**Foundations of Databases and SQL Programming (IT FDN 130 A)**

**Author:** Vamsi Krishna Kancharla

**Assignment 05: Views**

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**Introduction:**

This paper will describe all about Views, Functions and Stored Procedures in SQL Server and how they can be useful to slice and dice tables of any size and be utilized for reporting and analysis purpose.

1. Explain when you would use a SQL View:

A VIEW is a virtual table that contains data from one or multiple tables. It does not hold any data and does not exist physically in the database. Like a SQL table, the view name should be unique in a database, contains a set of predefined SQL queries to fetch data from the database. It can contain database tables from single or multiple databases as well. It is often helpful to slice larger tables into smaller ones and restrict access to everyone to a table and keep data confidential. View can also help by providing them the exact set of data required and from running longer queries by multiple users on a table which can slow down server and reduce database optimization. It does not require any storage in a database because it does not exist physically.

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

**View:** As described above, VIEW is a virtual table with no physical presence in the database and does not take any memory space. It can provide a level of isolation and security by hiding sensitive columns from the underlying tables.

**Functions:** A function has a return type and return value. User defined functions has limitations but also helpful to reuse. Cannot perform DML operation inside user defined functions. Usually only SELECT queries are allowed in functions.

**Stored Procedure:** A procedure returns values using the output parameters. DML operations such as Insert, Update and Delete can be performed in stored procedures. Functions can be called from a stored procedure. They can contain several statements like IF ELSE, CASE statements, can perform modifications to one or several tables and databases.

**Conclusion:**  I have enjoyed creating Views and writing select queries with multiple joins from several tables and learning how powerful views can be in protecting data and also help in database performance.