EXPERIMENT 5

**Aim:** To study the use of various join present in sql.

**Theory :**

JOINS in SQL are commands which are used to combine rows from two or more tables, based on a related column between those tables.  There are predominantly used when a user is trying to extract data from tables which have one-to-many or many-to-many relationships between them.

Now, that you know what joins mean, let us next learn the different types of joins.

## **Different Types of Joins**

There are mainly four types of joins that you need to understand. They are:

* [INNER JOIN](https://www.edureka.co/blog/sql-joins-types#INNER%20JOIN)
* [FULL JOIN](https://www.edureka.co/blog/sql-joins-types#FULL%20JOIN)
* [LEFT JOIN](https://www.edureka.co/blog/sql-joins-types#LEFT%20JOIN)
* [RIGHT JOIN](https://www.edureka.co/blog/sql-joins-types#RIGHT%20JOIN)

### **INNER JOIN**

This type of join returns those records which have matching values in both tables. So, if you perform an INNER join operation between the Employee table and the Projects table, all the tuples which have matching values in both the tables will be given as output.

#### **Syntax:**

SELECT Table1.Column1,Table1.Column2,Table2.Column1,....

FROM Table1

INNER JOIN Table2

ON Table1.MatchingColumnName = Table2.MatchingColumnName;

### **FULL JOIN**

Full Join or the Full Outer Join returns all those records which either have a match in the left(Table1) or the right(Table2) table.

#### **Syntax:**

SELECT Table1.Column1,Table1.Column2,Table2.Column1,....

FROM Table1

FULL JOIN Table2

ON Table1.MatchingColumnName = Table2.MatchingColumnName;

### **LEFT JOIN**

The LEFT JOIN or the LEFT OUTER JOIN  returns all the records from the left table and also those records which satisfy a condition from the right table. Also, for the records having no matching values in the right table, the output or the result-set will contain the NULL values.

#### **Syntax:**

SELECT Table1.Column1,Table1.Column2,Table2.Column1,....

FROM Table1

LEFT JOIN Table2

ON Table1.MatchingColumnName = Table2.MatchingColumnName;

### **RIGHT JOIN**

The RIGHT JOIN or the RIGHT OUTER JOIN  returns all the records from the right table and also those records which satisfy a condition from the left table. Also, for the records having no matching values in the left table, the output or the result-set will contain the NULL values.

#### **Syntax:**

SELECT Table1.Column1,Table1.Column2,Table2.Column1,....

FROM Table1

RIGHT JOIN Table2

ON Table1.MatchingColumnName = Table2.MatchingColumnName;

**Code:**

181070002@ltsp244:~$ ssh student@172.18.38.10

student@172.18.38.10's password:

Welcome to Ubuntu 16.04.4 LTS (GNU/Linux 4.13.0-36-generic x86\_64)

\* Documentation: https://help.ubuntu.com

\* Management: https://landscape.canonical.com

\* Support: https://ubuntu.com/advantage

536 packages can be updated.

379 updates are security updates.

Last login: Mon Feb 10 13:58:28 2020 from 172.18.38.243

student@admin:~$ mysql -u 181070002 -p

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 145

Server version: 5.7.28-0ubuntu0.16.04.2 (Ubuntu)

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affiliates. Other names may be trademarks of their respective

owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> **create 10feb;**

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '10feb' at line 1

mysql> create database 10feb;

Query OK, 1 row affected (0.00 sec)

mysql> **use 10feb;**

Database changed

mysql> **create table emp(eid int,ename varchar(40));**

Query OK, 0 rows affected (0.02 sec)

mysql> **create table cus(cid int,cname varchar(40));**

Query OK, 0 rows affected (0.01 sec)

mysql> **create table cuss(cid int,cname varchar(40));**

Query OK, 0 rows affected (0.02 sec)

mysql> **create table cust(eid int,cname varchar(40));**

Query OK, 0 rows affected (0.01 sec)

mysql> **insert into emp values(1,'ajinkya'),(2,'piyush');**

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> **insert into cust values(1,'aji'),(2,'pi');**

Query OK, 2 rows affected (0.00 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> **select \* from emp;**

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

| eid | ename |

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

| 1 | ajinkya |

| 2 | piyush |

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

2 rows in set (0.00 sec)

mysql> **select \* from cust;**

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

| eid | cname |

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

| 1 | aji |

| 2 | pi |

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

2 rows in set (0.00 sec)

mysql> **select \* from emp natural join cust;**

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

| eid | ename | cname |

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

| 1 | ajinkya | aji |

| 2 | piyush | pi |

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

2 rows in set (0.00 sec)

mysql> **select \* from emp inner join cust;**

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

| eid | ename | eid | cname |

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

| 1 | ajinkya | 1 | aji |

| 2 | piyush | 1 | aji |

| 1 | ajinkya | 2 | pi |

| 2 | piyush | 2 | pi |

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

4 rows in set (0.00 sec)

mysql> **select \* from emp inner join cust on cust.eid = emp.eid;**

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

| eid | ename | eid | cname |

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

| 1 | ajinkya | 1 | aji |

| 2 | piyush | 2 | pi |

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

2 rows in set (0.00 sec)

mysql> **select \* from emp left join cust on cust.eid = emp.eid;**

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

| eid | ename | eid | cname |

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

| 1 | ajinkya | 1 | aji |

| 2 | piyush | 2 | pi |

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

2 rows in set (0.00 sec)

mysql> **select \* from emp right join cust on cust.eid = emp.eid;**

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

| eid | ename | eid | cname |

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

| 1 | ajinkya | 1 | aji |

| 2 | piyush | 2 | pi |

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

2 rows in set (0.00 sec)

mysql**> select \* from emp full join cust;**

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

| eid | ename | eid | cname |

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

| 1 | ajinkya | 1 | aji |

| 2 | piyush | 1 | aji |

| 1 | ajinkya | 2 | pi |

| 2 | piyush | 2 | pi |

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

4 rows in set (0.00 sec)

mysql> select \* from emp full join cust on cust.eid = emp.eid;

ERROR 1054 (42S22): Unknown column 'emp.eid' in 'on clause'

**Conclusion:**

We have studied the use of various join such as inner, natural ,left , right and full join present in sql.