Assignment 4

1. View is a result set of a query that can be queried like a normal table but is not stored as part of the database schema. Instead, it is a virtual table that extract data from its underlying database tables. Because of this, views reflect the most updated changes in the underlying table or tables upon each request. The benefits of views allow abstraction by hiding the complexity and partitioning of the underlying table, join and simplify multiple tables, has less space complexity as it uses references to the underlying tables, and can act as aggregated tables.
2. Sql server does allow underlying base tables of a view to be modified through the view. Though it is generally bad practice as it can lead to unexpected cascading behavior when underlying base tables have multiple triggers.
3. Stored procedure contains one or more Transact-SQL stored as an object in the SQL server database. The benefit of stored procedure allows faster calls from web server to database server by sending less information to retrieve the result set, easy to call, supports update, delete, insert, and select statements, and due to the nature of store procedure being pre-compiled, it provides security against sql injection.
4. A view is a table whereas a stored procedure is an Transact-SQL stored as an object. Because of this difference, stored procedure may take parameters whereas views cannot. Another difference is when to use view vs stored procedure. Though both can support Update-Insert-Delete-Select statements, it is generally good practice to use stored procedure for update-insert-delete statements and views for select statements.
5. The notable difference between function and stored procedure is why they are used. Stored procedure is a good fit for use for insert-update-delete statements. Functions are good fit for use when calculations are needed.
6. Stored procedure cannot strictly *return* values that are not an int datatype. Store procedure, however, can output a result set but not multiple result sets.
7. Stored procedure can be used as part of select statement if the stored procedure outputs a result set. This would be classified as a co-related subquery as a subquery is used in the select clause which is also the reason why its allowed.
8. Triggers are special type of stored procedure that automatically executes when an event happens. There are DDL triggers which requires admin level rights to create and 4 sub-types of DML triggers. They are update, instead, delete, and insert triggers.
9. Triggers are used to ensure integrity of the database through cascading updates and deletes, main audit record of changes, and to implement business rules. One example scenario is given the tables of productsInStock and productSale. When products are sold, productInStock table would need to reflect that change.
10. Since trigger is a special type of stored procedure, it implies that triggers are a subset of stored procedure. The only difference is that triggers cannot be implicitly fired whereas stored procedure can be called implicitly.

Queries

Below is code snipper for questions 1-3



Below is code snippet for Question 4 & 5



Question 6



Question 7





Question 8



Question 9





Question 10



The image:

A screenshot of a computer

Description automatically generated with medium confidence

Question 11



Question 12

One of the methods to check if two tables are identical is using checksum store procedure. This does not always work as it lacks comparison for some datatypes. The best way, though inefficient, would be to union all both tables. If it is successful, at the very least the columns match in datatypes. The next step would be to add an additional column expression of type int with the value of 1 named “Num”. You can use count or sum aggregate function on the column of “Num” and group it by ALL the columns in the table. Then check and make sure that the new column only has the number 2. This method will fail if the table being used does not have primary key.