

21/9/21

Task 4: Independent and correlated Nested Queries

Aim: To Implement and understand Nested Queries in SQL, including Independent and correlated subqueries with practical examples in a university database scenario.

Procedure

1. Create required tables. (eg, Students, Departments, Courses Enrollments)
2. Insert sample data.
3. Write and execute Independent nested queries.
4. Write and execute correlated nested queries.
5. Observe and analyse the differences in execution and results

Explanation for nested query

A nested query (subquery) is a query written inside another query. It is used when the output of one query is required for another query.

1. Independent (Simple) Queries

- * Inner query runs once independently of the outer query.
- * The result of inner query runs once independently.

Syntax:

SELECT column_list

FROM table

WHERE column operator (SELECT column
FROM table

WHERE condition);

Example 1: Independent Nested Query
Query:

SELECT Employee Name

FROM Employee

WHERE EMP_ID = (101

SELECT EMP_ID

FROM Employee

WHERE EMP_NAME = 'Ravi');

Output

Ravi

2. Correlated Nested Queries

The inner query is executed repeatedly, once for each row of the outer query.

* Inner query depends on a value from the outer query.

Syntax:

SELECT column - list

FROM table 1 t1

WHERE EXISTS

SELECT

FROM table 2 t2

WHERE condition involving t1 column

= t2 column

Query

SELECT s. ~~Student~~ Name

FROM ~~Students~~ Employees emp

WHERE EXISTS

SELECT

FROM ~~Enrollment~~ projects

Where pa. Employee ID = emp Employee ID

Explanation:

* For each student in the outer query, the inner query checks if that student exists in Enrollments project.

* If yes \rightarrow the student is returned.

Answer out put for query

Rajesh
Rami
Valan
tamilarasan
Shaan

Reference between the query of independent
correlated

Feature

Independent
Subquery

Correlated

Execution

Inner query
runs once

Subquery

Inner query
runs for
each other

dependency

Independent of
outer query

dependent
on outer
query values

performance

Faster

Slower

Example
usage in
table

Finding dept
of place in
employee

checking
enrollment of
Employee

Output

Rajesh
Ravi
tamilarasan
shaan
kaavanan
valan

VEL TECH	
EX NO.	4
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	1
TOTAL (20)	15
SIGN WITH DATE	28/2

Result :

To Implement the independent
and correlated Nested queries executed
successfully