**(ITEMS AND PRODCUTS DATABASE)**

**By**

**Sachin Gunjal**

1. **Create two Databases Name :- Brands , and Products**

CREATE DATABASE Brands

CREATE DATABASE Products

1. **Create two tables in SQL Server name as ITEMS\_TABLE in Brands database and PRODUCT\_TABLE in Products database.**

USE Brands

CREATE TABLE Items\_Table(

Item\_ID INT PRIMARY KEY,

Item\_Description VARCHAR(100) NOT NULL,

Vendor\_nos INT,

Vendor\_Name VARCHAR(100),

Bottle\_Size INT,

Bottle\_Price FLOAT

----------------------------------------------------------------------

USE Products

CREATE TABLE Products\_Table(

Product\_ID INT PRIMARY KEY,

Country VARCHAR(50),

Product VARCHAR(50) NOT NULL,

UnitSold FLOAT,

ManufacturingPrice FLOAT,

SalePrice FLOAT,

GrossSales FLOAT,

Sales FLOAT,

COGS FLOAT,

Profit FLOAT,

Dates Date,

MonthNumber INT,

MonthName VARCHAR(25),

YEAR INT

);

1. **After Creating both the tables Add records in that tables (records are available in ITEMS\_TABLE Sheet and PRODUCTS\_TABLE Sheet)**

INSERT INTO ITEMS\_TABLE VALUES

(1, 'Travis Hasse Apple Pie', 305, 'Mhw Ltd', 750, 9.77),

(2, 'D''aristi Xtabentun', 391, 'Anchor Distilling (preiss Imports)', 750, 14.12),

(3, 'Hiram Walker Peach Brandy', 370, 'Pernod Ricard Usa/austin Nichols', 1000, 6.50),

(4, 'Oak Cross Whisky', 305, 'Mhw Ltd', 750, 25.33),

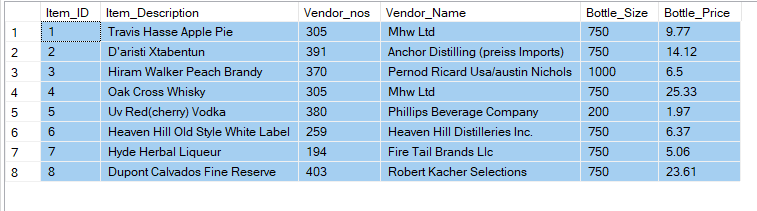
(5, 'Uv Red(cherry) Vodka', 380, 'Phillips Beverage Company', 200, 1.97),

(6, 'Heaven Hill Old Style White Label', 259, 'Heaven Hill Distilleries Inc.', 750, 6.37),

(7, 'Hyde Herbal Liqueur', 194, 'Fire Tail Brands Llc', 750, 5.06),

(8, 'Dupont Calvados Fine Reserve', 403, 'Robert Kacher Selections', 750, 23.61);

SELECT \* FROM Items\_Table



**-------------------------------------------------------------------**

INSERT INTO Products\_Table VALUES

(1, 'Canada', 'Carretera', 1618.5, 3, 20, '32370', '32370', '16185', '16185', '2014-01-01', 1, 'January', 2014),

(2, 'Germany', 'Carretera', 1321, 3, 20, '26420', '26420', '13210', '13210', '2015-01-01', 1, 'January', 2015),

(3, 'France', 'Carretera', 2178, 3, 15, '32670', '32670', '21780', '10890', '2016-06-01', 6, 'June', 2016),

(4, 'Germany', 'Carretera', 888, 3, 15, '13320', '13320', '8880', '4440', '2017-06-01', 6, 'June', 2017),

