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Assignment 07

<https://github.com/mm-ackerman/DBFoundations-Module07>

# Functions

## Introduction

In this assignment I will first explain when to use a SQL User Defined Function (UDF). Then, I will describe the differences between a Scalar, an Inline, and a Multi-Statement Function.

## Using SQL UDFs

A SQL UDF is a custom function that can return either a single value (Scalar Function) or a table consisting of multiple values (Table-Value Function). A SQL UDF is used when the built-in functions are not specific enough for the desired output. For reporting, if a query is complex, and needs to be run frequently a UDF may be used. Also, since User Defined Functions are saved within the database they can be run and updated by multiple users as needed allowing for both replicability and security.

## Scalar Functions

A Scalar Function is a type of a User Defined Function that returns a single value, that is an integer, a string, a date, or a Boolean.

## Inline Functions

An Inline Function is a type of a Table-Value Function that as returns a table and only consists of one SELECT statement.

## Multi-Statement Functions

A Multi-Statement Function is another type of a Table-Value Function that also returns a table. This type of function allows for more than just one SELECT statement.

## Differences between a Scalar, an Inline, a Multi-Statement Function

A Scalar Function returns a single value in comparison to Inline and Multi-Statement Functions which both return a table of values. Inline Functions only contain one SELECT statement and use the syntax RETURNS Table to do so as the terms suggest. Multi-Statement Functions often consist of more complicated logic and code in comparison to an Inline Function. Multi-Statement Functions can contain multiple SQL statements rather than just one statement as they use a BEGIN and END block.

## Summary

In this assignment, I first explained when to use a SQL User Defined Function. Next, I defined a Scalar, an Inline, and a Multi-Statement Function. Last, I described some differences between Scalar, Inline, and Multi-Statement Functions.