|  |  |
| --- | --- |
| **Course Code: CSL402** | **Course Name: Database Management System Lab** |
| **Class: SE-CO** | **Batch: 2020-24** |
| **Roll no: 20CO24** | **Name: Khan Arshad Abdulla** |

**Experiment: 07**

**Aim: Perform nested and complex queries.**

**Case Study Title – Currency Converter**

**Theory:**

A Subquery or Inner query or a Nested query is a query within another SQL query and embedded within the WHERE clause.

A subquery is used to return data that will be used in the main query as a condition to further restrict the data to be retrieved.

Subqueries can be used with the SELECT, INSERT, UPDATE, and DELETE statements along with the operators like =, <, >, >=, <=, IN, BETWEEN, etc.

There are a few rules that subqueries must follow −

* Subqueries must be enclosed within parentheses.
* A subquery can have only one column in the SELECT clause, unless multiple columns are in the main query for the subquery to compare its selected columns.
* An ORDER BY command cannot be used in a subquery, although the main query can use an ORDER BY. The GROUP BY command can be used to perform the same function as the ORDER BY in a subquery.
* Subqueries that return more than one row can only be used with multiple value operators such as the IN operator.
* The BETWEEN operator cannot be used with a subquery. However, the BETWEEN operator can be used within the subquery.

**Subqueries with the SELECT Statement**

Subqueries are most frequently used with the SELECT statement. The basic syntax is as follows −

SELECT column\_name [, column\_name ]

FROM table1 [, table2 ]

WHERE column\_name OPERATOR

(SELECT column\_name [, column\_name ]

FROM table1 [, table2 ]

[WHERE])

**Q1. Find the Match IDs of all matches in the database in which Sachin has batted.**

select MID from Batting

where PID IN (select PlayerID from Player where Fname = 'Sachin');

**Q2. Find the match information of all the matches in which Dhoni has batted.**

select MatchID, Team1, Team2, Ground from Matches

where MatchID IN ( select MID from Batting

where PID IN ( select PlayerID from Player where Lname = 'Dhoni'));

**Q3. Find the IDs of all players that have bowled and batted in the ODI Match 2689.**

select PlayerID, Fname, Lname from Player

where PlayerID IN

(select PID from Batting where MID = 2689

AND PID IN ( select PID from Bowling where MID = 2689 ));

**Q4. Find the IDs of players that have either bowling or batting or did both in the ODI Match 2689.**

select Fname, Lname from Player

where PlayerID IN

(select PID from Batting where MID = 2689

OR PID IN ( select PID from Bowling where MID = 2689 ));

**Q5. Find the IDs of players that have batted in match 2689 but have not bowled.**

select Fname, Lname from Player

where PlayerID IN

(select PID from Batting where MID = 2689

AND PID NOT IN ( select PID from Bowling where MID = 2689 ))

**Q6. Find the IDs and scores of players who score less than 75 but more than 50 in Colombo.**

select PID, NRuns from Batting

where NRuns between 51 and 74

AND MID IN (select MatchID from Matches where Ground = 'Colombo');

**Q7. Find the youngest player in the database.**

select Fname, Lname from Player

where YBorn IN (select MAX(YBorn) from Player);

**Output:**

**Attach the output of the nested queries on your project in txt format.**

**Conclusion:**

|  |
| --- |
| In this experiment we have performed nested and complex queries on Currency Converter database.  I understood how to perform sub-queries. |