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Title: Understanding SQL Views, Functions, and Stored Procedures

# Introduction:

In the world of databases, SQL provides tools like Views, Functions, and Stored Procedures to manage data efficiently. This document explains when to use each and how they differ.

## SQL Views:

A SQL View is a virtual table generated from a stored SQL query. It does not store data itself but rather provides a dynamic, up-to-date representation of data retrieved from one or more underlying tables. Views are particularly useful for simplifying complex queries, enhancing data security by restricting access to specific columns or rows, and promoting data abstraction by presenting a tailored perspective of the database to users or applications. They are employed when there is a need for frequent access to subsets of data, or when certain data transformations or joins need to be consistently applied across different queries.

## Differences and Similarities:

Views, Functions, and Stored Procedures are all database objects in SQL, but they serve distinct purposes:

* Views: Provide a virtual table for data retrieval and manipulation, offering a simplified and customized perspective of the underlying data.
* Functions: Are reusable blocks of SQL code that accept input parameters, perform calculations or operations, and return a single value. They are primarily used to encapsulate logic for calculations or data transformations.
* Stored Procedures: Are precompiled sets of SQL statements that can perform multiple operations, including data manipulation, transaction control, and business logic implementation. They can accept input parameters and return multiple result sets.

While Views and Functions focus on data retrieval and manipulation, Stored Procedures are more versatile, encompassing a broader range of functionalities including data modification and procedural logic execution. However, all three constructs promote code reusability, encapsulation of logic, and enhanced maintainability of the database.

# Summary:

Understanding Views, Functions, and Stored Procedures empowers effective database management, enabling streamlined data handling and application development.