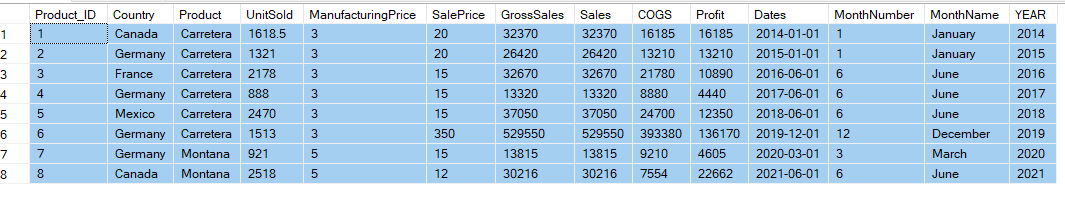
(5, 'Mexico', 'Carretera', 2470, 3, 15, '37050', '37050', '24700', '12350', '2018-06-01', 6, 'June', 2018),

(6, 'Germany', 'Carretera', 1513, 3, 350, '529550', '529550', '393380', '136170', '2019-12-01', 12, 'December', 2019),

(7, 'Germany', 'Montana', 921, 5, 15, '13815', '13815', '9210', '4605', '2020-03-01', 3, 'March', 2020),

(8, 'Canada', 'Montana', 2518, 5, 12, '30216', '30216', '7554', '22662', '2021-06-01', 6, 'June', 2021);

SELECT \* FROM Products\_Table

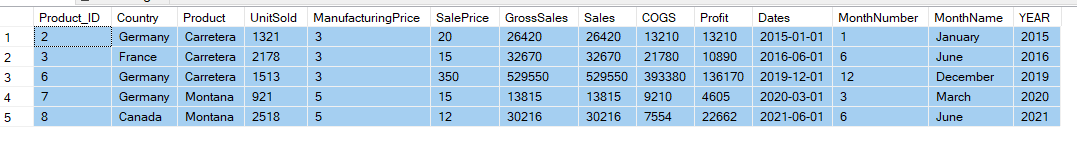


1. **Delete those product having the Units Sold 1618.5 , 888 and 2470.**

DELETE FROM Products\_Table

WHERE UnitSold IN (1618.5 , 888, 2470)

SELECT \* FROM Products\_Table

****

1. **Select all records from the ITEMS\_TABLE table.**

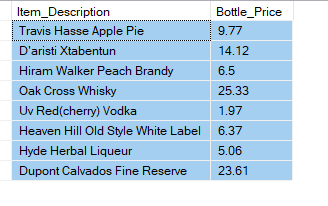
USE Brands

Select \* from Items\_Table

****

1. **Select the item\_description and bottle\_price for all items in the ITEMS\_TABLE table.**

SELECT Item\_Description, Bottle\_Price FROM Items\_Table



1. **Find the item\_description and bottle\_price of items where bottle\_price is greater than 20.**

SELECT Item\_Description, Bottle\_Price FROM Items\_Table

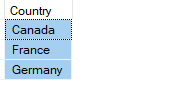
WHERE Bottle\_Price > 20;

****

1. **Select Unique Country from the product\_sales table**

USE Products

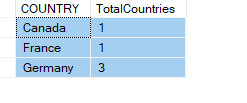
SELECT DISTINCT Country FROM Products\_Table

****

1. **Count the number of Countries in the product\_sales table**

SELECT COUNTRY, COUNT(\*) AS TotalCountries FROM Products\_Table

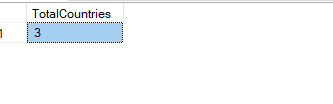
GROUP BY Country

****

1. **How Many Countries are there which contain the sales price between 10 to 20**

SELECT COUNT(DISTINCT Country) AS TotalCountries FROM Products\_Table

WHERE SalePrice BETWEEN 10 AND 20

****

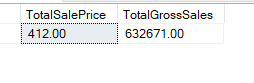
**Intermediate Questions**

1. **Find the Total Sale Price and Gross Sales**

SELECT SUM(CAST(SalePrice AS DECIMAL(10,2))) as TotalSalePrice,

SUM(CAST(REPLACE(GrossSales,',', '') as DECIMAL(10,2))) as TotalGrossSales

FROM Products\_Table

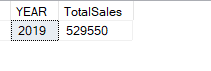
****

1. **In which year we have got the highest sales.**

SELECT TOP 1 YEAR, SUM(CAST(REPLACE(SALES,',','') AS DECIMAL(10,2))) AS TotalSales FROM Products\_Table

