Experiment – 8

1. Consider the following schema:

Student (sid, sname, age)

Match (mid, mname, venue)

Play (sid, mid, day(date))

```
create database exp8;
use exp8;
CREATE TABLE Student ( sid INT PRIMARY KEY, sname VARCHAR(100), age INT );
CREATE TABLE `Match` (
  mid VARCHAR(10) PRIMARY KEY,
  mname VARCHAR(100),
  venue VARCHAR(100)
);
CREATE TABLE Play (
  sid INT,
  mid VARCHAR(10),
  day DATE,
  FOREIGN KEY (sid) REFERENCES Student(sid),
  FOREIGN KEY (mid) REFERENCES `Match` (mid),
  PRIMARY KEY (sid, mid, day)
);
```

```
mysql> CREATE TABLE Student (    sid INT PRIMARY KEY,    sname VARCHAR(100),    age INT);
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> CREATE TABLE `Match` (
    ->     mid VARCHAR(10) PRIMARY KEY,
    ->     mname VARCHAR(100),
    ->     venue VARCHAR(100)
    -> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> CREATE TABLE Play (
    ->     sid INT,
    ->     mid VARCHAR(10),
    ->     day DATE,
    ->     FOREIGN KEY (sid) REFERENCES Student(sid),
    ->     FOREIGN KEY (mid) REFERENCES `Match`(mid),
    ->     PRIMARY KEY (sid, mid, day)
    -> );
Query OK, 0 rows affected (0.14 sec)
```

2. Populate all the tables.

insert into student (sid, sname, age) values

(1, 'Amit', 20),

(2, 'Vikram', 22),

(3, 'Neha', 21),

(4, 'Ravi', 23),

(5, 'Priya', 19),

(6, 'Anil', 20),

(7, 'Sunita', 22),

(8, 'Rajesh', 24),

(9, 'Kiran', 23),

(10, 'Meena', 21);

insert into `match` (mid, mname, venue) values

('B01', 'Football Match', 'Delhi'),

('B02', 'Cricket Match', 'Mumbai'),

('B03', 'Basketball Match', 'Kolkata'),

('B04', 'Tennis Match', 'Bangalore'),

('B05', 'Hockey Match', 'Chennai'),

('B06', 'Baseball Match', 'Pune'),

('B07', 'Football Match', 'Mumbai'),

('B08', 'Cricket Match', 'Delhi'),

('B09', 'Basketball Match', 'Goa'),

('B10', 'Tennis Match', 'Hyderabad'),

('B11', 'Hockey Match', 'Chandigarh'),

('B12', 'Baseball Match', 'Lucknow'),

('B13', 'Football Match', 'Chennai'),

('B14', 'Cricket Match', 'Bangalore'),

('B15', 'Basketball Match', 'Kolkata');

