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## Assignment 7 — Functions

### Introduction

In my seventh course writeup, I will discuss the purpose and usage of a SQL UDF, when and why it may be applied during a SQL user's database experience, as well as the differences found in Scalar, Inline and Multi-Statement Functions.

### SQL UDF

A user would implement a SQL UDF, also known as a User-Defined Function, allow users to create their own custom functions that can be used frequently in database management. UDFs can be especially beneficial in streamlining the coding process by making it more efficient and also reducing potential security risks and improving readability.

### Scalar, Inline, Multi-Statement Functions

A Scalar function returns a single value from a particular function. It is considered the simplest of the UDFs, though it can take one or more parameters to return just the single value.

Inline functions, meanwhile, return a table of information based on the given parameters, which may help in generating better scopes of a larger array of data from a database. They provide the ability for the user to add more complex parameters than in a much simpler Scalar function.

Finally, Multi-Statement functions are the most in-depth functions of the bunch. Multi-Statement functions still operate as tables, like Inline functions, but they additionally allow the user to stack several parameters that may often generate various results such as complex numeric equations based on user-defined attributes, such as a KPI.

### Summary

In Module 7, we learned about SQL User-Defined Functions (UDFs) and how they are applied to SQL coding. UDFs allow the user to increase their efficiency by creating a UDF for a simple or complex function that may be reused later on in the database management process, allowing for efficiency, neater coding and improved readability, and increase security. UDF types include Scalar, Inline and Multi-Statement functions, largely determined by what the user wishes to return from their function.