GROUP BY YEAR

ORDER BY TotalSales DESC

****

1. **Which Product having the sales of $ 37,050.00**

--Adding DELETED ROWS

INSERT INTO Products\_Table VALUES

(1, 'Canada', 'Carretera', 1618.5, 3, 20, '32370', '32370', '16185', '16185', '2014-01-01', 1, 'January', 2014),

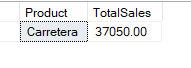
(4, 'Germany', 'Carretera', 888, 3, 15, '13320', '13320', '8880', '4440', '2017-06-01', 6, 'June', 2017),

(5, 'Mexico', 'Carretera', 2470, 3, 15, '37050', '37050', '24700', '12350', '2018-06-01', 6, 'June', 2018);

SELECT Product, SUM(CAST(REPLACE(SALES,',','') AS DECIMAL(10,2))) AS TotalSales FROM Products\_Table

WHERE SALES = '37,050'

GROUP BY Product

****

1. **Which Countries lies between profit of $ 4,605 to $ 22 , 662.00**

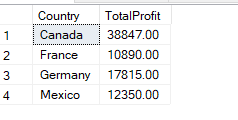
SELECT Country,

SUM(CAST(REPLACE(Profit, ',', '') AS DECIMAL(10,2))) AS TotalProfit

FROM Products\_Table

WHERE CAST(REPLACE(Profit, ',', '') AS DECIMAL(10,2)) BETWEEN 4605 AND 22662

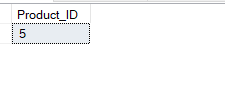
GROUP BY Country;



1. **Which Product Id having the sales of $ 24 , 700.00**

SELECT Product\_ID FROM Products\_Table

WHERE CAST(REPLACE(COGS, ',','') AS decimal(10,2)) = 24700

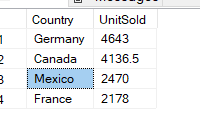


1. **Find the total Units Sold for each Country.**

SELECT Country, SUM(UNITSOLD) AS UnitSold FROM PRODUCTS\_TABLE

GROUP BY COUNTRY

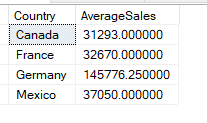
order by UnitSold DESC

****

1. **Find the average sales for each country**

SELECT Country, AVG(CAST(REPLACE(Sales, ',','') AS DECIMAL(10,2))) as AverageSales FROM Products\_table

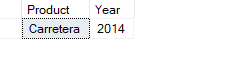
GROUP BY Country

****

1. **Retrieve all products sold in 2014**

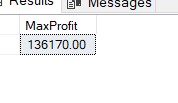
SELECT Product, Year FROM Products\_table

WHERE YEAR = 2014

****

1. **Find the maximum Profit in the product\_sales table.**

SELECT MAX(CAST(REPLACE(Profit, ',','') AS Decimal(10,2))) as MaxProfit FROM Products\_table

****

1. **Retrieve the records from product\_sales where Profit is greater than the average Profit of all records.**

SELECT AVG(CAST(REPLACE(Profit, ',','') AS Decimal(10,2))) as AverageProfit

FROM Products\_Table

SELECT Profit

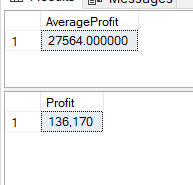
FROM Products\_Table

WHERE CAST(REPLACE(Profit, ',','') AS DECIMAL(10,2)) >

(

SELECT AVG(CAST(REPLACE(Profit, ',','') AS Decimal(10,2)))

