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IT FDN 130 A: Foundations Of Databases & SQL Programming

Assignment 06

Views

Introduction

This week, I learned how to save my Select statements within a database's file as a SQL View, Function, or Stored Procedure. And I also learned what are the differences and similarities between a View, Function, and Stored Procedure.

Topic 1: Explain when you would use a SQL View.

- An SQL view is called a virtual table because it does not store the rows and columns on the disk like a concrete table. Instead, it just contains the SQL query.
- From the Videos, I learned there are 2 scenarios to use a SQL View below:
 - 1. Scenario #1:

When we have a long and complex query. To save time on retyping and running the query, we can store it in a view and simply run the SELECT statement on that view.

Simple Example – The basic syntax of Creating Views

```
go

Create View vCustomersByLocation

As

Select

CustomerName = CompanyName

City

Region = IsNull(Region, Country)

Country

From Northwind.dbo.Customers;

go

Select * From vCustomersByLocation Order By CustomerName;
```

2. Scenario #2:

The access control to the data stored in the database is another reason why you should use SQL views. For example, we set permissions, so that the public group CANNOT select data from each table but can select data from each view.

- Simple Example The basic syntax of Grant/Deny Views Deny Select On dbo.Categories to Public; Grant Select On dbo.vCategories to Public;
- We can use view to save time and effort and to avoid any side effects of database administrative tasks.

(Above Reference What is an SQL View? | LearnSQL.com),2020

Topic 2: Explain the differences and similarities between a View, Function, and Stored Procedure.

- Similarities: From Module 6, we learned SQL Views and Functions are "Named" <u>Select</u> statements whose code is stored in a database. Stored Procedures are similar, but they are <u>not</u> restricted to just Select statements.
 - ➤ Simple Example Creating Views, Functions, and Stored Procedures are all similar, as shown in these three examples:

```
- Views

go

Create View vCustomersByLocation
As

Select
CustomerName = CompanyName
, City
, Region = IsNull(Region, Country)
, Country
From Northwind.dbo.Customers;
go

Select * From vCustomersByLocation Order By CustomerName;

go

Select * From vCustomersByLocation Order By CustomerName;

go

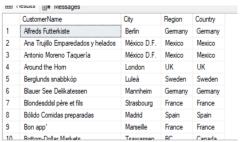
Select * From wCustomersByLocation() Order By CustomerName;

go

Select * From dob.fCustomersByLocation() Order By CustomerName;
```

Stored Procedures

- We get same read back table as below



Differences:

You cannot pass parameters to the view. Unlike views, functions can use parameters to change the results of the query as it is executed, and you can also create UDFs (User Defined Functions) to return a single (scalar) value as an expression.

• With Stored Procedure, we execute the code, not selecting from it, like it was a table. We cannot select from the Stored Procedure, but we can have many statements in the Stored Procedure, and we can even create a table in the Stored Procedure.

Summary

When I first learned and watched the Transaction Statement (videos), it was confusing for me to understand the differences between View, Function, and Stored Procedure. However, after doing a few research, I realized their differences. I would expect to learn more about them in the coming learnings.