

Task 8: Stored Procedures and Functions

Objective: Learn reusable SQL blocks

Tools: MySQL Workbench (Note: SQLite does not support stored procedures or functions natively)

1. Sample Schema

```
CREATE DATABASE CompanyDB;
USE CompanyDB;

CREATE TABLE Employees (
    emp_id INT PRIMARY KEY AUTO_INCREMENT,
    name VARCHAR(100),
    department VARCHAR(50),
    salary DECIMAL(10,2)
);

INSERT INTO Employees (name, department, salary) VALUES
('Alice', 'HR', 50000),
('Bob', 'IT', 60000),
('Charlie', 'Finance', 55000),
('David', 'IT', 62000),
('Eva', 'HR', 52000);
```

2. Stored Procedure

```
DELIMITER //

CREATE PROCEDURE GetEmployeesByDept(IN deptName VARCHAR(50))
BEGIN
    SELECT * FROM Employees WHERE department = deptName;
END //
```

DELIMITER ;

Call the procedure:

```
CALL GetEmployeesByDept('IT');
```

3. User-Defined Function

```
DELIMITER //

CREATE FUNCTION CalculateAnnualSalary(monthly DECIMAL(10,2))
RETURNS DECIMAL(10,2)
DETERMINISTIC
BEGIN
    RETURN monthly * 12;
END //
```

DELIMITER ;

Use the function:

```
SELECT name, salary, CalculateAnnualSalary(salary) AS AnnualSalary FROM Employees;
```

4. Summary

Stored Procedure: Reusable SQL block with input/output parameters.

Function: Returns a single value; can be used in SELECT statements.