FROM Products\_Table )

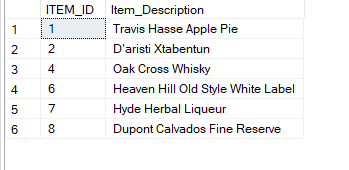


1. **Find the item\_description having the bottle size of 750**

USE Brands

SELECT ITEM\_ID, Item\_Description FROM Items\_Table

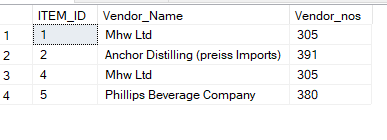
WHERE Bottle\_Size = 750

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1. **Find the vendor Name having the vendor\_nos 305 , 380 , 391**

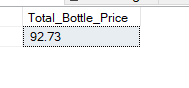
SELECT ITEM\_ID, Vendor\_Name, Vendor\_nos FROM Items\_Table

WHERE Vendor\_nos IN (305, 380, 391)

****

1. **What is total Bottle\_price**

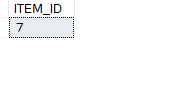
SELECT SUM(BOTTLE\_PRICE) AS Total\_Bottle\_Price FROM Items\_Table

****

1. **Make Primary Key to Item\_id**

ALTER TABLE ITEMS\_TABLE

ADD CONSTRAINT PK\_ITEM PRIMARY KEY(Item\_id)

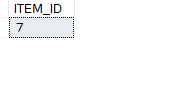
****

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1. **Which item id having the bottle\_price of $ 5.06**

