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Course: Foundation of Database and SQL Programming

Assignment 06: Creating Views in SQL

Introduction

In this module we learned about how to create views and the benefits of using a view. A view is a feature in SQL that allows you to create a table based on a SQL query that refers to another table in the database. This is a convenient way to get the desired data for a different number of reasons: simplicity, security, clarification, and much more. It is essential and recommended to be able to apply this feature efficiently.

1. ***Explain when you would use a SQL View.***

The main beauty of a view is that it can be used like a table in most situations, but unlike a table, it can encapsulate very complex calculations and commonly used joins. It can also use pretty much any object in the db except for stored procedures. Views are most useful when you always need to join the same set of tables say an Order with an Order Detail to get summary calculation fields etc. Therefore, the purpose and benefit of creating a view will be listed below:

- Security - Views can be made accessible to users while the underlying tables are not directly accessible. This allows the database to give users only the data they need, while protecting other data in the same table.
- Simplicity - Views can be used to hide and reuse complex queries.
- Column Name Simplification or Clarification - Views can be used to provide aliases on column names to make them more memorable and/or meaningful.
- Stepping Stone - Views can provide a stepping stone in a "multi-level" query.

In the picture below is a visible representation of what it is to create view using the tables from this module.

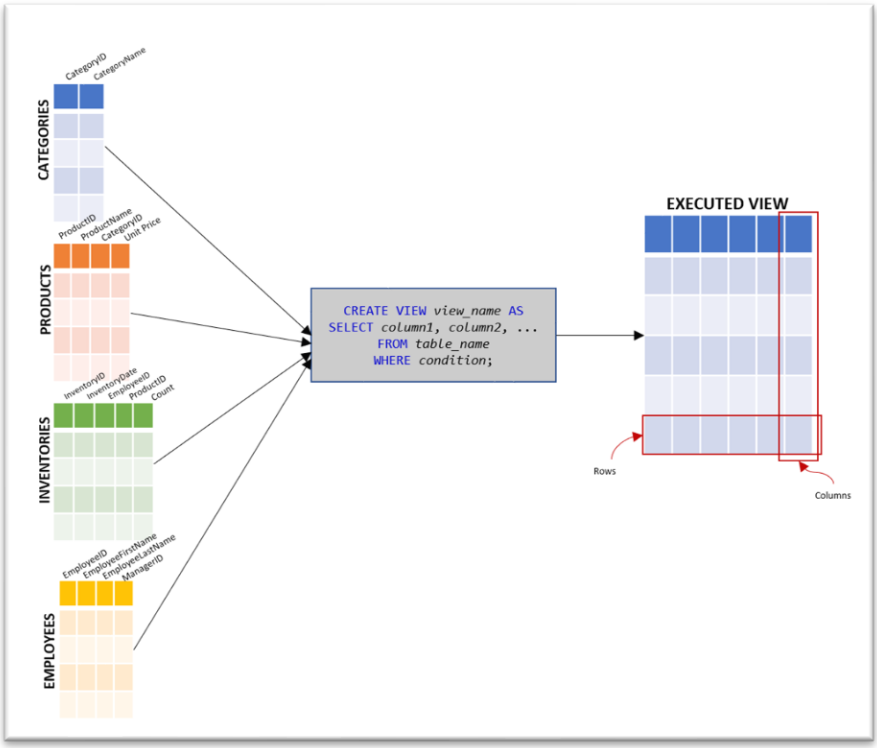

Image 1: Visual of Creating a view for Categories, Products, Inventories and Employees.

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

A View have different characteristics that differ from a Stored procedure, for example: views does not accept parameters, a view can be used as a building block in large query, a view can contain only one single SELECT query, a view cannot perform modifications to any table and a view can be used as the target for INSERT, UPDATE, DELETE queries. For instance, a Stored Procedure can accept parameters, cannot be used as a building block in large query, can contain several statement like if, else, etc. A Stored Procedure can perform modifications to one or several tables and finally stored procedures can not be used as the target for INSERT, UPDATE, DELETE queries.

For stored Procedures and Function the difference is that stored procedures can return zero or N values, they can work with INSERT, UPDATE, DELETE, SELECT, statements, they can use functions inside the stored procedure, error handing is possible using TRY CATCH, transaction are possible and stored procedures can be called by using exec followed by stored procedure name. A function can return single values, function only works with SELECT statements, and error handling not possible using try catch.

The similarities between stored procedure and a function is that both are database queries that contain a set of SQL statements to accomplish a task. Also, a procedure and a function are a block of code to perform a task and return values.

The similarities between a view and a function is that functions and views can be updated, they can contain multiple statements. Also, views are similar to inline table valued function, because they allow you centralize a query in an object that can be easily called from other queries.

Conclusion

In this module we learn to create views and how similar they can when using SELECT. Creating a table has their own perks as they can serve to protect a query that already has been created or make it simpler. Also, it can help to limit the access or view to certain data to the public, by allowing you to filter who can and cannot be allowed to watch your information.