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Assignment 06

https://github.com/AmyBo1123/DBFoundations

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

Views

# Introduction to views

Information in databases is stored in tables but the process for joining and accessing data across tables can be laborious. Creating views, functions, and stored procedures expedites the retrieval of data by setting up defined code to access commonly needed views.

# Creating SQL Views

SQL Views are created to extract data from one or more tables using a standard set of statements. Creating the view means defining the following parameters:

* Select: Select the columns from the tables or views
* From: Source table to start the join
* Join type
* On: the shared value across tables that allows for the connection

Once a SQL View is created, a very simple Select statement which accesses that view can be used to retrieve results, rather than having to write out the entire statement. Views, by definition, do not allow for additional definition of how data is sorted. However, the views can be written in a way to allow for horizontal or vertical partitioning to read the outputs more easily.

# Views, Functions, and Stored Procedures

There are multiple types of preconfigured code that can be used to access data in SQL. In general, views are considered the simplest and so the best practice is to limit creation to views where possible.

* Views behave as essentially a virtual table. Defining characteristics include:
  + They have a single SELECT query
  + They store no data and do not modify the underlying tables.
  + They can only configure output data using basic WHERE parameters.
  + They can be used to build larger queries or functions
* Functions behave very much like views, but users can define parameters to further limit the returned data. Similarly, functions do not modify underlying tables, but they can be used to build larger queries.
* Stored procedures are a slightly broader set of SQL statements. In comparison to views, stored procedures:
  + Can contain multiple statements
  + Can be used to modify tables
  + Do accept parameters
  + Cannot be used as building blocks as they are self-contained units of code

# Summary

Creating views, functions, and stored procedures is a more efficient way of accessing common data queries.