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Date: 8/27/2025

Course: IT FDN 130A

**Assignment 07:**

**1. Explain when you would use a SQL UDF.**

**2. Explain the differences between Scalar, Inline, and Multi-Statement Functions.**

Introduction

During Week 7, we learned about useful SQL functions such as MAX, MIN, AVE, and showed the results as Group by or Order by. Using Cast and Convert, the more specific and customizable results data can be listed. Not only that, but Concatenate, Format, and Immediate If functions can also be used to have better reporting data.

**1. Explain when you would use a SQL UDF.**

A SQL UDF would be used when standardized repeated logic needs to be used, such as formatting phone numbers and calculating age from date of birth. It needs to be consistent across multiple queries and reports, using the same calculation. Using a UDF gives cleaner and more readable SQL.

**2. Explain the differences between Scalar, Inline, and Multi-Statement Functions**.

A scalar function is used when a single calculation is needed. For example, calculating age from date of birth can be calculated as below.

Create Function fn\_GetAge (@DOB DATE)

RETURNS Int

As

Begin

RETURN DATEDIFF(YEAR, @DOB, GETDATE())

End

An inline function works similarly to a Scalar but returns as a table. The Inline function is optimal when you want to return a set of rows based on some input.

The multi-statement function works similarly to the Inline function but with more complicated formulas. Oftentimes, Join and longer Select (netting or series of subqueries) statements are being used.

Summary

In summary, I discovered that being familiar with and utilizing various functions is incredibly beneficial. This knowledge significantly reduces the time required for manual edits in Excel or Power BI. Functions like Lag are particularly useful for creating tables that allow for comparisons with previous time figures. Although writing code from scratch takes dedicated practice, it can be invaluable in a professional setting.