

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 (e.g. students, Department, Courses, Enrollments).
2. Insert Sample data.
3. write and Execute independent
4. write and Execute Correlated nested queries.
5. observe and analyse the difference in execution and results.

EXPLANATION

1. Nested Query (subquery) is a query written inside other query. It is used when we built of are query is required for Outerquery

Types of Nested Query

1. Independent (Simple), Nested queries
 - The inner queries are independently of the outer query
 - The Result of the innerqueries are is used to the other query.

Syntax:-

```
SELECT COLUMN n  
FROM TABLE
```

```
WHERE COLUMN OPERATOR (SELECT column from Table
```

where CONDITION)

EXAMPLE INDEPENDENT NESTED QUERY

find student where belong to the same department as Alice

```
SELECT student Name
FROM student
WHERE DEPT ID C
SELECT DEPT ID
FROM STUDENTS
where student Name = 'Alice'
);
```

EXPLANATION

→ inner query, gets Alice's DEPT ID (syntax),
→ outer query, finds all students (DEPT ID = Alice's DEPT ID)

2. corrected Nested queries:

- The inner query is executed repeatedly, one for each row of the outer query.
- inner query operates on a value from the outer query.

Syntax:

```
SELECT column-list
```

```
FROM table1
```

```
WHERE EXISTS
```

```
SPRIT 1
```

```
FROM TABLE 2
```

```
WHERE EXISTS (
```

```
SELECT 1
```

```
FROM ENROLMENT
```

```
WHERE condition including t1 column = t2 column);
```

OUTPUT

Alice

Charlie

OUTPUT

Alice

Bob

Charlie

David

Example 2: Corrected Nested Query

find student who have enrolled in ~~at least~~
atleast course

SELECT student Name

FROM students

WHERE EXISTS (

SELECT

FROM ENROLLMENTS

WHERE student ID = student ID);

EXPLANATION:

For Each student in the outer query the
inner checks if that student exists in
Enrollments.

If yes → The student returned

VELTECH	
EX No.	4
PERFORMANCE (5)	5
REPLY AND ANALYSIS (3)	5
VIVA (20%)	5
REMARKS	—
TOTAL	15
SIGNATURE DATE	8/09/25

Result: List of Employees where Salary is
greater than the query salary.