SELECT ITEM\_ID FROM Items\_Table

WHERE Bottle\_Price = 5.06

****

**Advance Questions**

1. **Apply INNER , FULL OUTER , LEFT JOIN types on both the table**

USE BRANDS

SELECT \* FROM Items\_table

USe Products

SELECT \* FROM PRODUCTS\_TABLE

SELECT P.\*, I.\* FROM Products.dbo.[Products\_Table] as P

INNER JOIN

Brands.dbo.[Items\_Table] as I

ON

P.Product\_ID = I.Item\_ID

SELECT P.\*, I.\* FROM Products.dbo.[Products\_Table] as P

LEFT JOIN

Brands.dbo.[Items\_Table] as I

ON

P.Product\_ID = I.Item\_ID

SELECT P.\*, I.\* FROM Products.dbo.[Products\_Table] as P

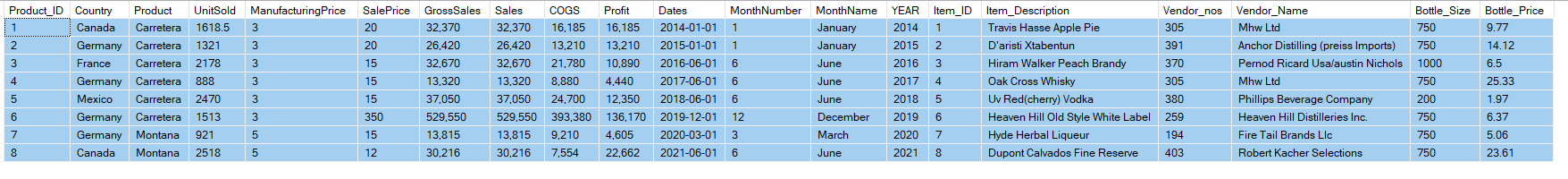
FULL JOIN

Brands.dbo.[Items\_Table] as I

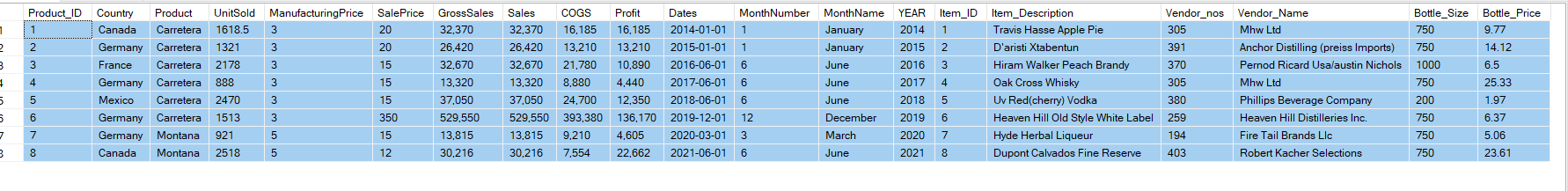
ON

P.Product\_ID = I.Item\_ID

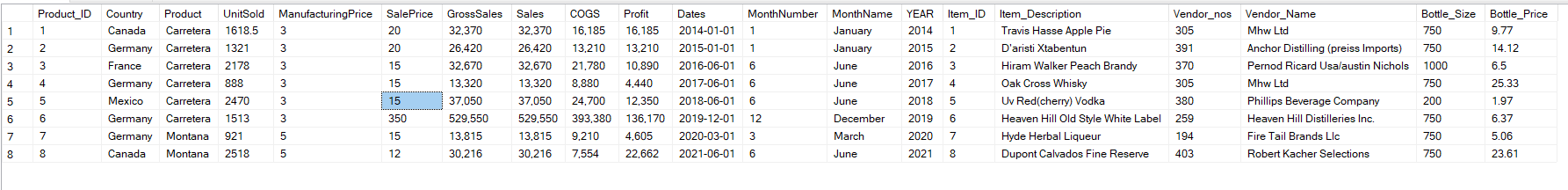
**INNER JOIN**



**Full Join**



**Left Join**



1. **Find the item\_description and Product having the gross sales of 13,320.00**

SELECT P.Product, I.Item\_Description, P.GrossSales FROM Products.dbo.[Products\_Table] as P

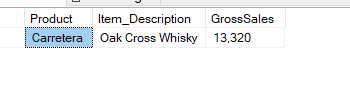
INNER JOIN

Brands.dbo.[Items\_Table] as I

ON

P.Product\_ID = I.Item\_ID

WHERE P.GrossSales = '13,320'



1. **Split the Item\_description Column into Columns Item\_desc1 and Item\_desc2**

SELECT Item\_Description,

SUBSTRING(Item\_Description, 1, CHARINDEX(' ',Item\_Description)-1) as Item\_Desc1,

SUBSTRING(Item\_Description, CHARINDEX(' ',Item\_Description), Len(Item\_Description)) as Item\_Desc2

FROM Brands.dbo.Items\_Table



1. **Find the top 3 most expensive items in the ITEMS\_TABLE table.**

SELECT TOP 3 Item\_ID, BOTTLE\_PRICE FROM BRANDS.DBO.ITEMS\_TABLE

ORDER BY Bottle\_Price DESC



1. **Find the total Gross Sales and Profit for each Product in each Country.**

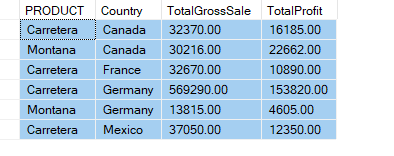
SELECT PRODUCT, Country,

SUM(CAST(REPLACE(GrossSales, ',','') AS DECIMAL(10,2))) as TotalGrossSale,

SUM(CAST(REPLACE(Profit, ',','') AS DECIMAL(10,2))) as TotalProfit

FROM PRODUCTS\_TABLE

GROUP BY Product, COUNTRY



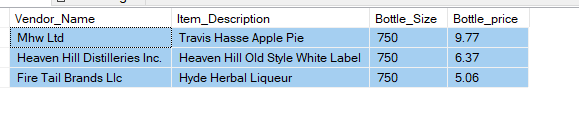
1. **Find the vendor\_name and item\_description of items with a bottle\_size of 750 and bottle\_price less than 10.**

