

SQL Views

I. Introduction

This article explores SQL Views and their usefulness in designing sound SQL script. This article also compares and contrasts View, Function, and Stored Procedure queries.

II. SQL View

Views are essentially named Select statements¹, allowing us to save a particular statement of code and have the ability to restrict access. Restricting database is an important feature to have in case you do not want everyone on your team or the public to be altering your database or using it for purposes other than what you have defined. This is where Views are very helpful; by creating a view, you can restrict access to your database while allowing general access to the View, therefore shrinking the risk of data being misused or table being altered. Views are also useful when you want to call a set of data repetitively and can cutback on code a lot by having your named view be a well-named and not having so many characters. In a way, a View can be thought of as a mathematical function e.g. $f(x)$, where the View is the function $f(x)$ which is much shorter than typing out the entirety of $f(x)$ which could be a very long function. Having a view allows you to quickly call a table, alter data, and cutback on time spent re-writing code.

III. Views, Function, and Stored Procedure.

Views are essentially stored Select statements, making them a function. However, Function in SQL is a little different than a SQL View in that Function allows you to alter the parameters to changes the results² of the query in SQL. There are different kinds of functions, such as Scalar Functions, Functions with Parameters³, etc. and all Functions are powerful if used correctly. It would be like comparing Apples to Oranges if one were to say a Function is more powerful than a View, but Views are static while Functions are dynamic and Function -meaning that Function is readily altered. A Stored Procedure is a named set of SQL statements⁴. Stored procedures are not as particular as a View and do not need to store Functions necessarily⁵. You

¹ Root, Randal, *Creating Views Functions and Stored Procedures Part 1*, at 00:02:00, IT FDN 130 A Au 21: Foundations Of Databases & SQL Programming

University of Washington 2021, Link to External Website: <https://youtu.be/1RsJmERUSyM>.

² Root, Randal, *Module 06 Notes*, 12, Module 6, IT FDN 130 A Au 21: Foundations Of Databases & SQL Programming, University of Washington 2021

³ Id. at 13

⁴ Root, Randal, *Creating Views Functions and Stored Procedures Part 4*, at 00:00:08, IT FDN 130 A Au 21: Foundations Of Databases & SQL Programming

University of Washington 2021, Link to External Website: <https://youtu.be/1RsJmERUSyM>.

⁵ Id. at 00:00:40

Assignment 6: SQL Views

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11/22/2021

IT FDN 130 A Au 21: Foundations Of Databases & SQL Programming

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GitHub Code for Module 06 (Link to External Site): <https://github.com/Makhlutha/DBFoundations>

do not Select from a stored procedure⁶ (as you would with a Function or View) rather, you execute the code rather than treating it as a table⁷. You can NEVER select from a stored procedure⁸. A Function evaluates *into a table*, but a Stored Procedure does *not* evaluate into anything⁹ -it evaluates as by executing the code. There can also be many statements in the Stored Procedure that are not limited to Select statements like a View is.

IV. Summary

Views, Functions, and Stored Procedures are all very powerful SQL queries that allow for varying levels of alterability of code, and are unique in what instances they should be used in. There are times when you could use one in place of the other, but in designing the code you should ensure that whichever you decide to use, it makes the most sense for what your goals are. Being strategic and realizing what each process is best used for is important, for example, do you expect to need to alter parameters of your code? Use a Function in place of View. Do you not need to build a table but rather have a series of different statements that you will want to execute recursively? Then consider using a Stored Procedure rather than a View or a Function. All three are powerful but should be used with attention to best practice when it comes to designing concise code.

⁶ Id. at 00:01:14

^{7 7} Id. at 00:01:30

^{8 8} Id. at 00:01:42

^{9 9} Id. at 00:03:05