SQL practice using the **AdventureWorksDW2022** database on MSSM.

Question 1 (5 points)

Listen

Total Sales by EnglishProductCategoryName WHERE OrderDateKey BETWEEN '20140101' AND '20153112'

Hint :

From FactInternetSales, join DimProduct,DimProductSubcategory and DimProductCategory

select EnglishProductCategoryName, sum(SalesAmount) as 'Total Sales' from [dbo].[FactInternetSales] as FIS

inner join [dbo].[DimProduct] as DP ON FIS.ProductKey = DP.ProductKey

inner join [dbo].[DimProductSubcategory] as DPSC ON DP.ProductSubCategoryKey = DPSC.ProductSubCategoryKey

inner join [dbo].[DimProductCategory] as DPC ON DPSC.ProductCategoryKey = DPC.ProductCategoryKey

where FIS.OrderDateKey >= '20140101'

AND FIS.OrderDateKey <= '20153112'

Group by EnglishProductCategoryName

```
Select EnglishProductCategoryName, sum(SalesAmount) as 'Total Sales' from [dbo].[FactInternetSales] as FIS
inner join [dbo].[DimProduct] as DP ON FIS.ProductKey = DP.ProductKey
inner join [dbo].[DimProductSubcategory] as DPSC ON DP.ProductSubCategoryKey = DPSC.ProductSubCategoryKey
inner join [dbo].[DimProductCategory] as DPC ON  DPSC.ProductCategoryKey = DPC.ProductCategoryKey
where FIS.OrderDateKey >= '20140101'
AND FIS.OrderDateKey <= '20153112'
Group by EnglishProductCategoryName
```

00 %

Results | Messages

	EnglishProductCategoryName	Total Sales
1	Clothing	15323.37
2	Accessories	30371.35

Question 2 (5 points)

Listen

Sum Order Quantity by Customer Country

Hint :

From FactInternetSales, join DimCustomer,DimGeography....

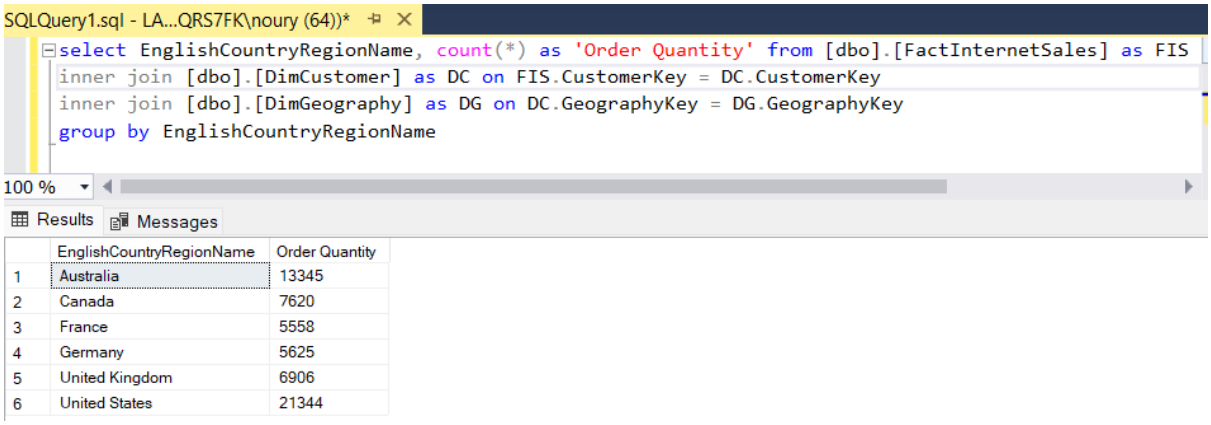
Group by EnglishCountryRegionName

select EnglishCountryRegionName, count(*) as 'Order Quantity' from [dbo].[FactInternetSales] as FIS

inner join [dbo].[DimCustomer] as DC on FIS.CustomerKey = DC.CustomerKey

inner join [dbo].[DimGeography] as DG on DC.GeographyKey = DG.GeographyKey

group by EnglishCountryRegionName



	EnglishCountryRegionName	Order Quantity
1	Australia	13345
2	Canada	7620
3	France	5558
4	Germany	5625
5	United Kingdom	6906
6	United States	21344

Question 3 (5 points)

Listen

Top 5 Products by Sales Amount in 2013 by Country

Hint :

group by EnglishProductName

Where orderdatekey between ? and ?

