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**Subject :** Task 6

Task 6 : Subqueries and Nested Queries

**Objective** : Use subqueries in SELECT, WHERE, and FROM

**Tools** : DB Browser for SQLite / MySQL Workbench

**Deliverables** : SQL queries with nested logic

**1.Use scalar and correlated subqueries**

I give my practical file in [github.com](https://github.com/harshtankariya/SQL-DEVELOPER-INTERNSHIP-ELEVATE-LABS)

**2.Use subqueries inside IN, EXISTS, =**

I give my practical file in [github.com](https://github.com/harshtankariya/SQL-DEVELOPER-INTERNSHIP-ELEVATE-LABS)

Interview Questions :

**1. What is a subquery?**

A subquery is a **query inside another query**. It provides a value or set of values to the main query.

**Example :** SELECT \* FROM Patient WHERE HosID = (SELECT MAX(HosID) FROM Hospital);

**2. Difference between subquery and join?**

| **Feature** | **Subquery** | **Join** |
| --- | --- | --- |
| Purpose | Filters or computes in steps | Combines rows from multiple tables |
| Readability | Easy for small logic | Better for multi-table fetch |
| Performance | Can be slower | Usually faster on large data |
|  |  |  |

**3. What is a correlated subquery?**

A subquery that uses a value from the outer query. It runs once per row of the outer query.

**Example :** SELECT Name FROM Patient P WHERE EXISTS (

SELECT 1 FROM Medical\_Record M WHERE M.PatID = P.PatID);

**4. Can subqueries return multiple rows?**

Yes, if used with IN, EXISTS, or as a table.  
 No, if used with = — that must return only one row.

**5. How does EXISTS work?**

It checks if a **subquery returns any row**. If yes, returns TRUE.  
Used to check existence without fetching data.

**6. How is performance affected by subqueries?**

* **Scalar subqueries**: Fine for small data
* **Correlated subqueries**: Slower for large tables  
   Use **JOINs or indexing** for optimization.

**7. What is a scalar subquery?**

A subquery that returns **exactly one value** (single row, single column).

**Example :** SELECT AVG(Charge) FROM Outdoor;

**8. Where can we use subqueries?**

* SELECT clause
* WHERE clause
* FROM clause
* HAVING clause

**9. Can a subquery be in FROM clause?**

Yes, it’s called a **derived table**.

**Example :** SELECT \* FROM (

SELECT HosID, COUNT(\*) AS Count FROM Patient GROUP BY HosID

) AS HospCount;

**10. What is a derived table?**

A subquery used in the FROM clause, treated like a **temporary table**.

**Key Concepts: Subqueries, Filtering**

**What is a Subquery?**

A subquery is a query inside another query, used to calculate a value or set of values dynamically.

**Example** :

-- Show patients from the hospital with the highest ID

SELECT Name

FROM Patient WHERE HosID = (SELECT MAX(HosID) FROM Hospital);

-- Patients who have at least one medical report

SELECT Name

FROM Patient P

WHERE EXISTS (

SELECT 1 FROM Medical\_Record M WHERE M.PatID = P.PatID

);

**What is Filtering?**

Filtering means selecting only **specific rows** from a table using **conditions** (with WHERE, IN, EXISTS, BETWEEN, etc.)

**Example :**

SELECT \* FROM Outdoor WHERE Charge BETWEEN 300 AND 500;

SELECT \* FROM Patient WHERE Name LIKE '%a%';

SELECT \* FROM Doctor WHERE HosID = 1;