Assignment Day4 –SQL: Comprehensive practice

Answer following questions

1. What is View? What are the benefits of using views?

   View is a virtual table, but it contains no data but all reference so that it can control the access to the data.

2. Can data be modified through views?

   No, you cannot modify the data in the view directly.

3. What is stored procedure and what are the benefits of using it?

   A stored procedure is a set of statements with an assigned name, it can be reused and share by multiple programs. It provides better performance

4. What is the difference between view and stored procedure?

   It provides better

5. What is the difference between stored procedure and functions?

   The biggest difference is that SP can be used in both SELECT and other DML statement, but functions (UDF) can only be used in SELECT statement. The function must return a value but in Stored Procedure it is optional. Even a procedure can return zero or n values. Functions can have only input parameters for it whereas Procedures can have input or output parameters. Functions can be called from Procedure whereas Procedures cannot be called from a Function

6. Can stored procedure return multiple result sets?

   Yes, most stored procedures return multiple result sets.

7. Can stored procedure be executed as part of SELECT Statement? Why?

   SP can have select statements as well as DML statements such as insert, update, delete etc but we can not call a stored procedure in a SELECT statement.

8. What is Trigger? What types of Triggers are there?

   Triggers are a special type of stored procedure that get executed (fired) when a specific event happens. When such an SQL operation is executed, the trigger is said to have been activated. Triggers are optional and are defined using the CREATE TRIGGER statement.

9. What are the scenarios to use Triggers?

   - Enforce Integrity beyond simple Referential Integrity
   - Implement business rules
   - Maintain audit record of changes
   - Accomplish cascading updates and deletes

10. What is the difference between Trigger and Stored Procedure?

A stored procedure is a user defined piece of code written in the local version of SQL, which may return a value (making it a function) that is invoked by calling it explicitly.

A trigger is a stored procedure that runs automatically when various events happen (eg update, insert, delete)

Write queries for following scenarios

Use Northwind database. All questions are based on assumptions described by the Database Diagram sent to you yesterday. When inserting, make up info if necessary. Write query for each step. Do not use IDE. BE CAREFUL WHEN DELETING DATA OR DROPPING TABLE.

1. Lock tables Region, Territories, EmployeeTerritories and Employees. Insert following information into the database. In case of an error, no changes should be made to DB.
   a. A new region called "Middle Earth";
   b. A new territory called "Gondor", belongs to region "Middle Earth";
   c. A new employee "Aragorn King" who's territory is "Gondor".
2. Change territory "Gondor" to "Arnor".
3. Delete Region "Middle Earth". (tip: remove referenced data first) (Caution: do not forget WHERE or you will delete everything.) In case of an error, no changes should be made to DB. Unlock the tables mentioned in question 1.
4. Create a view named "view_product_order_[your_last_name]", list all products and total ordered quantity for that product.
5. Create a stored procedure "sp_product_order_quantity_[your_last_name]" that accept product id as an input and total quantities of order as output parameter.
6. Create a stored procedure "sp_product_order_city_[your_last_name]" that accept product name as an input and top 5 cities that ordered most that product combined with the total quantity of that product ordered from that city as output.
7. Lock tables Region, Territories, EmployeeTerritories and Employees. Create a stored procedure "sp_move_employees_[your_last_name]" that automatically find all employees in territory "Tory"; if more than 0 found, insert a new territory "Stevens Point" of region "North" to the database, and then move those employees to "Stevens Point".
8. Create a trigger that when there are more than 100 employees in territory "Stevens Point", move them back to Troy. (After test your code,) remove the trigger. Move those employees back to "Troy", if any. Unlock the tables.
9. Create 2 new tables "people_your_last_name" "city_your_last_name". City table has two records: {Id:1, City: Seattle}, {Id:2, City: Green Bay}. People has three records: {id:1, Name: Aaron Rodgers, City: 2}, {id:2, Name: Russell Wilson, City:1}, {Id: 3, Name: Jody Nelson, City:2}. Remove city of Seattle. If there was anyone from Seattle, put them into a new city "Madison". Create a view "Packers_your_name" lists all people from Green Bay. If any error occurred, no changes should be made to DB. (after test) Drop both tables and view.

10. Create a stored procedure "sp_birthday_employees_[you_last_name]" that creates a new table "birthday_employees_your_last_name" and fill it with all employees that have a birthday on Feb. (Make a screen shot) drop the table. Employee table should not be affected.

11. Create a stored procedure named "sp_your_last_name_1" that returns all cites that have at least 2 customers who have bought no or only one kind of product. Create a stored procedure named "sp_your_last_name_2" that returns the same but using a different approach. (sub-query and no-sub-query).

12. How do you make sure two tables have the same data?

14.

First Name	Last Name	Middle Name
John	Green	
Mike	White	M

Output should be

Full Name
John Green
Mike White M.

Note: There is a dot after M when you output.

15.

Student	Marks	Sex
Ci	70	F
Bob	80	M
Li	90	F
Mi	95	M

Find the top marks of Female students.

If there are to students have the max score, only output one.

16.

Student	Marks	Sex
Li	90	F
Ci	70	F
Mi	95	M

Bob	80	M

How do you out put this?

GOOD LUCK.