



**Data Warehousing & Business Intelligent  
(IT)  
3<sup>rd</sup> Year, 1<sup>st</sup> Semester**

**Assignment 2 - part 1**

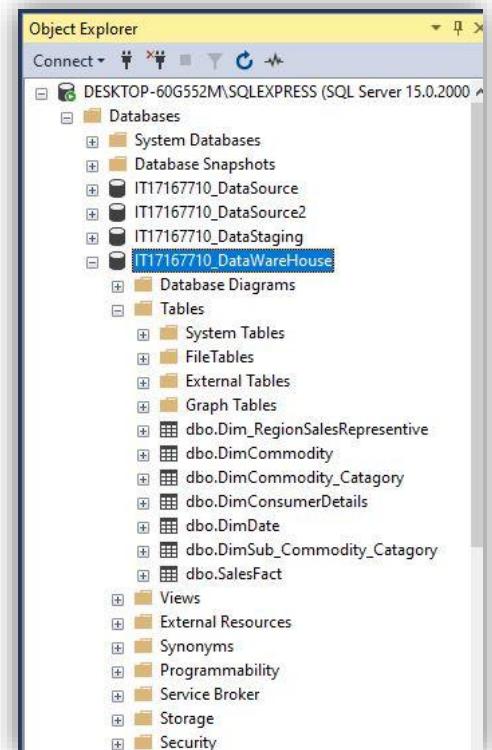
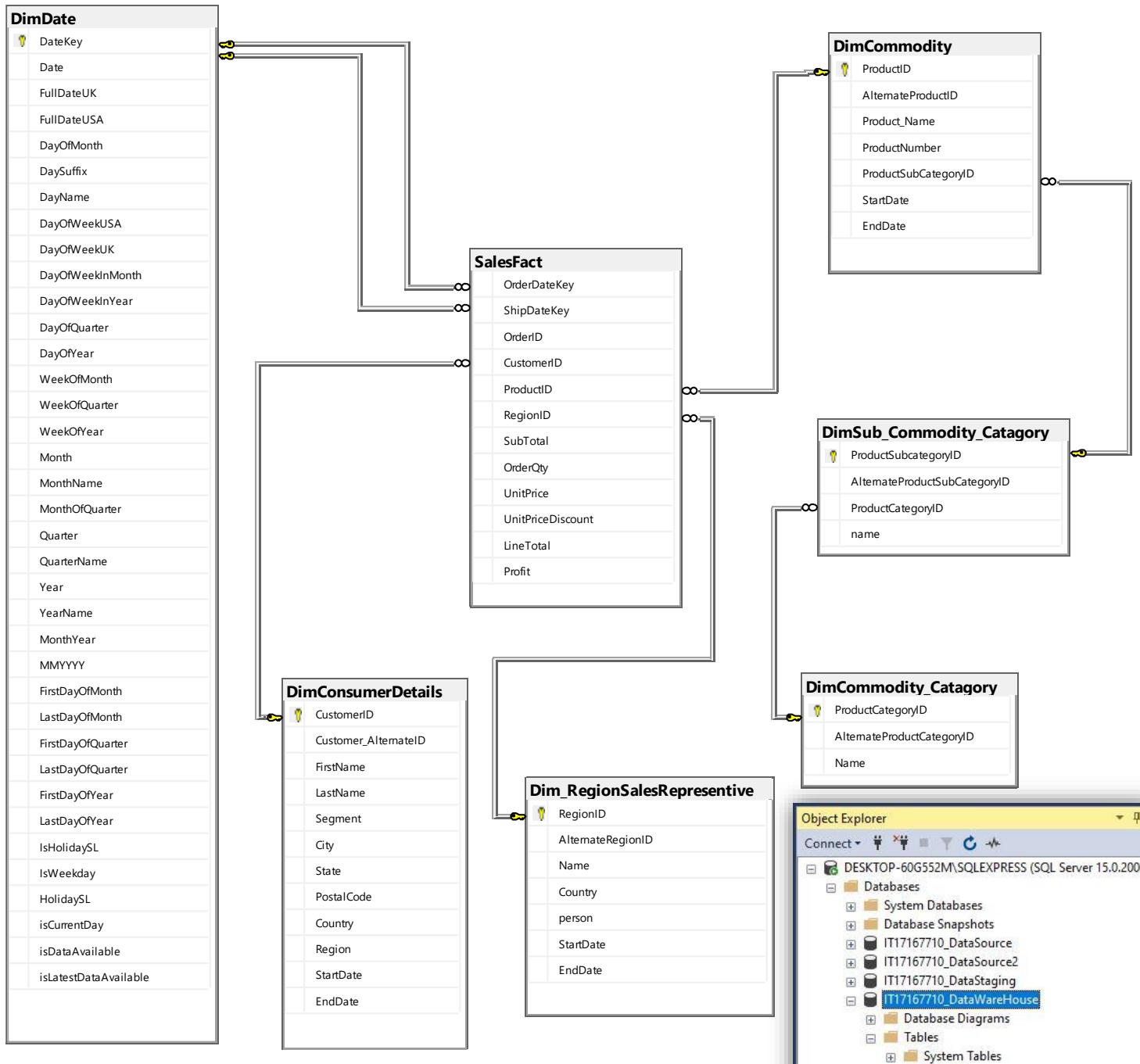
Submitted to  
Sri Lanka Institute of Information Technology

Bachelor of Science Special Honors Degree in Data Science

IT17167710  
D.M.J.Prathapa  
Weekday Batch

## Step 1: Data source for the assignment 2

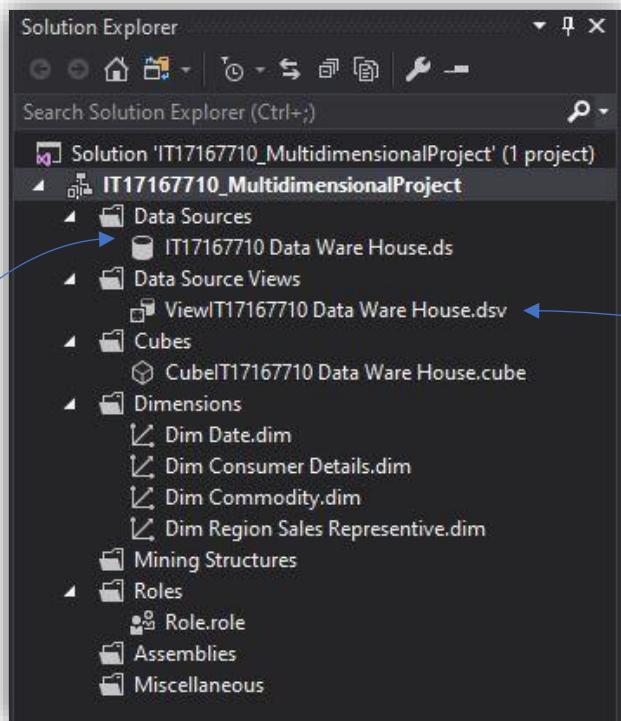
- I Used the **IT17167710\_DataWareHouse** that I have implemented and loaded with data in Assignment 1 as the data source for the assignment 2.



## Step 2: SSAS Cube implementation

Created a new Analysis Services Multidimensional and Data Mining Project called IT17167710\_MultidimensionalProject.

Then I have configured each option from top to bottom as shown below to create a data cube.



I created a data source based on new connection.

Once I completed the Data Source configuration, it created a new data source in solution explorer under Data Sources.

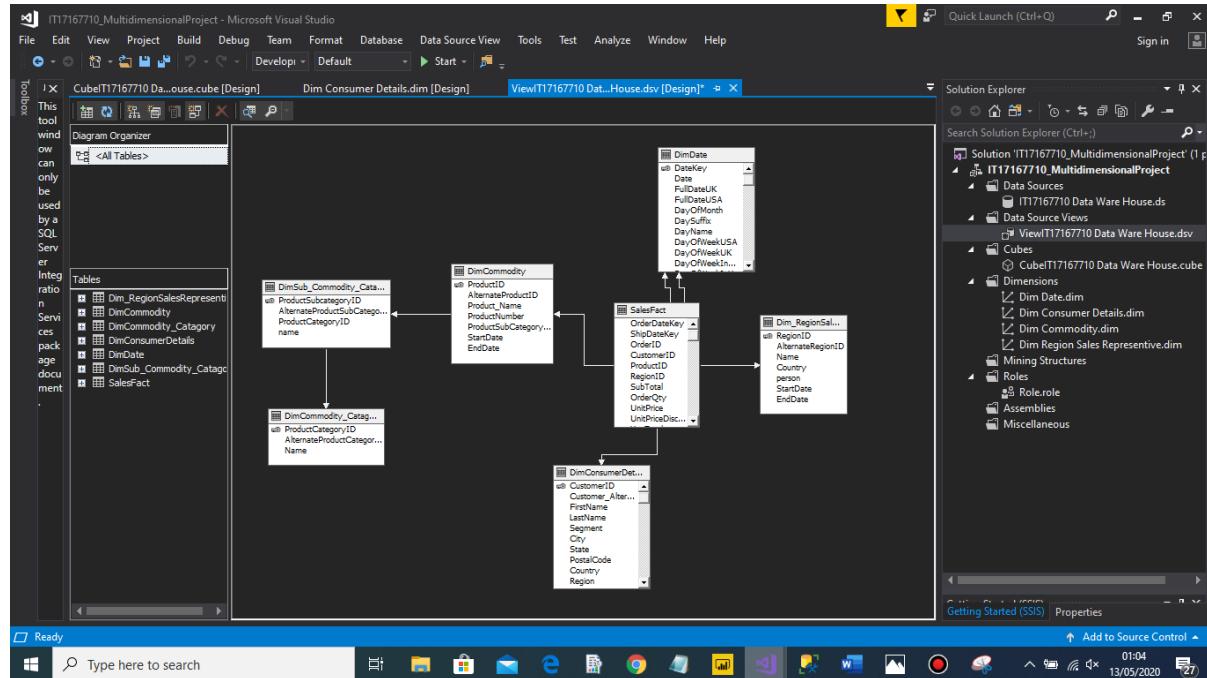
- Creating data source view

Then I Right clicked on Data Source Views and select "New Data Source View".

Then In the welcome screen of the wizard, clicked "Next" to continue the configuration.

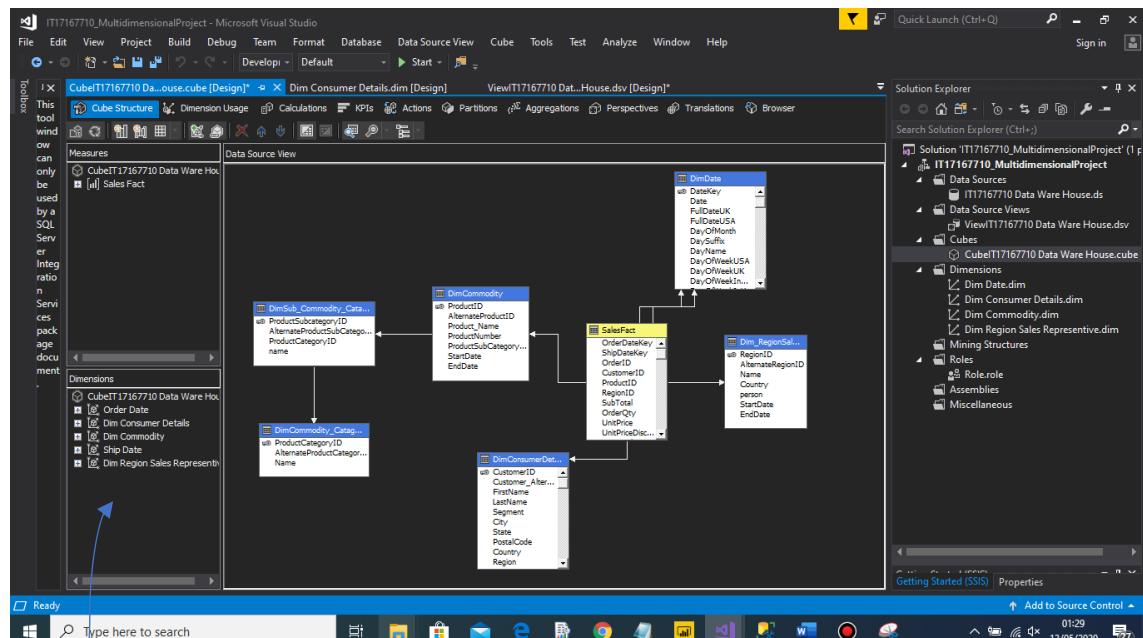
After that, I clicked on the "Add Related Tables" to automatically select and add the related dimension tables. It should automatically add SalesFact, DimDate, DimConsumerDetails, DimCommodity, Dim\_RegionSalesRepresentive dimensions to the list. However, it did not automatically add the DimCommodity\_Catagory and DimSub\_Commodity\_Catagory. So, I manually selected them and added to the list.

Once completed Creating data source view, the newly created data source view as shown in the below screenshot.



- Creating a Data Cube.

Once Cube wizard configurations completed, it created a data cube as shown in the screenshot below.



Then I have configured each dimension are shown in the table view

First, I configured the Dim Commodity dimension

The commodity, commodity Category and Sub commodity category all have keys as the displayed values in this cube.

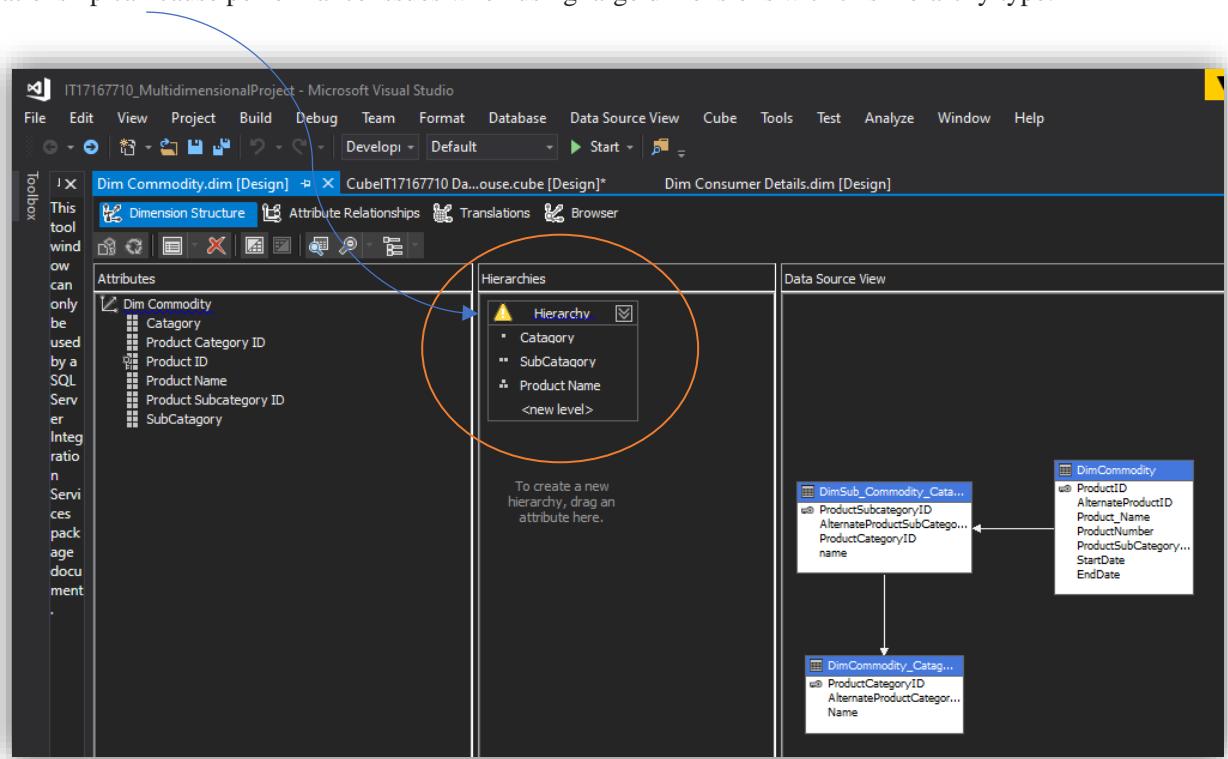
Changing the NameColumn property will enable a different column value to be used. The end user does not want to see the Primary key for commodity and, they would want to see the commodity Name.

So, I have changed the name NameColumn to Category and sub name to Subcategory.

As shown in the below I have created a commodity hierarchy in the cube.

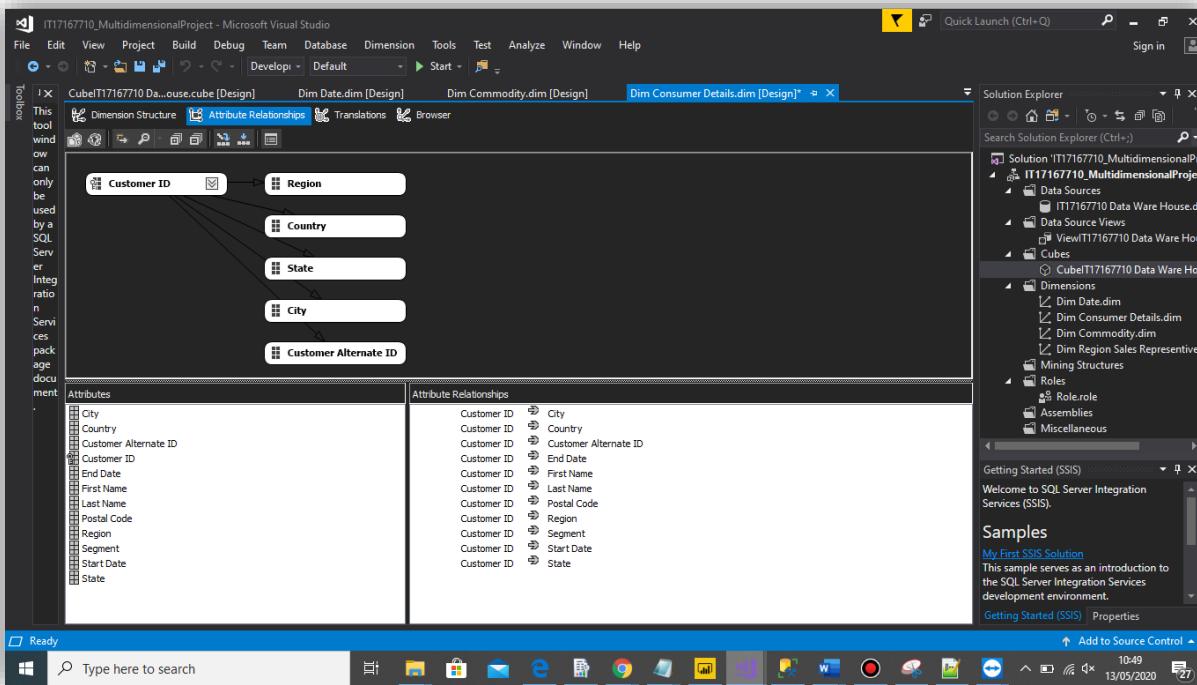
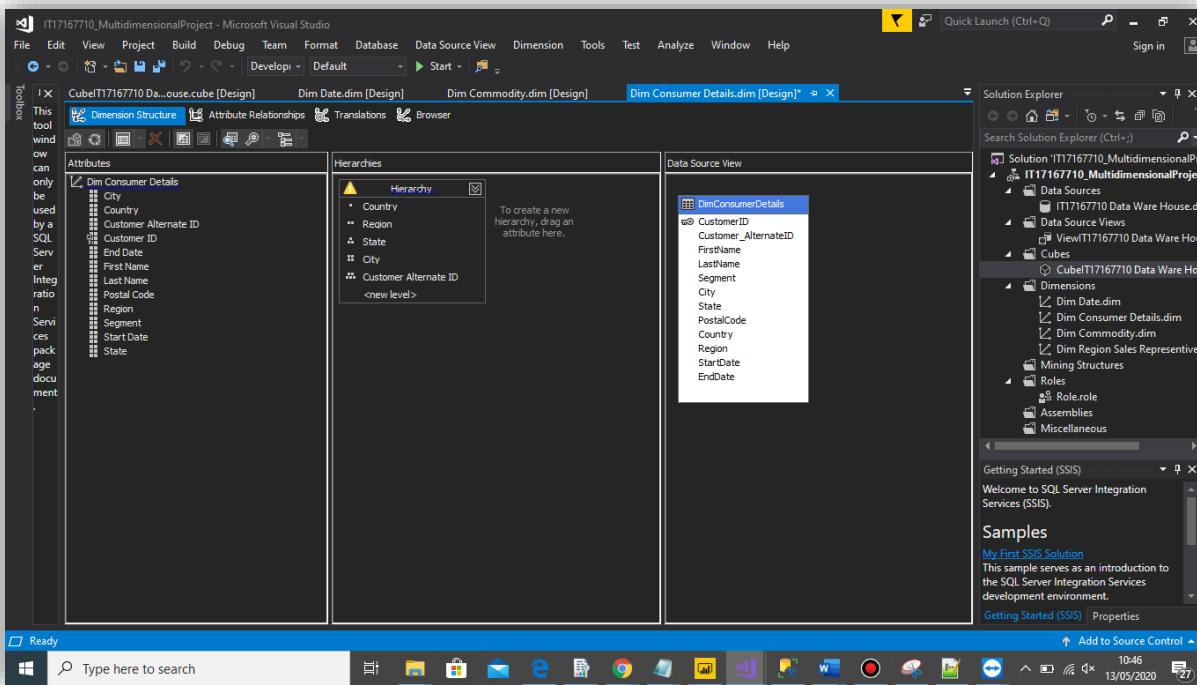
Category → Sub Category → product Name

This indicator is only a warning and will not prevent the cube from being deployed. It is only a saying no relationship can cause performance issues when using large dimensions with this hierarchy type.



