**TASK 5**

**Writing Join Queries, equivalent, and/or recursive queries:**

(Tool: SQL/ Oracle, ALM: Flipped Classroom)

**Aim:** To Perform the advanced query processing and test its heuristics using designing of optimal correlated and nested sub queries such as finding summary statistics.

* 1. To retrieve all cricket boards and their teams.
  2. To list all matches along with the teams and their captains.
  3. To count the number of matches played by each team.
  4. To find all the players who are part of the team named " TIGER ROCK ".
  5. To retrieve all team details, including the count of winning matches for each team.
  6. To retrieve the total number of 'Tie' matches in a team-wise manner.
  7. To retrieve the team details who won the matches.
  8. To retrieve players and match details of players who are above 25 years old.
  9. To retrieve the details of Team who have not played any matches.
  10. To retrieve the teamid, boardid, teamname, and playername for a particular playerid given.
  11. To retrieve all cricket boards and their teams.

SQL> SELECT cb.Name AS CricketBoard, t.Name AS Team FROM CricketBoard cb JOIN Team t ON cb.BoardID = t.BoardID;

|  |  |
| --- | --- |
| **CricketBoard** | **Team** |
| Chennai Cricket Board | ABS EXPRESS |
| Chennai Cricket Board | AVG EXPRESS |
| Tiruvallur Cricket Board | ANGRY BARD |
| Tiruvallur Cricket Board | TIGER ROCK |
| Trichy Cricket Board | ROCK |
| Viluppuram Cricket Board | RAINBOW |
| Madurai Cricket Board | PANTHER |
| Tuticorin Cricket Board | THUNDER |
| Selam Cricket Board | EAGLE |
| Tiruppur Cricket Board | KINGS |

* 1. List all matches along with the teams and their captains.

SQL> SELECT m.match\_Date, m.Time1, m.matchID, t1.name AS team1\_name, t1.captain AS team1\_captain, t2.name AS team2\_name, t2.captain AS team2\_captain FROM match m JOIN team t1 ON m.teamID = t1.teamID JOIN team t2 ON m.playerID = t2.teamID;

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Match\_Date** | **Time1** | **MatchID** | **team1\_name** | **team1\_captain** | **team2\_name** | **team2\_captain** |
| 22-JUN-2022 | 1.3 | M01 | ABS EXPRESS | SAMPATH KUMAR | ANGRY BARD | CINIL JOHN |
| 22-JUN-2022 | 8.3 | M02 | AVG EXPRESS | Y.JOHN | TIGER ROCK | BEN GEORGE |
| 24-JUN-2022 | 8.3 | M03 | ROCK | K.MUTHU | ANGRY BARD | CINIL JOHN |
| 25-JUN-2022 | 8.3 | M04 | ROCK | K.MUTHU | TIGER ROCK | BEN GEORGE |
| 04-APR-2023 | 7.3 | M05 | EAGLE | SRI HARI | AVG EXPRESS | Y.JOHN |

* 1. Count the number of matches played each team.

SQL> SELECT t.Name AS Team, COUNT(mt.TeamID) AS MatchesPlayed FROM Team t LEFT JOIN Match mt ON t.TeamID = mt.TeamID GROUP BY t.Name;

|  |  |
| --- | --- |
| **Team** | **MatchesPlayed** |
| ABS EXPRESS | 1 |
| ANGRY BARD | 0 |
| AVG EXPRESS | 1 |
| EAGLE | 1 |
| KINGS | 0 |
| PANTHER | 0 |
| RAINBOW | 0 |
| ROCK | 2 |
| THUNDER | 0 |
| TIGER ROCK | 0 |

* 1. To find all the players who are part of the team named "TIGER ROCK".

SQL> SELECT p.playerID, p.fname, p.teamID, t.coach, t.captain FROM player p JOIN team t ON p.teamID = t.teamID WHERE t.name = 'TIGER ROCK';

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PlayerID** | **FName** | **TeamID** | **Coach** | **Captain** |
| 102 | Akash | TCB02 | S.KANNAN | BEN GEORGE |
| 12 | Premkumar | TCB02 | S.KANNAN | BEN GEORGE |

* 1. To retrieve all team details, including the count of winning matches for each team.

