

UDF and Common Function Types

Introduction

This week's assignment centers around when to use a User-Defined Functions (UDF) and the differences between some of the common function types. (*Scalar, Inline, and Multi-Statement Functions*)

When to use a UDF

A UDF is a powerful tool within SQL that allows you to encapsulate a set of SQL statements. This encapsulation allows for complex data changes, calculations, and operations to be recalled under a single developer-defined command, ultimately reducing redundancy through cleaner code writing.

```
CREATE FUNCTION dbo.AddTwoNumbers(@num1 INT, @num2 INT)
RETURNS INT
AS
BEGIN
    RETURN @num1 + @num2;
END;
```

Example 1 - Function UDF¹

UDFs allow for parameters to be defined and support various data types, making them very versatile. While the above mentioned describe why and when you would use UDF, it is important to note that boated UDF code can cause performance issues when using larger datasets.

Scalar, Inline, and Multi-Statement Functions

Scalar functions are functions that return a single value based on the parameters. (see Example 1) The most common times to use this function type are for data operations, string changes, and calculations. Inline functions are single SELECT statements that return a table. A Multi-Statement Function (MSF) is like an Inline function except for it is comprised of multiple SELECT statements.

```
CREATE FUNCTION dbo.GetEmployeesByDepartment(@departmentId INT)
RETURNS TABLE
AS
RETURN (
    SELECT EmployeeID, EmployeeName
    FROM Employees
    WHERE DepartmentID = @departmentId
);
```

Example of Inline Function²

Summary

To summarize this week, I learned more about creating UDF functions and the different types of UDF. A UDF is a User-Defined Function that packs various actions within a command that we name. When developing the SQL code, we then referenced these newly defined functions in the code; in the process the code gets simplified in the same way that we simplify using table aliases. UDF are broken into two types: Scalar and Table-Value Functions.

Bibliography

1 Author: CoPilot-generated code – [bing.com](https://www.bing.com)

2 Author: CoPilot-generated code – [bing.com](https://www.bing.com)