(Commodity Hierarchy)

Hierarchies are useful in visual reporting tools to show the Parent/Child relationship between attributes. So, I have Created another hierarchy called Location hierarchy. This can be a natural hierarchy like Year/Qtr/Month/Day or a user hierarchy.



**(Location hierarchy)**

## Creating a KPI's

Then I have created 4 KPI's based on my business requirements.

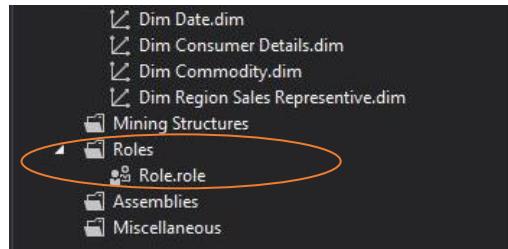
The screenshot shows the 'KPI Sub Total' configuration in the 'KPIs' tab of the Analysis Services Designer. The 'Name' field is set to 'KPI Sub Total'. The 'Associated measure group' dropdown is set to '<All>'. The 'Value Expression' field contains '[Measures].[Sub Total]'. The 'Goal Expression' field contains '[Measures].[Sub Total] > 100000'. A callout box labeled 'KPI Sub Total' is positioned to the right of the configuration pane.

The screenshot shows the 'KPI Profit' configuration in the 'KPIs' tab of the Analysis Services Designer. The 'Name' field is set to 'KPI Profit'. The 'Associated measure group' dropdown is set to '<All>'. The 'Value Expression' field contains '[Measures].[Profit]'. The 'Goal Expression' field contains '[Measures].[Profit] > 10000'. A callout box labeled 'KPI Profit' is positioned to the right of the configuration pane.

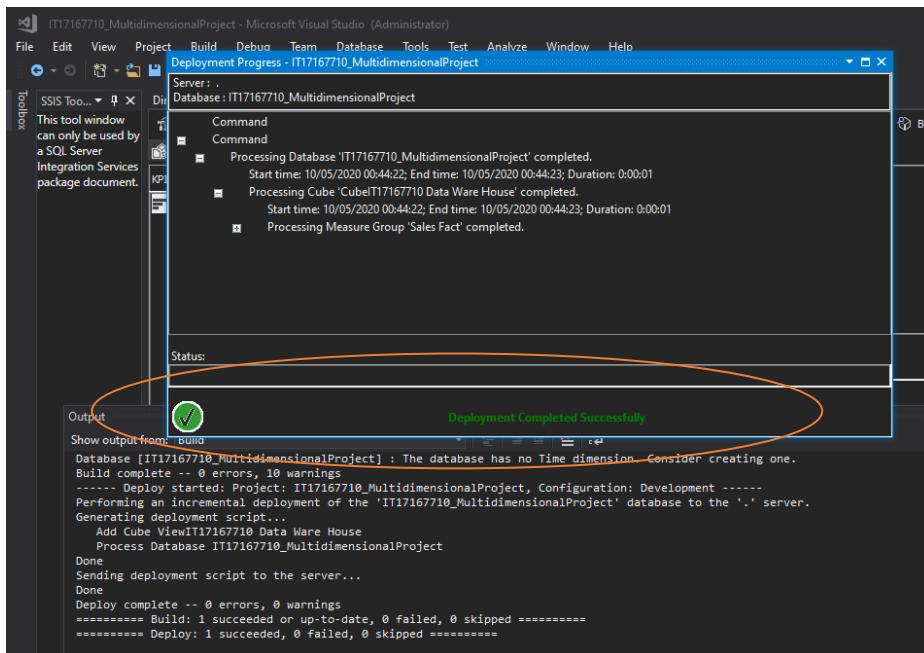
The screenshot shows the 'KPI Line Total' configuration in the 'KPIs' tab of the Analysis Services Designer. The 'Name' field is set to 'KPI Line Total'. The 'Associated measure group' dropdown is set to '<All>'. The 'Value Expression' field contains '[Measures].[Line Total]'. The 'Goal Expression' field contains '[Measures].[Line Total]> 100'. A callout box labeled 'KPI Line Total' is positioned to the right of the configuration pane.

The screenshot shows the 'KPI Sub Total' configuration in the 'KPIs' tab of the Analysis Services Designer. The 'Name' field is set to 'KPI Sub Total'. The 'Associated measure group' dropdown is set to '<All>'. The 'Value Expression' field contains '[Measures].[Order Qty]'. The 'Goal Expression' field contains '[Measures].[Order Qty] > 50'. A callout box labeled 'KPI Sub Total' is positioned to the right of the configuration pane.

Then I have created one user Role and provide permissions to access to the data cube



Finally, I have Deployed the project, I got the deployment is successful message as shown below.



Browsing the data cube

The screenshot shows two windows side-by-side. On the left is the 'Object Explorer' window, which lists the objects in the 'IT17167710\_DWBI\_Multidimensional\_Project' database, including dimensions, measures, and roles. A large orange oval surrounds the entire 'Object Explorer' window. On the right is the 'CubeIT17167710 Data Ware House [Browse]' window, which displays the structure of the 'CubeIT17167710 Data Ware House' cube. It shows the 'Measures' group containing 'Sales Fact' and 'KPIs', and the 'Dimensions' group containing 'Dim Commodity', 'Dim Consumer Details', 'Dim Date', and 'Dim Region Sales Representative'. The 'Calculated Members' tab is visible at the bottom of the browser window.

### Step 3: Demonstration of OLAP operations

Create an Excel report using MDX query

Using the Power pivot, Power Query, Power view in excel allow us to create a semantic layer inside excel.

To connect the excel workbook and to get the data to the semantic layer we use MDX query.

I dragged and dropped some fields from location hierarchy in consumer Location dimension and commodity hierarchy in commodity category dimension and added some filtering as well from the filtering section.

After that the data grid as displayed as below.

The screenshot shows the Microsoft Analysis Services Management Studio interface. On the left, there is a navigation pane titled 'Measure Group' containing a tree view of a cube named 'CubeIT17167710 Data Ware House'. The tree includes nodes for 'Measures' (with 'Sales Fact' expanded), 'KPIs', and various dimension nodes like 'Dim Commodity', 'Dim Consumer Details', etc. On the right, a large data grid displays a table with columns: Country, Region, State, City, Category, SubCategory, Sub Total, and Order Qty. The data is filtered to show rows for United States, Central Region, Illinois State, and specific categories like Furniture, Art, Paper, Storage, etc. The data grid has a header row and several data rows.

Country	Region	State	City	Category	SubCategory	Sub Total	Order Qty
United ...	Central	Illinois	Arl...	Furniture	Furnishings	266.52	3
United ...	Central	Illinois	Arl...	Office S...	Art	14.112	6
United ...	Central	Illinois	Arl...	Office S...	Paper	266.52	1
United ...	Central	Illinois	Arl...	Office S...	Storage	266.52	3
United ...	Central	Illinois	Au...	Furniture	Bookcases	1662.226	5
United ...	Central	Illinois	Au...	Furniture	Chairs	4843.324	12
United ...	Central	Illinois	Au...	Furniture	Furnishings	4413.32	23
United ...	Central	Illinois	Au...	Furniture	Tables	3958.627	9
United ...	Central	Illinois	Au...	Office S...	Appliances	2770.012	13
United ...	Central	Illinois	Au...	Office S...	Art	1215.006	34
United ...	Central	Illinois	Au...	Office S...	Binders	4806.809	38
United ...	Central	Illinois	Au...	Office S...	Envelopes	328.196	6
United ...	Central	Illinois	Au...	Office S...	Labels	269.492	8
United ...	Central	Illinois	Au...	Office S...	Paper	4858.894	38
United ...	Central	Illinois	Au...	Office S...	Storage	2954.47	26
United ...	Central	Illinois	Au...	Office S...	Supplies	261.1	5
United ...	Central	Illinois	Au...	Technolog...	Accessories	3064.74	15
United ...	Central	Illinois	Au...	Technolog...	Phones	12238.93	46

Then I Clicked on the Design Mode button to view the MDX query of the configuration.

The screenshot shows the Microsoft Analysis Services Management Studio interface in 'Design Mode'. The top bar says 'CubeIT17167710 Data Ware House [Browse] - Drill throth report.sql - not connected'. The main area has tabs for 'Edit as Text', 'Import...', 'MDX', and others. A red oval highlights the 'MDX' tab. Below it, the MDX query is displayed:

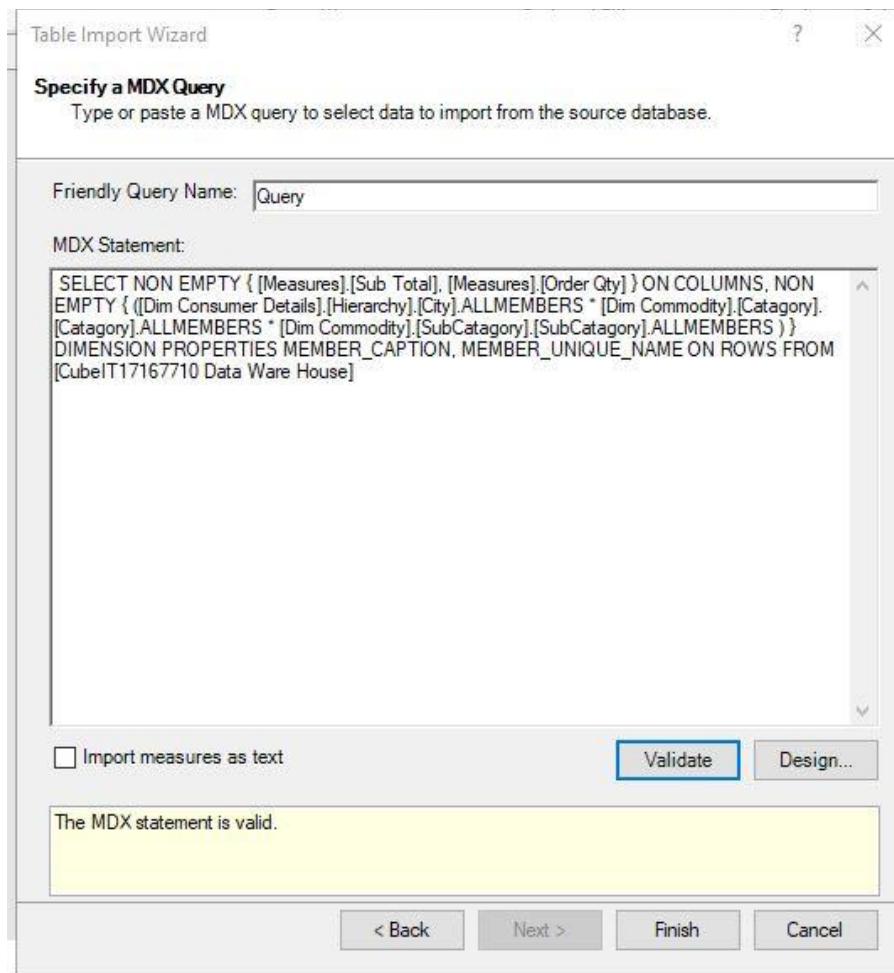
```
SELECT NON EMPTY { [Measures].[Sub Total], [Measures].[Order Qty] } ON COLUMNS, NON EMPTY { {[Dim Consumer Details].[Hierarchy].[City].ALLMEMBERS * [Dim Commodity].[Category].ALLMEMBERS * [Dim Commodity].[SubCategory].ALLMEMBERS } } ON ROWS FROM [CubeIT17167710 Data Ware House] CELL PROPERTIES VALUE, BACK_COLOR, FORE_COLOR, FORMATTED_VALUE, FORMAT_STRING, FONT_NAME, FONT_SIZE, FONT_FLAGS
```

Below the query, there is a data grid showing the same data as the previous screenshot. A blue arrow points from the bottom right of the MDX query area towards the data grid.

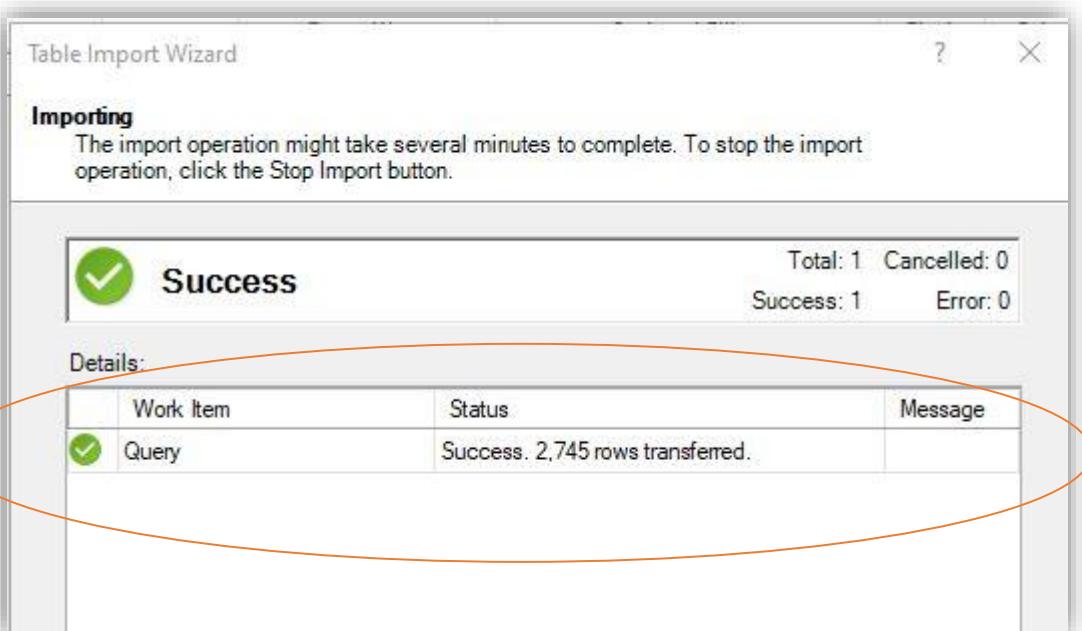
Country	Region	State	City	Category	SubCategory	Sub Total	Order Qty
United ...	Central	Illinois	Arl...	Furniture	Furnishings	266.52	3
United ...	Central	Illinois	Arl...	Office S...	Art	14.112	6
United ...	Central	Illinois	Arl...	Office S...	Paper	266.52	1

Then I have used this query in an Excel sheet to generate a report through Excel.

After pasting the generated query, clicked on Validate to make sure the query does not contain any errors



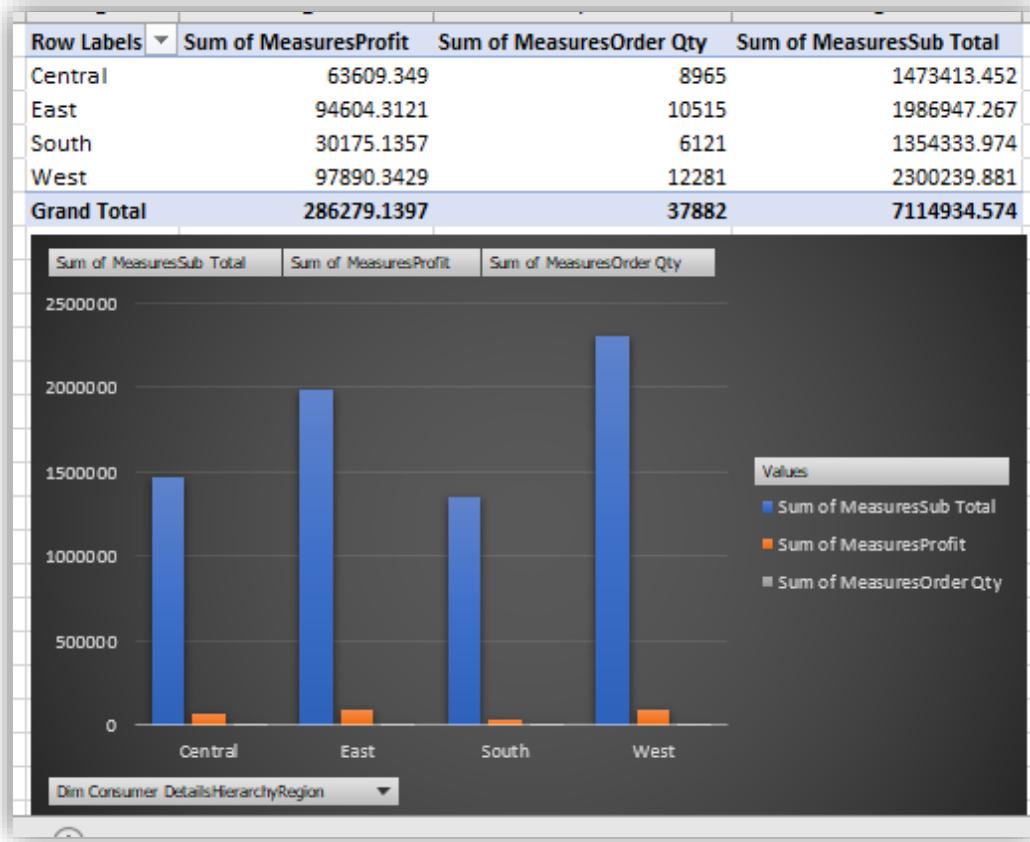
Then I have clicked on Finish to extract the data from the cube.



## Excel report – 01

- Pivot

In the below pivot table, I have statistically summarized the data of a more extensive sales table. This summary includes sum of Profit, sum of Quantities and sum Subtotal, which the pivot table groups together in a meaningful way in Region wise.



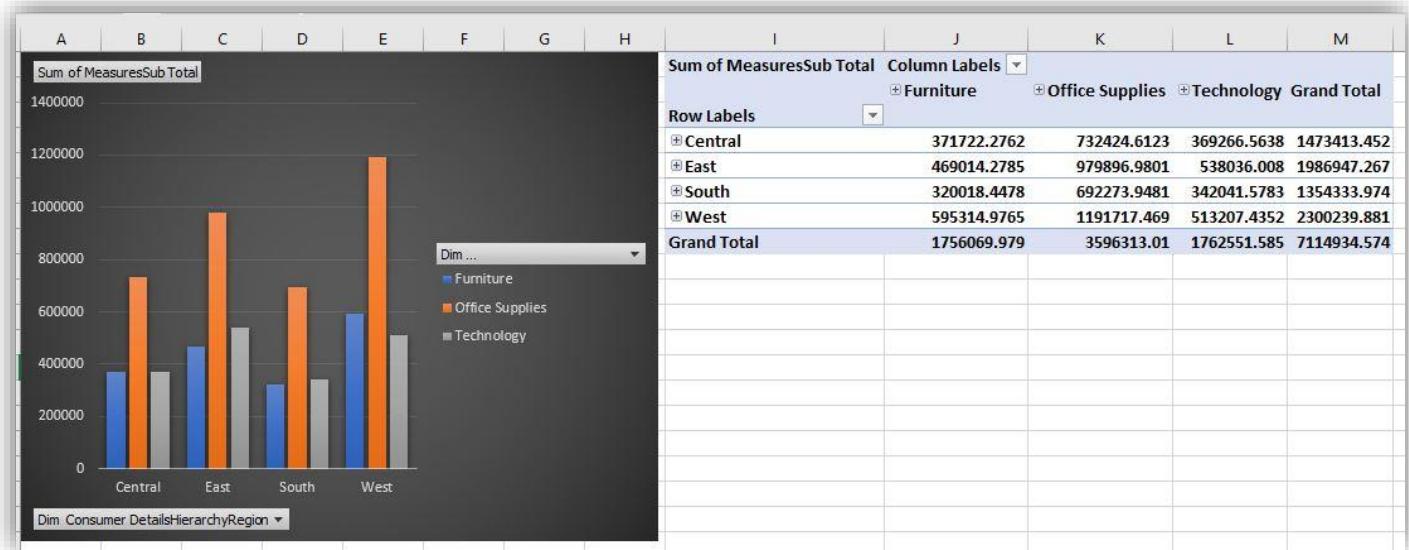
- Roll-up and Drill-down

In this excel sheet it shows the sub total sales amount. In the columns I have included a commodity category hierarchy (category → subcategory) so that report can be view by commodity category and subcategory wise and for the Rows I have used Location hierarchy (Region → State → city). So, in this case Report can be by view by the region wise state wise city wise.

