University of Petroleum

&

Energy Studies

SCHOOL OF COMPUTER SCIENCE

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BATCH: 1

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Experiment 8: Use of different SQL clauses and join

Objective: To understand the use of group by and having clause and execute the SQL commands using JOIN

1. **Consider the following schema:**

   Student (sid, sname, age)

```
mysql> CREATE DATABASE LAB_8;
Query OK, 1 row affected (0.02 sec)

mysql> USE LAB_8;
Database changed
mysql> CREATE TABLE Student (
    ->     sid VARCHAR(10) PRIMARY KEY,
    ->     sname VARCHAR(50) NOT NULL,
    ->     age INT
    -> );
Query OK, 0 rows affected (0.05 sec)
```

   Match (mid, mname, venue)

```
mysql> CREATE TABLE `Match` (
    ->     mid VARCHAR(10) PRIMARY KEY,
    ->     mname VARCHAR(50) NOT NULL,
    ->     venue VARCHAR(50)
    -> );
Query OK, 0 rows affected (0.05 sec)
```

   Play (sid, mid, day(date))

```
mysql> CREATE TABLE Play (
    ->     sid VARCHAR(10),
    ->     mid VARCHAR(10),
    ->     day DATE,
    ->     PRIMARY KEY (sid, mid, day),
    ->     FOREIGN KEY (sid) REFERENCES Student(sid),
    ->     FOREIGN KEY (mid) REFERENCES `Match`(mid)
    -> );
Query OK, 0 rows affected (0.07 sec)
```

2. **Populate all the tables.**

Table: Student

```
mysql> INSERT INTO Student (sid, sname, age) VALUES
    -> ('S1', 'Amit', 20),
    -> ('S2', 'Ravi', 22),
    -> ('S3', 'Pooja', 19),
    -> ('S4', 'John', 21);
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

Table: Match

```
mysql> INSERT INTO `Match` (mid, mname, venue) VALUES
    -> ('B10', 'Cricket', 'Delhi'),
    -> ('B20', 'Football', 'Mumbai'),
    -> ('B30', 'Tennis', 'Chennai'),
    -> ('B40', 'Basketball', 'Delhi');
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

Table: Play

```
mysql> INSERT INTO Play (sid, mid, day) VALUES
    -> ('S1', 'B10', '2024-01-10'),
    -> ('S2', 'B10', '2024-01-11'),
    -> ('S1', 'B20', '2024-01-15'),
    -> ('S3', 'B30', '2024-01-20'),
    -> ('S4', 'B40', '2024-01-25'),
    -> ('S2', 'B20', '2024-01-15');
Query OK, 6 rows affected (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

3. **Find all information of students who have played match number B10.**

```
mysql> SELECT Student.*
    -> FROM Student
    -> JOIN Play ON Student.sid = Play.sid
    -> WHERE Play.mid = 'B10';
+-----+-------+------+
| sid | sname | age  |
+-----+-------+------+
| S1  | Amit  |   20 |
| S2  | Ravi  |   22 |
+-----+-------+------+
2 rows in set (0.00 sec)
```

4. **Find the name of matches played by Amit.**

```
mysql> SELECT DISTINCT `Match`.mname
    -> FROM `Match`
    -> JOIN Play ON `Match`.mid = Play.mid
    -> JOIN Student ON Play.sid = Student.sid
    -> WHERE Student.sname = 'Amit';
+----------+
| mname    |
+----------+
| Cricket  |
| Football |
+----------+
2 rows in set (0.00 sec)
```

5. **Find the names of students who have played a match in Delhi.**

```
mysql> SELECT DISTINCT Student.sname
    -> FROM Student
    -> JOIN Play ON Student.sid = Play.sid
    -> JOIN `Match` ON Play.mid = `Match`.mid
    -> WHERE `Match`.venue = 'Delhi';
+-------+
| sname |
+-------+
| Amit  |
| Ravi  |
| John  |
+-------+
3 rows in set (0.00 sec)
```

6. **Find the names of students who have played at least one match.**

```
mysql> SELECT DISTINCT Student.sname
    -> FROM Student
    -> JOIN Play ON Student.sid = Play.sid;
+-------+
| sname |
+-------+
| Amit  |
| Ravi  |
| Pooja |
| John  |
+-------+
4 rows in set (0.00 sec)
```

7. **Find the ids and names of students who have played two different matches on the same day.**

```
mysql> SELECT Student.sid, Student.sname
    -> FROM Student
    -> JOIN Play AS P1 ON Student.sid = P1.sid
    -> JOIN Play AS P2 ON Student.sid = P2.sid
    -> WHERE P1.mid <> P2.mid AND P1.day = P2.day;
Empty set (0.00 sec)
```

8. **Find the ids of students who have played a match in Delhi or Mumbai.**

```
mysql> SELECT DISTINCT Student.sid
    -> FROM Student
    -> JOIN Play ON Student.sid = Play.sid
    -> JOIN `Match` ON Play.mid = `Match`.mid
    -> WHERE `Match`.venue IN ('Delhi', 'Mumbai');
+-----+
| sid |
+-----+
| S1  |
| S2  |
| S4  |
+-----+
3 rows in set (0.00 sec)
```

9. **Find the average age of students.**

```
mysql> SELECT AVG(age) AS average_age
    -> FROM Student;
+-------------+
| average_age |
+-------------+
|     20.5000 |
+-------------+
1 row in set (0.00 sec)
```