SELECT Vendor\_Name, Item\_Description, Bottle\_Size, Bottle\_price FROM BRANDS.DBO.ITEMS\_TABLE

WHERE Bottle\_size = 750

AND

Bottle\_Price < 10;



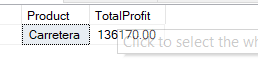
1. **Find the Product with the highest Profit in 2019.**

SELECT TOP 1 Product, CAST(REPLACE(Profit, ',','') AS Decimal(10,2)) AS TotalProfit

FROM PRODUCTS\_TABLE

WHERE YEAR = 2019

ORDER BY TotalProfit DESC



1. **Retrieve the Product\_Id and Country of all records where the Profit is at least twice the COGS.**

SELECT Product\_ID, Country, Profit, COGS

FROM Products\_Table

WHERE CAST(REPLACE(Profit, ',','') AS Decimal(10,2)) >=

(CAST(REPLACE(COGS, ',','') AS Decimal(10,2))) \* 2



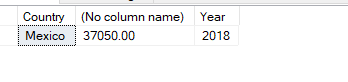
1. **Find the Country that had the highest total Gross Sales in 2018**

SELECT TOP 1 Country, CAST(REPLACE(GrossSales, ',','') AS DECIMAL(10,2)), Year

FROM products\_table

WHERE YEAR = 2018

ORDER BY CAST(REPLACE(GrossSales, ',','') AS DECIMAL(10,2)) DESC



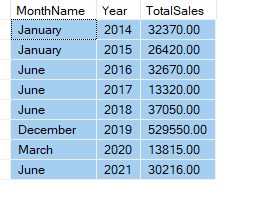
1. **Calculate the total Sales for each Month Name across all years.**

SELECT MonthName, Year, SUM(CAST(REPLACE(Sales, ',','') AS Decimal(10,2))) as TotalSales

FROM Products\_Table

GROUP By MonthName, Year

Order By Year



1. **List the item\_description and vendor\_name for items whose vendor\_nos exists more than once in the ITEMS\_TABLE table.**

SELECT Item\_Description, Vendor\_Name, Vendor\_nos from Brands.dbo.Items\_Table

WHERE Vendor\_nos IN

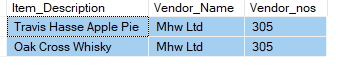
(

SELECT Vendor\_nos FROM Brands.dbo.Items\_Table

GROUP BY Vendor\_nos

HAVING COUNT(\*) >1

)



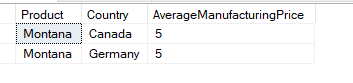
1. **Find the average Manufacturing Price for Product in each Country and only include those Country and Product combinations where the average is above 3**

SELECT Product, Country, AVG(MANUFACTURINGPRICE) AS AverageManufacturingPrice

FROM PRODUCTS\_TABLE

GROUP BY Product, COUNTRY

HAVING AVG(MANUFACTURINGPRICE) > 3



**Super-Advance Questions:-**

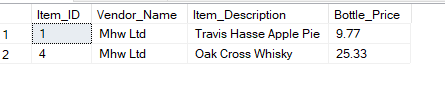
1. **Find the item\_description and bottle\_price of items that have the same vendor\_name as items with Item\_Id 1.**

SELECT Item\_ID, Vendor\_Name, Item\_Description, Bottle\_Price FROM BRANDS.DBO.ITEMS\_TABLE

WHERE Vendor\_Name = (

SELECT Vendor\_Name FROM BRANDS.DBO.ITEMS\_TABLE

WHERE Item\_ID = 1)

****

1. **Create a stored procedure to retrieve all records from the ITEMS\_TABLE table where bottle\_price is greater than a given value**