In this roll up and drill down Report rows can drill down Region to city. So that report can view the city sales amount details. And report can roll up from city to Region so we can view the Region Wise sales amount.

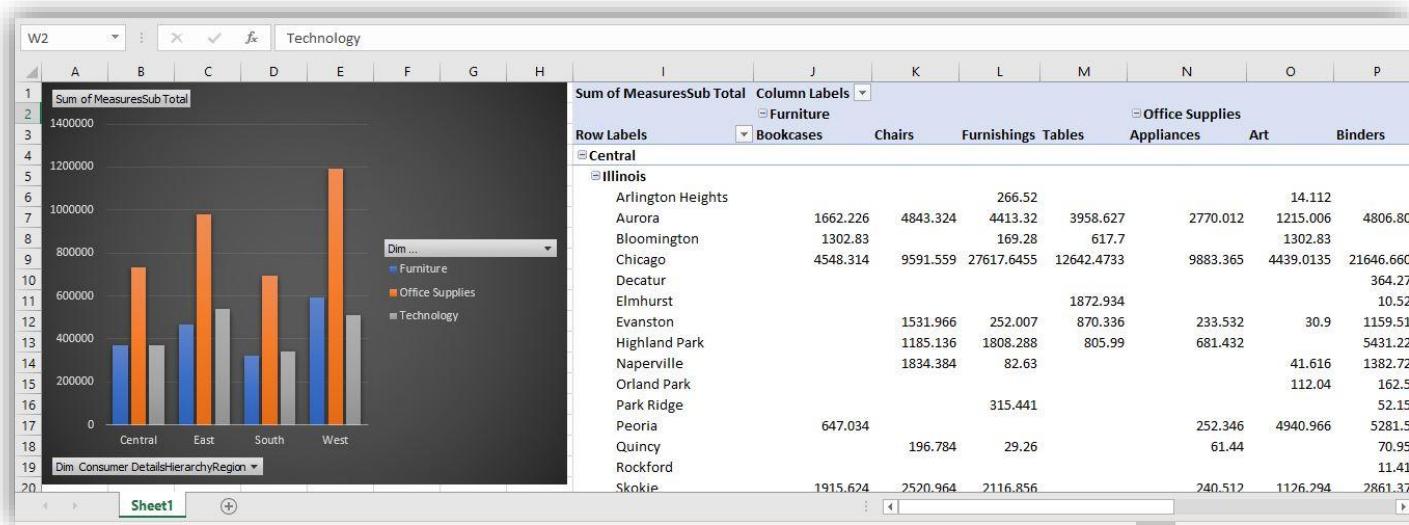
- Roll-up

Climbing up a hierarchy of a dimension to aggregate data means the Roll up OLAP operation in cubes.



- Drill-down

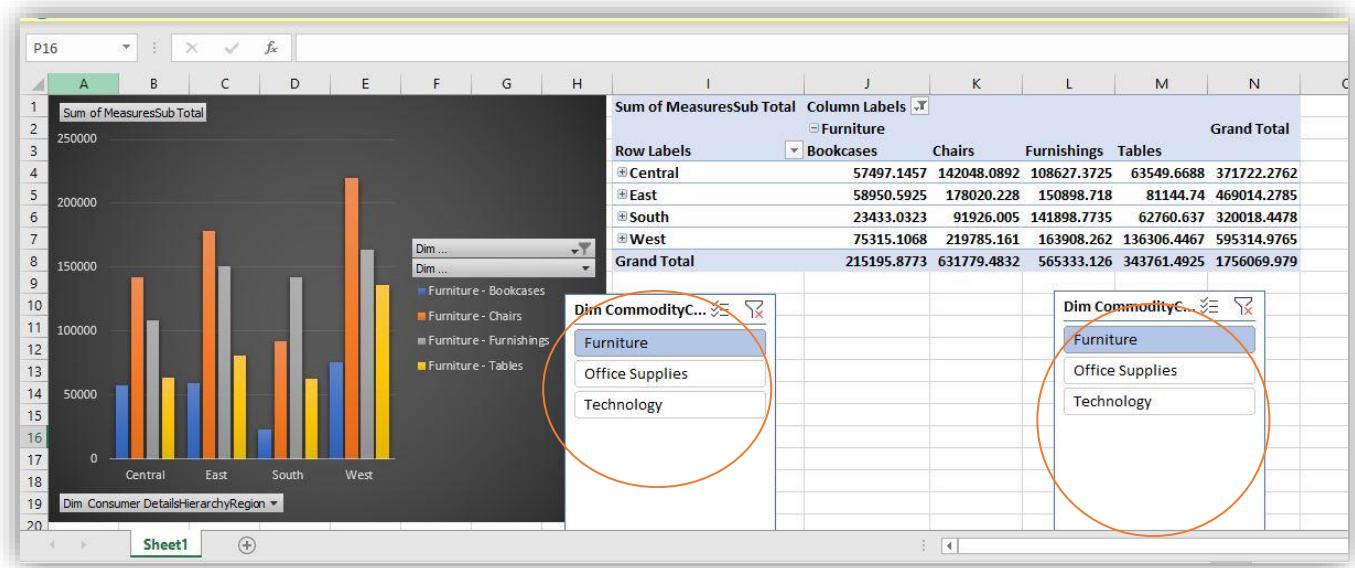
Stepping down a hierarchy of a dimension allowing navigation through details means the Drill down OLAP operation in cube.



- Slice

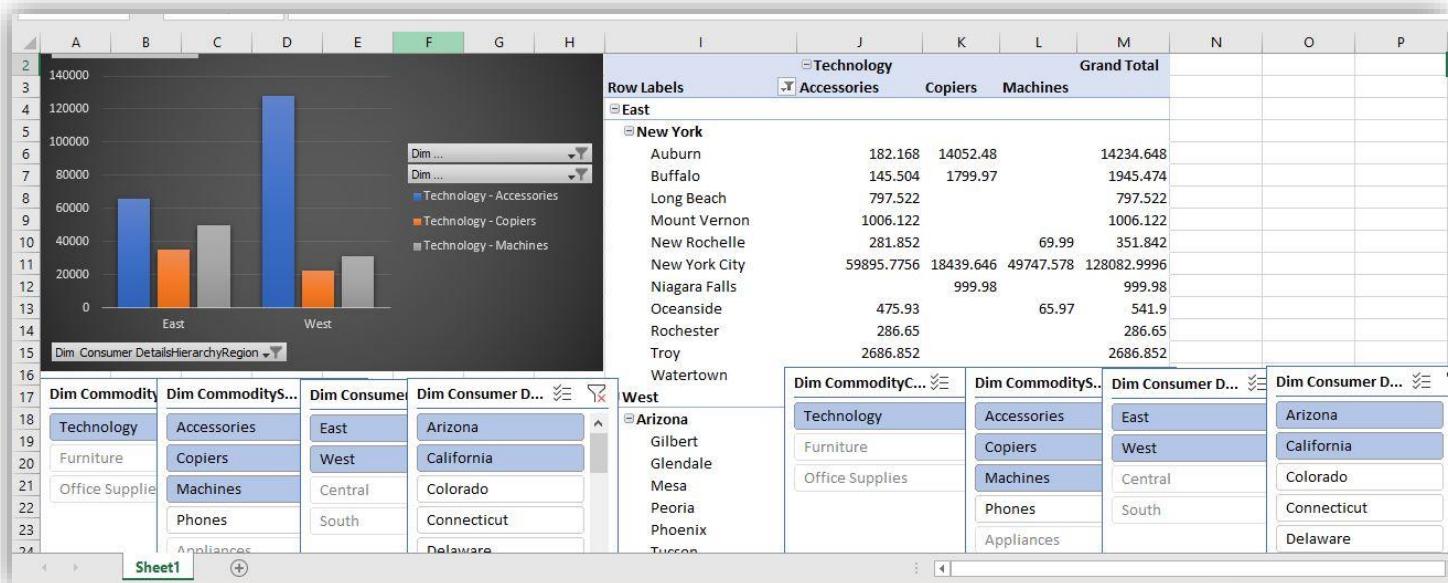
Slicers provide buttons that you can click to filter tables and graphs.

So, I have used a slicer to filter data in table and graph by commodity category. So, this report displays the total sales in central, west, south and East Regions by Category Furniture.



- Dice

This report shows sales details of Arizona, California and New York States by Accessories, copiers, machines Subcategory.

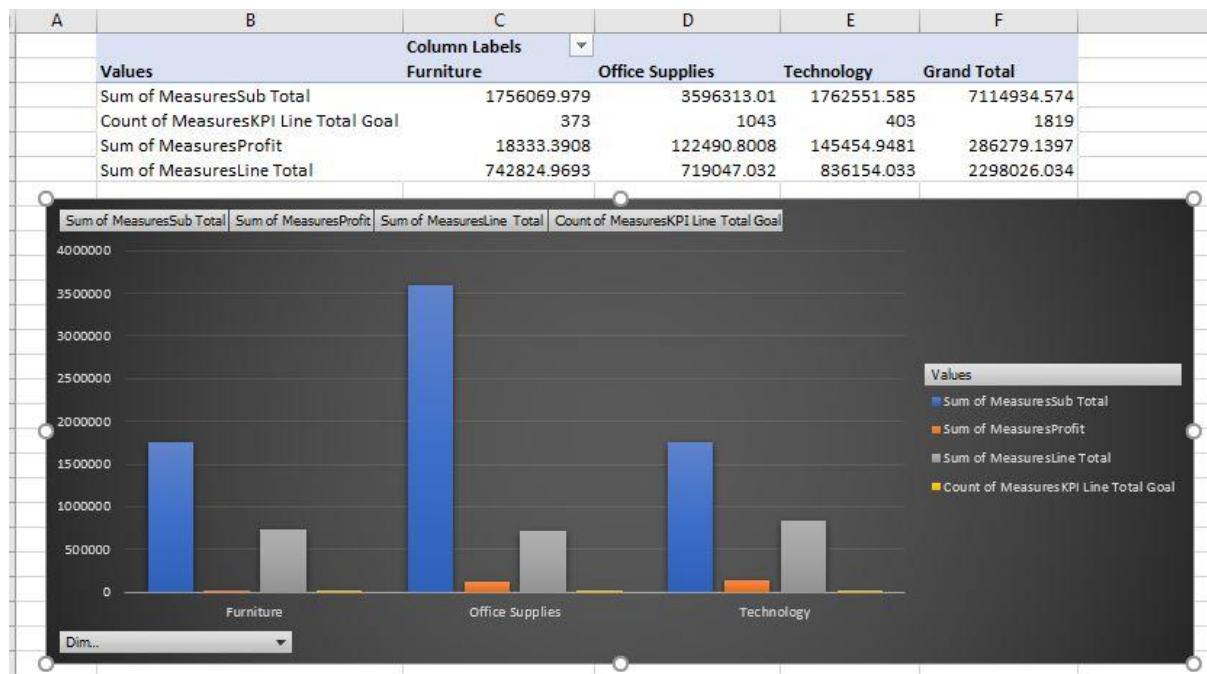


- Accessories, copiers, machines are subcategories of Technology category.
  - Arizona, California are states of West Region and New York is one state of East Region

## Excel report – 02

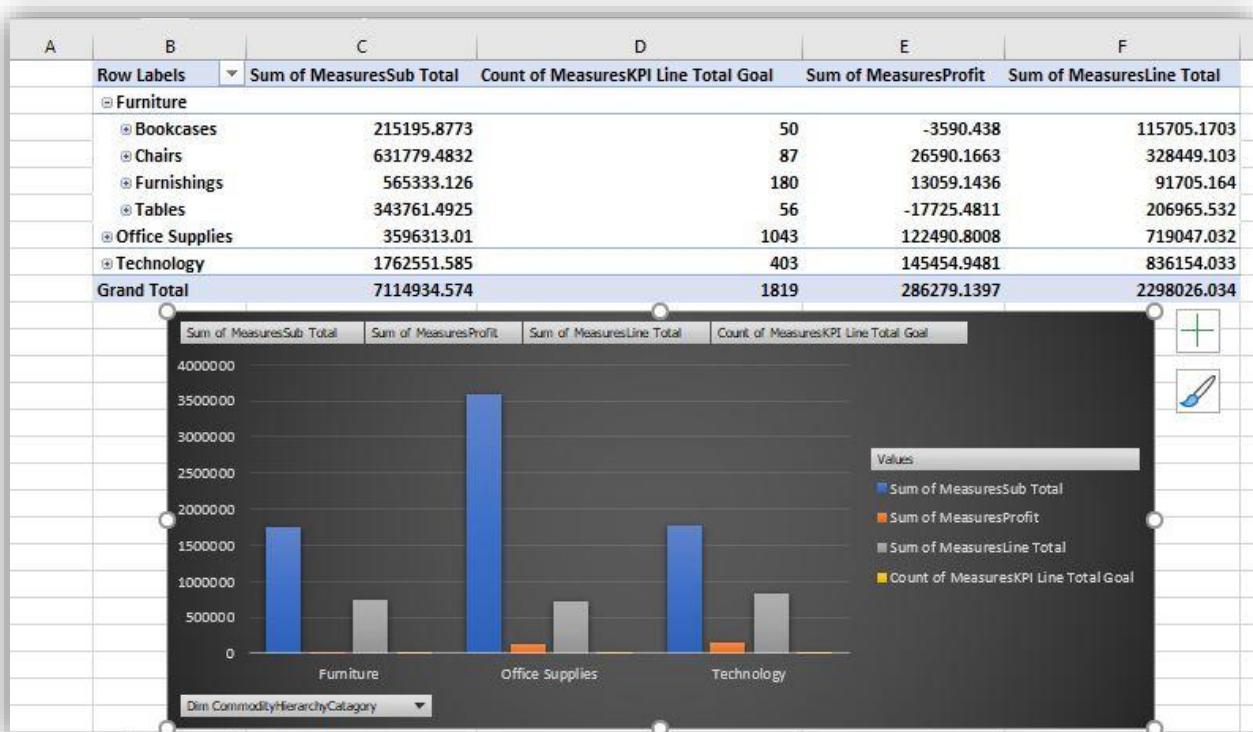
- Pivot

In the below pivot table, I have statistically that summarized the data of a more extensive sales table. This summary includes sum of Profit, sum of Quantities and sum Subtotal, which the pivot table groups together in a meaningful way in Category wise.



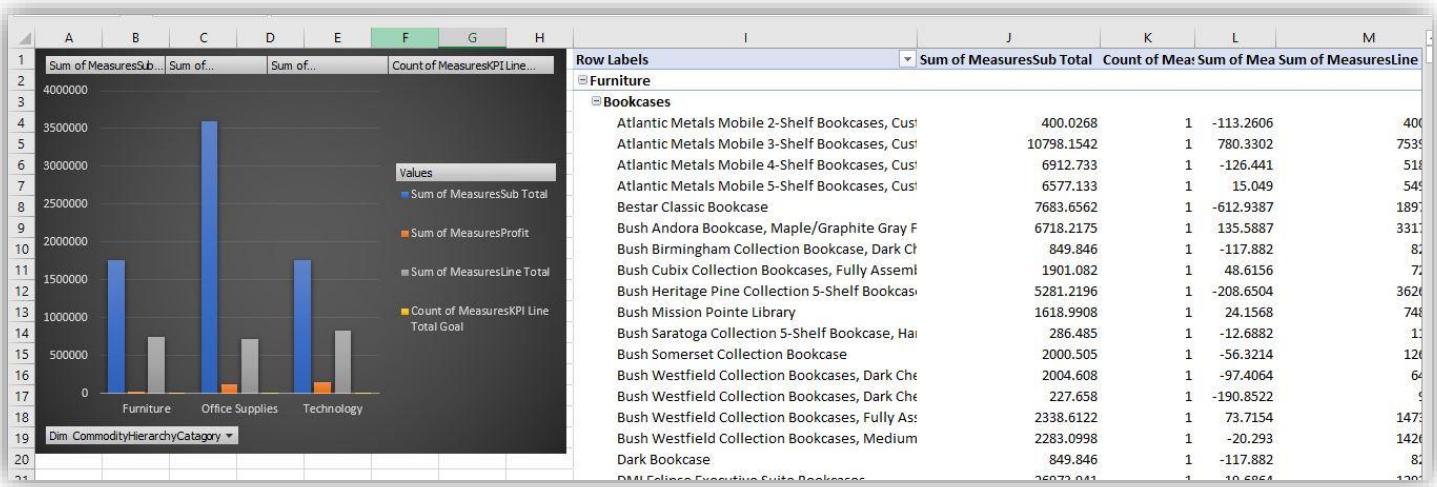
- Roll-up

This report can roll up from commodity to Commodity Category (category ← subcategory ← commodity), so we can view the Category Wise sales subtotal, profit and Quantities.



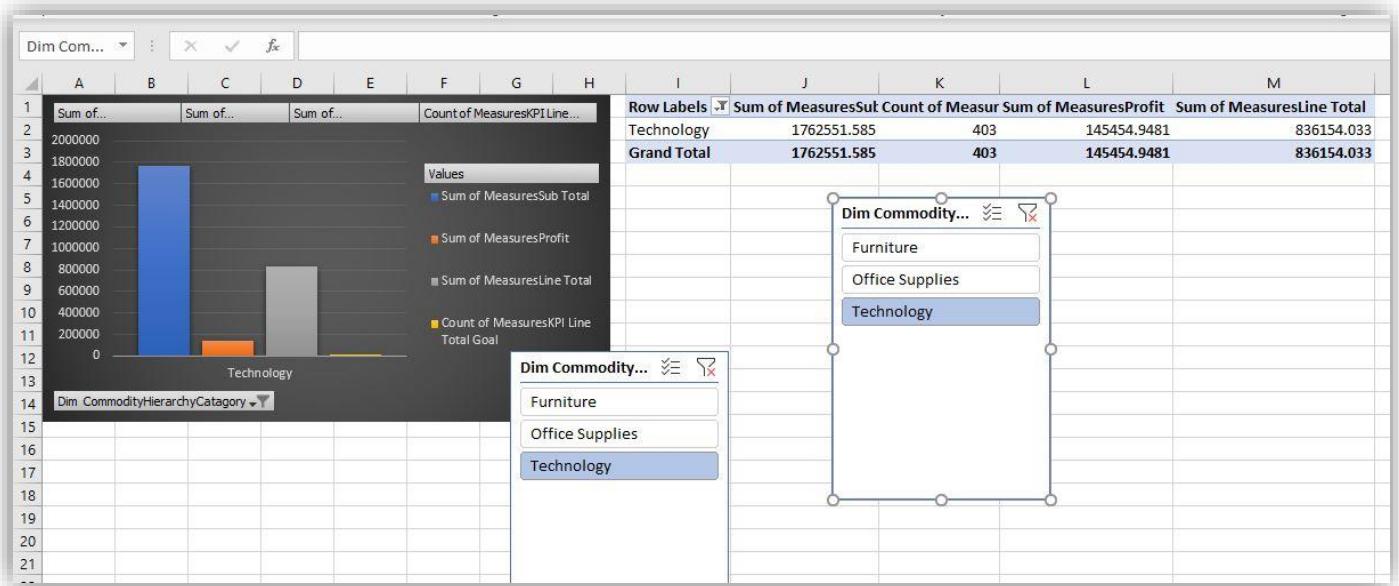
- Drill-down

In this Report, rows can drill down Commodity category to commodity. So that we can view the commodity Wise sales subtotal, profit and Quantities.

