EXPERIMENT NO. 06

AIM: To implement join operation. Perform various join operations on given tables.

1. Natural join. 2. Outer join

THEORY:

1) Natural Join: -

A NATURAL JOIN is a JOIN operation that creates an implicit join clause based on the common columns in the two tables being joined. Common columns are columns that have the same name in both tables.

-The associated tables have one or more pairs of identically named columns.
- The columns must be the same data type.
- Don't use ON clause in a natural join.

Syntax :- select select_list from T1 natural join T2 ;

2) Inner Join :- The INNER JOIN keyword selects records that have matching values in both tables. Inner join takes the join condition along with on clause.

Syntax :- select select_list from T1 inner join T2 on join_predicate;

3) Outer Join: -

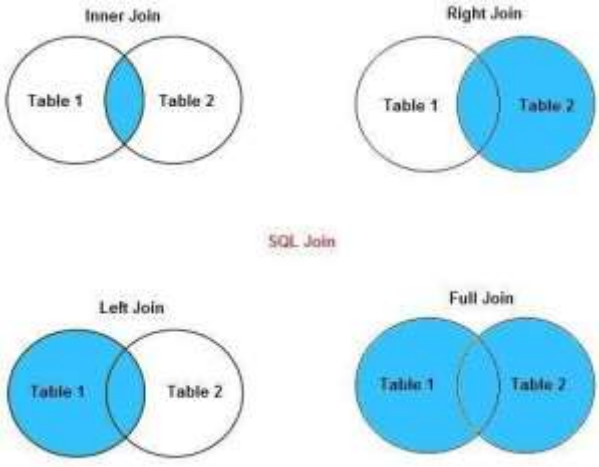
Outer joins are used to match rows from two tables even if there are no match rows are included. Rows from one of the tables are always included, for the other, when there are no matches, NULL values are included.

There are three types of outer joins:

Left Outer Join – All rows from the left table are included, unmatched rows from the right are replaced with NULL values.

Right Outer Join – All rows from the right table are included, unmatched rows from the left are replaced with NULL values.

Full Outer Join – All rows from both tables are included, NULL values fill unmatched rows.



```
mysql> select * from faculty;
+-----+-----------+--------+--------+------+
| Fid | Fname     | city   | salary | sid  |
+-----+-----------+--------+--------+------+
| 101 | Suraj N   | Thane  |  50000 |   10 |
| 102 | Diksha P  | Thane  |  51000 |   11 |
| 103 | Radhika J | Mumbai |  52000 |   12 |
| 110 | John M    | Pune   |  51000 |   13 |
| 115 | Ajay S.   | Mumbai |  52000 |   18 |
| 118 | Aarti K.  | Mumbai |  52000 |   20 |
+-----+-----------+--------+--------+------+
6 rows in set (0.00 sec)

mysql> select * from subject;
+-----+-------+-------+------+
| sid | sname | class | sem  |
+-----+-------+-------+------+
|  10 | DBMS  | TE    |    5 |
|  11 | CN    | TE    |    5 |
|  13 | OS    | SE    |    4 |
|  15 | DDB   | TE    |    6 |
|  17 | DSIP  | BE    |    8 |
+-----+-------+-------+------+
5 rows in set (0.00 sec)
```

Output :-

```
mysql> select F.Fid, F.Fname,F.salary ,s.sid, s.sname,s.class,s.sem from Faculty F natural join subject s;
+-----+----------+--------+------+-------+-------+------+
| Fid | Fname    | salary | sid  | sname | class | sem  |
+-----+----------+--------+------+-------+-------+------+
| 101 | Suraj N  |  50000 |   10 | DBMS  | TE    |    5 |
| 102 | Diksha P |  51000 |   11 | CN    | TE    |    5 |
| 110 | John M   |  51000 |   13 | OS    | SE    |    4 |
+-----+----------+--------+------+-------+-------+------+
3 rows in set (0.00 sec)
```

```
mysql> select F.Fid, F.Fname,F.salary ,s.sid, s.sname,s.class,s.sem from Faculty F inner join  subject s where F.sid=s.sid;
+-----+----------+--------+------+-------+-------+------+
| Fid | Fname    | salary | sid  | sname | class | sem  |
+-----+----------+--------+------+-------+-------+------+
| 101 | Suraj N  |  50000 |   10 | DBMS  | TE    |    5 |
| 102 | Diksha P |  51000 |   11 | CN    | TE    |    5 |
| 110 | John M   |  51000 |   13 | OS    | SE    |    4 |
+-----+----------+--------+------+-------+-------+------+
3 rows in set (0.00 sec)
```

```
mysql> select F.Fid, F.Fname,F.salary ,s.sid, s.sname,s.class,s.sem from Faculty F left outer join subject s on F.sid=s.sid ;
+-----+-----------+--------+------+-------+-------+------+
| Fid | Fname     | salary | sid  | sname | class | sem  |
+-----+-----------+--------+------+-------+-------+------+
| 101 | Suraj N   |  50000 |   10 | DBMS  | TE    |    5 |
| 102 | Diksha P  |  51000 |   11 | CN    | TE    |    5 |
| 110 | John M    |  51000 |   13 | OS    | SE    |    4 |
| 103 | Radhika J |  52000 | NULL | NULL  | NULL  | NULL |
| 115 | Ajay S    |  52000 | NULL | NULL  | NULL  | NULL |
| 118 | Aarti K   |  52000 | NULL | NULL  | NULL  | NULL |
+-----+-----------+--------+------+-------+-------+------+
6 rows in set (0.00 sec)
```

```
mysql> select F.Fid, F.Fname,F.salary ,s.sid, s.sname,s.class,s.sem from Faculty F right outer join subject s on F.sid=s.sid ;
+------+----------+--------+------+-------+-------+------+
| Fid  | Fname    | salary | sid  | sname | class | sem  |
+------+----------+--------+------+-------+-------+------+
|  101 | Suraj N  |  50000 |   10 | DBMS  | TE    |    5 |
|  102 | Diksha P |  51000 |   11 | CN    | TE    |    5 |
|  110 | John M   |  51000 |   13 | OS    | SE    |    4 |
| NULL | NULL     |   NULL |   15 | DDB   | TE    |    6 |
| NULL | NULL     |   NULL |   17 | DSIP  | BE    |    8 |
+------+----------+--------+------+-------+-------+------+
5 rows in set (0.00 sec)
```

CONCLUSION: - Hence studied all the types of Joins.