

Fan Yang

May 29, 2025

Course Name: Foundations Of Databases & SQL Programming

<https://github.com/Fyang712/DBFoundations-Module07>

Week 7 Assignment

Intro

In this lesson, I learned about SQL UDFs, or User Defined Functions. This paper will review the differences between Scalar, Inline, and Multi-Statement Functions and when to use them.

When to use a SQL UDF

UDF, or User Defined Function is a function written by the user and executed by the database software. SQL UDFs accept inputs, perform actions using those inputs, and return the output. UDFs promote modularity in SQL code, allowing developers to build logic into reusable functions. This reusability reduces redundancy and enhances maintainability.

What are the differences between Scalar, Inline, and Multi-Statement Functions

In SQL, scalar, inline, and multi-statement table-valued functions all serve different purposes. Scalar functions return a single value. Inline functions return a table (result set) as a single SQL statement. They are often optimized for performance as they can be treated as a view by the query optimizer. Multi-statement functions also return a table, but they allow for more complex logic using multiple SQL statements.

Summary

SQL User-Defined Functions (UDFs) are powerful tools, offering flexibility, reusability, and enhanced productivity. This reusability reduces redundancy and enhances maintainability. UDFs have three main categories: Scalar, inline, and multi-statement table-valued functions. These functions all serve different purposes to provide flexibility to users to query data in an efficient manner.