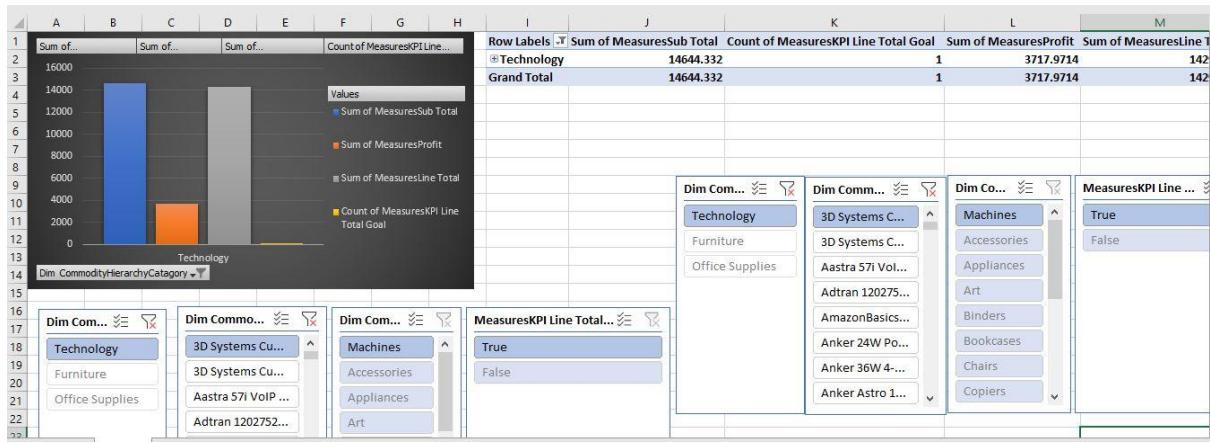


- Slice

In here I have used a slicer to filter by commodity category. So, this report displays the sub total, profit and Quantity by Category Technology.



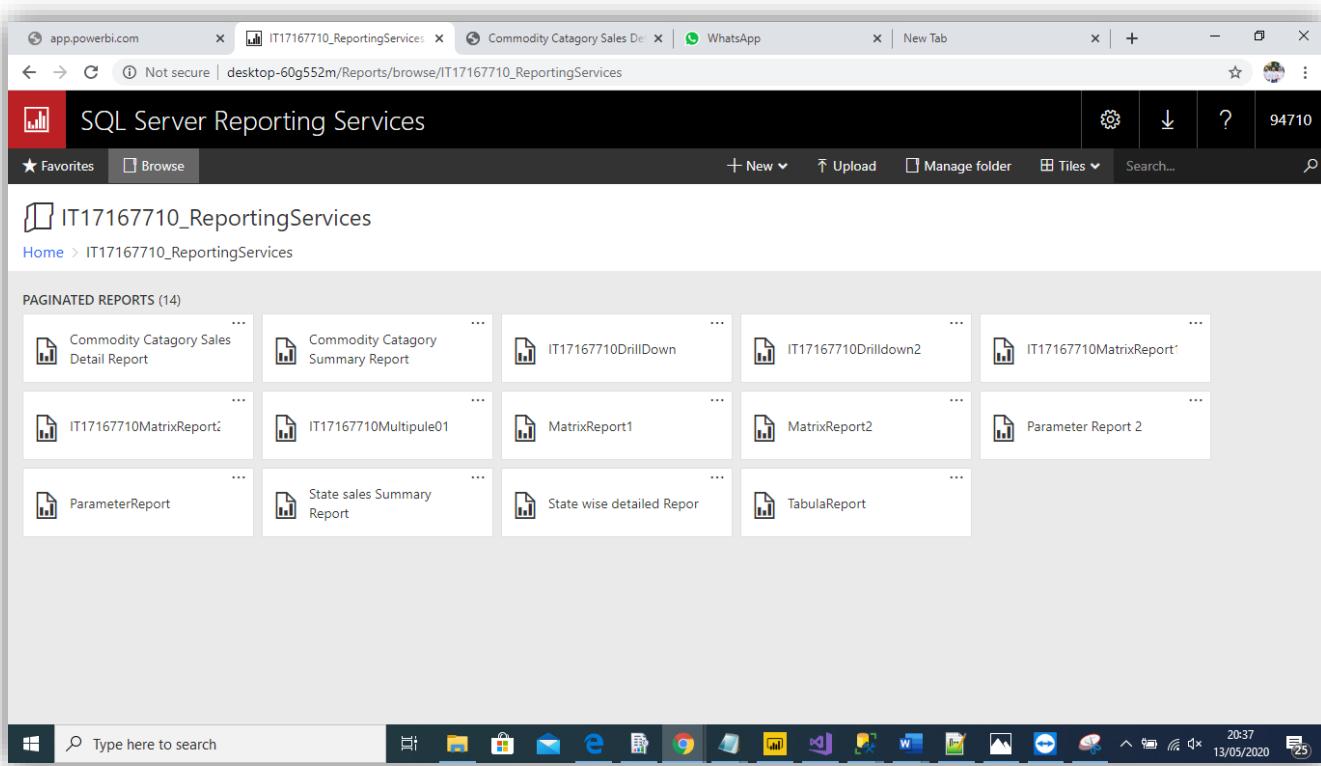
- Dice



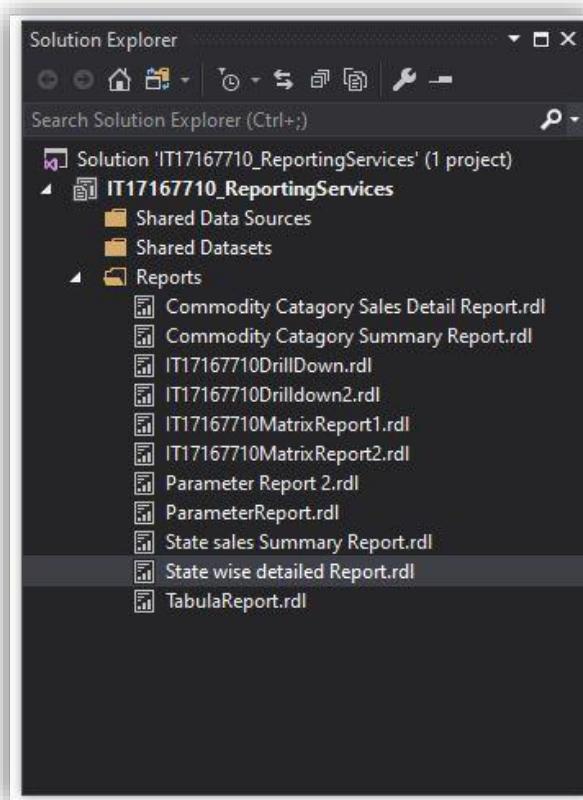
- In here I have added Line total KPI that created in SSAS project.  
**Line Total > \$100**
- This report shows commodity (Machines) wise profit, Quantities and subtotal which is KPI goal is true

## **Step 4: SSRS Reports**

SSRS is a platform creating, publishing, managing reports. Then we can deliver them to the right users in different ways like email, via a web browser, mobile device etc.



The screenshot shows the SQL Server Reporting Services web interface. At the top, there's a navigation bar with links for Favorites, Browse, New, Upload, Manage folder, Tiles, and Search. The main content area is titled "PAGINATED REPORTS (14)" and displays a grid of 14 report items. Each item has a thumbnail icon, a name, and a three-dot ellipsis menu. The reports include: Commodity Catagory Sales Detail Report, Commodity Catagory Summary Report, IT17167710DrillDown, IT17167710Drilldown2, IT17167710MatrixReport1, IT17167710MatrixReport2, IT17167710Multipule01, MatrixReport1, MatrixReport2, Parameter Report 2, ParameterReport, State sales Summary Report, State wise detailed Repor, and TabulaReport. Below the grid, there's a Windows taskbar with various pinned icons.



The screenshot shows the Solution Explorer window in Visual Studio. It lists the contents of the project "IT17167710\_Reportingservices". The project structure includes:

- Shared Data Sources
- Shared Datasets
- Reports
  - Commodity Catagory Sales Detail Report.rdl
  - Commodity Catagory Summary Report.rdl
  - IT17167710DrillDown.rdl
  - IT17167710Drilldown2.rdl
  - IT17167710MatrixReport1.rdl
  - IT17167710MatrixReport2.rdl
  - Parameter Report 2.rdl
  - ParameterReport.rdl
  - State sales Summary Report.rdl
  - State wise detailed Report.rdl
  - TabulaReport.rdl

## **1) Report 1: Report with a matrix**

Under this topic I have created two matrix reports

- 1) 1<sup>st</sup> report is containing on state and category wise sales details.
- 2) 2<sup>nd</sup> report is based on month and sub commodity category wise Sales details.

### **state and category wise sales details (subtotal) matrix Report**

The screenshot shows the 'Design' view of the SQL Server Reporting Services interface. It displays a matrix report titled 'State and Category wise Matrix Report'. The matrix has 'Category' as the column header and 'State' as the row header. A 'Sum/Sub Total' cell is located at the bottom right of the matrix area. Below the report preview, there is a 'Design view' button.

	Furniture	Office Supplies	Technology
Alabama	32037.2008	67808.7438	31464.8528
Arizona	78077.493	166501.479	62631.369
Arkansas	3363.422	5577.992	2953.668
California	349531.0463	663918.7752	292785.2092
Colorado	46275.4234	84290.9652	32350.69
Connecticut	17971.578	31482.581	7377.871
Delaware	40493.517	50118.593	43687.114
District of Columbia	83.15	1678.652	2080.738
Florida	39113.6928	85256.9050999	30911.7985
Georgia	30074.942	96383.2809999	39696.919
Illinois	89619.4527999	150374.2088	70613.3933
Indiana	15906.575	25616.283	15371.299
Iowa	5168.489	24271.96	11785.322
Kansas	559.706	2818.774	1876.046
Kentucky	19823.582	45343.956	21880.043
Louisiana	6728.51	29308.08	12122.866
Maryland	751.852	2256.128	460.568
Massachusetts	20644.831	41143.046	14147.078

The final report View

The screenshot shows the 'Preview' view of the SQL Server Reporting Services interface. It displays the same matrix report as the design view. The matrix has 'Category' as the column header and 'State' as the row header. A 'Sum/Sub Total' cell is located at the bottom right of the matrix area. Below the report preview, there is a 'Preview view' button.

	Furniture	Office Supplies	Technology
Alabama	32037.2008	67808.7438	31464.8528
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Georgia	30074.942	96383.2809999	39696.919
Illinois	89619.4527999	150374.2088	70613.3933
Indiana	15906.575	25616.283	15371.299
Iowa	5168.489	24271.96	11785.322
Kansas	559.706	2818.774	1876.046
Kentucky	19823.582	45343.956	21880.043
Louisiana	6728.51	29308.08	12122.866
Maryland	751.852	2256.128	460.568
Massachusetts	20644.831	41143.046	14147.078

Preview view

## Month and Subcategory wise sales details (subtotal) matrix Report

Commodity CatagoryReport.rdl [Design] IT17167710MatrixReport1.rdl [Design] X IT17167710MatrixReport2.rdl [Design]

Design Preview

Month and Sub Category wise Matrix Report

[SubCategory]  
[Month Name] [Sum(Sub Total)]

Design view

Commodity CatagoryReport.rdl [Design] IT17167710MatrixReport1.rdl [Design] X IT17167710MatrixReport2.rdl [Design]

Design Preview

Month and Sub Category wise Matrix Report

	Accessories	Appliances	Art	Binders	Bookcases	Chairs	Copiers	Envelopes	F
April	23140.3185	23222.153	30252.7695	58065.5505	14547.4306	27590.475	4649.838	2860.276	
August	42508.027	39048.375	22333.51	76465.6833	8272.333	31092.256	9988.461	11861.6775	
December	71802.797	40216.46	47087.8898	100322.934	28767.4265	100064.4482	25165.987	17932.3512	
February	11824.972	8601.322	6107.6344	25466.671	5570.2134	11285.437		3461.426	
January	15629.3906	9056.258	28813.2696	37617.143	14503.6006	22432.121	5149.348	7880.824	
July	41354.69	14998.053	24749.011	55060.205	15744.129	47314.611	10324.628	6422.654	
June	33923.655	29932.1502	24646.227	59644.1496	15201.0353	34283.282	976.29	1614.715	
March	32522.538	18016.585	56854.0874	56762.312	11036.5958	40514.257	28990.098	12682.585	
May	31250.076	20818.892	18789.33	53122.7678	9678.6717	46604.815	19123.408	6061.265	
November	86360.7095	51017.964	47274.2092	111655.9196	37160.8965	97824.268	17748.5468	22209.862	
October	38275.909	18865.732	42997.806	99466.2712	14934.7232	44646.909	40755.954	21233.047	
September	97128.2456	44175.681	68621.145	144251.8908	39778.8217	128126.604	12560.364	25759.4908	

Preview view

Not secure | desktop-60g552m/Reports/report/IT17167710\_Reportingservices/IT17167710MatrixReport1

SQL Server Reporting Services

★ Favorites □ Browse

Home > IT17167710\_Reportingservices > IT17167710MatrixReport1

1 of 1 100% Find | Next

The final report View

Month and Sub Category wise Matrix Report

	Accessories	Appliances	Art	Binders	Bookcases	Chairs	Copiers	Envelopes	Fasteners	Furnishings	Labels	Machines	Paper
April	23140.3185	23222.153	30252.7695	58065.5505	14547.4306	27590.475	4649.838	2860.276	4462.486	37564.2405	5776.9696	20096.771	28410.167
August	42508.027	39048.375	22333.51	76465.6833	8272.333	31092.256	9988.461	11861.6775	7938.078	44115.637	11077.6972	9476.481	62482.1312
December	71802.797	40216.46	47087.8898	100322.934	28767.4265	100064.4482	25165.987	17932.3512	10591.645	68059.832	21672.604	20339.063	107864.232
February	11824.972	8601.322	6107.6344	25466.671	5570.2134	11285.437		3461.426	4178.298	20356.262	2574.54	9286.564	17830.285
January	15629.3906	9056.258	28813.2696	37617.143	14503.6006	22432.121	5149.348	7880.824	5120.382	20025.187	3047.674	9004.061	28469.719
July	41354.69	14998.053	24749.011	55060.205	15744.129	47314.611	10324.628	6422.654	5824.088	47718.108	9903.647	6822.198	49254.336
June	33923.655	29932.1502	24646.227	59644.1496	15201.0353	34283.282	976.29	1614.715	4708.384	35550.043	10297.241	15033.2226	56557.1977
March	32522.538	18016.585	56854.0874	56762.312	11036.5958	40514.257	28990.098	12682.585	29731.474	78984.245	9859.31	66971.063	99459.0406
May	31250.076	20818.892	18789.33	53122.7678	9678.6717	46604.815	19123.408	6061.265	4651.728	35180.9945	21145.868	15892.951	56457.404
November	86360.7095	51017.964	47274.2092	111655.9196	37160.8965	97824.268	22209.862	12870.912	85153.958	22891.9438	41243.357	95136.6092	
October	38275.909	18865.732	42997.806	99466.2712	14934.7232	44646.909	40755.954	21233.047	9459.331	31721.631	11383.837	11599.279	47890.403
September	97128.2456	44175.681	68621.145	144251.8908	39778.8217	128126.604	12560.364	25759.4908	14850.108	60902.988	34039.708	38539.448	126778.0108

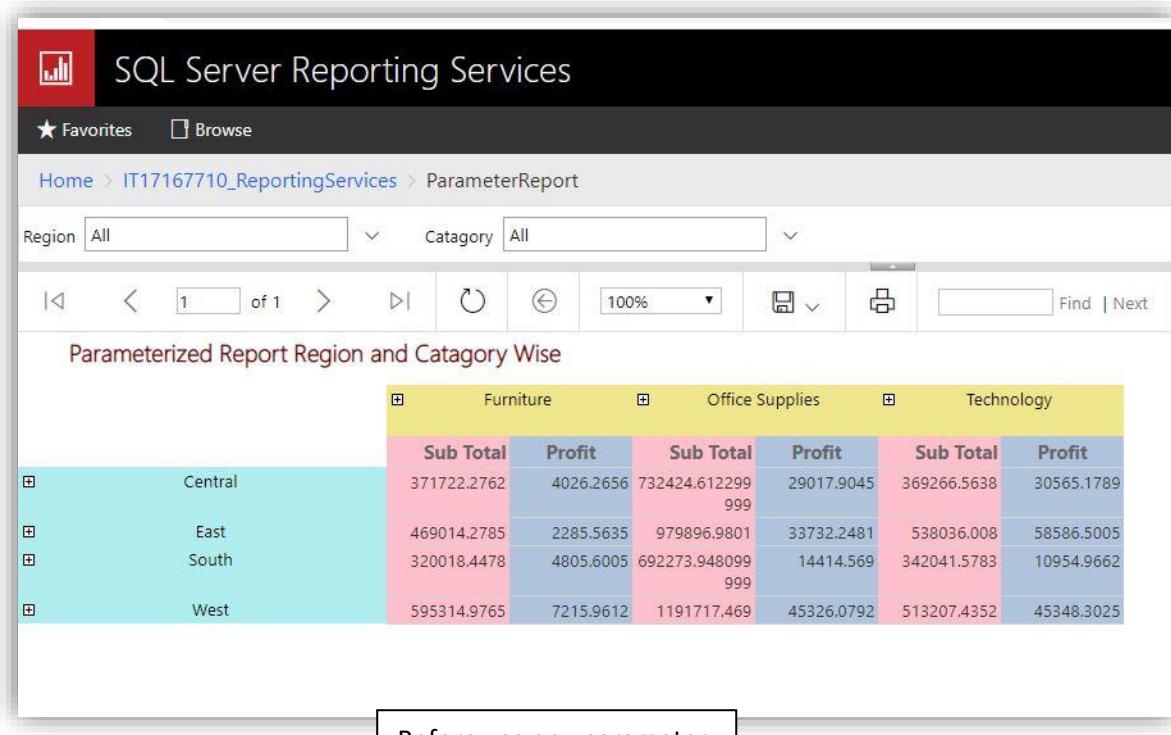
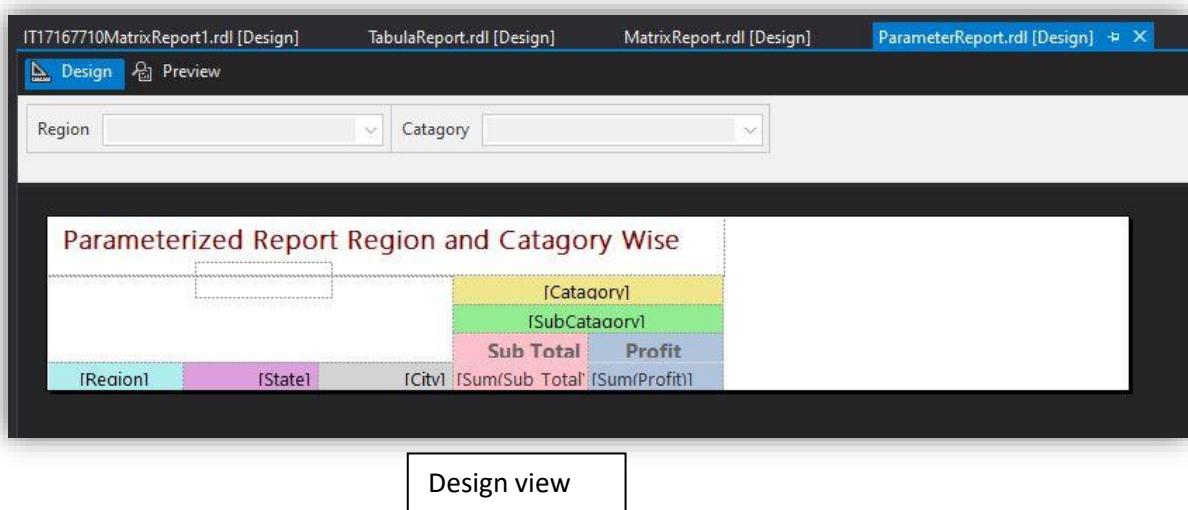
## **Report 2: parameter Report**

Under this topic I have created two parameter reports

- 1) 1<sup>st</sup> one is Parameterized Report Region and category wise.
  - 2) 2<sup>nd</sup> report is based on month and sub commodity category wise Sales details.