SELECT TOP (5) EnglishProductName, SUM(SalesAmount) AS 'Sales Amount'

FROM FactInternetSales as FIS

INNER JOIN DimProduct as DP ON DP.ProductKey = FIS.ProductKey

INNER JOIN DimCustomer as DC ON DC.CustomerKey = FIS.CustomerKey

INNER JOIN DimGeography as DG ON DG.GeographyKey = DC.GeographyKey

WHERE OrderDateKey BETWEEN '20130101' AND '20131231'

/*OR WHERE YEAR(OrderDate) = '2013'*/

GROUP BY EnglishProductName

ORDER BY 'Sales Amount' DESC

```
SELECT TOP (5) EnglishProductName, SUM(SalesAmount) AS 'Sales Amount'
FROM FactInternetSales as FIS
INNER JOIN DimProduct as DP ON DP.ProductKey = FIS.ProductKey
INNER JOIN DimCustomer as DC ON DC.CustomerKey = FIS.CustomerKey
INNER JOIN DimGeography as DG ON DG.GeographyKey = DC.GeographyKey
WHERE OrderDateKey BETWEEN '20130101' AND '20131231'
/*OR WHERE YEAR(OrderDate) = '2013'*/
GROUP BY EnglishProductName
ORDER BY 'Sales Amount' DESC
```

) %

Results | Messages

EnglishProductName	Sales Amount
Mountain-200 Black, 42	970780.77
Mountain-200 Silver, 38	967435.83
Mountain-200 Black, 38	947830.87
Mountain-200 Black, 46	947830.87
Mountain-200 Silver, 46	923356.02

Question 4 (5 points)

Listen

Sales Count and Total Sales by Customer Gender

SELECT Gender, COUNT(SalesAmount) as 'Quantity of Sales', ROUND(SUM(SalesAmount), 2) AS 'Sales Amount'

FROM FactInternetSales as FIS

INNER JOIN DimCustomer as DC ON DC.CustomerKey = FIS.CustomerKey

GROUP BY Gender

```
SELECT Gender, COUNT(SalesAmount) as 'Quantity of Sales', ROUND(SUM(SalesAmount), 2) AS 'Sales Amount'
FROM FactInternetSales as FIS
INNER JOIN DimCustomer as DC ON DC.CustomerKey = FIS.CustomerKey
GROUP BY Gender
```

Results | Messages

Gender	Quantity of Sales	Sales Amount
F	30017	14813618.68
M	30381	14545058.55

Question 5 (5 points)

Listen

collect Average TaxAmount , Sum OrderQuantity group by EnglishProductCategory

SELECT EnglishProductCategoryName, ROUND(AVG(TaxAmt), 2) AS 'Avg Tax Amount', SUM(OrderQuantity) as 'Orders Quantity'

FROM FactInternetSales as FIS

INNER JOIN DimProduct as DP ON DP.ProductKey = FIS.ProductKey

INNER JOIN DimProductSubcategory as DPSC ON DPSC.ProductSubcategoryKey = DP.ProductSubcategoryKey

INNER JOIN DimProductCategory as DPC ON DPC.ProductCategoryKey = DPSC.ProductCategoryKey

GROUP BY EnglishProductCategoryName

```
SQLQuery1.sql - LA...QRS7FK\noury (63))*
SELECT EnglishProductCategoryName, ROUND(AVG(TaxAmt), 2) AS 'Avg Tax Amount', SUM(OrderQuantity) as 'Orders Quantity'
FROM FactInternetSales as FIS
INNER JOIN DimProduct as DP ON DP.ProductKey = FIS.ProductKey
INNER JOIN DimProductSubcategory as DPSC ON DPSC.ProductSubcategoryKey = DP.ProductSubcategoryKey
INNER JOIN DimProductCategory as DPC ON DPC.ProductCategoryKey = DPSC.ProductCategoryKey
GROUP BY EnglishProductCategoryName
```

