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IT FDN 130 A

Assignment 06

https://github.com/UW2023/DBFoundations

SQL V/F/Ps

# Introduction

Views, functions and stored procedures are an important part of generating databases. They all have antonymous utilities, but can all be used to improve security, performance and create custom logic in the database.

# SQL Views

SQL views are used when there is a need to query a database in a more complex way than is possible with a single SQL statement. SQL views can be used to create a custom interface for querying data without modifying the underlying database schema or altering the data itself. Some common scenarios where SQL views may be used include:

1. To simplify complex queries (i.e., if a complex query needs to be executed frequently, it can be simplified by creating a SQL view that combines and organizes the data in a way that makes it easier to query)
2. To provide read-only access to sensitive data (i.e., creating a subset of data from a table that does not contain sensitive information, for when users need to access the data but should not be able to see certain attributes such as social security numbers or other personal information)
3. To improve application performance (i.e., SQL views can be used to pre-join tables and perform calculations ahead of time, which can improve application performance by reducing the amount of processing time needed to generate a report)
4. To keep data consistent (i.e., SQL views can be used to ensure that data is being used in a consistent manner by creating a standardized view of the data that all users can access)

# Views, Functions and Stored Procedures

Views, Functions, and Stored Procedures are database objects that are used to simplify database management, increase security, and improve performance. Similarities and differences are discussed below:

Similarities:

1. All these database objects can be created using SQL commands.
2. They can be used to implement business logic and improve database performance.
3. They can improve database security as they allow data access only to authorized users.

Differences:

1. View:
   1. A view is a virtual table that is created using a SELECT statement.
   2. It provides a logical representation of data from multiple tables or views.
   3. Views can be used to simplify complex queries, hide confidential data from unauthorized users, and reduce the amount of data returned to the client.
   4. Views do not accept parameters.
2. Function:
   1. A function is a database object that returns a single value or a table.
   2. It can accept parameters and operate on them to generate a result.
   3. User-defined functions can be created to customize the functionality of the database system.
   4. Functions can be used in queries as expressions.
3. Stored Procedure:
   1. A stored procedure is a precompiled set of SQL statements.
   2. The stored procedure can accept parameters and execute a set of SQL statements.
   3. Stored procedures can be used to encapsulate business logic, reduce network traffic, and improve performance.
   4. Stored procedures can also be used for batch processing and transaction management.

# Summary

In summary, a view is a virtual table, a function is a database object that returns a single value or a table, and a stored procedure is a set of precompiled SQL statements. They are all used to improve database functionality for end users.

Chat-GPT, May 2023, chat-gpt.org/chat: Aspects of this assignment were informed and created by queries I submitted to Chat-GPT.