CREATE PROCEDURE RetrieveRecords

@BottlePrice FLOAT

AS

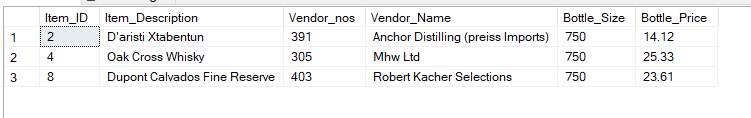
BEGIN

SELECT \* FROM BRANDS.DBO.ITEMS\_TABLE

WHERE Bottle\_Price > @BottlePrice

END

EXEC RetrieveRecords @BottlePrice = 10.00

****

1. **Create a stored procedure to insert a new record into the product\_sales table.**

CREATE PROCEDURE InsertNewRecords

@Product\_ID INT,

@Country VARCHAR(50),

@Product VARCHAR(50),

@UnitSold FLOAT,

@ManufacturingPrice FLOAT,

@SalePrice FLOAT,

@GrossSales VARCHAR(20),

@Sales VARCHAR(20),

@COGS VARCHAR(20),

@Profit VARCHAR(20),

@Dates Date,

@MonthNumber INT,

@MonthName VARCHAR(25),

@YEAR INT

AS

BEGIN

INSERT INTO Products\_Table

(Product\_ID, Country, Product,UnitSold, ManufacturingPrice ,SalePrice,GrossSales,Sales,COGS,Profit,Dates,MonthNumber,MonthName,YEAR)

VALUES

(@Product\_ID,@Country,@Product,@UnitSold,@ManufacturingPrice,@SalePrice,@GrossSales,@Sales,@COGS,@Profit,@Dates,@MonthNumber,@MonthName,@YEAR)

END;

EXEC InsertNewRecords

@Product\_ID = 10,

@Country = 'India',

@Product = 'Computer',

@UnitSold = 345,

@ManufacturingPrice = 6,

@SalePrice =50,

@GrossSales = '103,500',

@Sales ='103,500',

@COGS ='51,750',

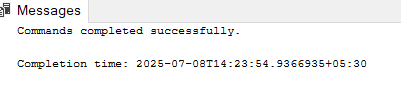
@Profit = '51,750',

@Dates = '2016-06-05',

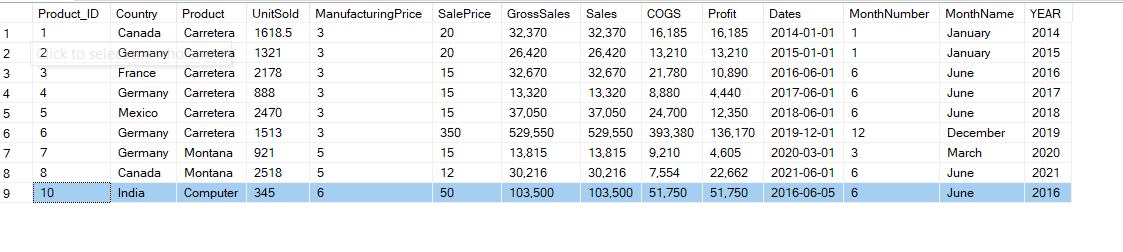
@MonthNumber = 6,

@MonthName = 'June',

@YEAR = 2016

****

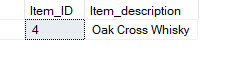
SELECT \* FROM PRODUCTS.DBO.PRODUCTS\_TABLE

****

1. **Create a trigger to automatically update the Gross\_Sales field in the product\_sales table whenever Units\_Sold or Sale\_Price is updated.**
2. **Write a query to find all item\_description in the ITEMS\_TABLE table that contain the word "Whisky" regardless of case.**

SELECT Item\_description FROM Brands.DBO.Items\_Table

WHERE Item\_Description LIKE '%Whisky%'



1. **Write a query to find the Country and Product where the Profit is greater than the average Profit of all products**

