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## Assignment 7 – User Defined Functions

### Introduction

In this write-up we will delve into understanding when to use SQL User Defined Functions and the difference between Scalar, Inline and Multi-Statement Functions.

### Topic

In contrast to built-in functions, which are developed/provided by the database system, the User Defined Functions, are custom functions created by the user to encapsulate a specific piece of logic/computation. There are two types of UDF that the users might have to develop due to logic/computation not being available on a built-in function. The first one being scalar functions, where the user encapsulates calculations that return a single value based on the input parameters. And Table-Valued Functions, where a table result set is returned.

To delve deeper into other type of functions, Table-Values Functions can be broken down into two types of functions: Inline and Multi-Statement Table-Valued Functions. Where Inline TVF returns a table and is defined using a single SELECT statement. And the Multi-Statement TVF uses a BEGIN and END block and can contain more complex logic, including multiple INSERT, UPDATE, DELETE, etc.

### Summary

User defined functions are a great way to simplify complex code, thus improving the code readability, also providing consistency by utilizing specific computation or transformations where any changes to that logic will be reflected wherever the functions are used on.