Assignment 4

Title: Data retrieval from database using JOIN in SQL - I

Objective: To understand how to work with JOIN.

The assignment covers the course outcome(s):
Bloom's Cognitive Domain:

Theory:

Natural Join - A natural join is 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 join creates 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).

Consider the following tables

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

Syntax of natural join for the above tables.

SELECT * FROM employee NATURAL JOIN dept;

Equivalent to:

SELECT * FROM employee,dept where employee.Deptid = dept.Deptid ;

Problem Statements

1. Consider the following tables. Create the tables and insert sufficient records. Execute the queries that follow.

   SAILORS(s_id , s_name , rating , age)
   BOATS(b_id , b_name , color)
   RESERVES(s_id , b_id , day)

   i. **s**_id , b_id are primary keys of the tables SAILORS and BOATS.
   ii. s_id , b_id together of the table RESERVES form the composite primary key.
   iii. s_id , b_id are also the foreign keys references SAILORS and BOATS respectively.

   a) Find the color of boats reserved by '**Tarun**'.
   b) Find the sailor_ids and sailor_names who have reserved boats on '**Monday**'.
   c) List boat_id's and boat names for '**red**' and '**green**' colors only.
   d) Delete all the sailors' information whose age is greater than 60.

2. Consider the following tables. Create the tables and insert sufficient records. Execute the queries that follow.

   i. Teacher (Tid , Name , Dept)
   ii. Subject (Subno , Subtitle)
   iii. TaughtBy (Tid , Subno)
   iv. Student (Rollno , Sname , City)

   a) Get the names of all the teachers of 'Physics' department who teach 'Thermodynamics'.
   b) Rename the subject 'DBMS' to 'RDBMS'.

c) Find out all the students who stay in ‘Kolkata’ and whose roll number is between 20 and 25.
d) Display all the students’ information in descending order of their roll number who stay in ‘Kolkata’.

Questionnaire:

1. Explain the difference between natural join and conditional join with examples.

Teacher's signature with date: