",60000),
    -> (3,"Amit",55000),
    -> (4,"Sai",80000),
    -> (106,"Saksham",55000),
    -> (107,"Sayali",60000);
SELECT * FROM TEACHER;

```
+-----+---------+--------+
| id  | name    | salary |
+-----+---------+--------+
|   1 | Mayuri  |  57000 |
|   2 | Sakshi  |  60000 |
|   3 | Amit    |  55000 |
|   4 | Sai     |  80000 |
| 106 | Saksham |  55000 |
| 107 | Sayali  |  60000 |
+-----+---------+--------+
```

CREATE TABLE COURSE(c_id INT PRIMARY KEY, c_name VARCHAR(20), id INT, FOREIGN KEY(id) REFERENCES TEACHER(id));
Insert into COURSE(c_id,id,c_name) values
    -> (101,1,"Maths"),
    -> (102,4,"Science"),
    -> (103,2,"Physics"),
    -> (104,4,"Bio"),
    -> (106,3,"History");
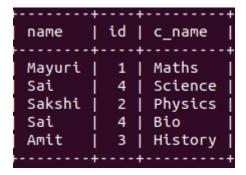SELECT * FROM COURSE;

```
+------+---------+------+
| c_id | c_name  | id   |
+------+---------+------+
|    6 | Geo     | NULL |
|    7 | Civics  | NULL |
|  101 | Maths   |    1 |
|  102 | Science |    4 |
|  103 | Physics |    2 |
|  104 | Bio     |    4 |
|  106 | History |    3 |
+------+---------+------+
```
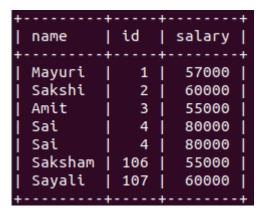
INNER JOIN:
Return all rows with same spacified column value.
SELECT t.name,c.c_name FROM TEACHER t INNER JOIN COURSE c ON t.id = c.id;

```
+--------+----+---------+
| name   | id | c_name  |
+--------+----+---------+
| Mayuri |  1 | Maths   |
| Sai    |  4 | Science |
| Sakshi |  2 | Physics |
| Sai    |  4 | Bio     |
| Amit   |  3 | History |
+--------+----+---------+
```

NATURAL JOIN
Join 2 tables by common column name no need to specify column name eplicitly
SELECT * FROM TEACHER natural join COURSE;

```
+---------+-----+--------+
| name    | id  | salary |
+---------+-----+--------+
| Mayuri  |   1 |  57000 |
| Sakshi  |   2 |  60000 |
| Amit    |   3 |  55000 |
| Sai     |   4 |  80000 |
| Sai     |   4 |  80000 |
| Saksham | 106 |  55000 |
| Sayali  | 107 |  60000 |
+---------+-----+--------+
```
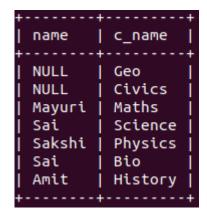
LEFT JOIN
select t.name,t.salary,c.c_name,t.id from TEACHER t LEFT JOIN COURSE c ON t.id=c.id;

```
+---------+--------+---------+-----+
| name    | salary | c_name  | id  |
+---------+--------+---------+-----+
| Mayuri  |  57000 | Maths   |   1 |
| Sakshi  |  60000 | Physics |   2 |
| Amit    |  55000 | History |   3 |
| Sai     |  80000 | Science |   4 |
| Sai     |  80000 | Bio     |   4 |
| Saksham |  55000 | NULL    | 106 |
| Sayali  |  60000 | NULL    | 107 |
+---------+--------+---------+-----+
```

RIGHT JOIN
SELECT t.name,c.c_name from TEACHER t RIGHT JOIN COURSE c ON t.id=c.id;

```
+--------+---------+
| name   | c_name  |
+--------+---------+
| NULL   | Geo     |
| NULL   | Civics  |
| Mayuri | Maths   |
| Sai    | Science |
| Sakshi | Physics |
| Sai    | Bio     |
| Amit   | History |
+--------+---------+
```
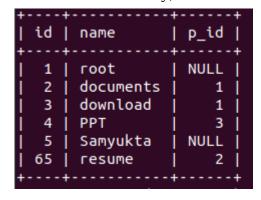
OUTER JOIN
select t.name as teacher_id, c.c_name as c_name from TEACHER t LEFT JOIN COURSE c ON t.id = c.id UNION select t.name, c.c_name as c_name from TEACHER t RIGHT JOIN COURSE c ON t.id=c.id;

```
+------------+---------+
| teacher_id | c_name  |
+------------+---------+
| Mayuri     | Maths   |
| Sakshi     | Physics |
| Amit       | History |
| Sai        | Science |
| Sai        | Bio     |
| Saksham    | NULL    |
| Sayali     | NULL    |
| NULL       | Geo     |
| NULL       | Civics  |
+------------+---------+
```

SELF JOIN
SELECT * FROM directory;

```
+----+-----------+------+
| id | name      | p_id |
+----+-----------+------+
|  1 | root      | NULL |
|  2 | documents |    1 |
|  3 | download  |    1 |
|  4 | PPT       |    3 |
|  5 | Samyukta  | NULL |
| 65 | resume    |    2 |
+----+-----------+------+
```

SELECT p.name as Parent, c.name as Child FROM directory c JOIN directory p on p.id = c.p_id;

```
+-----------+-----------+
| Parent    | Child     |
+-----------+-----------+
| root      | documents |
| root      | download  |
| download  | PPT       |
| documents | resume    |
+-----------+-----------+
```