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Assignment 06

https://github.com/adearing27/DBFoundations

SQL Views

# Introduction

SQL views present information from databases but restrict access to changing data depending on the user accessing the database. This helps to maintain data integrity while allowing users to view data from their chosen tables or databases.

## When A SQL View Would Be Used

SQL views are used for several reasons. It does not store data but provides a way to simplify complex queries, enhance security, and improve maintainability. Views simplify complex queries and can capture queries involving multiple joins, aggregations and subqueries. Once the view is created, only the coding for viewing the view is needed, not all the underlying coding for the query. This allows for the abstracting or hiding of complex database schema from users. Views can limit the exposure of sensitive data to other users of the database by only granting access to the view rather than the complete database. Views are also much easier to update as rules change for the database without updating multiple queries.

## Similarities and Differences between Views, Functions, and Stored Procedures

SQL views, functions, and stored procedures have similar and different uses when coding for a database. Views create a virtual table based on a select query, while a function is a reusable code block that returns a single value or table, and a stored procedure is a code block used for a specific task or operation. Views are used for simplification, functions are used for calculations, and stored procedures execute multiple SQL statements. None of them store data, but functions and stored procedures can manipulate data pulled from a database. While views and functions return a single set or scalar value, stored functions do not have a direct returned value. Views do not accept parameters, functions accept input parameters, and stored functions accept input and output parameters. The similarities are that all are reusable, all assist in the abstraction of sensitive data, all can introduce dependencies in database structures and changes that need to be carefully managed, and all allow for security through managing user permissions.

# Summary

Views are a subset of select coding that creates a specific value returned or table. They are helpful when multiple users are accessing a database, but not all users should view all data due to sensitivity or security. Views can restrict access to viewing or changing data. Views are a more simplified version of SQL functions and stored procedures and are most important for simplifying.