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<https://github.com/MSandoval11/DBFoundations>

Views, Functions, and Stored Procedures

Introduction

SQL databases can contain large amounts of data, and often Select statements used to query databases are very long or used often. Fortunately, there are many ways to more easily Select report data from a SQL database.

SQL View

Views provide an abstraction layer that allows users to visualize and manipulate the data without directly interacting with it. When using a view, a user cannot modify the actual data content. All tables should have a Base View, which shows the data in that table. This View can then be used to restrict access to the table but users can utilize the view for querying. A specific view can be easily run using a `SELECT * FROM ViewA` statement. This means that a user does not need extensive programming knowledge to run a View. Views can utilize a Where clause, allowing data to be partitioned by row. Columns can also be partitioned by selecting specific columns when creating the View. Security measures may need to be put in place so that data is imported, updated, and deleted by those who have the right permissions and knowledge. A user can be denied using a particular View in order to protect sensitive information. A View can also be bound to a table so a user cannot make any changes to a table that would cause a disruption in the View.

View, Functions, and Stored Procedures

Both Views and Functions are saved Select statements. Functions come in two categories: return a table of values, or return one value. Functions can use parameters to specify results of a query. Functionally, a Stored Procedure is similar to a View and a Function because they are also a named set of SQL statements. When using a Stored Procedure, the user does not select from tables, but instead directly runs the code of the Stored Procedure. A Stored Procedure is Executed in order to report the data. Stored Procedures are not restricted to Select statements, as Views and Functions are.

Summary

Views, Functions, and Stored Procedures are all methods of reporting data from a SQL database. Each has its own properties that can uniquely fit the needs of the end user.

Citations

1. "Creating Views Functions And Stored Procedures Part 1". Randal Root.
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2. "Creating Views Functions And Stored Procedures Part 2". Randal Root.
<https://www.youtube.com/watch?v=2kDyLrVH5iY&list=PLfycUyp06LG8cefs0gA38wO7nFrRjD5Ad&index=3>. (Links to external site).
3. "Creating Views Functions And Stored Procedures Part 3". Randal Root.
<https://www.youtube.com/watch?v=wdMk2YG2sBo&list=PLfycUyp06LG8cefs0gA38wO7nFrRjD5Ad&index=4>. (Links to external site).
4. "SQL - Using Views." <https://www.tutorialspoint.com/sql/sql-using-views.htm> (Links to external site).