Northwind Project

Purpose: In business, things change, and data in an organization's database must be modified to reflect those changes. In this project, I will insert new data into the Northwind database and then update a table in the database. I will also develop SQL DML statements to retrieve data addressing several business inquiries. I will use the Northwind database for this project.

Things to do before starting the project;
1. Install Microsoft SQL Server Express
2. Install Microsoft SSMS
3. Connect the (1) and (2)
4. Download the Northwind Database script
5. Create a new database in SSMS to append the Northwind script
6. Read the Northwind script as a New Query to import the Northwind database
7. Refresh the interface and good to start

Task 1: Display the product records with unit prices equal to or greater than $100

```
SELECT *
FROM Northwind.dbo.Products
where  UnitPrice >= 100;
```

Results | Messages

	ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder	ReorderLevel	Discontinued
1	29	ThÄ¼ringer Rostbratwurst	12	6	50 bags x 30 sausgs.	123.79	0	0	0	1
2	38	CÃ´te de Blaye	18	1	12 - 75 cl bottles	263.50	17	0	15	0

Task 2: Present the unit value minimum, maximum, average, and standard deviation for current and discontinued products. Group the results based on the "Discontinued" attribute.

```
SELECT
 Discontinued,
 MIN(UnitPrice) AS MinUnitPrice,
 MAX(UnitPrice) AS MaxUnitPrice,
 AVG(UnitPrice) AS AvgUnitPrice,
 STDEV(UnitPrice) AS StddevUnitPrice
FROM Northwind.dbo.Products
GROUP BY Discontinued;
```

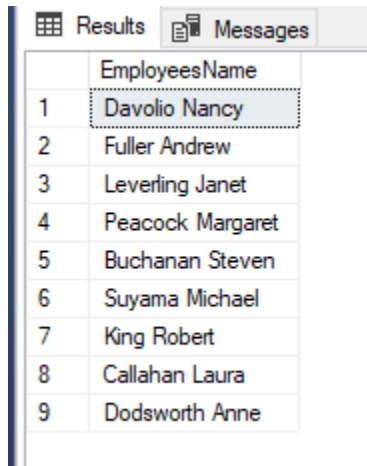|	Discontinued	MinUnitPrice	MaxUnitPrice	AvgUnitPrice	StddevUnitPrice
1	0	2.50	263.50	26.7343	32.464315951983
2	1	4.50	123.79	47.255	41.7765422900733

Task 3: List suppliers with names starting with "G" in alphabetical order.

```
SELECT CompanyName
FROM Northwind.dbo.Suppliers
Where CompanyName LIKE 'g%';
```

	CompanyName
1	Gai pÅ¢turage
2	G'day, Mate
3	Grandma Kelly's Homestead

Task 4: Display the full names of all Employees in FirstName, " ", LastName format.

SELECT CONCAT(LastName, ' ', FirstName) AS EmployeesName
FROM Northwind.dbo.Employees

	EmployeesName
1	Davolio Nancy
2	Fuller Andrew
3	Leverling Janet
4	Peacock Margaret
5	Buchanan Steven
6	Suyama Michael
7	King Robert
8	Callahan Laura
9	Dodsworth Anne

Task 5: Display all the supplier names and HomePage values is null. Present the results in alphabetical order by supplier name.

SELECT CompanyName, HomePAge
FROM Northwind.dbo.Suppliers
Where HomePage IS Null
Order By CompanyName;

	CompanyName	HomePAge
1	Aux joyeux ecclÃ©siastiques	NULL
2	Bigfoot Breweries	NULL
3	Cooperativa de Quesos 'Las Cabras'	NULL
4	Escargots Nouveaux	NULL
5	Exotic Liquids	NULL
6	ForÃªts d'Ã©rables	NULL
7	Gai pÃ¢turage	NULL
8	Grandma Kelly's Homestead	NULL
9	Heli SÃ¼ÃŸwaren GmbH & Co. KG	NULL
10	Karkki Oy	NULL
11	Leka Trading	NULL
12	Lyngbysild	NULL
13	Ma Maison	NULL
14	New England Seafood Cannery	NULL
15	Nord-Ost-Fisch Handelsgesellscha...	NULL
16	Norske Meierier	NULL
17	Pasta Buttini s.r.l.	NULL
18	Pavlova, Ltd.	NULL
19	PB KnÃ¤ckebrÃ¶d AB	NULL
20	Refrescos Americanas LTDA	NULL

