Assignment Day3 –SQL: Comprehensive practice

# Answer following questions

1. In SQL Server, assuming you can find the result by using both joins and subqueries, which one would you prefer to use and why?
   1. Join as it has better processing
2. What is CTE and when to use it?
   1. Common table expression – use with subquery to be more organized and in recursion
3. What are Table Variables? What is their scope and where are they created in SQL Server?
   1. A local variable that stores data temporarily. It scope is that it can only be used in the batch that it is declared in
4. What is the difference between DELETE and TRUNCATE? Which one will have better performance and why?
   1. DELETE remove specific row, TRUNCATE remove all rows on the table
5. What is Identity column? How does DELETE and TRUNCATE affect it?
   1. The collum that has a unique value for that row used to identify its place in the table. DELETE does not reset how value in identify column is selected . TRUNCATE does reset
6. What is difference between “delete from table\_name” and “truncate table table\_name”?
   1. “delete from table\_name” delete specific row on the table .“truncate table table\_name” resets the entire table

# Write queries for following scenarios

All scenarios are based on Database NORTHWND.

1. List all cities that have both Employees and Customers.
2. List all cities that have Customers but no Employee.
   1. Use sub-query
   2. Do not use sub-query
3. List all products and their total order quantities throughout all orders.
4. List all Customer Cities and total products ordered by that city.
5. List all Customer Cities that have at least two customers.
   1. Use union
   2. Use sub-query and no union
6. List all Customer Cities that have ordered at least two different kinds of products.
7. List all Customers who have ordered products, but have the ‘ship city’ on the order different from their own customer cities.
8. List 5 most popular products, their average price, and the customer city that ordered most quantity of it.
9. List all cities that have never ordered something but we have employees there.
   1. Use sub-query
   2. Do not use sub-query
10. List one city, if exists, that is the city from where the employee sold most orders (not the product quantity) is, and also the city of most total quantity of products ordered from. (tip: join sub-query)

11. How do you remove the duplicates record of a table?

12. Sample table to be used for solutions below- Employee (empid integer, mgrid integer, deptid integer, salary money) Dept (deptid integer, deptname varchar(20))

Find employees who do not manage anybody.

13. Find departments that have maximum number of employees. (solution should consider scenario having more than 1 departments that have maximum number of employees). Result should only have - deptname, count of employees sorted by deptname.

14. Find top 3 employees (salary based) in every department. Result should have deptname, empid, salary sorted by deptname and then employee with high to low salary.

GOOD LUCK.