Katherine Copper

May 31, 2024

Foundations of Databases & SQL Programming

<https://github.com/kacopper/DBFoundations-Module07.git>

**Assignment 7: SQL UDF, Scalar, Inline, Multi-Statement Functions**

**Introduction:**

This paper will cover SQL User-Defined Functions (UDFs), focusing on the differences between Scalar, Inline, and Multi-Statement functions.

**SQL UDF:**

User-defined functions (UDF) allow the user to create a function using a SQL expression. A SQL UDF is typically made up of four elements: name, arguments, output/return statement and the function. In order to use a UDF, it needs to be defined. The ‘create’ function enables the user to create a UDF. A UDF can return different options, single value, or if the UDF is defined as a table function, then a set of rows.

**Scalar, Inline, Multi-Statement Functions:**

Scalar, Inline and Multi-Statement functions are all types of table-valued functions. Scalar will return a single value, regardless of if there are multiple values as an input. It’s often used to simplify more complex queries and is often used with select and where clauses. Inline functions utilize the ‘SELECT’ statement to define the rows and columns for a table. Multi-statement functions are more complex in the sense that it uses variables and multiple statements to populate a table variable and return it.

**Conclusion:**

In conclusion, SQL UDFs allow users to create custom functions using SQL expressions. Scalar functions return a single value, Inline functions use the SELECT statement to define table rows and columns while the Multi-Statement function employs variables and multiple statements to return a table variable.