insert into play (sid, mid, day) values

(1, 'B01', '2024-10-01'),

(2, 'B02', '2024-10-01'),

(3, 'B03', '2024-10-02'),

(4, 'B04', '2024-10-03'),

(5, 'B05', '2024-10-04'),

(6, 'B06', '2024-10-05'),

(7, 'B07', '2024-10-06'),

(8, 'B08', '2024-10-07'),

(9, 'B09', '2024-10-08'),

(10, 'B10', '2024-10-09'),

(1, 'B11', '2024-10-10'),

(2, 'B12', '2024-10-11'),

(3, 'B13', '2024-10-12'),

(4, 'B14', '2024-10-13'),

(5, 'B15', '2024-10-14'),

(1, 'B03', '2024-10-02'),

(2, 'B05', '2024-10-04'),

(3, 'B07', '2024-10-06'),

(4, 'B09', '2024-10-08'),

(5, 'B11', '2024-10-10'),

(6, 'B13', '2024-10-12'),

(7, 'B15', '2024-10-14'),

(8, 'B01', '2024-10-01'),

(9, 'B02', '2024-10-01'),

(10, 'B04', '2024-10-03');

```
mysql> select
    -> * from student;
+-----+--------+------+
| sid | sname  | age  |
+-----+--------+------+
|   1 | Amit   |   20 |
|   2 | Vikram |   22 |
|   3 | Neha   |   21 |
|   4 | Ravi   |   23 |
|   5 | Priya  |   19 |
|   6 | Anil   |   20 |
|   7 | Sunita |   22 |
|   8 | Rajesh |   24 |
|   9 | Kiran  |   23 |
|  10 | Meena  |   21 |
+-----+--------+------+
10 rows in set (0.00 sec)
```

```
mysql> select * from play;
+-----+-----+------------+
| sid | mid | day        |
+-----+-----+------------+
|   1 | B01 | 2024-10-01 |
|   8 | B01 | 2024-10-01 |
|   2 | B02 | 2024-10-01 |
|   9 | B02 | 2024-10-01 |
|   1 | B03 | 2024-10-02 |
|   3 | B03 | 2024-10-02 |
|   4 | B04 | 2024-10-03 |
|  10 | B04 | 2024-10-03 |
|   2 | B05 | 2024-10-04 |
|   5 | B05 | 2024-10-04 |
|   6 | B06 | 2024-10-05 |
|   3 | B07 | 2024-10-06 |
|   7 | B07 | 2024-10-06 |
|   8 | B08 | 2024-10-07 |
|   4 | B09 | 2024-10-08 |
|   9 | B09 | 2024-10-08 |
|  10 | B10 | 2024-10-09 |
|   1 | B11 | 2024-10-10 |
|   5 | B11 | 2024-10-10 |
|   2 | B12 | 2024-10-11 |
|   3 | B13 | 2024-10-12 |
|   6 | B13 | 2024-10-12 |
|   4 | B14 | 2024-10-13 |
|   5 | B15 | 2024-10-14 |
|   7 | B15 | 2024-10-14 |
+-----+-----+------------+
25 rows in set (0.00 sec)
```

```
mysql> select * from `match`;
+-----+------------------+------------+
| mid | mname            | venue      |
+-----+------------------+------------+
| B01 | Football Match   | Delhi      |
| B02 | Cricket Match    | Mumbai     |
| B03 | Basketball Match | Kolkata    |
| B04 | Tennis Match     | Bangalore  |
| B05 | Hockey Match     | Chennai    |
| B06 | Baseball Match   | Pune       |
| B07 | Football Match   | Mumbai     |
| B08 | Cricket Match    | Delhi      |
| B09 | Basketball Match | Goa        |
| B10 | Tennis Match     | Hyderabad  |
| B11 | Hockey Match     | Chandigarh |
| B12 | Baseball Match   | Lucknow    |
| B13 | Football Match   | Chennai    |
| B14 | Cricket Match    | Bangalore  |
| B15 | Basketball Match | Kolkata    |
+-----+------------------+------------+
15 rows in set (0.00 sec)
```

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

```
select student.* from student join play on student.sid = play.sid where play.mid = 'B10';
```

```
+-----+-------+------+
| sid | sname | age  |
+-----+-------+------+
|  10 | Meena |   21 |
+-----+-------+------+
1 row in set (0.01 sec)
```

4. Find the name of matches played by Amit.

```
select `match`.mname from `match` join play on `match`.mid = play.mid join student
    on play.sid = student.sid where student.sname = 'amit';
```

```
+-------------------+
| mname             |
+-------------------+
| Football Match    |
| Basketball Match  |
| Hockey Match      |
+-------------------+
3 rows in set (0.00 sec)
```

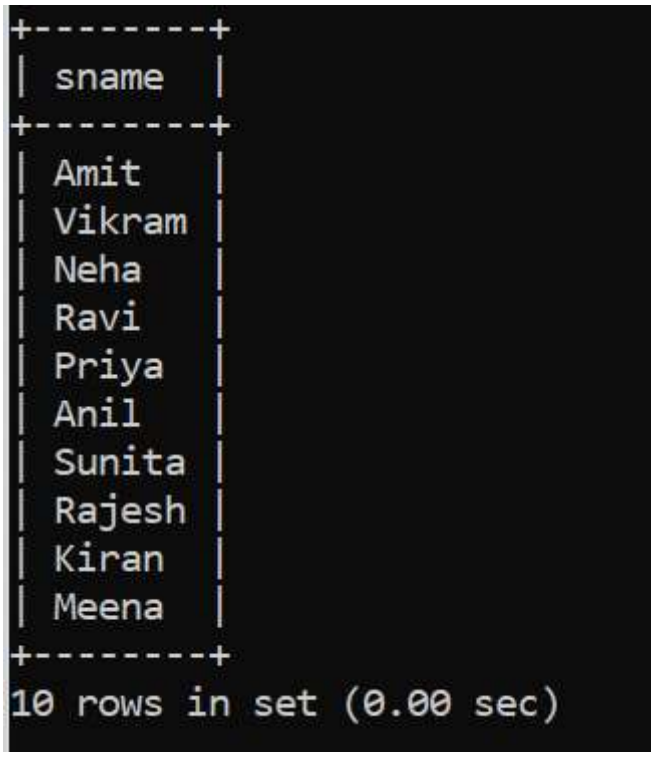
5. Find the names of students who have played a match in Delhi.

```
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    |
| Rajesh  |
+---------+
2 rows in set (0.01 sec)
```

