James Sharma

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Prof Root

Foundations Of Databases & SQL Programming

jimsharma206/DBFoundations-Module07 (github.com)

Module 7: Functions

Introduction

Module 7 explored the various forms of functions. For instance, aggregate functions include average, count, and sum, while server string functions include "FORMAT." The Format function allows the developer to control how a column's values are displayed, including in terms of monetary value or date format. In addition, the module explored user defined functions (UDF), which allow the developer to create specific parameters to output a single value or a table of values. This is extremely useful in certain industries or academic fields which have standard measurements. UDFs can also be used to check constraints. In addition,

Explain when you would use a SQL UDF

User Defined Functions, abbreviated as UDF, are customized functions that either output a table of values or a single value. Developers who need specific calculations, such a z-value, which is the sample mean minus the population mean over the standard deviation, can create a specific function that calculates this value. I assume creating functions are very useful for specific fields, such as finance, who have industry-wide measures. In addition, developers can use UDFs to check constraints. For instance, in the video, Prof Root used a UDF to check if the meeting time was before a certain hour.

In this week's assignment, we created a UDF on question 8. In the specific question, we enter a specific value, or integer, for the KPIValue. Consequently, the function filters the table to provide the rows which satisfies when the value is equal to the "CountVsPreviousCountKPI" value.

```
Create Function fProductInventoriesWithPreviousMonthCountsWithKPIs (@KPIValue int)
Returns Table
As
Return Select Top 1000000
        ProductName,
        InventoryDate,
        Count,
        PreviousMonthCount,
        CountvsPreviousCountKPI
    From vProductInventoriesWithPreviousMonthCountsWithKPIs
    Where CountVsPreviousCountKPI = @KPIValue
    Order By ProductName, Cast((InventoryDate) as Date);
go
```

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

A scalar function outputs a single value and is useful to check constraints. On the other hand, inline function outputs are like views, outputting multiple rows and columns. Furthermore, multi-statement functions are more complex. Like inline functions, multi-statement functions output tables. However, they are more complex and often include IF ELSE clauses.

Conclusion

In conclusion, module 7 explored various forms of functions, including aggregate functions and string functions. User defined functions (UDF) are customized functions that output a single value or a table of values. They are especially useful in industries or academic fields that have common measurements, such as a z-value or asset to liability ratios in business. UDFs are also useful to check constraints. Moreover, we examined the difference between scalar, inline, and multi-statement functions. Scalar functions return a single value, while inline functions output a set of rows. Multi-statement functions are more complex and often utilize IF ELSE statements.

Citations

Citations OpenAI ChatGPT, June 2023, chat.openai.com/chat: Aspects of this assignment were informed and created by queries I submitted to the ChatGPT