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Course Name: IT FDN 130 A Wi 25: Foundations Of Databases & SQL Programming

GitHub Repo: https://github.com/maxxyb33/DBFoundations

Assignment 06 – Views

Introduction

SQL provides various tools to manage and manipulate data efficiently. Among these, Views, Functions, and Stored Procedures offer different ways to streamline queries, enhance security, and improve performance. Understanding their use cases and differences helps in designing optimized database solutions.

Topic

1. ***Explain when you would use a SQL View.***

SQL Views are useful when you need to simplify complex queries by storing them as a virtual table, allowing users to retrieve data without needing to write long SQL statements repeatedly, and storing them in the database. Views also enhance security by restricting access to specific columns or rows in a table, ensuring users can only see the necessary data. They can also be used to partition data by certain rows.

2. ***Explain are the differences and similarities between a View, Function, and Stored Procedure.***

A View is a virtual table that stores a SQL query result but does not store data itself. It simplifies complex queries and enhances security by restricting data access.

A Function is a reusable SQL code that returns a single value or table and is often used for calculations or transformations. Functions must return a value and cannot modify database state. They consist of arguments which feed into parameters.

A Stored Procedure is a set of SQL statements that perform operations like modifying data, executing multiple queries, and can manipulate databases unlike functions.

All three improve code reusability and performance optimization. However, views are read-only, functions return values, and stored procedures perform broader database operations.

Summary

Each of these SQL components serves a unique purpose in database management. Views simplify data retrieval, functions provide reusable logic, and stored procedures execute complex operations. Leveraging them effectively can improve database efficiency, security, and maintainability.

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