SELECT Country, Profit FROM PRODUCTS.DBO.PRODUCTS\_TABLE

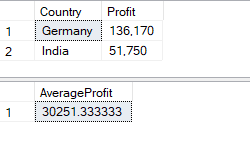
WHERE CAST(REPLACE(Profit, ',','') AS DECIMAL(10,2)) > (

SELECT AVG(CAST(REPLACE(Profit,',','') AS DECIMAL(10,2)))

FROM PRODUCTS.DBO.PRODUCTS\_TABLE)

SELECT AVG(CAST(REPLACE(Profit,',','') AS DECIMAL(10,2))) AS AverageProfit

FROM PRODUCTS.DBO.PRODUCTS\_TABLE

****

1. **Write a query to join the ITEMS\_TABLE and product\_sales tables on a common field (e.g., vendor\_nos) and select relevant fields from both tables.**

SELECT P.Product\_ID, P.Product, B.Item\_Description, B.Vendor\_Name, B.Bottle\_Price,

P.UnitSold, P.Sales, P.Profit,P.Country, P.Dates

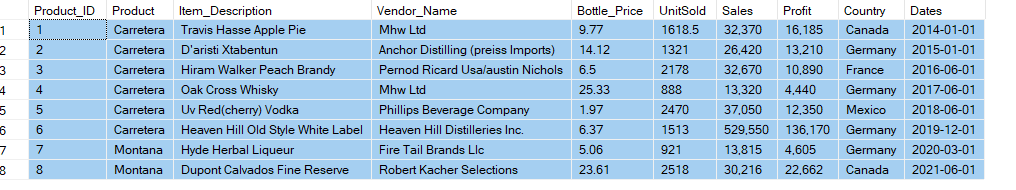
FROM BRANDS.DBO.ITEMS\_TABLE B

INNER JOIN

PRODUCTS.DBO.PRODUCTS\_TABLE P

ON

B.Item\_ID = P.Product\_ID

****

1. **Write a query to combine item\_description and vendor\_name into a single string for each record in the ITEMS\_TABLE table, separated by a hyphen.**

SELECT \*, CAST(CONCAT(Item\_Description,' - ', Vendor\_Name) AS VARCHAR(200)) AS ProductWithVendor

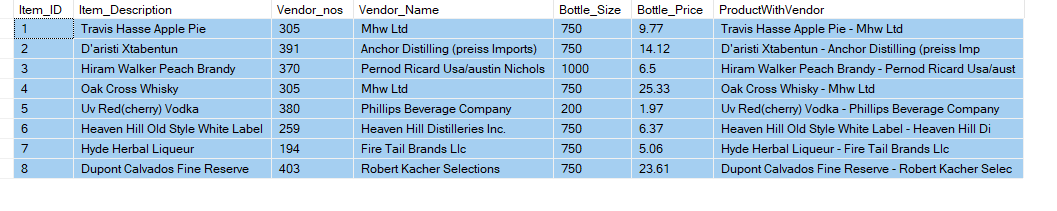
FROM BRANDS.DBO.ITEMS\_TABLE

ISSUE with Size, not showing complete String



SELECT \*, LEFT(CONCAT(Item\_Description, ' - ', Vendor\_Name), 50) AS ProductWithVendor

FROM Brands.dbo.Items\_Table;

****

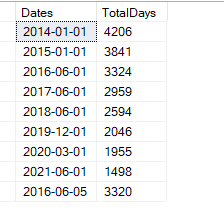
1. **Write a query to display the bottle\_price rounded to one decimal place for each record in the ITEMS\_TABLE table.**

SELECT \*, ROUND(Bottle\_Price,1) as RoundBottlePrice FROM BRANDS.DBO.ITEMS\_TABLE



1. **Write a query to calculate the number of days between the current date and the Date field for each record in the product\_sales table.**

SELECT Dates, DATEDIFF(DAY,Dates, GETDATE()) AS TotalDays FROM PRODUCTS.DBO.PRODUCTS\_TABLE

****