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| **Experiment No.** | **4** |

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| **AIM:** | **To perform join operations on the database** |
| **PROBLEM STATEMENT:** | To implement 5 types of JOINS in MySQL on existing tables in the database |
| **THEORY:** | **JOINS IN MySQL**:  A JOIN clause is used to combine rows from two or more tables, based on a related column between them.  **TYPES OF JOINS IN MySQL:**  **1. INNER JOIN:** The INNER JOIN keyword selects records that have matching values in both tables.  **INNER JOIN Syntax:**  SELECT *column\_name(s)* FROM *table1* INNER JOIN *table2* ON *table1.column\_name*=*table2.column\_name*;  **2. LEFT OUTER JOIN**  The LEFT JOIN keyword returns all records from the left table (table1), and the matching records (if any) from the right table.  **LEFT JOIN Syntax**  SELECT *column\_name(s)* FROM *table1* LEFT JOIN *table2* ON *table1.column\_name*=*table2.column\_name*;  **3. RIGHT OUTER JOIN**  The RIGHT JOIN keyword returns all records from the right table (table2), and the matching records (if any) from the left table (table1).  **RIGHT JOIN Syntax**  SELECT *column\_name(s)* FROM *table1* RIGHT JOIN *table2* ON *table1.column\_name*=*table2.column\_name*;  **4. FULL/CROSS JOIN**  The CROSS JOIN keyword returns all records from both tables (table1 and table2).  **CROSS JOIN Syntax**  SELECT *column\_name(s)* FROM *table1* CROSS JOIN *table2*; |
| **QUERIES:** | **1. INNER JOIN**  **Query:**  SELECT patient.P\_id,patient.Pname,patient.Age,doctor.Dname,doctor.Field  FROM patient  INNER JOIN doctor  ON patient.D\_id = doctor.D\_id;  **Output:**  **2. LEFT OUTER JOIN**  **Query:**  SELECT patient.P\_id,patient.Pname,patient.Age,doctor.Dname,doctor.Field  FROM patient  LEFT JOIN doctor  ON patient.D\_id = doctor.D\_id  ORDER BY patient.Age;  **Output:**  **3. RIGHT OUTER JOIN**  **Query:**  SELECT patient.P\_id,patient.Pname,patient.Age,doctor.Dname,doctor.Field  FROM patient  RIGHT JOIN doctor  ON patient.D\_id = doctor.D\_id  ORDER BY patient.Age;  **Output:**  **4. FULL JOIN**  **Query:**  SELECT \* FROM patient FULL JOIN doctor;  **Output:**  **5. CROSS JOIN**  **Query:**  SELECT patient.P\_id,patient.Pname,patient.Age,doctor.Dname,doctor.Field  FROM patient  CROSS JOIN doctor;  **Output:** |
| **RESULT:**  **Final Patient table:** | |
| **CONCLUSION:** | In this experiment, we learned how to implement different type of joins in MySQL. |