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**Subject :** Task 8

Task 8**: Stored Procedures and Functions**

**Objective** : Learn reusable SQL blocks

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

**Deliverables** : At least one stored procedure and one function

**1.Use CREATE PROCEDURE and CREATE FUNCTION**

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

**2.Use parameters and conditional logic**

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

**Interview Questions:**

**1. Difference between Procedure and Function?**

| **Feature** | **Procedure** | **Function** |
| --- | --- | --- |
| Returns | No return (uses CALL) | Yes, returns a value (RETURN) |
| Use in SQL | Cannot use in SELECT | Can use in SELECT |
| Output type | Can return multiple results | Returns single value or table |

**2. What is IN/OUT parameter?**

* IN: Input only (you pass value in)
* OUT: Output only (procedure sets value)
* INOUT: Both input and output

**3. Can functions return tables?**

Yes, in some DBMS like **SQL Server**, they can return a **table** (called Table-Valued Function).  
 Not supported in MySQL or SQLite directly.

**4. What is RETURN used for?**

In a **function**, RETURN sends back the **final result value**.

**5. How to call stored procedures?**

Use the CALL command:

**Example** : CALL ProcedureName(parameters);

**6. What is the benefit of stored routines?**

* Reuse code
* Improve performance
* Easier maintenance
* Secure data access
* Reduce client-side logic

**7. Can procedures have loops?**

Yes. You can use LOOP, WHILE, or REPEAT in procedures.

**8. Difference between Scalar and Table-Valued Functions?**

| **Type** | **Returns** |
| --- | --- |
| Table-Valued Function | A full table (rows/columns) |

**9. What is a trigger?**

A **trigger** is automatic code that runs when an **INSERT**, **UPDATE**, or **DELETE** happens on a table.

**10. How to debug stored procedures?**

* Use SELECT statements inside the procedure
* Check logic step by step
* Use SQL debugger tools (in MySQL Workbench, SSMS, etc.)
* Add error handling (DECLARE, HANDLER)

Key Concepts: Procedures, Functions

**What is a Procedure?**

A **Stored Procedure** is a saved block of SQL code that you can **call** to perform a task.

**Example:** Get Patients by Hospital

CREATE PROCEDURE GetPatientsByHospital(IN hosid INT)

BEGIN

SELECT Name FROM Patient WHERE HosID = hosid;

END;

Call it using: CALL GetPatientsByHospital(1);

**What is a Function?**

A **Function** is a block of SQL code that returns a **value**. You can use it inside SELECT, WHERE, etc.

**Example**: Get total charge for one patient

CREATE FUNCTION GetCharge(pid INT)

RETURNS DECIMAL(10,2)

BEGIN

DECLARE total DECIMAL(10,2);

SELECT SUM(Charge) INTO total FROM Outdoor WHERE PatID = pid;

RETURN IFNULL(total, 0);

END;