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# Assignment Day2 –SQL:  Comprehensive practice

## Answer following questions

1. What is a result set?
   Result set refers to a set of data (whether empty or not) that are returned by a select statement or by a stored store procedure. The result set is either saved in RAM or displayed on the screen
2. What is the difference between Union and Union All?
   While UNION removes duplicates, UNION ALL does not. For Union the values for first column will be sorted automatically. Lastly, UNION cannot be used in recursive cte but UNION ALL can.
3. What are the other Set Operators SQL Server has?
   SET Operator SQL, such as UNION and INTERSECT, returns multiple set of data to be combined into a single result set
4. What is the difference between Union and Join?
   While UNION group rows, JOIN groups columns from other tables.
5. What is the difference between INNER JOIN and FULL JOIN?
   INNER JOIN returns the records that have matching values in both tables.
   FULL JOIN(aka full outer join) returns all rows in both the left and right tables.
6. What is difference between left join and outer join.
   Left Join return the result set that contains all the rows from the left table specified in the LEFT OUTER clause.
7. What is cross join?
   Cross join returns the Cartesian product of the set of records from the two joined tables. As a result, it equates to an inner join where the join-condition always evaluates to True.
8. What is the difference between WHERE clause and HAVING clause?
   Even though both are used for filters, WHERE clauses is used before aggregation, but HAVING clause used after the aggregation; Furthermore, WHERE can be used with SELECT and UPDATE, while HAVING can be used only with SELECT.
9. Can there be multiple group by columns?
   Yes. Multiple “GROUP BY” columns can be listed in the query.

## Write queries for following scenarios (Uploaded in the Github)

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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4. How many products that do not have a product subcategory.
5. Write a query to list the sum of products quantity in the Production.ProductInventory table.
6. 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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7. 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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8. Write the query to list the average quantity for products where column LocationID has the value of 10 from the table Production.ProductInventory table.
9. Write query to see the average quantity of products by shelf from the table Production.ProductInventory

ProductID Shelf TheAvg
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10. 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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11. 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:**

12. 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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13. 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)**

14. List all Products that has been sold at least once in last 25 years.
15. List top 5 locations (Zip Code) where the products sold most.
16. List top 5 locations (Zip Code) where the products sold most in last 25 years.
17. List all city names and number of customers in that city.
18. List city names which have more than 2 customers, and number of customers in that city
19. List the names of customers who placed orders after 1/1/98 with order date.
20. List the names of all customers with most recent order dates
21. Display the names of all customers along with the count of products they bought
22. Display the customer ids who bought more than 100 Products with count of products.
23. 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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24. Display the products order each day. Show Order date and Product Name.
25. Displays pairs of employees who have the same job title.
26. Display all the Managers who have more than 2 employees reporting to them.

27. Display the customers and suppliers by city. The results should have the following columns

City

Name

Contact Name,

Type (Customer or Supplier)

GOOD LUCK.