5. SQL Exercise - Functions.pdf

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 VALUES

(1, 'HR'), (2, 'IT'), (3, 'Finance');

INSERT INTO Employees VALUES

(1, 'John', 'Doe', 1, 5000.00, '2020-01-15'),

(2, 'Jane', 'Smith', 2, 6000.00, '2019-03-22'),

(3, 'Bob', 'Johnson', 3, 5500.00, '2021-07-01');

CREATE FUNCTION fn\_CalculateAnnualSalary (@Salary DECIMAL(10,2))

RETURNS DECIMAL(10,2)

AS

BEGIN

RETURN @Salary \* 12;

END;

GO

CREATE FUNCTION fn\_GetEmployeesByDepartment (@DeptID INT)

RETURNS TABLE

AS

RETURN (

SELECT \* FROM Employees WHERE DepartmentID = @DeptID

);

GO

CREATE FUNCTION fn\_CalculateBonus (@Salary DECIMAL(10,2))

RETURNS DECIMAL(10,2)

AS

BEGIN

RETURN @Salary \* 0.10;

END;

GO

ALTER FUNCTION fn\_CalculateBonus (@Salary DECIMAL(10,2))

RETURNS DECIMAL(10,2)

AS

BEGIN

RETURN @Salary \* 0.15;

END;

GO

DROP FUNCTION fn\_CalculateBonus;

GO

SELECT

EmployeeID,

FirstName,

LastName,

Salary,

dbo.fn\_CalculateAnnualSalary(Salary) AS AnnualSalary

FROM Employees;

GO

SELECT

dbo.fn\_CalculateAnnualSalary(Salary) AS AnnualSalary

FROM Employees

WHERE EmployeeID = 1;

GO

SELECT \* FROM dbo.fn\_GetEmployeesByDepartment(3);

GO

CREATE FUNCTION fn\_CalculateBonus (@Salary DECIMAL(10,2))

RETURNS DECIMAL(10,2)

AS

BEGIN

RETURN @Salary \* 0.15;

END;

GO

CREATE FUNCTION fn\_CalculateTotalCompensation (@Salary DECIMAL(10,2))

RETURNS DECIMAL(10,2)

AS

BEGIN

DECLARE @Annual DECIMAL(10,2) = dbo.fn\_CalculateAnnualSalary(@Salary);

DECLARE @Bonus DECIMAL(10,2) = dbo.fn\_CalculateBonus(@Salary);

RETURN @Annual + @Bonus;

END;

GO

SELECT

EmployeeID,

FirstName,

LastName,

Salary,

dbo.fn\_CalculateTotalCompensation(Salary) AS TotalCompensation

FROM Employees;