Results | Messages

	EnglishProductCategoryName	Avg Tax Amount	Orders Quantity
1	Clothing	2.99	9101
2	Bikes	148.99	15205
3	Accessories	1.55	36092

Question 6 (5 points)

Listen

Monthly Sales by Year and month

Hint :

FROM

FactInternetSales
INNER JOIN DimDate
GRUP BY
YEAR(FullDateAlternateKey) AS SalesYear,
MONTH(fullDateAlternateKey) AS SalesMonth,

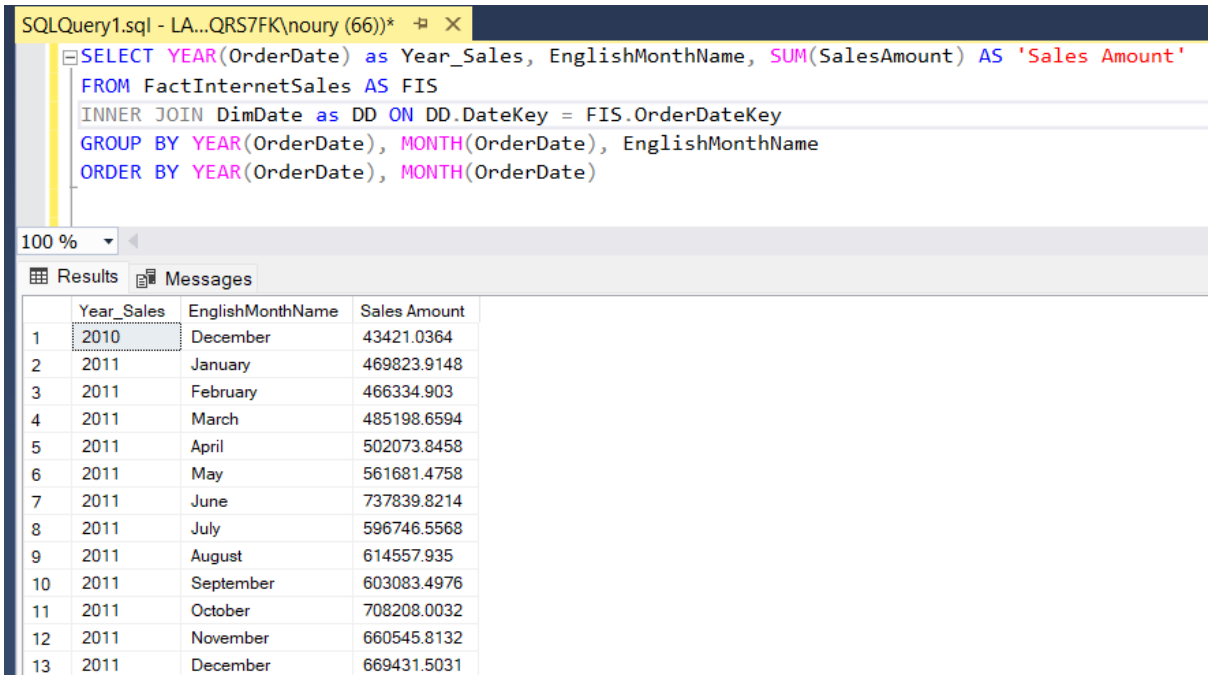
SELECT YEAR(OrderDate) as Year_Sales, EnglishMonthName, SUM(SalesAmount) AS 'Sales Amount'

FROM FactInternetSales AS FIS

INNER JOIN DimDate as DD ON DD.DateKey = FIS.OrderDateKey

GROUP BY YEAR(OrderDate), MONTH(OrderDate), EnglishMonthName

ORDER BY YEAR(OrderDate), MONTH(OrderDate)



	Year_Sales	EnglishMonthName	Sales Amount
1	2010	December	43421.0364
2	2011	January	469823.9148
3	2011	February	466334.903
4	2011	March	485198.6594
5	2011	April	502073.8458
6	2011	May	561681.4758
7	2011	June	737839.8214
8	2011	July	596746.5568
9	2011	August	614557.935
10	2011	September	603083.4976
11	2011	October	708208.0032
12	2011	November	660545.8132
13	2011	December	669431.5031

Question 7 (5 points)

Listen

Customer Count by Income Group. MAKE YOUR OWN 4 GROUPS....

