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Foundations of Databases and SQL Programming

Assignment 06

Views, Functions, Stored Procedures

# Introduction

In this document, I will discuss use of SQL Views, Functions, and Stored Procedures.

# Use of SQL Views

SQL Views are “virtual” tables that contains data from one or multiple tables - Views do not hold any data and do not exist physically in the database. One of the main advantages to using Views is that they allow SQL queries to be stored that can subsequently be used without having to write the code all over again. Views are also more secure because it is easier to control user access to the data contained in database tables by defining who can use the View and what data they can see. Finally, Views provide users with easy access to data and queries without having to write complex code – this is important for organizations where not everyone has a working knowledge of SQL programming. Figure 1 below shows an example of a simple View statement. Notice how Views are typically used to obtain data from a select number of columns within one or more tables. Furthermore, notice the use of “With Schemabinding” command, which protects the view from changes to the parent tables.

Graphical user interface, text, application

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**Figure 1: SQL Views**

# Views vs. Functions vs. Stored Procedures

Stored Procedures are simply stored queries, which can have parameters and allow users to choose which parts to execute or not with control logic. Stored Procedures can also create and destroy objects (e.g., change data) in the database and return any number of result sets. The main difference between Views and Stored Procedures is precisely the ability of the latter to change or alter data in the database, whereas Views restrict the ability to modify data (with some exceptions). User Defined Functions (UDFs) are similar than Views in that they limit the ability to make changes in the data. UDFs also must generally return a value, which is not the case for Views or Stored Procedures. Also, while Views are limited to a single SELECT statement, user-defined functions can have multiple SELECT statements and provide more powerful logic than is possible with Views. Figure 2 below shows examples of Stored Procedures and Functions.

Graphical user interface, text, application, email

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**Figure 2: Function and Stored Procedure**

# Conclusion

This paper provided a definition and overview of the SQL Views, Functions, and Stored Procedures. As noted in the descriptions, these SQL commands are powerful tools that make it easier for users to save or modify their queries to enhance the power and usefulness of relational databases.