## **Parameterized Report -01 Region and category wise.**

In this report I have used 2 Parameters which have lists of values. Selection of the value of Region parameter, changed the list of available values in the category parameter.



Home > IT17167710\_ReportngServices > ParameterReport

Region Central,East Catagory All

Parameterized Report Region and Catagory Wise

	Furniture	Office Supplies	Technology			
Sub Total	Profit	Sub Total	Profit	Sub Total	Profit	
Central	371722.2762	4026.2656	732424.612299 999	29017.9045	369266.5638	30565.1789
East	469014.2785	2285.5635	979896.9801	33732.2481	538036.008	58586.5005

In here I have used only **Region** parameter. So, in here It shows the all the subtotals and Profits which are belongs to **Central and East Regions**.

Region Central,East Catagory Furniture

Parameterized Report Region and Catagory Wise

	Furniture
Sub Total	Profit
Central	371722.2762
East	469014.2785

Then I have used the both **Region and category** parameters. So, in here It shows the all the subtotals and Profits which are belongs to **Central, East Regions and Furniture category**.

## Parameterized Report 02 - Region and category wise.

Home > IT17167710\_Reportingservices > Parameter Report 2

Order Date.Month Name All State All

Date(month) and Location( state) wise Parameterized Report

	2014	2015	2016	2017				
	Sub Total	Profit	Sub Total	Profit	Sub Total	Profit	Sub Total	Profit
United States	382408.7847	7976.0736	312229.5436	12092.3919	375265.6969	12508.6949	453509.4271	31032.1886
United States	291124.898	12538.5221	454175.871	19037.895	510240.0208	26314.364	731406.4768	36713.531
United States	480696.961	4338.2018	246893.9714	10460.6526	313332.749	7487.9567	313410.2928	7888.3246
United States	495409.7252	24691.1766	465519.778	20027.6642	587904.0229	35484.1587	751406.354599	17687.3434
							999	

Before use any parameter

Home > IT17167710\_Reportingservices > Parameter Report 2

Order Date.Month Name February,January State All

Date(month) and Location( state) wise Parameterized Report

	2014	2015						
	First	First						
	February	January	February	January				
	Sub Total	Profit	Sub Total	Profit	Sub Total	Profit	Sub Total	Profit
United States	737.656	228.6214	13764.55	54.7	8757.908	318.0244	10485.15	-210
United States	3473.812	169.7678	13400.009	382.9611	253.652	28.7051	17354.5008	-162
United States	5665.374	306.5248	38248.61	1905.8819	2797.222	93.2549	2699.18	36
United States	2672.13	157.3944	7626.828	106.6477	13724.848	2373.8664	7180.954	9

In here I have used only Month parameter. So, in here It shows the all the subtotals and Profits which are belongs to January and February Month.

Home > IT17167710\_Reportingservices > Parameter Report 2

Order Date.Month Name February,January State Arizona,California

Date(month) and Location( state) wise Parameterized Report

	2014	2015						
	First	First						
	February	January	February	January				
	Sub Total	Profit	Sub Total	Profit	Sub Total	Profit	Sub Total	Profit
United States [Region]	Arizona	California						
United States	2465.282	128.3578	7539.62	155.8305	10630.848	972.213	7171.134	87.0493
			61.96	-53.2856	502.9	107.577		

Then I have used the both Month and state parameters. So, in here It shows the all the subtotals and Profits which are in Arizona, California States in January and February months.

### **Report 3: SSRS drill-down report**

In here also I have created two reports

- 1) 1<sup>st</sup> one is Drill-down Report Region and category wise.
- 2) 2<sup>nd</sup> report is based on date and category wise Sales details.

#### **Drill-down Report -01 Region and category wise.**

IT17167710MatrixReport1.rdl [Design] IT17167710Multipule01.rdl [Design] IT17167710DrillDown.rdl [Design] X

Design Preview

Category and Region wise sales Drill Down Report

		[Region]	Order Qty	Sub Total	Profit
[Category]	[SubCategory]	Product Name	[Sum(Order Qty)]	[Sum(Sub Total)]	[Sum(Profit)]

Design view

IT17167710MatrixReport1.rdl [Design] X IT17167710Multipule01.rdl [Design] IT17167710DrillDown.rdl [Design] X

Design Preview

Category and Region wise sales Drill Down Report

		Central	East				
		Order Qty	Sub Total	Profit	Order Qty	Sub Total	Profit
+	Furniture	1836	371722.2762	4026.2656	2109	469014.2785	2285.5635
+	Office Supplies	5420	732424.6123	29017.9045	6496	979896.980100001	33732.2481
+	Technology	1709	369266.5638	30565.1789	1910	538036.008	58586.5005

Preview view

the user has clicked the plus signs (+) in the report to show detail data.

Not secure | desktop-60g552m/Reports/report/IT17167710\_ReportServices/IT17167710DrillDown

## SQL Server Reporting Services

Favorites Browse

Home > IT17167710\_ReportServices > IT17167710DrillDown

Category and Region wise sales Drill Down Report

	Furniture	Central			East			South		
		Order Qty	Sub Total	Profit	Order Qty	Sub Total	Profit	Order Qty	Sub Total	Profit
	Furniture	1836	371722.2762	4026.2656	2109	469014.2785	2285.5635	1328	320018.4478	4805.600
	Office Supplies	5420	732424.6123	29017.9045	6496	979896.980100 001	33732.2481	3712	692273.9481	14414.56
	Technology	1709	369266.5638	30565.1789	1910	538036.008	58586.5005	1081	342041.5783	10954.96

In this SSRS Report it shows the sales details (subtotal, profit, and Quantities) commodity and Region wise.

For the rows I have included a commodity category hierarchy (category → subcategory → commodity) so that report can be view by category, subcategory and commodity wise.

SQL Server Reporting Services

Favorites Browse Comments

Home > IT17167710\_ReportServices > IT17167710DrillDown

Category and Region wise sales Drill Down Report

	Furniture	Bookcases	Central			East			South			West	
			Order Qty	Sub Total	Profit	Order Qty	Sub Total	Profit	Order Qty	Sub Total	Profit	Order Qty	Sub Total
	Furniture	2	327.7328	-14.4588						1	72.294		
	Bookcases	8	2683.7912	-99.1724	16	5601.878	929.0888			11	2512.485		
	Atlantic Metals Mobile 2-Shelf Bookcases, Custom Colors				11	2273.086	-674.352	7	1772.691	295.029		9	2866.956
	Atlantic Metals Mobile 3-Shelf Bookcases, Custom Colors				12	2949.3226	291.9506	2	228.572	-240.784		5	1875.128
	Atlantic Metals Mobile 4-Shelf Bookcases, Custom Colors				10	330.762	-509.949	7	372.285	-216.9783		11	6170.4092
	Atlantic Metals Mobile 5-Shelf Bookcases, Custom Colors				11	1148.7875	80.3933	10	3888.2675	173.9855		2	203.983
	Bestar Classic Bookcase	3	810.2	56.9943									
	Bush Andora Bookcase	11	1477.1795	-135.5887									

Category → subcategory → commodity

The diagram illustrates the hierarchical nature of the report. It starts with a blue arrow pointing from the 'Furniture' category row to the 'Bookcases' subcategory row. From there, an orange arrow points to the 'Bush Andora Bookcase' commodity row. This visualizes how the report allows users to drill down from a broad category to a specific product detail.

## Drill-down Report -02 Date and category wise.

The screenshot shows a report with the following structure:

	Order Qty	Furniture			Office Supplies			Technology		
		Sub Total	Profit	Order Qty	Sub Total	Profit	Order Qty	Sub Total	Profit	
2014	1623	406027.1391	5457.7255	4569	824525.3709	22593.4161	1389	369087.8589	21492.8325	
2015	1775	396897.0247	3015.2029	4715	711687.2772	25099.5338	1489	370234.8621	33503.867	
2016	2193	413902.9408	6959.9531	5946	952482.5914	35061.2292	1698	420356.9574	39773.992	
2017	2446	539242.8744	2900.5093	7676	1107617.77	39736.6217	2363	602871.9069	50684.2566	

In this Report it shows sales details, date and commodity wise. In the columns I have included a commodity category hierarchy (category → subcategory) so that report can be view by commodity category and subcategory wise. For the Rows I have included date natural hierarchy (year→ quarter → month). So, in this Report rows can be drill down year to month.

The screenshot shows a report with the following structure:

	Order Qty	Bookcases			Chairs			Furnishings			Tables		
		Sub Total	Profit	Order Qty	Sub Total	Profit	Order Qty	Sub Total	Profit	Order Qty	Sub Total		
2014	First	February			3	664.838	-9.0715	14	657.62	54.39	6	1508.13	
		January	16	2563.609	-326.7848	18	6780.22	1058.0256	33	5681.652	90.8757	3	426.67
		March	17	1766.238	-141.225	54	8343.655	354.1411	32	53065.906	38.3162	28	13917.872
		December	17	10100.8185	176.8456	133	25539.188	1580.4612	123	13087.958	-15.2791	39	16961.903
	Second	November	39	13392.8477	-115.0854	57	15942.16	173.3116	104	17992.567	277.7045	28	7198.636
		October	6	1252.602	-36.294	49	10004.705	854.2199	50	5584.796	69.5267	25	7100.908
		April	3	1840.043	-18.147	19	4923.192	212.6848	36	3773.268	288.5029	23	5237.944
		June	9	2006.5176	-6.5766	38	9909.055	634.9176	39	10082.153	66.0426	36	9069.277
	Third	May	9	948.519	-189.6215	33	5610.291	224.4649	37	1258.198	-2.668	18	3073.301
		August	13	794.276	164.7086	31	4033.428	442.784	47	7376.419	213.4408	16	4084.7245
		July	9	1539.937	266.9386	36	9650.244	-4.7764	55	17040.38	170.6711	14	4521.41
		September	15	5471.3558	-120.9292	69	28773.667	1433.8842	90	12313.486	721.3685	34	13160.0554
2015	First	February	4	1558.42	82.3368	25	2955.75	320.1066	8	396.17	21.564	8	696.504
		January	14	3574.5496	-681.8634	12	3936.578	-70.0656	44	3918.476	-13.4832	18	5617.49
		March	18	4765.274	-2.4864	34	6726.235	320.4122	46	8004.154	316.1782	13	4353.17
		December	25	5531.0862	-993.6108	76	20897.0182	995.9062	111	20966.066	291.5703	45	12982.072

## Report 4: Create an SSRS drill-through report.

A drill through report is a report that a user opens by clicking a link within another report. Drill through reports commonly contain details about an item that is contained in an original summary report.

I have created two **drill-through** reports

- 1) 1<sup>st</sup> Drill-through Report mainly based on State wise sales Details.
- 2) 2<sup>nd</sup> Drill-through Report mainly based on commodity category wise sales Details.

### Drill-through Report 01 – state wise

```
SELECT d.State,f.OrderQty,f.Profit,f.SubTotal  
FROM DBO.SalesFact f, dbo.DimConsumerDetails d  
where f.CustomerID= d.CustomerID
```

SQL Query for summary Report

```
SELECT d.State, m.Date ,s.name,  
c.Product_Name,f.OrderQty,f.SubTotal,f.Profit ,f.LineTotal,f.UnitPrice  
FROM DBO.SalesFact f, dbo.DimCommodity c ,dbo.DimSub_Commodity_Catagory s  
, dbo.DimConsumerDetails d , dbo.DimDate m  
where f.ProductID = c.ProductID  
and s.ProductSubcategoryID = c.ProductSubCategoryID  
and d.CustomerID = f.CustomerID  
and f.OrderDateKey = m.DateKey  
and d.State=@State
```

SQL Query for Detailed Report

State wise Sales Summary Report

State	Order Qty	Profit	Sub Total
[State]	[Sum(OrderQty)]	[Sum(Profit)]	[Sum(SubTotal)]

Design view of summary Report

## summary Report

State wise detailed Report.rdl [Design] State sales Summary Report.rdl [Design]

Design Preview 100%

**State wise Sales Summary Report**

State	Order Qty	Profit	Sub Total
Alabama	472	2845.0624	131310.7974
Arizona	1150	9563.2001	307210.3410
Arkansas	87	-62.9462	11895.0820
California	7633	59280.4305	1306235.0307
Colorado	1082	970.4647	162917.0786
Connecticut	290	533.4987	56832.0300
Delaware	364	3336.3827	134299.2240
District of Columbia	35	490.9567	3842.5400
Florida	1130	750.7424	155282.3964
Georgia	713	12781.3426	166155.1420
Illinois	2100	9560.1456	310607.0549
Indiana	619	2707.3495	56894.1570
Iowa	165	2258.5883	41225.7710
Kansas	40	139.2008	5254.5260
Kentucky	561	4513.3140	87047.5810
Louisiana	290	2659.2401	48159.4560
Maryland	84	436.6492	3468.5480
Massachusetts	433	5905.5446	75934.9550
Michigan	871	7752.2969	151281.9248

in this report, the sales summary report lists total sales state wise. When a user clicks a state in the summary list, another report opens that contains sales details that belongs to selected State.

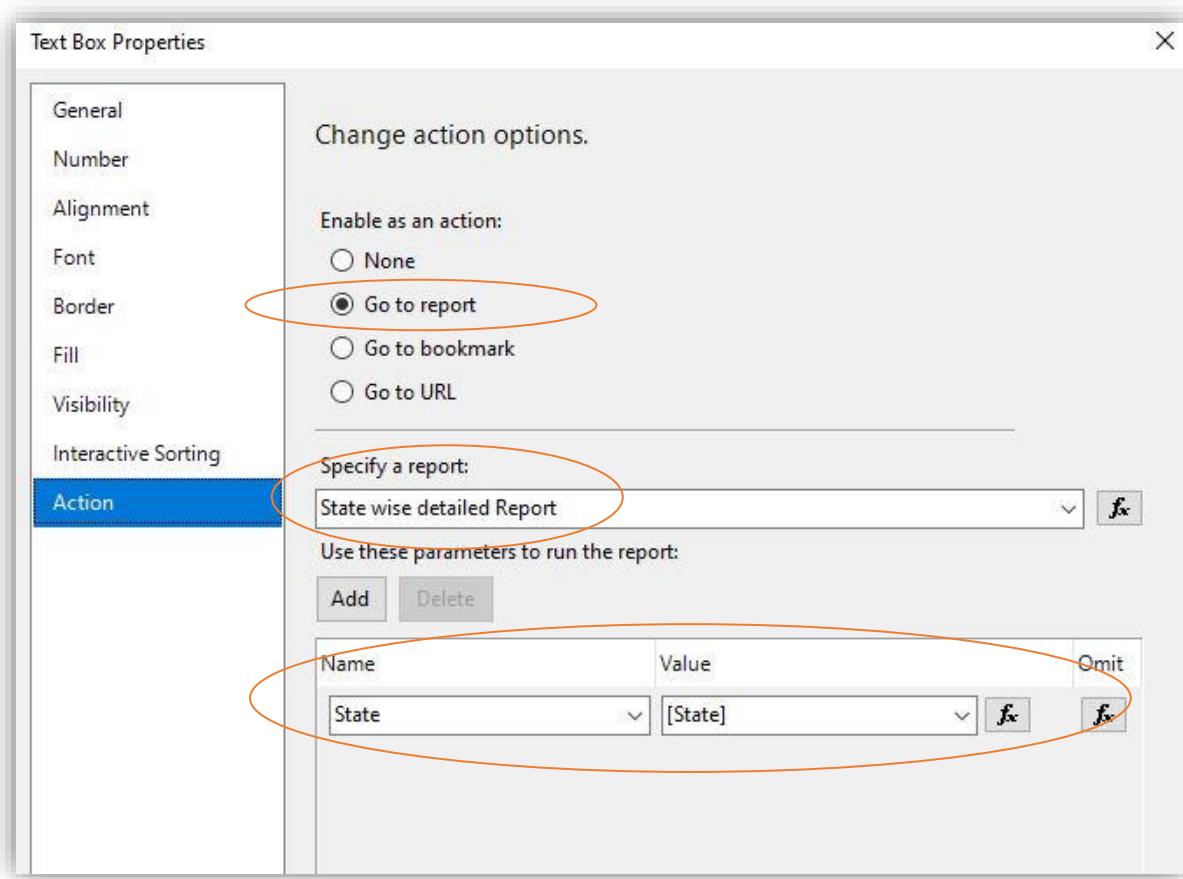
## Detailed Report

State wise detailed Report.rdl [Design] State sales Summary Report.rdl [Design] Commodity Catagor...eport.rdl [Design]

Design Preview 100% Find | Next

**State wise Sales detailed report**

State	Date	category	Product Name	Order Qty	Sub Total	Profit	Line Total	Unit Price
California	10/13/2014 12:00:00 AM	Binders	Flexible Leather- Look Classic Collection Ring Binder	1	264.9200	9.4700	18.940000	18.9400
	8/21/2017 12:00:00 AM	Phones	Cisco 8x8 Inc. 6753i IP Business Phone System	4	1520.1500	37.7972	431.968000	134.9900
	4/19/2016 12:00:00 AM	Phones	PowerGen Dual USB Car Charger	5	156.5160	12.9870	39.960000	9.9900
	9/23/2016 12:00:00 AM	Binders	ACCOHIDE 3-Ring Binder, Blue, 1	4	197.9680	4.4604	13.216000	4.1300
	4/21/2016 12:00:00 AM	Binders	Round Ring Binders	5	8.3200	2.8080	8.320000	2.0800
	4/19/2016 12:00:00 AM	Phones	Gear Head AU3700S Headset	2	633.0400	0.7794	25.980000	12.9900
	12/10/2017 12:00:00 AM	Binders	Ibico Covers for Plastic or Wire Binding Elements	3	34.5000	15.5250	34.500000	11.5000
	9/10/2017 12:00:00 AM	Binders	Wilson Jones	1	2.7800	1.3622	2.780000	2.7800



In the above report I have assigned proper value to the selected Parameter.

Here, **state** Parameter is expecting state names. So, I have chosen the state column from the main report.

I have hidden the Parameter. Because it will pass the parameter value from the main summary report, and it will be annoying to display the Parameter in Drill Through reports.

## Drill-through Report 02 – subcategory wise

```
SELECT c.name, c.Product_Name,f.OrderQty,f.SubTotal  
FROM DBO.SalesFact f,dbo.DimCommodity c  
where f.ProductID = c.ProductID
```

SQL Query for summary Report

```
SELECT s.name, c.Product_Name,f.OrderQty,f.SubTotal,f.Profit  
,f.LineTotal,f.UnitPrice  
FROM DBO.SalesFact f,dbo.DimCommodity c ,dbo.DimSub_Commodity_Catagory s  
where f.ProductID = c.ProductID  
and s.ProductSubcategoryID = c.ProductSubCategoryID  
and  
s.name=@name
```

SQL Query for Detailed Report

The screenshot shows the 'Design' tab of the Report Designer interface. The report title is 'Commodity Catagory Summary Report wise Sales'. It features a single table with three columns: 'Sub Catagory' (green), 'Order Qty' (blue), and 'Sub Total' (pink). The first column contains the placeholder '[name]'. The second column contains the expression '[Sum(OrderQty)]'. The third column contains the expression '[Sum(SubTotal)]'. The entire report area is highlighted with a yellow box labeled 'summary Report design View'.

The screenshot shows the 'Design' tab of the Report Designer interface. The report title is 'Commodity Catagory wise Sales detailed report'. It features a single table with seven columns: 'sub catagory' (light blue), 'Product Na' (purple), 'Order Qty' (cyan), 'Sub Total' (brown), 'Profit' (yellow), 'Line Total' (light blue), and 'Unit Price' (green). The first column contains the placeholder '[name]'. The second column contains the expression '[Product Name]'. The third column contains the expression '[OrderQty]'. The fourth column contains the expression '[SubTotal]'. The fifth column contains the expression '[Profit]'. The sixth column contains the expression '[LineTotal]'. The seventh column contains the expression '[UnitPrice]'. The entire report area is highlighted with a yellow box labeled 'Detailed Report design View'.

