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IT FDN 130 A: Foundations of Databases & SQL Programming

Assignment 06

https://github.com/bestiems/DB-Foundations

SQL VIEWS

INTRODUCTION

SQL Views, Functions, and Stored Procedures are useful tools when selecting and using data from databases for reporting or other purposes.

WHEN TO USE A VIEW

A View is commonly used when the database administrator wishes to simplify complex Select statements. A View can be created with the built-in selection sources and logic and can be then used repeatedly later in the code by simply referring to the named View in a simple Select statement. This helps to simplify the code and eliminates redundant complex query writing.

Views can also be used to protect the base tables from unauthorized or accidental modification. Since a View is essentially a virtual table, it creates an abstraction layer between external users and programs, and the underlying tables. This also enables easier updating to the base tables and provides a consistent interface with the data in those base tables, which can be helpful when interacting with other external applications.

Similarly, Views allow the database administrator to allow certain users to see certain parts of the underlying data, without exposing or allowing access to all the data in the tables. This can be defined by user roles specified in the Views.

SIMILARITIES WITH FUNCTIONS AND STORED PROCEDURES

Views are similar with Functions and Stored Procedures in that they all contain pre-written logic that can be re-used throughout an SQL script. They all also help the database administrator to restrict or control which data is accessible to database users.

DIFFERENCES WITH FUNCTIONS AND STORED PROCEDURES

Unlike Views, which can only be used as Select statements, Stored Procedures are not restricted to just Select statements; they can contain other SQL actions such as Insert, Delete, and Update. Also, Views always return tables as the output, while Stored Procedures can return a variety of output.

Functions are also stored SQL logic objects, but they are used to transform or manipulate data, and the output is a calculation or output table of calculated values. They can be used in other SQL queries or statements. Functions are not used to update the underlying data in tables, rather they perform calculations on that data.

SUMMARY

Views are powerful SQL objects that have many practical uses for database administrators. They store SQL logic that can be used multiple times without re-writing complex Select code. They can also be used as an abstraction layer to restrict or protect the underlying base tables. Similarly, Functions and Stored Procedures are also objects that encapsulate pre-written SQL code that can be called upon, but each object has a unique role in SQL.