Brian LeBlanc

3/5/24

IT FDN 130 A

DB Foundation Assignment 06

SQL Views

# Introduction

Views are an important part of making SQL widely available in an organization. Views, along with functions and stored procedures, are code that is stored in the database that queries the tables indirectly. This allows the tables to be changed only by advanced users but makes the data available to anyone who has access to the view. Views provide users with a way to view the most up-to-date data while protecting the integrity by limiting access to changing the tables. “Quote.” (LeBlanc, B., Title, Publisher, Year)

# What a view is and when you would use one

1. Explain when you would use a SQL View.

According to W3 Schools, “a view is a virtual table based on the result-set of an SQL statement (“SQL Views,” https://www.w3schools.com/SQL/sql\_view.asp, *W3 Schools*, Accessed 5 March 2024).” Using the CREATE VIEW command, you are able to save a SELECT statement that draws from one or more existing tables and creates a virtual one. You can also add additional functions. The virtual table, or view, that is created and saved is accessible at any time as long as someone has the name of the view.

A screenshot of CREATE VIEW page on W3 Schools
https://www.w3schools.com/SQL/sql_view.asp

#### Figure 1: A screenshot from W3 Schools SQL VIEWS page.

Views are useful for several reasons. First, “the database engine recreates the view, every time a user queries it (“SQL Views,” https://www.w3schools.com/SQL/sql\_view.asp, *W3 Schools*, Accessed 5 March 2024).” Each time the view is recreated, it has the most current data in the one or more tables that it is querying. Additionally, views allow those who are responsible for the database administrators (DBAs) a great deal of flexibility. They can allow DBAs ways to share the data within a table to those who might need it for reporting purposes without sharing access to the actual table itself. Access to views, as well as tables, can be restricted. Restricting the data, either through or by limiting what columns are shown in a view, allows sensitive data to be shown only to those who need it. This also limits access to the tables themselves, which is also important for security. Finally, by giving the view a simple name, it reduces the amount of code needed by writing a simple query with the same rather than the possibly complex code that is stored as the view.

# Functions and Stored Procedures

1. Explain are the differences and similarities between a View, Function, and Stored Procedure.

Views are one example of saved code that returns a virtual table. Additionally, there are functions and stored procedures. “SQL Views and Functions are "Named" Select statements whose code is stored in a database. Stored Procedures are similar, but they are not restricted to just Select statements (“Views, Functions, and Stored Procedures,” Module 06 Notes, *Randal Root*, IT FDN 130 A Accessed 5 March 2024).”

## Functions

There are many functions in SQL. Many of these functions perform manipulation of data by a single command after a Select function. Functions in this context allow you add in multiple select statements in addition to the one that you create, allowing you to manipulate the data you are creating in the view by using an additional function. You do this by adding in “Returns” and specifying the function while having the view can also use a function to return a single (scalar) value from a table.

## Stored Procedures

A stored procedure is similar, in that it is a SQL query that is used often. By creating it, saving it, and giving it a name, the query can be run using the EXEC command. A stored procedure can have one or many parameters.

# Summary

Views, functions, and stored procedures gave the user a great deal of flexibility. By being able to save complex select statements or queries under a more simple name, it reduces the amount of code that needs to be written in order to access data. It also allows the DBAs to restrict access to the underlying tables by creating a virtual table that is recreated every time with the most up-to-date data to approved users.