Store Sales Analysis by Location / Commodity Catagory Summary

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## SQL Server Reporting Services

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Home > IT17167710\_Reportin > Commodity Catagory S

1 of 1 100

**Commodity Catagory Summary Report wise Sales**

Sub Category	Order Qty	Sub Total
Accessories	2976	525721.3282
Appliances	1729	317969.6252
Art	3000	418526.8889
Binders	5974	877901.4978
Bookcases	877	215195.8773
Chairs	2356	631779.4832
Copiers	234	175432.9228
Envelopes	906	139980.1735
Fasteners	914	114386.9140
Furnishings	3563	565333.1260
Labels	1400	163671.0396
Machines	440	264304.4586
Paper	5178	776589.5355
Phones	3289	797092.8757
Storage	3158	670141.9098
Supplies	647	117145.4252
Tables	1241	343761.4925

This drill through report contains a parameter that takes the Subcategory as a value. When the user clicks the Subcategory in the summary report, the target detail report opens and displays the information for that Subcategory.

summary Report

SQL Server Reporting Services

Favorites Browse

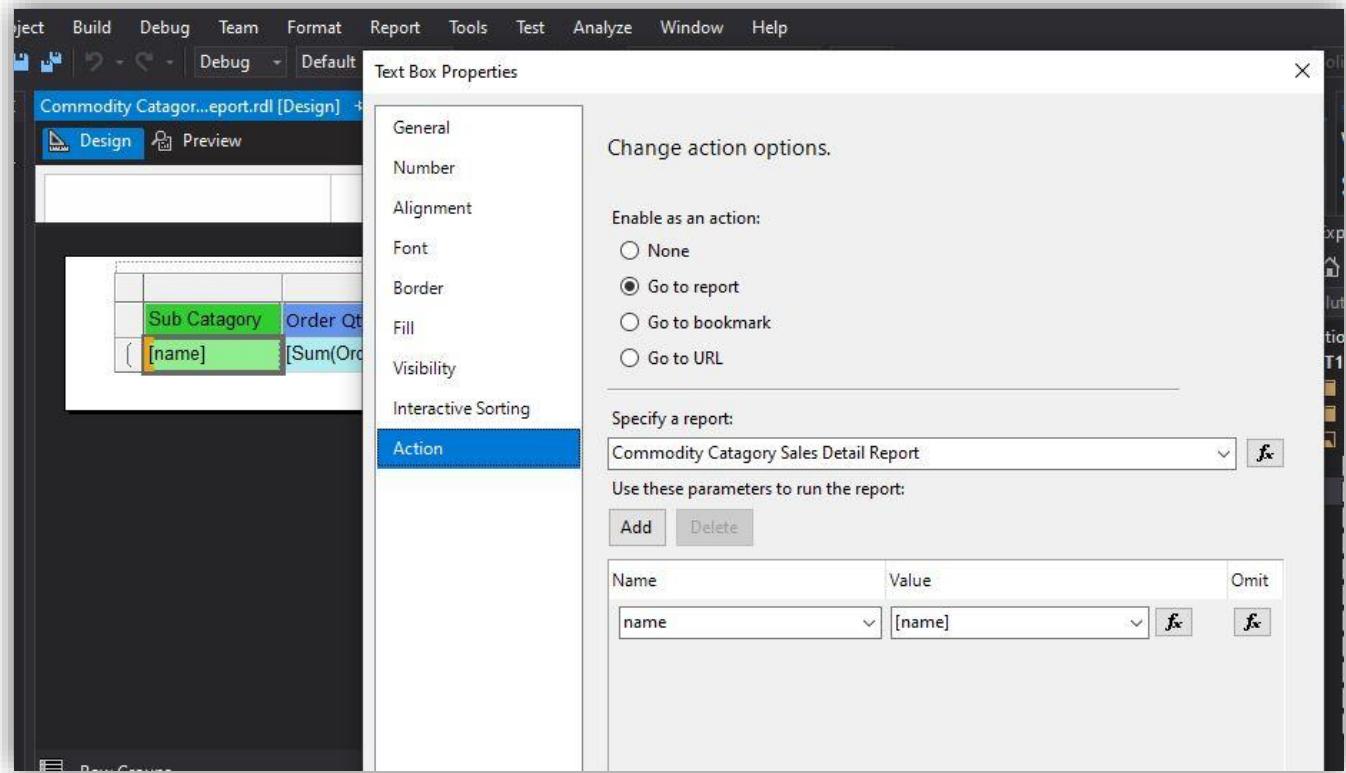
Home > IT17167710\_Reportin > Commodity Catagory Summary Report

1 of 2 ? 100% 100%

**Commodity Catagory wise Sales detailed report**

sub category	Product Name	Order Qty	Sub Total	Profit	Line Total	Unit Price
Chairs	Novimex Swivel Fabric Task Chair	5	1037.1900	-67.9410	603.920000	150.9800
	Novimex Swivel Fabric Task Chair	3	366.6660	-86.0586	317.058000	150.9800
	Hon Olson Stacker Stools	5	492.8350	-14.0810	492.835000	140.8100
	Global Value Mid-Back Manager's Chair, Gray	3	127.8690	-9.1335	127.869000	60.8900
	Global Value Mid-Back Manager's Chair, Gray	5	400.3900	76.1125	304.450000	60.8900
	Global Value Mid-Back Manager's Chair, Gray	4	194.8480	12.1780	194.848000	60.8900
	Global Value Mid-Back Manager's Chair, Gray	2	319.9840	-9.1602	81.424000	50.8900

Detailed Report

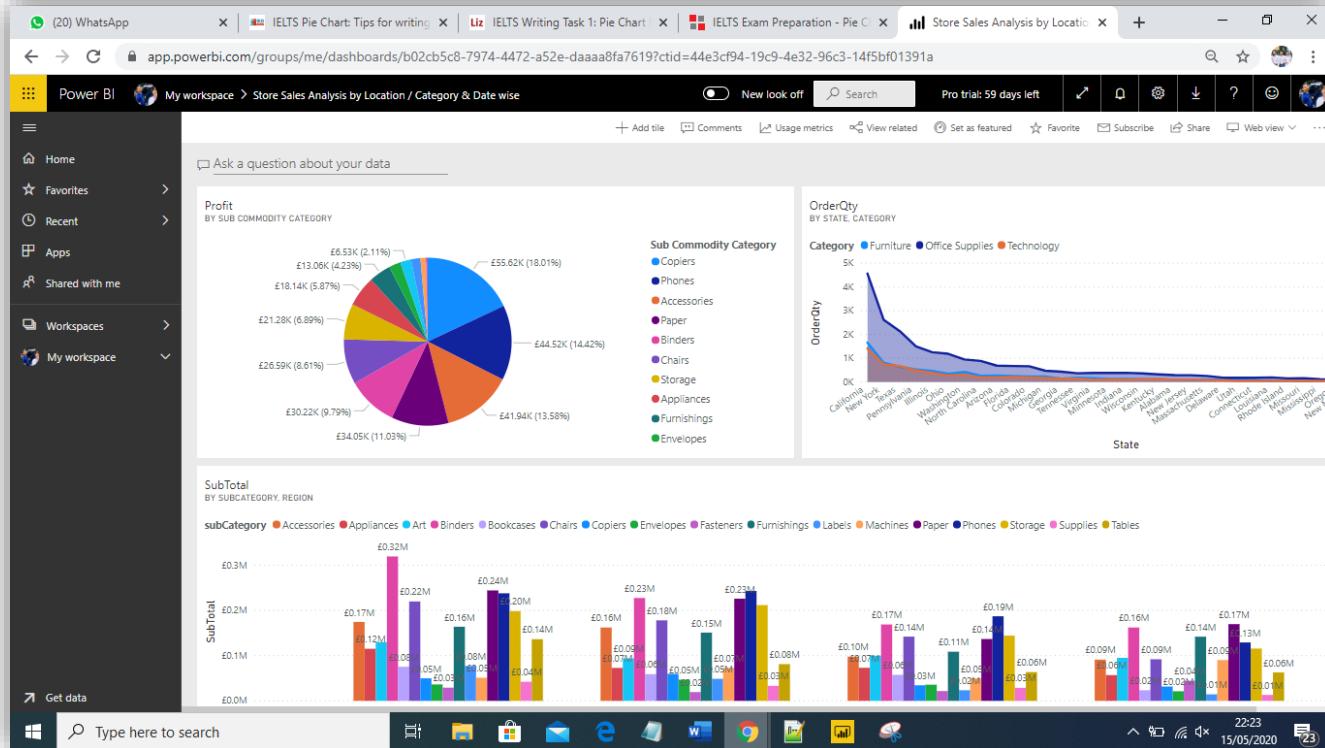
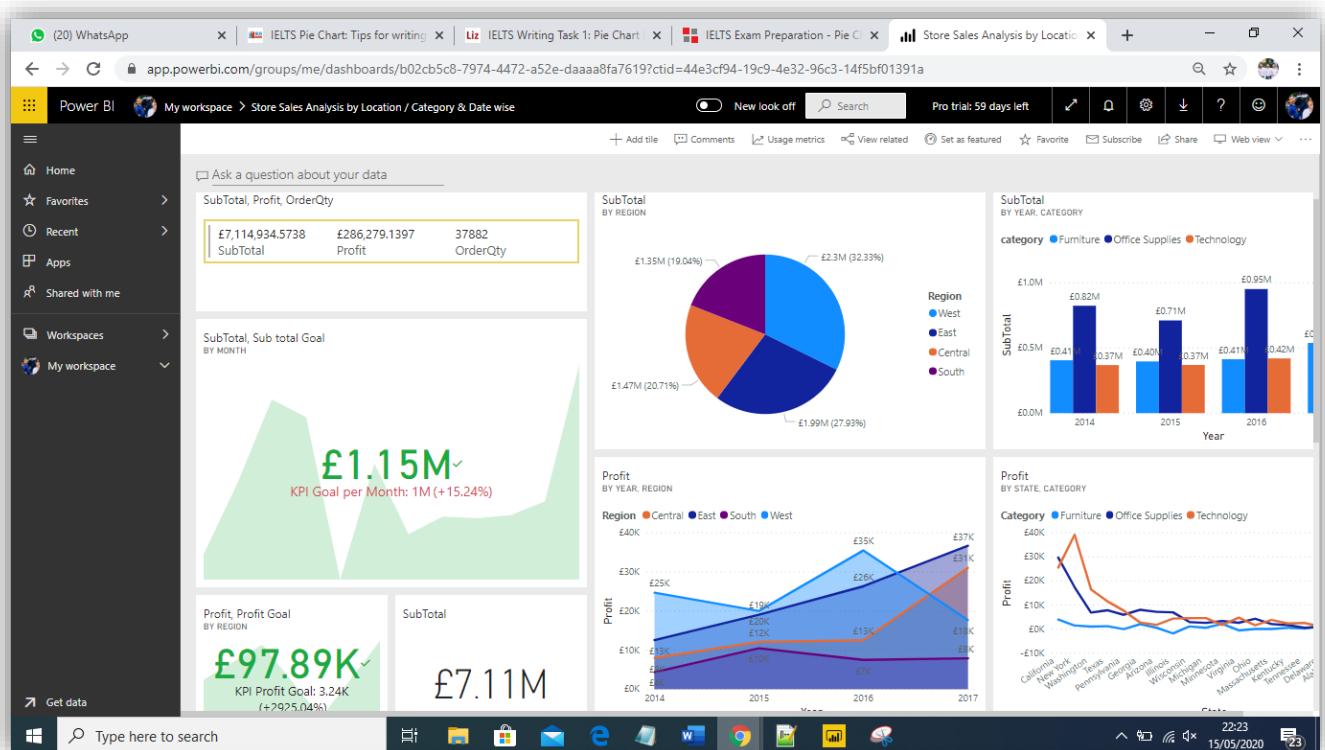


## **Part 2**

## Designing the Dashboard

To Build a suitable dashboard in Power BI. I have Used the data from **IT17167710\_DataWarehouse**.

Dashboard link <https://app.powerbi.com/groups/me/dashboards/b02cb5c8-7974-4472-a52e-daaaa8fa7619?ctid=44e3cf94-19c9-4e32-96c3-14f5bf01391a>



## Audience

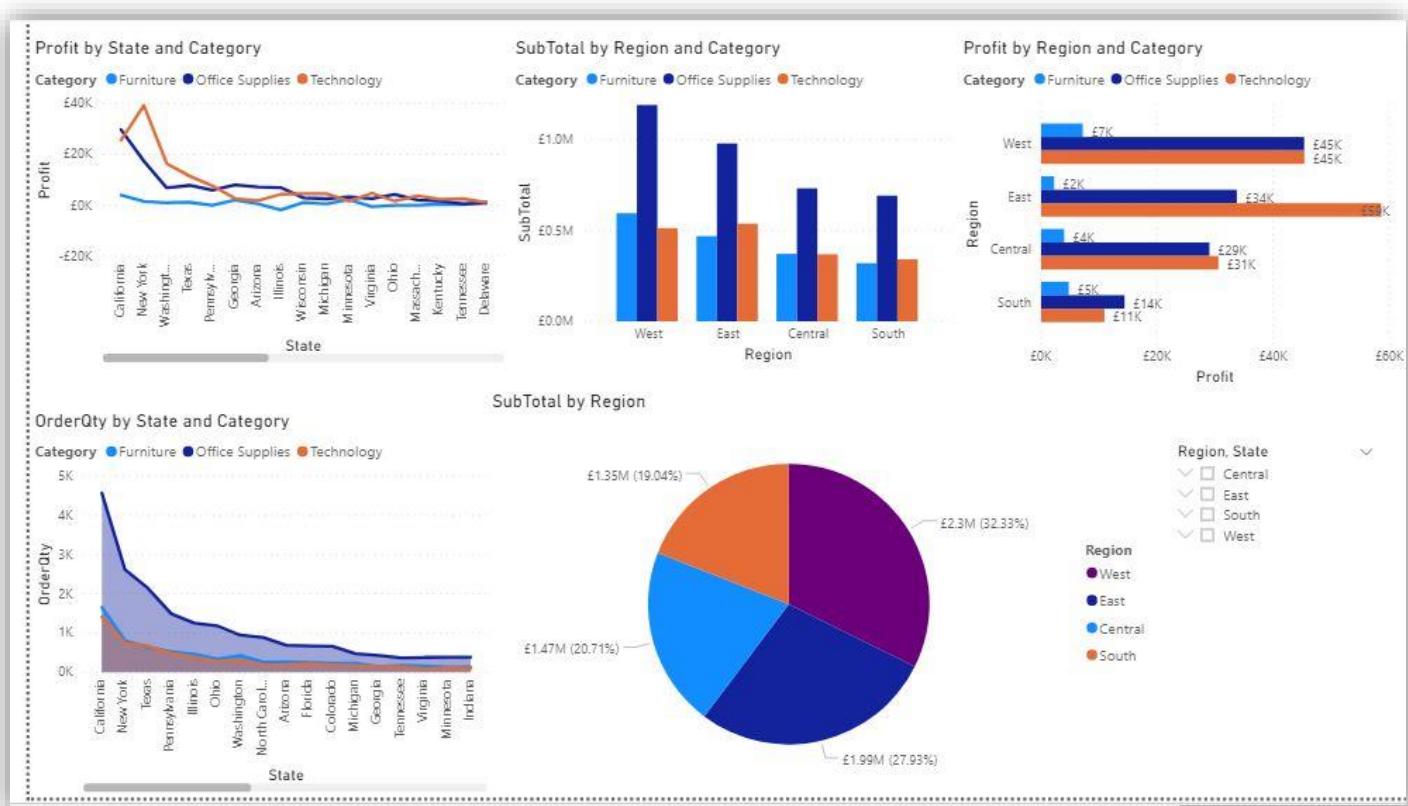
This is a Business referred to as "Super Store". This is a US business that has been unfolded via mainly four regions. They are East, West, North, and Southern. The analysis is ordinarily necessary to **the Top-Level Managers, and the Promote Sales Representatives.**

## Story

The analysis has been mainly performed in three ways. They are Location-wise, product and product Category wise and Date wise. According to the analysis end result, Top-level Managers and Owners can enlarge the extent of the product in the states where the product demand is high and minimize the extent of the product in areas where the product demand is low. Furthermore, some products are high in availability in some seasons. So that the Sales Representative can promote the most wished product in these seasons in order to improve the Business.

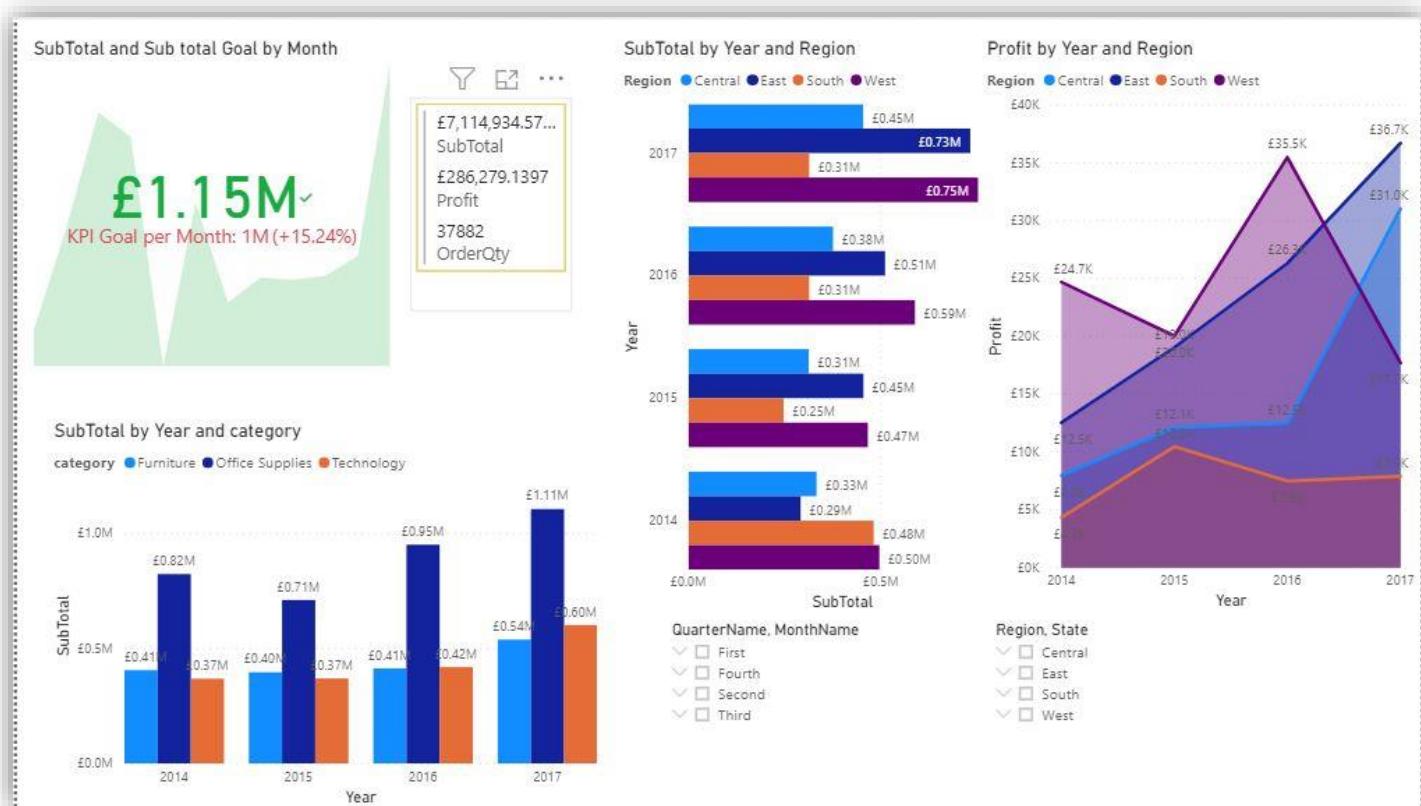
### Amount of Sales By location and category wise

The First analyses have been accomplished in Location-wise sales details. The Profit, Sub Total, and Commodity Quantity have been used as the measurements. Furthermore, the analysis has been completed in Region-wise, State wise and City wise. According to this analysis maximum profit and the maximum variety of portions have been promoted and sold at West Region in California state. Moreover, the Top-Level Managers and the Owner can decide the deliverable places according to the wide variety of sales in particular regions. And the Sales Representatives have to promote more products in the places where the product is demand. If the Sales Representative promotes the products more, in states and areas where the product has a greater demand it is effortless to improve the business.



