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Assignment 07

In this article, I will introduce the use of SQL User-Defined Functions (UDF) and the differences between scalar, inline and multi-statement functions. It is important to understand the differences as it has benefits between the types of user defined functions.

What is User Defined Functions (UDF) and when to use them?

User Defined Function is a function where a user can create custom functions. UDF in SQL are declared using CREATE FUNCTION statement and may be used in expression in SQL statements.

It is best to use user defined function as it has few benefits:

1) Modular programming – you create the function, store it in the database and use it multiple times in your program.
2) Faster execution – reduces caching which minimizes the need to be reparsed and reoptimized with each use resulting in a faster performance time.

Differences between Scalar, Inline and Multi-Statement Functions:

The SQL standard includes few types:

(1) Scalar Function – is a user defined function that returns only a single value.

(2) In-line Table-valued Function (ITVF) – is a user defined function that returns a table result set, comprising rows where each row with one or more columns. It can also be used in a query just like a table.

(3) Multi-Statement Table-valued function (MSTVF) – is a user defined function which also returns a table of data, after only with additional processing.

In conclusion, user defined functions are useful when you use values provided as parameters and combine them with other values or database objects and it will return the result of these combinations or calculations.

Citations:

User-Defined Functions - SQL Server | Microsoft Learn

User-defined function - Wikipedia

Simple (in-line) table-valued functions (wiseowl.co.uk)

Multi-Statement Table-Valued Functions (wiseowl.co.uk)

Difference Between Multi-Statement Table-Valued Functions & Inline Table-Valued Functions in SQL Server (database.guide)