# Assignment 07

Alex Harteloo

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GitHub Link:

## Introduction

In this week's module, we learned how to utilize functions within our SQL code. Functions can either be preset ones already found on your system, or user created code designed to return either a table of values or a single value. Finally, we breifly looked at writing in Markdown, a common word presenation file type.

## Why Create UDFs?

A UDF, or user-defined function is a when a user creates a custome function. This can be to produce a table of values with a certain criteria, create simple expressions between values, or to create a check for constraints by referencing a column in another table. More benefits of UDFs are they encourage modular programming, they can operate as a stored set of procedures, and they can use filters to reduce the load on system calls.

## Compare/Contrast Scalar, Inline, and Multi-Statement Functons

Scalar functions are built in functions that perfrom operations on a dataset and return a single value. Some examples include, MIN, MAX, LEN, etc. Scalar functions are useful for looking simplifying groupings or performing complex calculations. Inline functions, otherwise known as Inline Table-valted functions (ITVF) are user defined functions that return a set, visualized as a table. The benefit of using an inline function is it allows the user to input one or more parameters to parse information from a dataset. Finally, multi-statment functions, or multi-statment table-valued function (TVF) is another type of user defined function that returns table of values, similar to ITVFs. Where TVFs and ITVFs differ

is that TVFs need a clearly defined structure. This is done by begining the funciton with a BEGIN statement and fininishing it with an END statement.

## Summary

This week's module focused on SQL functions, including built-in and user-defined functions (UDFs), which can return either a single value or a table. UDFs allow users to create custom functions for tasks like generating specific data tables, performing calculations, or enforcing constraints. They promote modular programming, reduce system load through filtering, and can function as stored procedures. We also explored three types of functions: scalar functions, which return single values (e.g., MIN, MAX, LEN) and simplify calculations; inline table-valued functions (ITVFs), which return tables and accept parameters for parsing datasets; and multi-statement table-valued functions (TVFs), which also return tables but require a defined structure using BEGIN and END. Additionally, we briefly covered Markdown as a common format for writing and presenting text.