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EXPERIEMENT 7

AIM: Perform Join operations.

THEORY:

CROSS JOIN: In this join, the result set appeared by multiplying each row of the first table with all rows in the second table if no condition introduced with CROSS JOIN. This kind of result is called as Cartesian Product.

In MySQL, the CROSS JOIN behaves like JOIN and INNER JOIN of without using any condition.

SYNTAX:

```
SELECT table111.*,table113.* FROM table111 CROSS JOIN table113 WHERE
table111.id=table113.id;
```

NATURAL JOIN: The NATURAL JOIN is such a join that performs the same task as an INNER or LEFT JOIN, in which the ON or USING clause refers to all columns that the tables to be joined have in common.

The MySQL NATURAL JOIN is structured in such a way that, columns with the same name of associate tables will appear once only.

SYNTAX:

```
SELECT id, aval1, cval1 FROM table111 NATURAL JOIN table113;
```

INNER JOIN: The INNER JOIN keyword selects records that have matching values in both tables.

SYNTAX:

```
SELECT column_name(s) FROM table1 INNER JOIN table2
ON table1.column_name = table2.column_name;
```

RIGHT JOIN: The RIGHT JOIN keyword returns all records from the right table (table2), and the matched records from the left table (table1). The result is NULL from the left side, when there is no match.

SYNTAX:

```
SELECT column_name(s) FROM table1 RIGHT JOIN table2
ON table1.column_name = table2.column_name;
```

LEFT JOIN: The LEFT JOIN keyword returns all records from the left table (table1), and the matched records from the right table (table2). The result is NULL from the right side, if there is no match.

SYNTAX:

```
SELECT column_name(s) FROM table1 LEFT JOIN table2
ON table1.column_name = table2.column_name;
```

FULL OUTER JOIN: The FULL OUTER JOIN keyword returns all records when there is a match in left (table1) or right (table2) table records.

SYNTAX:

```
SELECT column_name(s) FROM table1 FULL OUTER JOIN table2
ON table1.column_name = table2.column_name

condition;
```

COMMANDS AND THEIR OUTPUTS:

```
select user.user_id, user.Name, Bank.Bank_name, Bank.Branch from user
CROSS JOIN Bank;
```

```
+---------+--------------+-----------+------------+
| user_id | Name         | Bank_name | Branch     |
+---------+--------------+-----------+------------+
|       1 | Junaid Girkar | ICICI     | VILE PARLE |
|       2 | Harry Potter  | ICICI     | VILE PARLE |
|       3 | Percy Jackson | ICICI     | VILE PARLE |
|       1 | Junaid Girkar | HDFC      | VILE PARLE |
|       2 | Harry Potter  | HDFC      | VILE PARLE |
|       3 | Percy Jackson | HDFC      | VILE PARLE |
+---------+--------------+-----------+------------+
```

```
select * from user_mobile_no NATURAL JOIN user;
```

```
+---------+-----------+--------------+-----------------------+----------------------------+
| user_id | Mobile_No | Name         | Email                 | Address                    |
+---------+-----------+--------------+-----------------------+----------------------------+
|       1 |     12345 | Junaid Girkar | junaidgirkar@gmail.com | 221 Bakers Street          |
|       2 |     54321 | Harry Potter  | harrypotter@gmail.com  | 4 Private Drive, Surry     |
|       3 |     98765 | Percy Jackson | percyjackson@gmail.com | camp Half Blood, Long Island |
+---------+-----------+--------------+-----------------------+----------------------------+
```

```
select * from user INNER
JOIN user_mobile_no ON user.user_id=user_mobile_no.user_id;
```

```
+---------+--------------+-----------------------+----------------------------+-----------+---------+
| user_id | Name         | Email                 | Address                    | Mobile_No | user_id |
+---------+--------------+-----------------------+----------------------------+-----------+---------+
|       1 | Junaid Girkar | junaidgirkar@gmail.com | 221 Bakers Street          |     12345 |       1 |
|       2 | Harry Potter  | harrypotter@gmail.com  | 4 Private Drive, Surry     |     54321 |       2 |
|       3 | Percy Jackson | percyjackson@gmail.com | camp Half Blood, Long Island |     98765 |       3 |
|
+---------+--------------+-----------------------+----------------------------+-----------+---------+
```

```
select * from user LEFT
JOIN user_mobile_no ON user.user_id = user_mobile_no.user_id;
```

```
+---------+----------------+----------------------+----------------------------+-----------+---------+
| user_id | Name           | Email                | Address                    | Mobile_No | user_id |
+---------+----------------+----------------------+----------------------------+-----------+---------+
|       1 | Junaid Girkar  | junaidgirkar@gmail.com | 221 Bakers Street          |     12345 |       1 |
|       2 | Harry Potter   | harrypotter@gmail.com  | 4 Private Drive, Surry     |     54321 |       2 |
|       3 | Percy Jackson  | percyjackson@gmail.com | camp Half Blood, Long Island |     98765
|       3
|       4 | Severus Snape  | snape@snapey.com       | Hogwards                   |      NULL |    NULL |
|       5 | Albus Dumbledore | APWBD@hogwards.com   | Hogwards                   |      NULL |    NULL
|
+---------+----------------+----------------------+----------------------------+-----------+---------+
```

```
select * from user RIGHT
JOIN user_mobile_no ON user.user_id = user_mobile_no.user_id;
```

```
+---------+--------------+----------------------+----------------------------+-----------+---------+
| user_id | Name         | Email                | Address                    | Mobile_No | user_id |
+---------+--------------+----------------------+----------------------------+-----------+---------+
|       1 | Junaid Girkar | junaidgirkar@gmail.com | 221 Bakers Street          |     12345 |       1 |
|       2 | Harry Potter  | harrypotter@gmail.com  | 4 Private Drive, Surry     |     54321 |       2 |
|       3 | Percy Jackson | percyjackson@gmail.com | camp Half Blood, Long Island |     98765 |       3
|
+---------+--------------+----------------------+----------------------------+-----------+---------+
```

```
select * from user right outer
join user_mobile_no on user_mobile_no.user_id = user.user_id union select
* from user left outer
join user_mobile_no on user_mobile_no.user_id = user.user_id;
```

```
+---------+----------------+----------------------+----------------------------+-----------+---------+
| user_id | Name           | Email                | Address                    | Mobile_No | user_id |
+---------+----------------+----------------------+----------------------------+-----------+---------+
|       1 | Junaid Girkar  | junaidgirkar@gmail.com | 221 Bakers Street          |     12345 |       1 |
|       2 | Harry Potter   | harrypotter@gmail.com  | 4 Private Drive, Surry     |     54321 |       2 |
|       3 | Percy Jackson  | percyjackson@gmail.com | camp Half Blood, Long Island |     98765
|       3 |
|       4 | Severus Snape  | snape@snapey.com       | Hogwards                   |      NULL |    NULL |
|       5 | Albus Dumbledore | APWBD@hogwards.com   | Hogwards                   |      NULL |    NULL|
+---------+----------------+----------------------+----------------------------+-----------+---------+
```

CONCLUSION: Thus, we have executed several different queries using joins and various other operations.