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Date: November 29, 2023
Course: Foundations of Databases & SQL Programming
https://github.com/vbmok/DBFoundations-Module07/

Assignment 07 – Functions

Introduction

When managing and working with relational databases, user-defined functions (UDFs) are essential in easing database operations. A variety of types of user-defined functions, including scalar, inline, and multi-statement functions, each allow for more efficient approaches to data management.

User Defined Functions

In addition to the functions already available to access in SQL, users can create custom functions known as user defined functions, or UDFs. UDFs are often created when one can benefit from a set of SQL statements being stored for reuse. This allows for further ease of use and organization within the code. There are functions that can be created to return a table of values and those that can be created to return just a single value. Creating UDFs streamlines the coding process and allows for easier database management.

Scalar, Inline, and Multi-Statement Functions

Scalar functions are UDFs that can be created to return single values. Scalar functions are used to ease readability and simplify query results. Scalar functions are also useful for Check constraints to reference columns in other tables.

Inline functions are scalar functions that use the keyword INLINE. Inline functions are more powerful than simple scalar functions because of the query optimizer, which substitutes a function's definition into a query. This can lead to more efficient and optimized data output.

Multi-statement functions are the most complex functions, because they can contain multiple SQL statements. Multi-statement functions are always bookended by BEGIN and END. Multi-statement functions can be beneficial to one's work as they are often very complex, and they can be most useful when a procedure requires more than one expression.

Summary

User defined functions (UDFs) offer multiple ways to store and repeat logic within relational databases. Scalar, inline, and multi-statement functions all offer solutions to different situations requiring simplicity or complexity. Understanding the optimal usage for each type of UDF is critical to utilizing SQL to its full database management and usage potential.