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Assignment 6- Views

Introduction

There are a number of different ways to save code to a database including the use of views, functions, and stored procedures. The use of these tools within sql allows users to save written code by storing it in database files as opposed to sql script text files. These tools can also be used to simplify complex code, increasing overall database efficiency and accessibility

Views

In general, views can be defined as saved select statements; they exist as virtual tables created by joining one or more tables through a query. Views are created using a unique name and a (simple or complex) select statement. These virtual tables are used as abstraction layers between the user and the original table and makes changing the database or original table design easier by hiding the working details of the rest of the system. There are different types of views (named for their different usages) such as basic/base views and reporting views. Base views represent the underlying table that is being queried while reporting views are used to extract data for reporting purposes. Unlike functions and stored procedures in SQL, views do not accept parameters and cannot influence how the data is sorted in the table (although there are some workarounds in SQL).

Functions and Stored Procedures

Functions, also known as "User Defined Functions" or UDFs, are computed values that can not permanently change the environment (insert or update will not work). UDFs work to either return a single, scalar value or to return a table of values. Unlike views, functions can accept parameters to modify the results of a query. Use of functions also help to increase code reusability, especially when repeatedly creating large scripts in SQL, and can be used inline in a statement unlike stored procedures.

Stored procedures are used in SQL as groups of transact statements that execute one plan. These statements efficiently reuse code since they are compiled once and then stored in a procedure that allows them to be executed with a single call. Depending on the procedural statement/s, input and output parameters, stored procedures can perform multiple operations.

Conclusion

Although similarities and differences between views, stored procedures, and functions determine the specific roles they play in database management, all these tools function to increase efficiency and accessibility. Abstraction layers and precompiled database queries also help to simplify complex code while improving the security and usability of database applications.