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IT FDN 130 A: Foundations of Database Management

Assignment07

<https://github.com/Lisap-01/DBFoundations-Module07>

Functions

# Introduction

**Built in Functions**:

SQL functions are used to perform calculations on data. There are many types of built-in functions such as the Math/Numeric Functions like SUM, AVG, and COUNT. There are over a hundred built in functions in SQL server!

**User Defined Function (UDF)**:

A function, in any programming environment, lets you encapsulate reusable logic and build software that is “composable”, i.e. built of pieces that can be reused and put together in a number of different ways to meet the needs of the users. Functions hide the steps and the complexity from other code.

A user may create custom complex functions that are named and then stored in the Database.

([www.red-gate.com](http://www.red-gate.com), <https://www.red-gate.com/simple-talk/sql/t-sql-programming/sql-server-functions-the-basics/>, 2020) (external site)

# Explain when you would use a SQL User Defined Function (UDF)

The UDF is a ‘named’ and reusable routine that can perform complex calculations using input parameters. Wrapping complex code and storing it in a function allows you to call that function whenever needed, without re-writing the code. This is beneficial for regularly used calculations, and saves time and database resources.

# Explain the differences between Scalar, Inline, and Multi-Statement Functions

All 3 of these functions are UDFs.

* **Scalar functions** are able to contain multiple SELECT statements but can only return a single value.
* I**nline functions** are only able to contain a single SELECT statement and returns results in a table.
* A **Multi-Statement** function is able to contain multiple SELECT statements and returns results in a table.

# Summary

SQL functions are simply sub-programs, which are commonly used and re-used throughout SQL database applications for processing or manipulating data.