Assignment Day2 –SQL: Comprehensive practice

# Answer following questions

1. What is a result set?

* SQL result set is a set of rows from a database, as well as metadata about the query such as the column names and types and sizes of each column.

1. What is the difference between Union and Union All?

* Both Union and Union All are for concatenate 2 tables vertically.
  + Union combines the result set only with distinct value
  + Union All combines the result set that allows duplicated values

1. What are the other Set Operators SQL Server has?
   * Intersect
   * Except
2. What is the difference between Union and Join?

* Main difference between Union and Join is combines data from many tables based on a matched condition between them and combines the data into new column, where Union combines two or more of the result set into new rows.

1. What is the difference between INNER JOIN and FULL JOIN?
   * Inner join focuses on the commonality between two tables
   * Full join returns a set of rows that includes Inner Join would return and also includes other rows which no corresponding match is found in the other table.
2. What is difference between left join and outer join
   * Left join would return all data of table 1 but only corresponding data from table 2
   * Outer join would return all data of table 1 and table 2
3. What is cross join?

* Cross Join is used to generate a paired combination of each row of the first table of the second table. It also is called cartesian join.

1. What is the difference between WHERE clause and HAVING clause?
   * WHERE clause cannot contain aggregation function and WHERE is used before GROUP BY clause
   * HAVING clause can contain aggregation function and it cannot be used without GROUP BY clause
2. Can there be multiple group by columns?

* Yes. Group By single column means to place all the rows with same value of only that particular column in one group.

Group by multiple columns, for example, GROUP BY col1, col2, this means to place all the rows with same values of both columns col1 and col2 in one group.

# Write queries for following scenarios

1. How many products can you find in the Production.Product table?
2. Write a query that retrieves the number of products in the Production.Product table that are included in a subcategory. The rows that have NULL in column ProductSubcategoryID are considered to not be a part of any subcategory.
3. How many Products reside in each SubCategory? Write a query to display the results with the following titles.

ProductSubcategoryID CountedProducts

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1. How many products that do not have a product subcategory.
2. Write a query to list the sum of products quantity in the Production.ProductInventory table.
3. Write a query to list the sum of products in the Production.ProductInventory table and LocationID set to 40 and limit the result to include just summarized quantities less than 100.

ProductID TheSum

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1. Write a query to list the sum of products with the shelf information in the Production.ProductInventory table and LocationID set to 40 and limit the result to include just summarized quantities less than 100

Shelf ProductID TheSum

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1. Write the query to list the average quantity for products where column LocationID has the value of 10 from the table Production.ProductInventory table.
2. Write query to see the average quantity of products by shelf from the table Production.ProductInventory

ProductID Shelf TheAvg

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1. Write query to see the average quantity of products by shelf excluding rows that has the value of N/A in the column Shelf from the table Production.ProductInventory

ProductID Shelf TheAvg

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1. List the members (rows) and average list price in the Production.Product table. This should be grouped independently over the Color and the Class column. Exclude the rows where Color or Class are null.

Color Class TheCount AvgPrice

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**Joins:**

1. Write a query that lists the country and province names from person. CountryRegion and person. StateProvince tables. Join them and produce a result set similar to the following.

Country Province

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1. Write a query that lists the country and province names from person. CountryRegion and person. StateProvince tables and list the countries filter them by Germany and Canada. Join them and produce a result set similar to the following.

Country Province

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**Using Northwnd Database: (Use aliases for all the Joins)**

1. List all Products that has been sold at least once in last 25 years.
2. List top 5 locations (Zip Code) where the products sold most.
3. List top 5 locations (Zip Code) where the products sold most in last 25 years.
4. List all city names and number of customers in that city.
5. List city names which have more than 2 customers, and number of customers in that city
6. List the names of customers who placed orders after 1/1/98 with order date.
7. List the names of all customers with most recent order dates
8. Display the names of all customers along with the count of products they bought
9. Display the customer ids who bought more than 100 Products with count of products.
10. List all of the possible ways that suppliers can ship their products. Display the results as below

Supplier Company Name Shipping Company Name

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1. Display the products order each day. Show Order date and Product Name.
2. Displays pairs of employees who have the same job title.
3. Display all the Managers who have more than 2 employees reporting to them.
4. Display the customers and suppliers by city. The results should have the following columns

City

Name

Contact Name,

Type (Customer or Supplier)

28. Have two tables T1 and T2

|  |  |
| --- | --- |
| F1.T1 | F2.T2 |
| 1 | 2 |
| 2 | 3 |
| 3 | 4 |

Please write a query to inner join these two tables and write down the result of this query.

29. Based on above two table, Please write a query to left outer join these two tables and write down the result of this query.

GOOD LUCK.