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IT Foundations of Database Management
Assignment 07 Write Up
GitHub URL: https://github.com/cjbenson123/DBFoundations-Module07

SQL Functions

Introduction

In this write up, I will discuss when to use a SQL User Defined Function, and explain the differences between Scalar, Inline and Multi-Statement functions.

When to Use a SQL UDF

A SQL User Defined Function, or UDF, is a custom-built function that accepts parameters and returns a result. Functions should be used when there is a desire to encapsulate code and reduce code repetition.

Scalar, Inline and Multi-Statement Functions

There are two main types of UDF's; Scalar functions, which return a single value, and table-valued functions, which return tables. The main difference between scalar and table functions is the form of the return value:

- Scalar defined functions return a single value
- Both Inline and multi-statement table-valued functions return tables
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Table valued functions can further be broken down into inline and multi-statement. The main difference between inline the two is in the Return syntax. The inline function returns a table based off the functions select statement, while the multi-statement function specifies explicitly the structure of the return table. The latter is done by declaring a table variable, which is used to store and accumulate the rows that are then returned to the user by the function. A comparison of the syntax for each table function can be seen below in Figure 1.

Figure 1: Multi-statement vs Inline function syntax (https://www.sqlshack.com/sql-server-multi-statement-table-valued-functions/, 2022)(External Site)

Summary

In this write up, I have discussed user defined functions in SQL. I have explained when to use a UDF, and compared inline, multi-statement and scalar functions.