Gabriela Tedeschi

IT FDN 130

May 23, 2021

Assignment 07

# **SQL Functions**

## Introduction

In this document, I will define UDFs and the purpose they serve. I will also explain the differences between Scalar, Inline Table, and Multi-Statement Tables Functions, outlining how to create these different forms of UDFs and when they each are useful.

## 1. Explain when you would use a SQL UDF.

You create and use SQL User Defined Functions (UDFs) when you want to simplify the process of performing certain operations, but don’t have built-in functions that will accomplish this. You may use a UDF in the place of a complex or frequently used Select statement to make accessing its results set easier for reporting purposes. UDFs can be Scalar Functions, Inline Table Functions, and Multi-Statement Functions, meaning you can return a single value, add a new column to a results set by performing calculations for each row, or return a table of values.

Graphical user interface, text, application, email

Description automatically generated

Figure 1: An inline table UDF I created for Assignment 07.

## 2. Explain are the differences between Scalar, Inline, and Multi-Statement Functions.

Scalar Functions return a single value as an expression. When you create a Scalar Function, you specify variables, the operations you want to perform on the variables, and the data types of the variables and the value you will return. You can use Scalar Functions as columns in Select statements to apply the function to each row in a result set. You can also use Scalar Functions as a check constraint to limit possible values in a column of table.

Inline Functions return a table of values based on the values you input. When you create an Inline Function, you specify one or more variables, select columns from a table, and typically use the variables in the Where clause. When you use the use the Inline Function, you treat it like a table in the From clause and plug values into the variables, which determine what table of values is returned.

Multi-Statement Functions allow you to use multiple statements to return a table of values that draws from multiple tables. To create a Multi-Statement Function, you both specify a variable to plug into your statements and a table variable. You then specify the columns that your result set will have. Then, you use Insert Into @[table variable] and add your Select statements, using the variable you specified in the Where clause of these statements. To use the Multi-Statement Function, plug values into your variables and you will return a table of values.

## Summary

In this document, I explained how and why UDFs are created, breaking down the differences between Scalar, Inline, and Multi-Statement Functions. This information will be useful when I want to simplify the process of organizing and accessing data for myself and other database users.