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February 22, 2023  
IT FDN 130A  
Assignment 06  
GITHUB: <https://github.com/dlgiroux/DBFoundations>

## SQL Views, Functions, and Stored Procedures

### Introduction

SQL Views are virtual tables that can be very useful for users of databases. View, Functions, and Stored Procedures are all very similar but each has its own place in SQL Programming.

### When to Use a SQL View

SQL Views are a tool for writing complex code and saving it within the database for repeated use. The data that a view returns are not saved on the hard drive. The data isn't stored, but rather the query is stored. Base views are a good added layer of security for your database because they can prevent mistakes from occurring within your actual database. Users can access the data through the view but will not have actual access to the database itself. Views are also customizable so that you can create many views for many types of users and only show them the information that is most important to them. The view can be an exact replica of a table or tables or it can be customized accordingly. Also, when data changes within your database, the view will represent those changes and show the most current version of the query results.

Here is an example of a SQL view created from a query of the table Products:

```
CREATE VIEW vProducts
AS
SELECT ProductID, ProductName, CategoryID, UnitPrice
FROM dbo.Products;
go
```

### Views, Functions, and Stored Procedures

Functions and Stored Procedures in SQL programming are similar to views in that they are also stored within a database for repeated use. Functions, or user defined functions (UDFs) are more than just queries; they can be any type of action that then returns results. UDFs can also accept parameters whereas views cannot. Stored Procedures are a bit more complex than a view in that they are groups of statements that can be executed and not necessarily a simple virtual table like a view. Functions and stored procedures are very similar as well; however, stored procedures do not require parameters, do not need to return a result like a function, and

can modify database objects, which functions and views cannot. Functions are used more for calculating information and stored procedures are used to perform tasks.

## Summary

While views, functions, and stored procedures have some basic similarities, they each perform their own specific tasks within the SQL world.