Task 6: Get the number of Northwind customers in each country that has five or more customers. Present the results in alphabetical order by country name.

```
SELECT Country, Count(*) AS Numberofcustomers
FROM Northwind.dbo.Customers
GROUP BY Country
HAVING COUNT(*) >= 5
ORDER BY Country;
```

	Country	Numberofcustomers
1	Brazil	9
2	France	11
3	Germany	11
4	Mexico	5
5	Spain	5
6	UK	7
7	USA	13

Task 7: Get the total product costs (i.e multiplying the unit price by quantity) for ProductID = 20 along with the associate orders IDs from the OrderDetails table. Provide the result in ascending order based on the orderID.

SELECT
        OrderID,
        ProductID,
        UnitPrice * Quantity AS ProductCost
FROM Northwind.dbo.OrderDetails
WHERE ProductID = 20
ORDER BY OrderID ASC;

	OrderID	ProductID	ProductCost
1	10252	20	2592.00
2	10272	20	388.80
3	10292	20	1296.00
4	10372	20	777.60
5	10384	20	1814.40
6	10514	20	3159.00
7	10523	20	1215.00
8	10593	20	1701.00
9	10660	20	1701.00
10	10828	20	405.00
11	10878	20	1620.00
12	10927	20	405.00
13	10953	20	4050.00
14	10986	20	1215.00
15	11021	20	1215.00
16	11077	20	81.00

Task 8: Select all of the cities where there are employees with no duplicates values displayed. Show the cities in alphabetical order.

SELECT DISTINCT City
FROM Northwind.dbo.Employees
Order By City;

	City
1	Kirkland
2	London
3	Redmond
4	Seattle
5	Tacoma

Task 9: List First and Last Names for Employees who live in London, Seattle, or Redmond. Show the employee's city in the output.

SELECT FirstName, LastName, City
FROM Northwind.dbo.Employees
Where City IN ('London', 'Seattle', 'Redmond')

	FirstName	LastName	City
1	Nancy	Davolio	Seattle
2	Margaret	Peacock	Redmond
3	Steven	Buchanan	London
4	Michael	Suyama	London
5	Robert	King	London
6	Laura	Callahan	Seattle
7	Anne	Dodsworth	London

Task 10: Display all product IDs and names for out-of-stock products having a unit price in the range of $20 to $25. Show the units-in-stock value in the results.

SELECT ProductID, ProductName, UnitPrice, UnitsInStock
FROM Northwind.dbo.Products
Where UnitsInStock < 1 AND UnitPrice >= 20 AND UnitPrice <= 25;

	ProductID	ProductName	UnitPrice	UnitsInStock
1	5	Chef Anton's Gumbo Mix	21.35	0

Problem 2 - Modifying Database Data

Task 11: Use an SQL INSERT statement to populate the Categories table with a new category called "Fresh Produce" and a description of "Fresh Fruits and Vegetables". There is no picture for this record insert. Remember, the CategoryID field auto populates so you do not include this in your insert statement . After you have added the category., select all records in the categories table to see if the record was added.

INSERT INTO Northwind.dbo.Categories (CategoryName, Description)
VALUES ('Fresh Produce', 'Fresh Fruits and Vegetables')

SELECT *
FROM Northwind.dbo.Categories;

	CategoryID	CategoryName	Description	Picture
1	1	Beverages	Soft drinks, coffees, teas, beers, and ales	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
2	2	Condiments	Sweet and savory sauces, relishes, spreads, and ...	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
3	3	Confections	Desserts, candies, and sweet breads	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
4	4	Dairy Products	Cheeses	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
5	5	Grains/Cereals	Breads, crackers, pasta, and cereal	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
6	6	Meat/Poultry	Prepared meats	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
7	7	Produce	Dried fruit and bean curd	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
8	8	Seafood	Seaweed and fish	0x151C2F00020000000D000E0014002100FFFFFFFF4269746...
9	9	Fresh Produce	Fresh Fruits and Vegetables	NULL

Task 12: Use the SQL INSERT command to add a new region to handle customers in the Midwest. In this case, the RegionID field does not auto-populate so you should first find how many regions are in the table before adding the region and regionID. Use a query after completing this to verify that the new region has been added.