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

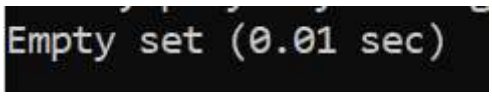
```
select distinct student.sname from student join play on student.sid = play.sid;
```



```
+--------+
| sname  |
+--------+
| Amit   |
| Vikram |
| Neha   |
| Ravi   |
| Priya  |
| Anil   |
| Sunita |
| Rajesh |
| Kiran  |
| Meena  |
+--------+
10 rows in set (0.00 sec)
```

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

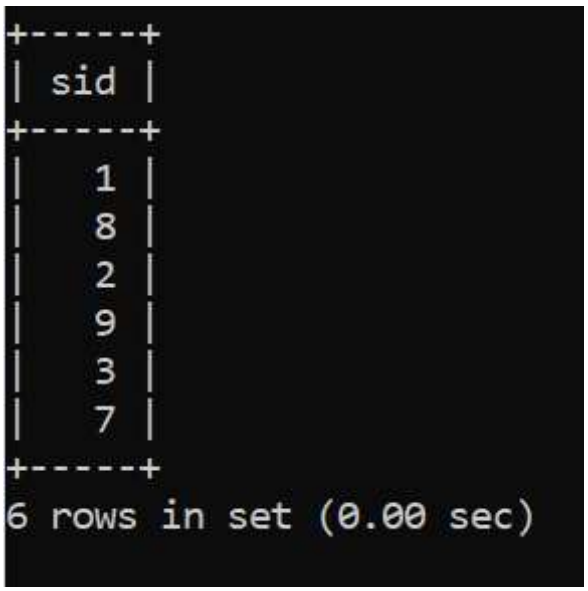
```
select student.sid, student.sname from student join play on student.sid = play.sid group
    by student.sid, student.sname, play.day having count(distinct play.mid) >= 2;
```



```
Empty set (0.01 sec)
```

8. Find the id’s of students who have played a match in Delhi or Mumbai.

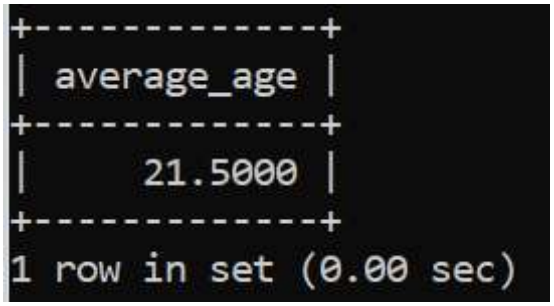
```
select distinct student.sid from student join play on student.sid = play.sid join `match` on
    play.mid = `match`.mid where `match`.venue in ('delhi', 'mumbai');
```



```
+-----+
| sid |
+-----+
|   1 |
|   8 |
|   2 |
|   9 |
|   3 |
|   7 |
+-----+
6 rows in set (0.00 sec)
```

9. Find the average age of students.

select avg(age) as average_age from student;



```
+-------------+
| average_age |
+-------------+
|     21.5000 |
+-------------+
1 row in set (0.00 sec)
```

Experiment – 9

1. Create table of table name: EMPLOYEES and add 6 rows

Column Name	Data Type	Width	Attributes
Employee_id	Character	10	PK
First_Name	Character	30	NN
Last_Name	Character	30	NN
DOB	Date		
Salary	Number	25	NN
Department_id	Character	10	

create database exp9;

use exp9;

create table employees (employee_id char(10) primary key, first_name char(30) not null, last_name char(30) not null, dob date, salary decimal(25,2) not null, department_id char(10));

insert into employees (employee_id, first_name, last_name, dob, salary, department_id) values('E001', 'John', 'Doe', '1985-04-12', 75000.00, 'D001'),('E002', 'Jane', 'Smith', '1990-11-23', 85000.00, 'D002'),('E003', 'Michael', 'Johnson', '1983-06-15', 90000.00, 'D001'),('E004', 'Emily', 'Davis', '1995-09-30', 72000.00, 'D003'),('E005', 'David', 'Brown', '1988-02-10', 88000.00, 'D002'),('E006', 'Sarah', 'Wilson', '1992-12-05', 95000.00, 'D004');

```
mysql> select * from employees;
+-------------+------------+-----------+------------+----------+---------------+
| employee_id | first_name | last_name | dob        | salary   | department_id |
+-------------+------------+-----------+------------+----------+---------------+
| E001        | John       | Doe       | 1985-04-12 | 75000.00 | D001          |
| E002        | Jane       | Smith     | 1990-11-23 | 85000.00 | D002          |
| E003        | Michael    | Johnson   | 1983-06-15 | 90000.00 | D001          |
| E004        | Emily      | Davis     | 1995-09-30 | 72000.00 | D003          |
| E005        | David      | Brown     | 1988-02-10 | 88000.00 | D002          |
| E006        | Sarah      | Wilson    | 1992-12-05 | 95000.00 | D004          |
+-------------+------------+-----------+------------+----------+---------------+
6 rows in set (0.00 sec)
```