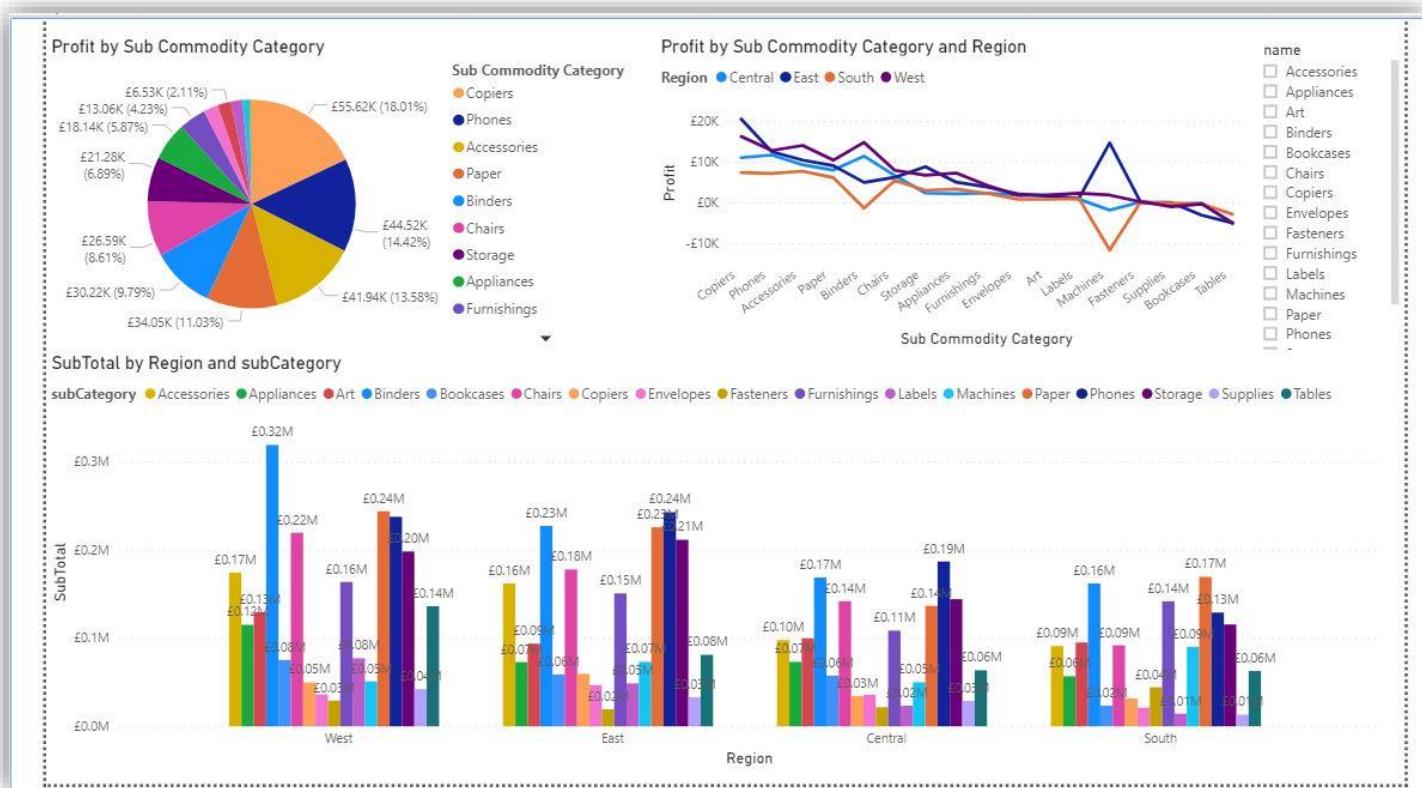
## Sales analysis by Date / category and Location wise

The 2nd analysis is primarily based on Date wise. Four years of dates have been used for this analysis. They are 2014,2015,2016 and 2017 in years. The measurements that have used in this analysis are Profit, Sub Total, and Order Quantity. According to the analysis, greater income has been carried out in the year 2017. The output can sincerely get as which quarter and month the products have maximumly offered and can promote the applicable product and get a high income throughout that month. Furthermore, the Owner is responsible to make a greater volume of that product in that duration. However, if the Sales Representative promotes the product in this season, it is simple to enhance the Business.



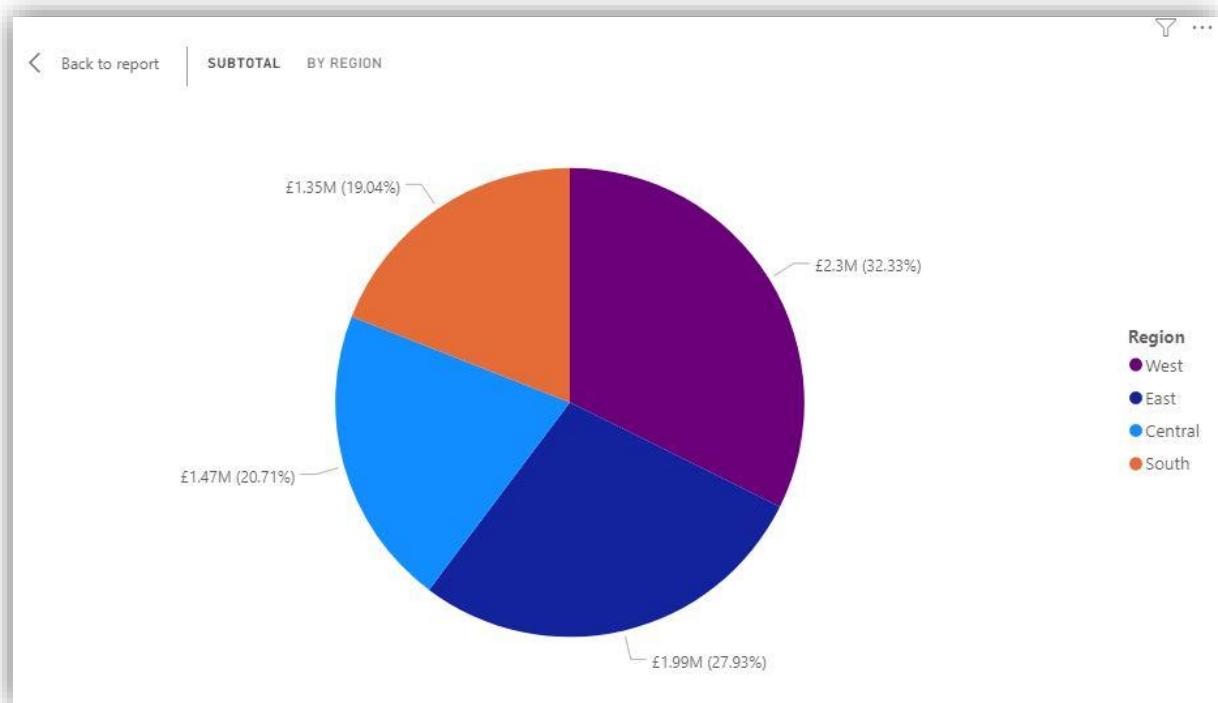
## Sales analysis by Subcategory and Location wise

The 3rd evaluation has been executed in the Commodity, Commodity category and Sub Commodity Category wise and the measures which have been using are the Profit, Order quantity, and Sub Total. Three categories have been used to analyses. They are Office Suppliers, Technologies, and Furniture. Furthermore, Office Suppliers are the major product that has been promoted most. Moreover, Copiers subcategory have been selling as Office Suppliers as the end result.



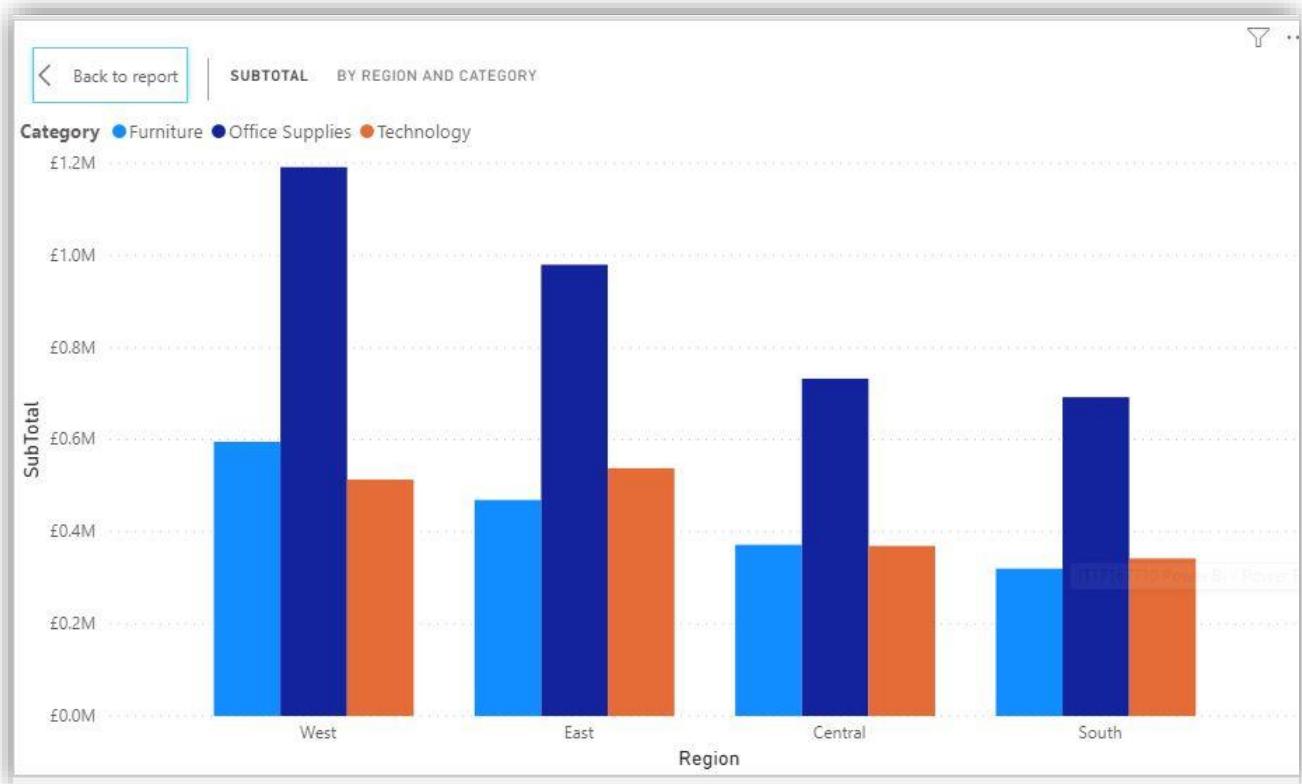
## Main Graphs

Pie chart – Subtotal by Region wise



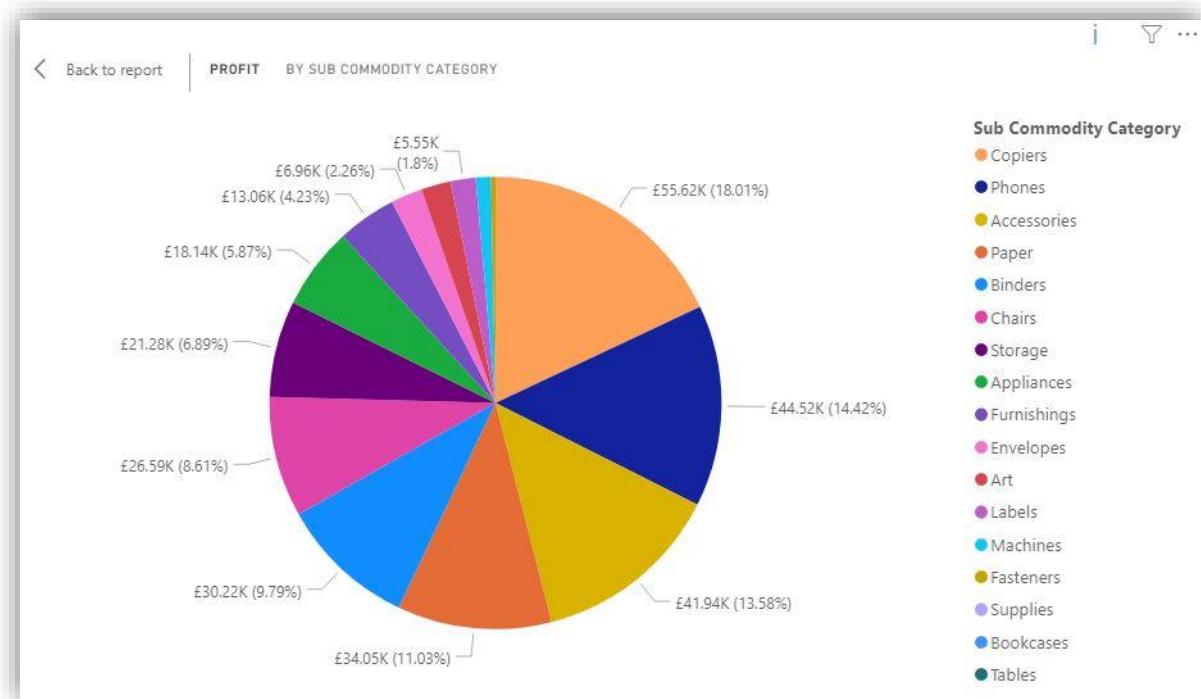
The above displayed pie chart is clear illustration of sales subtotal Occurred in different regions in US country. Overall, it is ostensible that the maximum sub total sales go to west region while the minimum subtotal goes to south.

### Clustered Column Chart – Subtotal by Region and category wise



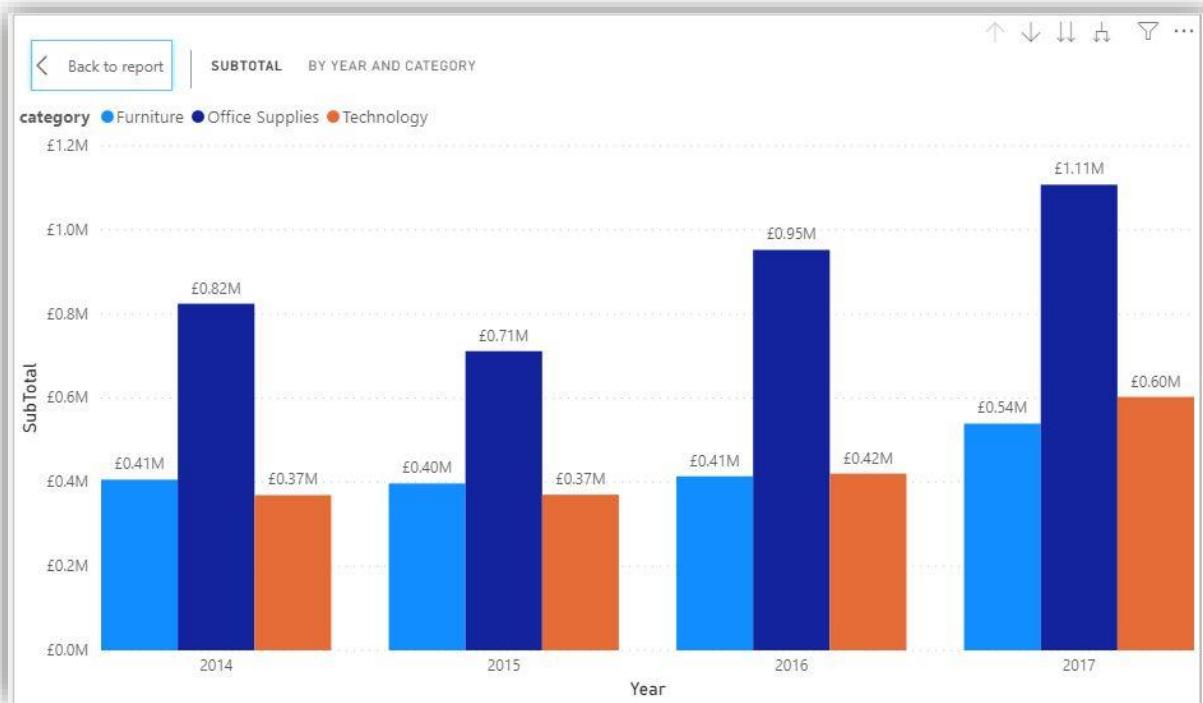
The bar chart compares three main commodity categories (Furniture, Office Suppliers, Technology) in US in terms of summation of their sales in East, west, central and south regions. Office Suppliers are the major product that has been promoted and sold most in every Region. Moreover, Copiers subcategory have been selling as Office Suppliers as the end result.

### Pie chart – Profit by Sub commodity Category wise



According to the above pie the maximum profit came from Copiers subcategory while the minimum goes to tables subcategory.

## Clustered Column Chart – Subtotal by Date and category wise



The above bar chart compares three main commodity categories (Furniture, Office Suppliers, Technology) in US in terms of SUM of their sales subtotal in four years, 2014,2015,2016 and 2017.

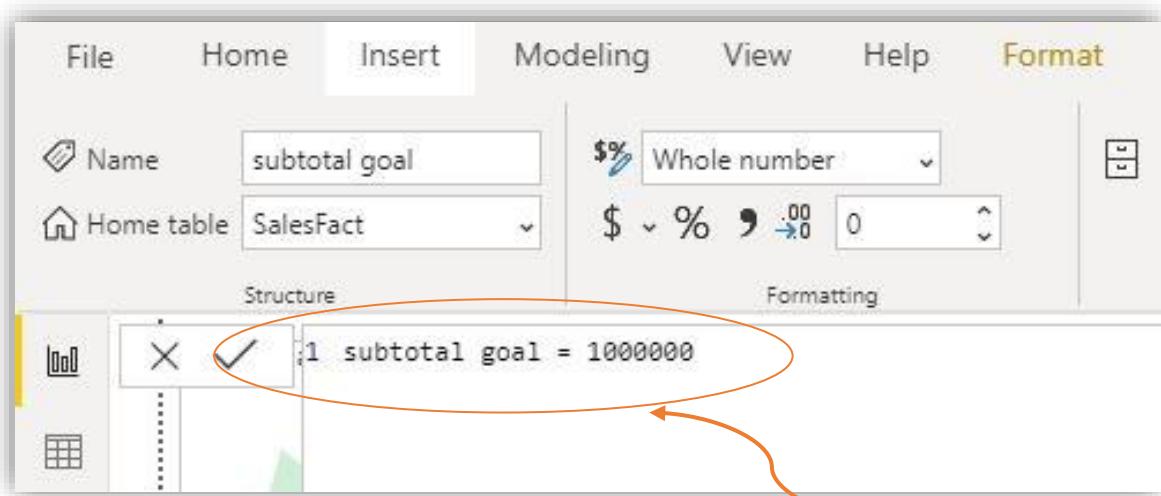
Overall the sum of each subtotal for each of the three-category changed significantly from 2014 – 2017. While the figures for Furniture, Office Suppliers and also Technology increased.

In 2014, the subtotal of office suppliers was 0.82 million, but this rose to 1.11 million in 2017. And technology category commodities rose to 0.37 million to 0.60 million.

