

Colleen Price

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Assignment 7: Functions

Introduction

In this assignment, we learned how to use functions to retrieve information from a database. There are premade SQL functions that anyone can use in a select statement and there are also UDFs (User Defined Functions) that you can make to get the data you need. There are many different kinds of functions including (but not limited to) scalar, inline and multi-statement functions. In this writeup I will explain when it is best to use UDFs as well as the differences between scalar, inline and multi-statement functions.

Topic 1: Explain when you would use a SQL UDF

If you are trying to find the right function to use to retrieve the information you need from a database but can't find a specific premade function to do so, a UDF is a good option. Also, you can create the UDF you need and store it in the database to be used anytime you need it. A UDF is similar to a stored procedure in that you can store the code and reuse it again later without having to build it from scratch every time you need it. In this case, UDFs are very handy when writing complex queries so you can save the code instead of getting bogged down with typing out everything you need.

Topic 2: Explain the differences between Scalar, Inline and Multi-Statement Functions

Scalar functions are UDFs that return a single (scalar) value. It is important to note that you need to use the schema name when using scalar functions. An inline function, on the other hand, is a UDF that returns a single set of rows. The result can then be used in a query just like a table, unlike scalar function results. Also, with scalar functions you need to wrap the select statement in Begin/End blocks but you don't need to do this with inline functions. A multi-statement function is a UDF that returns a table of data. Similar to scalar functions (but unlike inline functions), you need to add Begin/End blocks around your select statement when using multi-statement functions.

Summary

To summarize, functions are a very useful SQL tool but sometimes you need to create your own custom UDFs to get the results you need. UDFs are very handy in this case and can be saved just like stored procedures for later use. Scalar, inline and multi-statement functions are all different types of UDFs you can create but it is important to get the syntax right for each because they all have different rules for use.