2. Execute the following view related queries:

1. Create View of name emp_view and the column would be Employee_id, Last_Name, salary and department_id only.

```
create view emp_view as

select employee_id, last_name, salary, department_id

from employees;
```

```
Query OK, 0 rows affected (0.01 sec)
```

2. Insert values into view(remove the NOT NULL constraint and then insert values).

```
insert into employees (employee_id, first_name, last_name, dob, salary, department_id)

values ('E007', 'Unknown', 'Taylor', '2000-01-01', null, 'D003');
```

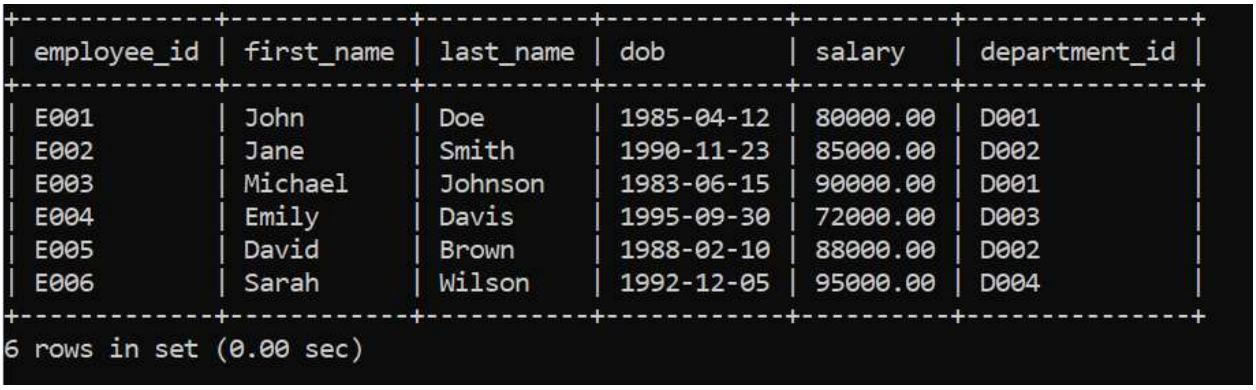
```
mysql> select * from employees;
+-------------+------------+-----------+------------+----------+---------------+
| employee_id | first_name | last_name | dob        | salary   | department_id |
+-------------+------------+-----------+------------+----------+---------------+
| E001        | John       | Doe       | 1985-04-12 | 75000.00 | D001          |
| E002        | Jane       | Smith     | 1990-11-23 | 85000.00 | D002          |
| E003        | Michael    | Johnson   | 1983-06-15 | 90000.00 | D001          |
| E004        | Emily      | Davis     | 1995-09-30 | 72000.00 | D003          |
| E005        | David      | Brown     | 1988-02-10 | 88000.00 | D002          |
| E006        | Sarah      | Wilson    | 1992-12-05 | 95000.00 | D004          |
| E007        | Unknown    | Taylor    | 2000-01-01 |     NULL | D003          |
+-------------+------------+-----------+------------+----------+---------------+
7 rows in set (0.00 sec)
```

3. Modify, delete and drop operations are performed on view.

```
update emp_view set salary = 80000 where employee_id = 'E001';

delete from emp_view where employee_id = 'E007';

drop view emp_view;
```



employee_id	first_name	last_name	dob	salary	department_id
E001	John	Doe	1985-04-12	80000.00	D001
E002	Jane	Smith	1990-11-23	85000.00	D002
E003	Michael	Johnson	1983-06-15	90000.00	D001
E004	Emily	Davis	1995-09-30	72000.00	D003
E005	David	Brown	1988-02-10	88000.00	D002
E006	Sarah	Wilson	1992-12-05	95000.00	D004

6 rows in set (0.00 sec)

4. Creates a view named salary_view. The view shows the employees in department 20 and their annual salary.

```
create view salary_view as

select employee_id, last_name, salary * 12 as annual_salary

from employees

where department_id = 'D020';
```