INSERT INTO Northwind.dbo.Region (RegionID, RegionDescription)
VALUES (5, 'Midwest')

SELECT *
FROM Northwind.dbo.Region;

	RegionID	RegionDescription
1	1	Eastern
2	2	Western
3	3	Northern
4	4	Southern
5	5	Midwest

Task 13: Northwind has decided to change the employee title that is now called "Sales Representative" to "Sales Specialist" Use the SQL UPDATE statement to reflect the change in the Employees table. After you have updated the Employees table, select all records in the Employees table to see if the update was performed correctly.

UPDATE Employees
SET Title = 'Sales Specialist'
WHERE Title = 'Sales Representative'

SELECT *
FROM Northwind.dbo.Employees;

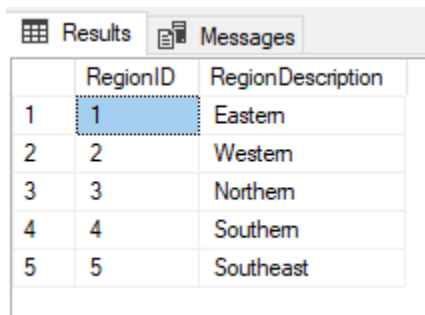|	EmployeeID	LastName	FirstName	Title	TitleOfCourtesy	BirthDate	HireDate	Address	City	Region	PostalCode
1	1	Davolio	Nancy	Sales Specialist	Ms.	1948-12-08 00:00:00.000	1992-05-01 00:00:00.000	507 - 20th Ave. E. Apt. 2A	Seattle	WA	98122
2	2	Fuller	Andrew	Vice President, Sales	Dr.	1952-02-19 00:00:00.000	1992-08-14 00:00:00.000	908 W. Capital Way	Tacoma	WA	98401
3	3	Leverling	Janet	Sales Specialist	Ms.	1963-08-30 00:00:00.000	1992-04-01 00:00:00.000	722 Moss Bay Blvd.	Kirkland	WA	98033
4	4	Peacock	Margaret	Sales Specialist	Mrs.	1937-09-19 00:00:00.000	1993-05-03 00:00:00.000	4110 Old Redmond Rd.	Redmond	WA	98052
5	5	Buchanan	Steven	Sales Manager	Mr.	1955-03-04 00:00:00.000	1993-10-17 00:00:00.000	14 Garrett Hill	London	NULL	SW1 8JR
6	6	Suyama	Michael	Sales Specialist	Mr.	1963-07-02 00:00:00.000	1993-10-17 00:00:00.000	Coventry House Miner Rd.	London	NULL	EC2 7JR
7	7	King	Robert	Sales Specialist	Mr.	1960-05-29 00:00:00.000	1994-01-02 00:00:00.000	Edgeham Hollow Winchester Way	London	NULL	RG1 9SP
8	8	Callahan	Laura	Inside Sales Coordinator	Ms.	1958-01-09 00:00:00.000	1994-03-05 00:00:00.000	4726 - 11th Ave. N.E.	Seattle	WA	98105
9	9	Dodsworth	Anne	Sales Specialist	Ms.	1966-01-27 00:00:00.000	1994-11-15 00:00:00.000	7 Houndstooth Rd.	London	NULL	WG2 7LT

Task 14: The Sales department has realigned and before they implement the new "Midwest" region you added, they noted that it really should be called the "Southeast" region. Change the "Midwest" region name to "Southeast" and show the regions again to confirm this change.

UPDATE Region
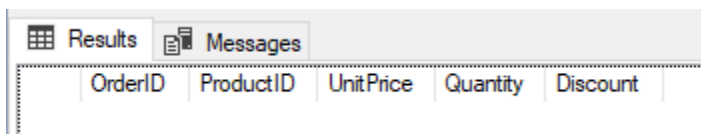SET RegionDescription = 'Southeast'
WHERE RegionDescription = 'Midwest'

SELECT *
FROM Northwind.dbo.Region;

	RegionID	RegionDescription
1	1	Eastern
2	2	Western
3	3	Northern
4	4	Southern
5	5	Southeast

Task 15: An order needs to be deleted. The order number is 11071. However, before you can delete the order, you must delete the order details. Delete all records in the OrderDetails table that reference order number 11071. Then execute a query against the OrderDetails table to show that the records associated with order number 11071 have been removed.

