**SQL-Functions and Exercise 7- Return Data from a Scalar Function**

IF OBJECT\_ID('Employees', 'U') IS NOT NULL DROP TABLE Employees;

IF OBJECT\_ID('Departments', 'U') IS NOT NULL DROP TABLE Departments;

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, 'IT'),

(3, 'Finance');

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

GO

-- Exercise 1

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

RETURNS DECIMAL(10,2)

AS

BEGIN

RETURN @Salary \* 12;

END;

GO

-- Exercise 2

CREATE FUNCTION fn\_GetEmployeesByDepartment (@DeptID INT)

RETURNS TABLE

AS

RETURN (

SELECT EmployeeID, FirstName, LastName, DepartmentID, Salary, JoinDate

FROM Employees

WHERE DepartmentID = @DeptID

);

GO

-- Exercise 3

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

RETURNS DECIMAL(10,2)

AS

BEGIN

RETURN @Salary \* 0.10;

END;

GO

-- Exercise 4

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

RETURNS DECIMAL(10,2)

AS

BEGIN

RETURN @Salary \* 0.15;

END;

GO

-- Exercise 5

DROP FUNCTION fn\_CalculateBonus;

GO

-- Exercise 6

SELECT

FirstName, LastName, Salary,

dbo.fn\_CalculateAnnualSalary(Salary) AS AnnualSalary

FROM Employees;

-- Exercise 7

SELECT

FirstName, LastName, Salary,

dbo.fn\_CalculateAnnualSalary(Salary) AS AnnualSalary

FROM Employees

WHERE EmployeeID = 1;

-- Exercise 8

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

-- Exercise 9

IF OBJECT\_ID('fn\_CalculateTotalCompensation', 'FN') IS NOT NULL

DROP FUNCTION fn\_CalculateTotalCompensation;

GO

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

RETURNS DECIMAL(10,2)

AS

BEGIN

DECLARE @AnnualSalary DECIMAL(10,2);

DECLARE @Bonus DECIMAL(10,2);

SET @AnnualSalary = dbo.fn\_CalculateAnnualSalary(@Salary);

SET @Bonus = dbo.fn\_CalculateBonus(@Salary);

RETURN @AnnualSalary + @Bonus;

END;

GO

-- Exercise 10

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

RETURNS DECIMAL(10,2)

AS

BEGIN

DECLARE @AnnualSalary DECIMAL(10,2);

DECLARE @Bonus DECIMAL(10,2);

SET @AnnualSalary = dbo.fn\_CalculateAnnualSalary(@Salary);

SET @Bonus = dbo.fn\_CalculateBonus(@Salary);

RETURN @AnnualSalary + @Bonus;

END;

GO