Hint :
From DimCustomer ONLY

WHEN YearlyIncome < 50000 THEN 'Below 50K'
WHEN YearlyIncome BETWEEN 50000 AND 100000 THEN '50K-100K'
ELSE 'Above 100K'

```
WITH IncomeGroups AS (
  SELECT
    CASE
      WHEN YearlyIncome < 50000 THEN '<50k'
      WHEN YearlyIncome BETWEEN 50000 AND 80000 THEN '[50k-80k]'
      WHEN YearlyIncome > 80000 AND YearlyIncome < 100000 THEN '[80k-100k]'
      ELSE '> 100K'
    END AS IncomeGroup
  FROM DimCustomer
)
SELECT IncomeGroup, COUNT(*) AS IncomeGroupCount
FROM IncomeGroups
GROUP BY IncomeGroup
ORDER BY
  CASE
    WHEN IncomeGroup = '<50k' THEN 1
    WHEN IncomeGroup = '[50k-80k]' THEN 2
    WHEN IncomeGroup = '[80k-100k]' THEN 3
    ELSE 4
  END;
```

SQLQuery1.sql - LA...QRS7FK\noury (58))*

```sql
WITH IncomeGroups AS (
    SELECT
        CASE
            WHEN YearlyIncome < 50000 THEN '<50k'
            WHEN YearlyIncome BETWEEN 50000 AND 80000 THEN '[50k-80k]'
            WHEN YearlyIncome > 80000 AND YearlyIncome < 100000 THEN '[80k-100k]'
            ELSE '> 100K'
        END AS IncomeGroup
    FROM DimCustomer
)
SELECT IncomeGroup, COUNT(*) AS IncomeGroupCount
FROM IncomeGroups
GROUP BY IncomeGroup
ORDER BY
    CASE
        WHEN IncomeGroup = '<50k' THEN 1
        WHEN IncomeGroup = '[50k-80k]' THEN 2
        WHEN IncomeGroup = '[80k-100k]' THEN 3
        ELSE 4
    END;
```

100 %

Results | Messages

	IncomeGroup	IncomeGroupCount
1	<50k	7956
2	[50k-80k]	7488
3	[80k-100k]	842
4	> 100K	2198

Question 8 (5 points)

Listen

Sales by Product and Country

Hint :

INNER JOIN DimGeography

SELECT EnglishProductName AS 'PRODUCT', EnglishCountryRegionName AS 'COUNTRY', SUM(SalesAmount) AS 'SALES'

FROM FactInternetSales AS FIS

INNER JOIN DimGeography AS DG ON DG.SalesTerritoryKey = FIS.SalesTerritoryKey

INNER JOIN DimProduct AS DP ON DP.ProductKey = FIS.ProductKey

GROUP BY EnglishCountryRegionName, EnglishProductName

ORDER BY EnglishProductName

```
SELECT EnglishProductName AS 'PRODUCT', EnglishCountryRegionName AS 'COUNTRY', SUM(SalesAmount) AS 'SALES'
FROM FactInternetSales AS FIS
INNER JOIN DimGeography AS DG ON DG.SalesTerritoryKey = FIS.SalesTerritoryKey
INNER JOIN DimProduct AS DP ON DP.ProductKey = FIS.ProductKey
GROUP BY EnglishCountryRegionName, EnglishProductName
ORDER BY EnglishProductName
```