Delete From Northwind.dbo.OrderDetails
Where OrderID = 11071
Select *
From Northwind.dbo.OrderDetails
Where OrderID =11071;

OrderID	ProductID	UnitPrice	Quantity	Discount

Task 16: Delete Order number 11071 from the order table. Then execute a query against the orders table to show that the record was removed.

Delete From Northwind.dbo.Orders
Where OrderID = 11071
Select *
From Northwind.dbo.Orders
Where OrderID =11071;

OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	Freight	ShipName	ShipAddress	ShipCity	ShipRegion	ShipPostalCode	ShipCountry

Task 17: An employee named Margeret Peacock just received a 5% raise from Northwind. Update Ms. Peacock's employee record to reflect this change. In order to do this, her current salary needs to be multiplied by 1.05 in the update statement.

UPDATE Employees
SET Salary = Salary * 1.05
WHERE LastName = 'Peacock' AND FirstName = 'Margaret';

Select *
From Northwind.dbo.Employees;

	EmployeeID	FirstName	LastName	Salary
1	1	Click to select the whole column		2.00
2	2	Andrew	Fuller	250000.00
3	3	Janet	Leverling	61500.00
4	4	Margaret	Peacock	64575.00
5	5	Steven	Buchanan	98802.00
6	6	Michael	Suyama	58345.00
7	7	Robert	King	54120.00
8	8	Laura	Callahan	42125.00
9	9	Anne	Dodsworth	52987.00

Task 18: A new supplier needs to be added to the Northwind database. Generate an SQL statement to insert the following details:

Company Name: Acme Enterprises

Contact Name: Wylie Coyote

Contact Title: Executive Manager

Address: 123 Main Street

City: Las Vegas

Region: NV

Postal Code: 89108

Country: USA

Phone: (702) 555-9876

Note: You do not need to provide a SupplierID for this record

```
INSERT INTO Suppliers (CompanyName, Contact Name, ContactTitle, Address, City, Region, PostalCode, Country, Phone)
VALUES ('Acme Enterprises', 'Wylie Coyote', 'Executive Manager', '123 Main Street', 'Las Vegas', 'NV', '89108', 'USA', '(702) 555-9876');

Select *
From Northwind.dbo.Suppliers
Where CompanyName = 'Acme Enterprises'
```

	SupplierID	CompanyName	ContactName	Contact Title	Address	City	Region	PostalCode	Country	Phone	Fax	HomePage
1	30	Acme Enterprises	Wylie Coyote	Executive Manager	123 Main Street	Las Vegas	NV	89108	USA	(702) 555-9876	NULL	NULL

Task 19: A customer just purchased 40 units of a product called "Boston Crab Meat" from Northwind. Reduce the current UnitsInStock value in the Products table by 40 for this product.

```
SET UnitsInStock = UnitsInStock - 40
WHERE ProductName = 'Boston Crab Meat'

Select *
From Northwind.dbo.Products
WHERE ProductName = 'Boston Crab Meat';
```
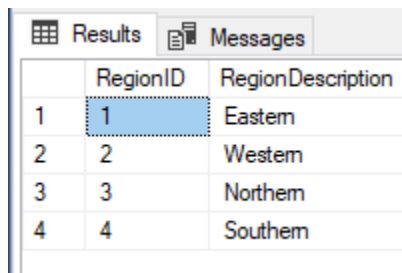
	ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder	ReorderLevel	Discontinued
1	40	Boston Crab Meat	19	8	24 - 4 oz tins	18.40	83	0	30	0

Task 20: A final call has come in from the Sales Department. After presenting the new regional alignment to the board, the board has rejected this part of the reorganization plan. Please DELETE that new region that was added earlier in Task 12 and then changed in Task 14 of this assessment task.

Delete From Northwind.dbo.Region
Where RegionID = 5

Select *
From Northwind.dbo.Region

	RegionID	RegionDescription
1	1	Eastern
2	2	Western
3	3	Northern
4	4	Southern

Conclusion: I've been able to query the Northwind Database and Modify the Northwind Database.