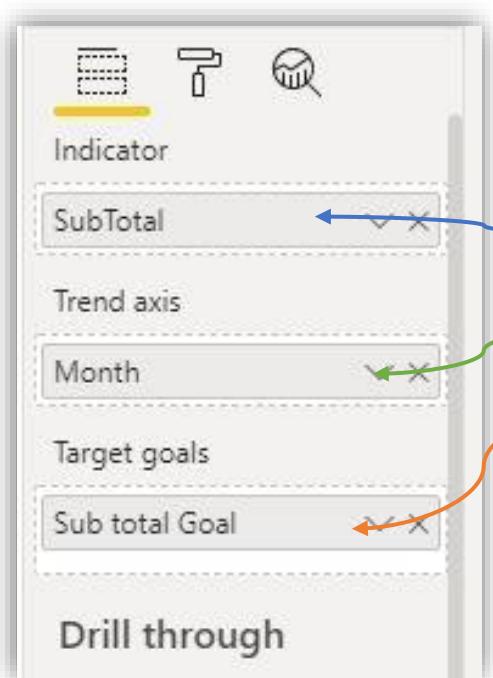
## 4 - KPIs

A Key Performance Indicator is a measurable value that demonstrates how effectively a company is achieving key business objectives

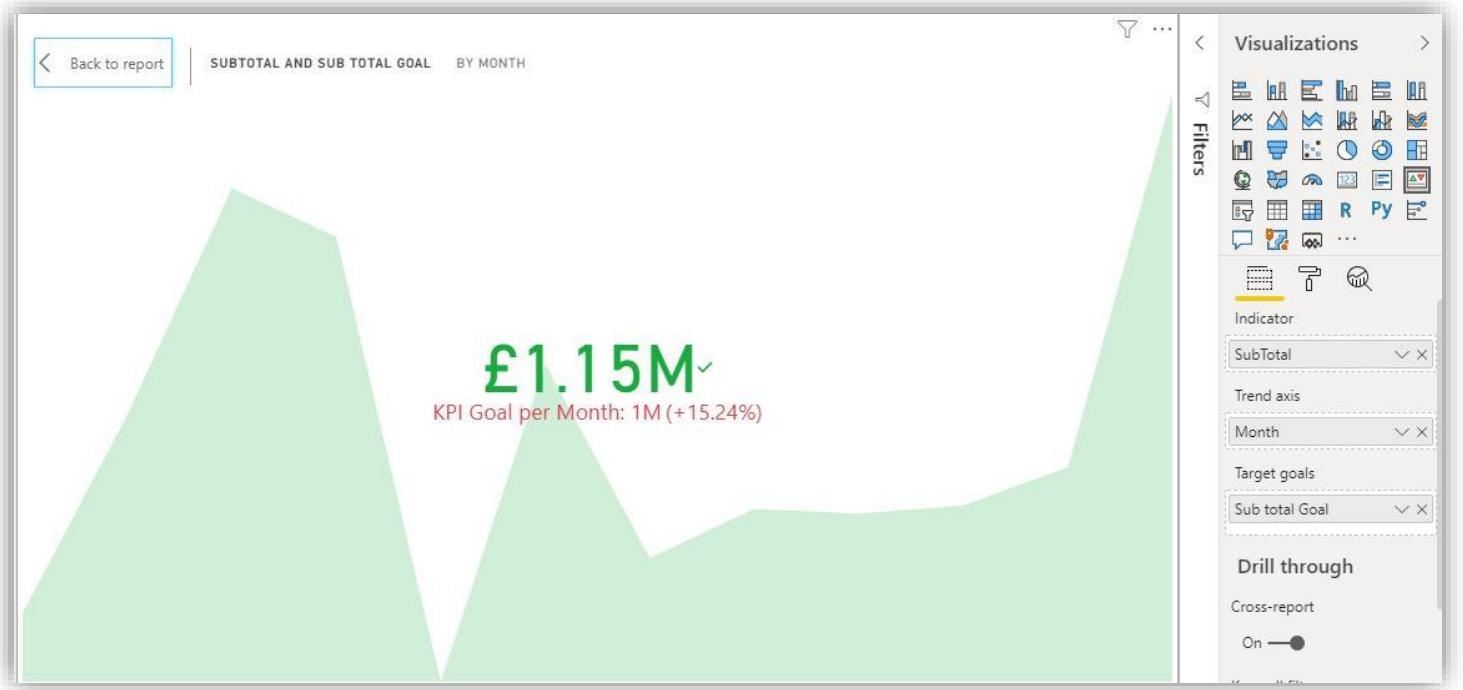
So, as a KPI I have introduced the subtotal and subtotal goal by month.



**For the target goal I have created a new measure called subtotal goal and set the measure value for 100000.**



- Drag and drop KPI Indicators visual to design panel
- Then I have set indicator value field to subtotal
- And Set Trend axis field to month
- After that I have included Target value field to subtotal goal measure that I have created previously.



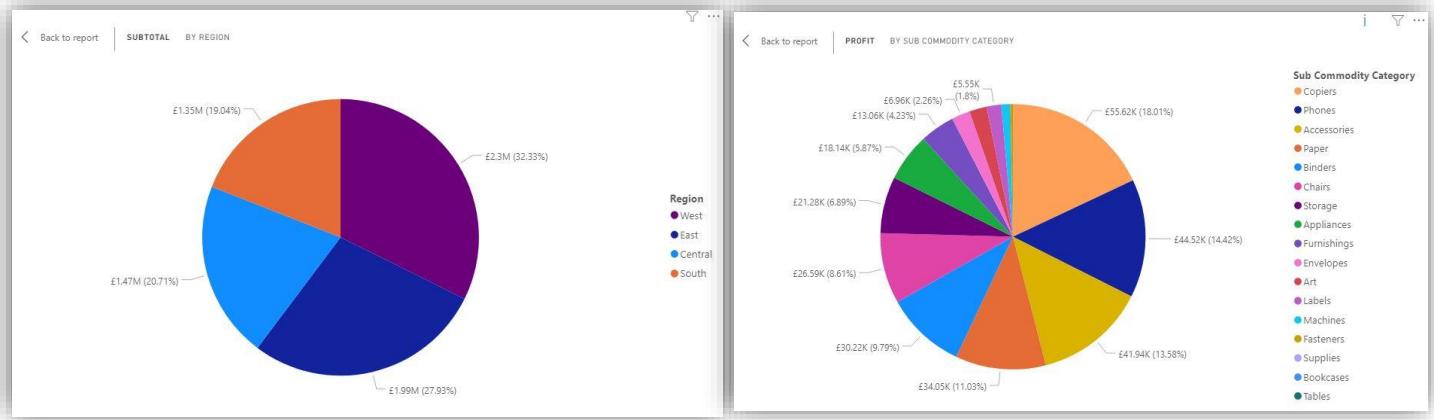
The intention was set to acquire 1 million Sub Total monthly. However, the monthly remaining end result of the Sub Total was 1.5 million. So that it is crystal clear that Business is a success.

## Reason for selecting display types

Mainly I have used 4 types of Graphs.

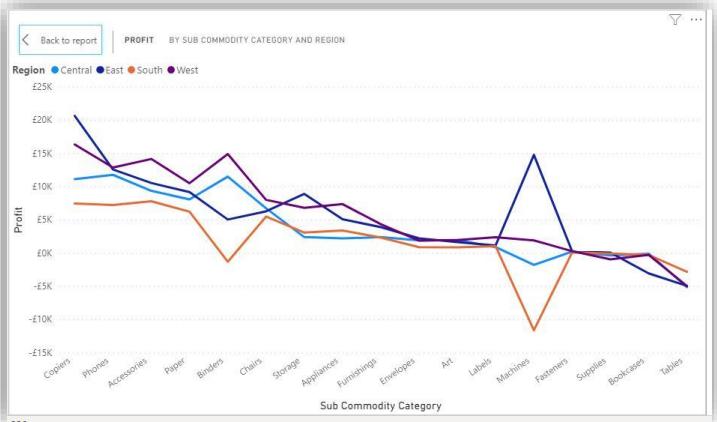
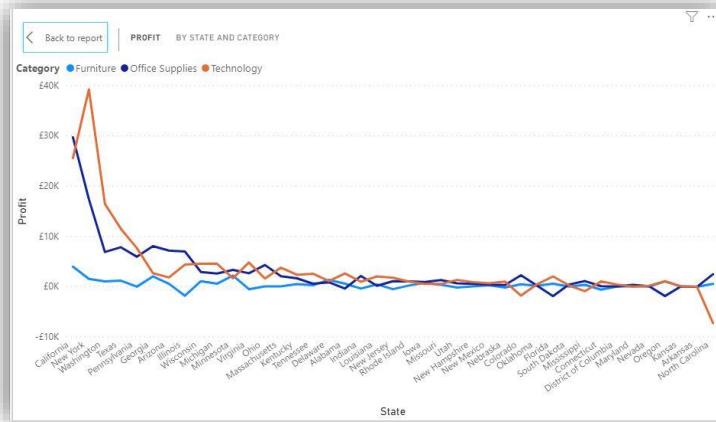
- Pie chart

Pie charts are simple and easy-to-understand picture which means be visually simpler than other types of graphs, it will help to. Summarize a large data set in visual form.



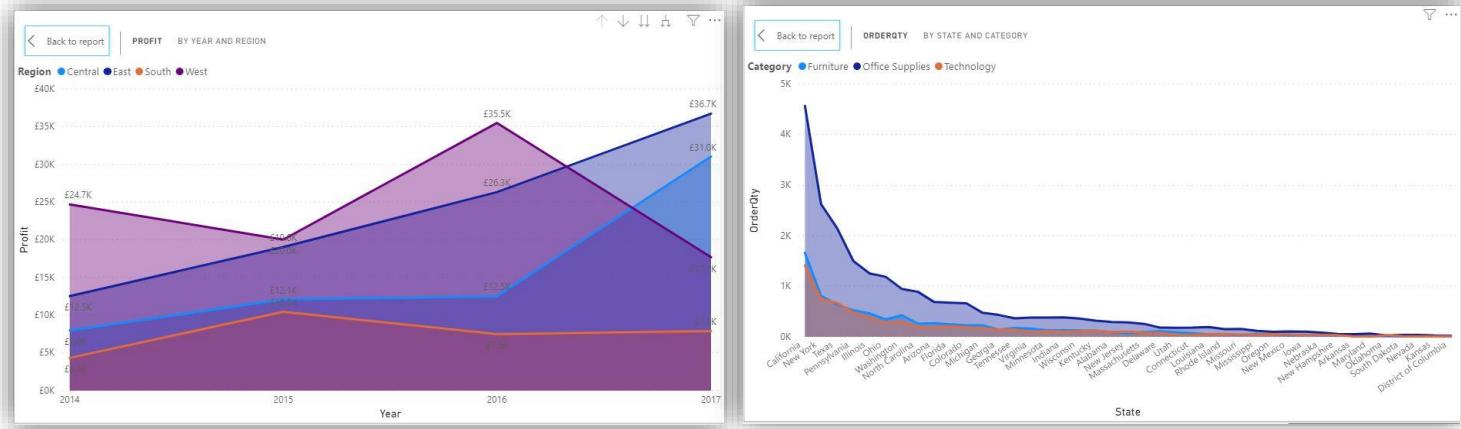
- Line charts

The reason for choosing Line graphs because it is very useful that they show data variables and trends very clearly and it will help to make predictions about the results of data not yet recorded.



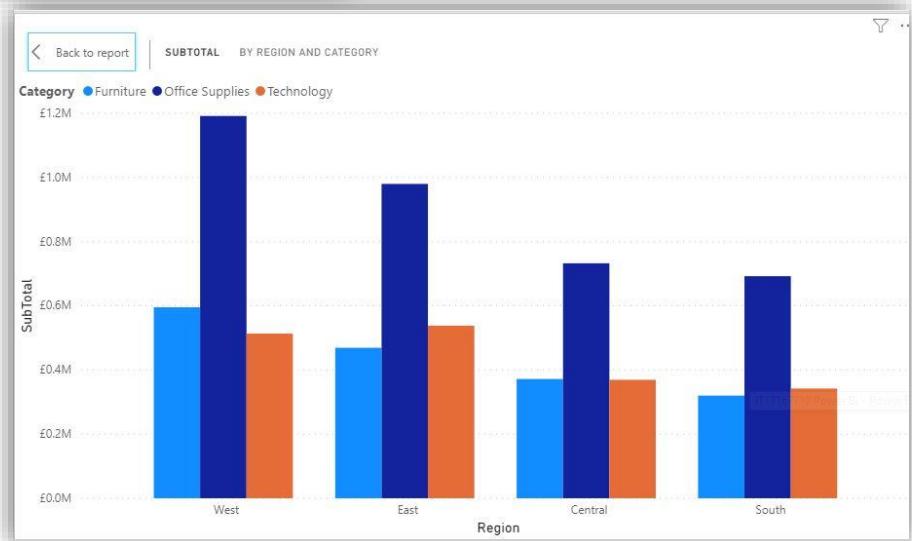
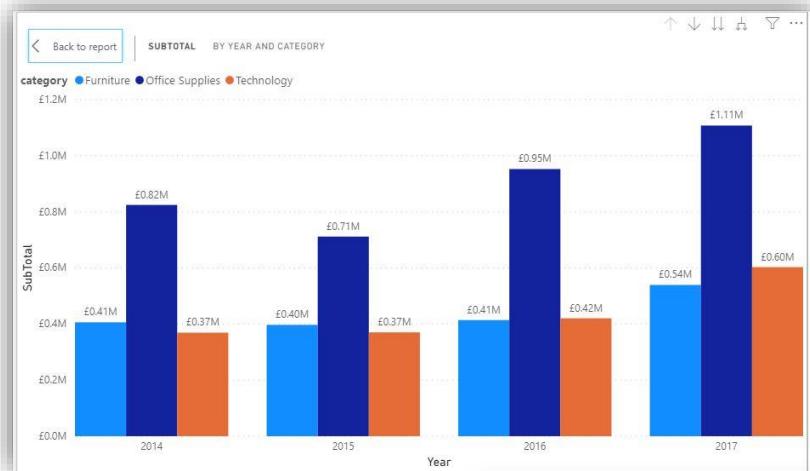
- Area charts

Area graphs are very similar to line graphs. They can be used to track changes over time for one or more groups.



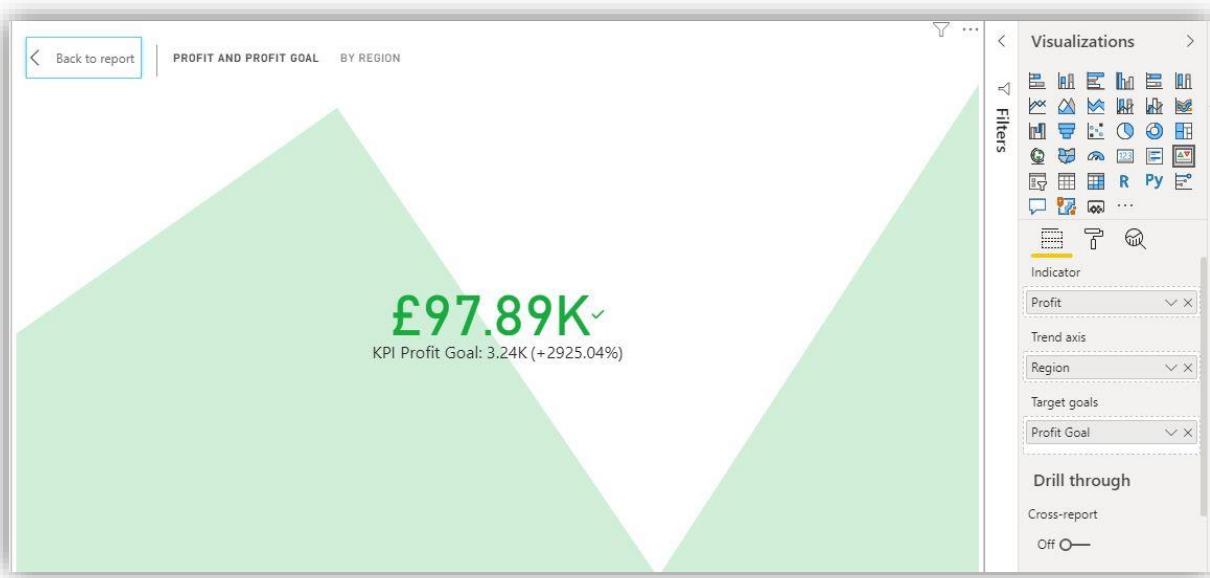
- Clustered Column Chart:

Reason for selecting Clustered Column Chart graph is useful for looking at a set of data and making comparisons.



## Alert

For the alert I have created another KPI based on profit and profit goal by region.



PROFIT, PROFIT GOAL  
Manage alerts

+ Add alert rule

~ Alert for Profit, Profit Goal

Active  On

Alert title

Set alerts rule for

Condition

Maximum notification frequency  
 At most every 24 hours  
 At most once an hour

Alerts are only sent if your data changes.

[Use Microsoft Power Automate to trigger additional actions](#)

Save and close Cancel

Name   
Data type

Structure   1 KPI = if([Profit]>2000.00,"T","F")

OrderDateKey	ShipDateKey	OrderID	CustomerID	ProductID	RegionID
20150727	20150802	US-2015-129553	592	1739	1
20160913	20160918	CA-2016-105732	19	1739	1
20140711	20140714	CA-2014-166555	376	1741	1
20141213	20141215	CA-2014-129819	422	704	1
20171210	20171210	CA-2017-108294	473	706	1

Send an e-mail to any audience when a Power BI data alert is triggered

Save Flow checker Test

**Send an email**

To: Prathapa D.M.J... ; Karunarathne J... ;

Subject: Alert title triggered

Body:

```
<p><strong>Tile value: <img alt="bar chart icon" style="vertical-align: middle;" /> Tile value </strong></p>
<ul><li><strong>Alert threshold</strong>: <img alt="bar chart icon" style="vertical-align: middle;" /> Alert threshold</li>
<li><strong>Go to report</strong>: <a href="<img alt="link icon" style="vertical-align: middle;" /> Tile URL </a>">Tile URL</a></li>
</ul>
```

Show advanced options

+ New step Save

Add dynamic content from the apps and connectors used in this flow.

Dynamic content Expression

Search dynamic content

When a data driven alert is triggered See more

- Alert threshold: The threshold at which the alert is triggered.
- Alert title: The title of the alert.
- Is alert triggered: A boolean value (true, false) determining whether or not the alert has been triggered.
- Tile URL: The URL of the tile that triggered the alert.

Focused Other 91 Filter

Alert for Profit, Profit Goal triggered

Microsoft Power Apps and Power Automate <microsoft@powerapps.com>

Fri 5/15/2020 9:42 PM

To: Prathapa.D.M.J.it17167710; Karunarathne.J.M.P.D.it18195194

**Tile value: 63609.349**

- Alert threshold: 3236
- Go to report: <https://app.powerbi.com/MobileRedirect.html?action=OpenTile&dashboardObjectId=b02cb5c8-7974-4472-a52e-daaaa8fa7619&tileObjectId=aab6734c-d293-48d6-933c-da6d9454d7c2&OpenAppFromWindowsPCAndTablet=false&context=Flow>

If you want to unsubscribe from these emails, please use this [form](#).

Other: New conversations Microsoft Power Automate; Adobe Cre...

Microsoft Power Apps and Power Automate Alert for Profit, Profit Goal triggered 9:42 PM

Tile value: 63609.349 \* Alert threshold: 3236 ...

Sri Lanka Institute of Information Technolo... Enroll and build your profes... 8:55 PM

Don't miss out on building your professional ...

Yesterday

Pramodya Hettiarachchi it18006308 DWBI Exam Review Session Thu 10:13 PM

Mon 5/18 10:00 AM - 5:00 PM

No conflicts RSVP

## Flows

My flows Team flows Business process flows UI flows

	Name	Modified	Type
	Send an e-mail to any audience when a Power BI data a...	1 h ago	Automated
	Send an e-mail to any audience when a Power BI data ...	1 h ago	Automated

Edit Share Save As Delete Send a copy Submit as template Export Analytics Turn off Repair tips off

Details		Edit	Connections
Flow	Send an e-mail to any audience when a Power BI data alert is triggered	Status On	Power BI
Description	Use this template to send any audience an e-mail when a Power BI data-driven alert is triggered. The email will come from Microsoft Flow. For example: send support team a heads up when incident volume > 100.	Created May 15, 09:42 PM	Mail
Owner	Prathapa D.M.J it17167710	Modified May 15, 09:42 PM	Owners
		Type Automated	Prathapa D.M.J it17167710
		Plan Per-user plan	
Original template <a href="#">Edit</a>			
28-day run history		All runs	
Start	Duration	Status	
May 15, 09:42 PM (1 h ago)	00:00:00	Succeeded	

The audience, top-level Managers, sometime business owners, promote sales representative who are drawn to this report- outcome may be entirely based on the value of selected business activity, reliable data and how those are evaluated by using tools of data science to forecast future actives of ongoing business.

This report is based on a huge chain of Business named “Super Store “in USA that has been unfolded via four main regions of the country as East, West, North, and Southern. This analysis is based on above mentioned business and its activities during past selected years including data obtained accurately from trusted source which could be vouched of their confidentially.

## **References**

<https://www.tutorialgateway.org/drill-through-reports-in-ssrs/>

<https://docs.microsoft.com/en-us/sql/reporting-services/report-design/drillthrough-reports-report-builder-and-ssrs?view=sql-server-ver15>

<https://docs.microsoft.com/en-us/sql/reporting-services/report-design/drilldown-action-report-builder-and-ssrs?view=sql-server-ver15>

<https://www.mssqltips.com/sqlservertutorial/9082/sql-server-reporting-services-ssrs-2017-parameters/>