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**Course:** Foundations Of Database & SQL Programming

**Assignment 6**



*Introduction*

SQL views are powerful tools used to focus, simplify, and customize the perception each user has of a database. They serve multiple purposes like serving as a security layer by controlling access to tables and maintain backward compatibility, enhancing performance, and facilitating data organization.

Views, functions, and stored procedures are fundamental components in database management, each serving distinct purposes yet sharing certain similarities explained in the following paragraphs.

When would you use a SQL View?

When it is necessary to focus, simplify, and customize the perception each user has of the database. It is also used as a security mechanism by letting users access data through the view, without granting the users permission to directly access the underlying base tables of the views.

Views can offer a solution for maintaining backward compatibility by emulating a previously existing table with an altered schema. They are also handy for enhancing performance and organizing data when transferring data from SQL.

Another benefit to use Views is to aggregate and transform data in a way that makes it easier to analyze and understand.

What are the differences and Similarities of:

**View** is a virtual table whose contents are defined by a query.

**Functions** are programs that database management software runs across a database to perform operations on data or database objects. It means that functions can manipulate data or database schema, or return data from a database, along with the actions they perform.

**Store Procedure** is a prepare SQL code that you can save. Then, the code can be reuse repeatedly. Also, it is possible to pass parameters to a store procedure, so that the stored procedure can act based on the parameter value that is passed.

**Similarities** between views and store procedure are that both are SQL objects that can store and execute queries. Also, accept parameters and use variables, but stored procedures can also use control flow statements, such as IF, WHILE, or CASE.

**Differences** between Store Procedure and Function are that Store Procedure take no parameters, can modify database objects, and need not return results. While Function can only have INPUT Parameters, whereas procedures can have either Input or Output parameters.

Procedures cannot be used in SELECT statements, but functions can be embedded in SELECT Statements.

*Summary*

A SQL view serves multiple purposes, including simplifying complex queries, enhancing security by limiting direct table access, and maintaining compatibility. It aggregates and transform data for easier analysis and offers performance benefits during data. On the other hand, functions and stored procedures offer distinct functionalities. For instance, both are database objects that contain a set of SQL statements to accomplish a task. In many respects, they are different from each other. However, views and stored procedures share similarities such as storing and executing queries, accepting parameters, and using variables.

*Reference*

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