**6. SQL Exercise - Triggers**

CREATE TABLE Departments (

DepartmentID INT PRIMARY KEY,

DepartmentName VARCHAR(100)

);

CREATE TABLE Employees (

EmployeeID INT PRIMARY KEY,

FirstName VARCHAR(50),

LastName VARCHAR(50),

DepartmentID INT FOREIGN KEY REFERENCES Departments(DepartmentID),

Salary DECIMAL(10,2),

JoinDate DATE

);

INSERT INTO Departments (DepartmentID, DepartmentName) VALUES

(1, 'HR'),

(2, 'Finance'),

(3, 'IT'),

(4, 'Marketing');

INSERT INTO Employees (EmployeeID, FirstName, LastName, DepartmentID, Salary, JoinDate) VALUES

(1, 'John', 'Doe', 1, 5000.00, '2022-01-15'),

(2, 'Jane', 'Smith', 2, 6000.00, '2021-03-22'),

(3, 'Michael', 'Johnson', 3, 7000.00, '2020-07-30'),

(4, 'Emily', 'Davis', 4, 5500.00, '2019-11-05');

CREATE TABLE EmployeeChanges (

ChangeID INT IDENTITY(1,1) PRIMARY KEY,

EmployeeID INT,

OldSalary DECIMAL(10,2),

NewSalary DECIMAL(10,2),

ChangeDate DATETIME DEFAULT GETDATE()

);

CREATE TRIGGER trg\_AfterSalaryUpdate

ON Employees

AFTER UPDATE

AS

BEGIN

INSERT INTO EmployeeChanges (EmployeeID, OldSalary, NewSalary)

SELECT d.EmployeeID, d.Salary, i.Salary

FROM deleted d

JOIN inserted i ON d.EmployeeID = i.EmployeeID

WHERE d.Salary <> i.Salary;

END;

CREATE TRIGGER trg\_InsteadOfDelete

ON Employees

INSTEAD OF DELETE

AS

BEGIN

RAISERROR ('Deleting employees is not allowed.', 16, 1);

END;

CREATE TRIGGER trg\_BlockDuringMaintenance

ON ALL SERVER

FOR LOGON

AS

BEGIN

IF DATEPART(HOUR, GETDATE()) = 2

BEGIN

ROLLBACK;

RAISERROR ('Logins are blocked between 2 AM and 3 AM for maintenance.', 16, 1);

END

END;

ALTER TABLE Employees

ADD AnnualSalary AS Salary \* 12 PERSISTED;

