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IT Foundations of Database Management
Assignment 06

Creating Views with SQL

Introduction to This Week's Topics

In previous weeks we had explored creating, maintaining, and directly querying databases. With that work complete, we now are approaching our databases more holistically from a reporting perspective via Views in SQL. This functionality is essential as our database not only continues to grow in terms of stored data, but additionally through the number of users accessing the database. How these views work and when a user should implement them will be explored further below.

Documenting Module Knowledge

Questions for our consideration:

1. **Explain when you would use a SQL View.**
   Firstly, breaking down a SQL View, this is simply a stored SQL query that essentially acts as a virtual table since it is not directly storing rows and columns. Since we are referencing a virtual table versus a full database of stored data, a View comes in handy to speed along complex and longer queries (MOD06Notes.DOCX 2023, PG 2). Additionally, Views can permit access control to certain groups only to ensure data confidentially as needed, while still allowing some usability for greater database access. (MOD06Notes.DOCX 2023, PG 7).

2. **Explain are the differences and similarities between a View, Function, and Stored Procedure.**
   While a View creates the virtual tables that a user will reference, a function is the action that returns either single or multiple values from those tables. Functions additionally can be used with parameters to alter the results of a given query, unlike with a View. Similarly, Scalar Functions can be used to return a single (scalar) value as an expression (MOD06Notes.DOCX 2023, PG 11 - 13). Furthermore, Stored Procedures are multiple-step statements stored as a single named process for easy and repeatable execution. Though overall, all three concepts often can work in tandem together and implement similar functionality, such as Stored Procedures, Views, and Functions all essentially boiling down to being a named set of SQL statements (MOD06Notes.DOCX 2023, PG 15).

Summary

This week’s module challenged us to go beyond just direct, hands on functionality of our databases. While previously we had focused on designing, populating, and querying our databases, we now must consider more of the day-to-day use of our database. This is where Views come into play. As the questions and problems that we want to query from our databases grow, Views will become more essential to quickly package up these complex queries in easy to review “reports.” Additionally, as the users of a database grows from the creator to perhaps multiple individuals, Views become even more critical to provide levels of permissions on which users have access to certain datasets. Especially as more confidential data enters a particular database. Which in summary, highlights the importance of any SQL user understanding the basics of what Views are and when to implement them.