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IT FDN 130 A

Assignment 07

GitHub: https://github.com/UW2023/Assignment07

Functions in SQL

# Introduction

Functions in SQL are used to summarize and simplify the data contained within the database. While there are many functions that are pre-built into SQL, users can also generate user-defined functions (UDFs) to further streamline database functionality.

# UDF

A UDF can be used in SQL when a certain calculation or operation needs to be performed repeatedly in multiple queries or scripts. Instead of writing the same code line by line in each query or script, a UDF can be created and used as a modular component. This can improve the efficiency of code development, maintenance, and troubleshooting.

A UDF can also be used to encapsulate complex or repetitive logic into a single unit, making the code more readable and maintainable. Examples include using a UDF to calculate age based on a given date of birth, or to perform a complex mathematical calculation.

Another reason to use a UDF is to enable code reuse. With UDFs, developers can create shared libraries of code snippets that can be reused across different projects or within the same project. This can save time and effort in coding and testing, as well as make it easier to maintain and update code.

# Scalar, Inline and Multi-Statement Functions

Scalar functions in SQL are used to perform calculations and return a single value. These functions take an input value and return a single output value by executing a predefined logic (i.e., the AVG function calculating the average value of a group of data).

Inline functions in SQL are used to write reusable code that can be called within a SQL query. These functions can be used to simplify complex queries and can return a table variable as output (i.e., the table-valued function that takes a date as input and returns a table containing the sales data for that date).

Multi-statement functions in SQL are similar to scalar functions but they can contain multiple SQL statements. These functions use the BEGIN and END keywords to define the scope of the function and can have input and output parameters. An example of a multi-statement function is the stored procedure, which can perform multiple SQL operations and return a result set.

# Summary

Being able to properly utilize functions in a SQL database is an important foundational skill for database designers.

Chat-GPT, May 2023, chat-gpt.org/chat: Aspects of this assignment were informed and created by queries I submitted to Chat-GPT.