**LAB SESSION 04**

**Title:**Data retrieval from database using JOIN in SQL.

**Objective:**To understand how to work with JOIN.

1. Satisfy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ knowledge of Bloom’s Taxonomy.

2. Achieve PO1, PO2, PO3, PO9 and PO12 of Program Outcomes.

**Theory:**

**Natural join -** A Natural joinis a join operation that creates an implicit join clause based on the common columns in the two tables being joined. Common columns are columns that have the same name in both tables.

**Inner join -**The most frequently used and important of the joins is the inner join. They are also referred to as an EQUI JOIN. The inner joincreates a new result table by combining column values of two tables (table1 and table2) based upon the join-predicate.

**Outer join –** In an Outer Join, the joined table retains each row—even if no other matching row exists. Outer joins subdivide further into left outer joins, right outer joins, and full outer joins, depending on which table's rows are retained (left, right, or both).

**SYNTAX OF NATURAL JOIN FOR THE FOLLOWING EXAMPLES**

|  |  |  |
| --- | --- | --- |
| **Employee** | | |
| **Empid** | **Deptid** |
| 3415 | 10 |
| 2241 | 20 |
| 3401 | 30 |
| 2202 | 40 |

**Dept**

**Deptid DeptName Manager**

10 Finance George

20 Sales Harriet

30 Production Charles

40 Admin David

SELECT\*FROMemployeeNATURALJOINdept

SELECT\*FROMemployee,dept

whereemployee.Deptid=dept.Deptid;

**Assignment:**

**Consider the following employee database:**

SAILORS(s\_id , s\_name , rating , age)

BOATS(b\_id , b\_name , color)

RESERVES(s\_id , b\_id , day)

* **s\_id** ,**b\_id** are primary keys of the tables SAILORS and BOATS.
* **s\_id** ,**b\_id** together of the table RESERVES form the composite primary key.
* **s\_id** ,**b\_id** are also the foreign keys references SAILORS and BOATS respectively.

**Write necessary SQL queries for the following:**

1. Create the above tables and insert sufficient records.
2. Write SQL commands to perform the following:
3. Find the color of boats reserved by ‘**Tarun**’.
4. Find the sailor\_id’s and sailor\_names who have reserved boats on ‘**Monday**’.
5. List boat\_id’s and boat names for ‘**red**’ and ‘**green**’ colors only.
6. Delete all the sailors information whose age is greater than 60.

**Consider the following relations:**

Teacher (Tid, Name , Dept)

Subject (Subno, Subtitle)

TaughtBy (Tid,Subno)

Student (Rollno,Sname , City)

**Create the Tables and insert sufficient number of records. Write SQL queries with corresponding Outputs for the following.**

1. Get the names of all the teachers of ‘Physics’ department who teach ‘Thermodynamics’.
2. Rename the subject ‘DBMS’ to ‘RDBMS’.
3. Find out all the students who stay in ‘Kolkata’ and whose roll number is between 20 and 25.
4. Display all the students’ information in descending order of their roll number who stay in ‘Kolkata’.

**Discussions:**

**Questionnaires:**

1) Discuss about THETA JOIN.