

Task-4: Independent and correlated Nested Queries

Aim:- To Implement and understand nested queries in SQL including and correlated subqueries.

procedure :-

- 1) create required tables
- 2) Insert sample data
- 3) write and execute Independent nested queries.
- 4) write and execute correlated nested queries.

Syntax :- select column list
from table

where column operator (select column from table where condition).

Example-1:- Independent nested query
find students who belong to the same department as Alice.

```
select student Name  
from students  
where dept ID = (
```

```
select dept ID  
from students
```

```
where student Name = "Alice")
```

Explanation :-

* Running query: gets Alice dept ID

* outer query: finds all students with parent ID = 101

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 []

where exists (

~~SELECT 1~~
FROM enrollments e
WHERE e student ID = s. student

);

Explanation :-

* for each student in the outer query, the inner query checks if that student exists in enrollment.

* if yes \rightarrow the student is returned.

Answer output :-

Alice
Bob
Charlie
David

difference

feature

Independent Subquery

correlated

Execution

inner query runs once

Inner query runs of each row of outer query

Dependency

Independent of outer query

Dependent on outer queries

Performance

faster if inner query (small)

slower (due to repeated execution)

Example

Finding dept of Alice MAX

checking enrollments

usage

salary, etc.

filtering rows by row check

Result :- Hence, implementation and understand all nested equations in SQL including and correlated subqueries successfully.

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