**Exercise 3: Stored Procedures**

create database storedprocedures;

use storedprocedures;

CREATE TABLE customers (

customer\_id INT AUTO\_INCREMENT PRIMARY KEY,

name VARCHAR(50) NOT NULL

);

CREATE TABLE accounts (

account\_id INT AUTO\_INCREMENT PRIMARY KEY,

customer\_id INT,

account\_type ENUM('SAVINGS', 'CURRENT') NOT NULL,

balance DECIMAL(12,2) NOT NULL DEFAULT 0.00,

FOREIGN KEY (customer\_id) REFERENCES customers(customer\_id)

);

CREATE TABLE employees (

emp\_id INT AUTO\_INCREMENT PRIMARY KEY,

emp\_name VARCHAR(50) NOT NULL,

department VARCHAR(50) NOT NULL,

salary DECIMAL(12,2) NOT NULL

);

INSERT INTO customers (name) VALUES

('Alice'),

('Bob'),

('Charlie');

INSERT INTO accounts (customer\_id, account\_type, balance) VALUES

(1, 'SAVINGS', 10000.00),

(1, 'CURRENT', 5000.00),

(2, 'SAVINGS', 8000.00),

(2, 'CURRENT', 3000.00),

(3, 'SAVINGS', 12000.00);

INSERT INTO employees (emp\_name, department, salary) VALUES

('David', 'IT', 60000.00),

('Emma', 'HR', 55000.00),

('Frank', 'IT', 58000.00),

('Grace', 'Finance', 62000.00);

**Scenario 1:**

CREATE DEFINER=`root`@`localhost` PROCEDURE `ProcessMonthlyInterest`()

BEGIN

UPDATE accounts

SET balance = balance + (balance \* 0.01)

WHERE account\_type = 'SAVINGS';

END

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**Scenario 2:**

CREATE DEFINER=`root`@`localhost` PROCEDURE `UpdateEmployeeBonus`(

IN dept\_name VARCHAR(50),

IN bonus\_percent DECIMAL(5,2)

)

BEGIN

UPDATE employees

SET salary = salary + (salary \* (bonus\_percent / 100))

WHERE department = dept\_name;

END

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**Scenario 3:**

CREATE DEFINER=`root`@`localhost` PROCEDURE `TransferFunds`(

IN from\_account INT,

IN to\_account INT,

IN amount DECIMAL(12,2)

)

BEGIN

DECLARE current\_balance DECIMAL(12,2);

SELECT balance INTO current\_balance

FROM accounts

WHERE account\_id = from\_account;

IF current\_balance >= amount THEN

-- Deduct from source account

UPDATE accounts

SET balance = balance - amount

WHERE account\_id = from\_account;

UPDATE accounts

SET balance = balance + amount

WHERE account\_id = to\_account;

ELSE

SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT = 'Insufficient funds';

END IF;

END

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