SQL> SELECT t.TeamID, t.Name AS TeamName, t.Coach, t.Captain, COUNT(m.MatchID) AS WinningMatchCount FROM Team t LEFT JOIN Match m ON t.TeamID = substr(m.result,1,5) GROUP BY t.TeamID, t.Name, t.Coach, t.Captain;

**Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TeamID** | **TeamName** | **Coach** | **Captain** | **WinningMatchCount** |
| CCB01 | ABS EXPRESS | G.D.RAMESH | SAMPATH KUMAR | 1 |
| CCB02 | AVG EXPRESS | T.KARTHIK | Y.JOHN | 0 |
| MCB01 | PANTHER | SARAVANAN | R.SUNILKUMAR | 0 |
| SCB01 | EAGLE | SOMU | SRI HARI | 0 |
| TCB01 | ANGRY BARD | TOM BABU | CINIL JOHN | 2 |
| TCB02 | TIGER ROCK | S.KANNAN | BEN GEORGE | 0 |
| TICB01 | KINGS | D ANAND | MATHAN | 0 |
| TRICB01 | ROCK | K.PAUL | K.MUTHU | 0 |
| TUCB01 | THUNDER | D ALEX | BARATHI | 0 |
| VCB01 | RAINBOW | S.RAJESHKUMAR | MANIMARAN | 0 |

5.6 To retrieve the total number of 'Tie' matches in a team-wise manner.

SQL> SELECT t.Name AS TeamName, COUNT(\*) AS TotalTieMatches FROM Team t JOIN Match\_result mt ON t.TeamID = mt.TeamID JOIN Match\_result m ON mt.MatchID = m.MatchID WHERE m.Result = 'Tie' GROUP BY t.Name;

|  |  |
| --- | --- |
| **TeamName** | **TotalTieMatches** |
| ROCK | 1 |

5.7To retrieve the team details who won the matches.

SQL> select \* from team where teamID in (select mr.teamID from match\_result mr left join team t on mr.teamId=t.teamID where mr.result='Win');

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TeamID** | **BoardID** | **Name** | **Coach** | **Captain** |
| CCB01 | BID01 | ABS EXPRESS | G.D.RAMESH | SAMPATH KUMAR |
| TCB01 | BID02 | ANGRY BARD | TOM BABU | CINIL JOHN |
| TRICB01 | BID04 | ROCK | K.PAUL | K.MUTHU |

* 1. To retrieve players and match details of players who are above 25 years old.

SQL> SELECT p.PlayerID, p.FName AS PlayerName, p.Age, m.MatchID, m.match\_Date, m.Time1, m.Result FROM Player p, match m where p.playerID in(select playerID from player where age>25);

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **PlayerID** | **PlayerName** | **Age** | **MatchID** | **Match\_Date** | **Time1** | **Result** |
| 1 | Raj | 27 | M01 | 22-JUN-2022 | 1.3 | TCB01 - WIN |
| 1 | Raj | 27 | M02 | 22-JUN-2022 | 8.3 | CCB01 - WIN |
| 1 | Raj | 27 | M03 | 24-JUN-2022 | 8.3 | TCB01 - WIN |
| 1 | Raj | 27 | M04 | 25-JUN-2022 | 8.3 | TRICB01 - WIN |
| 1 | Raj | 27 | M05 | 04-APR-2023 | 7.3 | Tie |

* 1. To retrieve the details of Team who have not played any matches.

SQL> select \* from team where teamID not in(select teamid from match Union select playerId from match);

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TeamID** | **BoardID** | **Name** | **Coach** | **Captain** |
| VCB01 | BID03 | RAINBOW | S.RAJESHKUMAR | MANIMARAN |
| MCB01 | BID05 | PANTHER | SARAVANAN | R.SUNILKUMAR |
| TUCB01 | BID06 | THUNDER | D ALEX | BARATHI |
| TICB01 | BID08 | KINGS | D ANAND | MATHAN |

* 1. To retrieve the teamid, boardid, teamname, and playername for a particular playerid given.

SQL> SELECT t.teamid, t.boardid, t.name, p.fname FROM team t JOIN player p ON t.teamid = p.teamid WHERE p.playerid = '66';

|  |  |  |  |
| --- | --- | --- | --- |
| **TeamID** | **BoardID** | **Name** | **FName** |
| VCB01 | BID03 | RAINBOW | Ganesh |

**Result:**

Thus the query using Join Queries, equivalent, and/or recursive queries has been done successfully.