Results | Messages

	PRODUCT	COUNTRY	SALES
1	All-Purpose Bike Stand	United States	1464549.00
2	All-Purpose Bike Stand	Australia	413400.00
3	All-Purpose Bike Stand	Germany	206700.00
4	All-Purpose Bike Stand	United Kingdom	235956.00
5	All-Purpose Bike Stand	France	145008.00
6	All-Purpose Bike Stand	Canada	371424.00
7	AWC Logo Cap	France	102270.24
8	AWC Logo Cap	United Kingdom	157235.10
9	AWC Logo Cap	Canada	158817.34
10	AWC Logo Cap	Australia	152470.40

Question 9 (5 points)

Listen

Sum Order Quantity by Product Subcategory. Pick lowest 5

Hint :

```
select top x
 SUM(fs.OrderQuantity) AS TotalOrderQuantity
ORDER BY
   TotalOrderQuantity aSC;
```

SELECT TOP(5) EnglishProductSubcategoryName AS 'Product Subcategory', SUM(OrderQuantity) AS 'Total Order Quantity'

FROM FactInternetSales AS FIS

INNER JOIN DimProduct AS DP ON DP.ProductKey = FIS.ProductKey

INNER JOIN DimProductSubcategory AS DPS ON DPS.ProductSubcategoryKey = DP.ProductSubcategoryKey

GROUP BY EnglishProductSubcategoryName

ORDER BY 'Total Order Quantity' ASC

SQLQuery1.sql - LA...QRS7FK\noury (53))*

```
SELECT TOP(5) EnglishProductSubcategoryName AS 'Product Subcategory', SUM(OrderQuantity)
AS 'Total Order Quantity'
FROM FactInternetSales AS FIS
INNER JOIN DimProduct AS DP ON DP.ProductKey = FIS.ProductKey
INNER JOIN DimProductSubcategory AS DPS ON DPS.ProductSubcategoryKey = DP.ProductSubcategoryKey
GROUP BY EnglishProductSubcategoryName
```

100 %

Results | Messages

	Product Subcategory	Total Order Quantity
1	Bike Stands	249
2	Bike Racks	328
3	Vests	562
4	Socks	568
5	Hydration Packs	733

Question 10 (5 points)

Listen

Sales by Promotion and Product

Hint :

Join DimPromotion and DimProduct

SELECT EnglishPromotionName AS 'PROMOTION', EnglishProductName AS 'PRODUCT', SUM(SalesAmount) AS 'SALES'

from FactInternetSales AS FIS

INNER JOIN DimProduct AS DP ON DP.ProductKey = FIS.ProductKey

INNER JOIN DimPromotion AS DPM ON DPM.PromotionKey = FIS.PromotionKey

GROUP BY EnglishProductName, EnglishPromotionName

ORDER BY EnglishPromotionName, 'SALES' DESC

```sql
SELECT EnglishPromotionName AS 'PROMOTION', EnglishProductName AS 'PRODUCT', SUM(SalesAmount) AS 'SALES'
from FactInternetSales AS FIS
INNER JOIN DimProduct AS DP ON DP.ProductKey = FIS.ProductKey
INNER JOIN DimPromotion AS DPM ON DPM.PromotionKey = FIS.PromotionKey
GROUP BY EnglishProductName, EnglishPromotionName
ORDER BY EnglishPromotionName, 'SALES' DESC

select * from [dbo].[FactInternetSales]
```

Results | Messages

PROMOTION	PRODUCT	SALES
No Discount	Mountain-200 Black, 42	1363142.0934
No Discount	Mountain-200 Black, 38	1294866.1412
No Discount	Mountain-200 Silver, 42	1257434.5728
No Discount	Road-150 Red, 48	1205876.99
No Discount	Road-150 Red, 62	1202298.72
No Discount	Road-150 Red, 52	1080637.54
No Discount	Road-150 Red, 56	1055589.65
No Discount	Road-150 Red, 44	1005493.87
No Discount	Mountain-200 Silver, 46	1004141.3784
No Discount	Mountain-200 Silver, 38	977544.3504
No Discount	Mountain-200 Black, 46	766526.66
No Discount	Road-250 Black, 52	734401.20
No Discount	Road-250 Red, 58	702637.65
No Discount	Road-250 Black, 48	691206.2625