



Sri Lanka Institute of Information Technology

## Data Warehousing & Business Intelligence

# Customer Credit Card Promotions

Assignment 2

**Submitted By:**

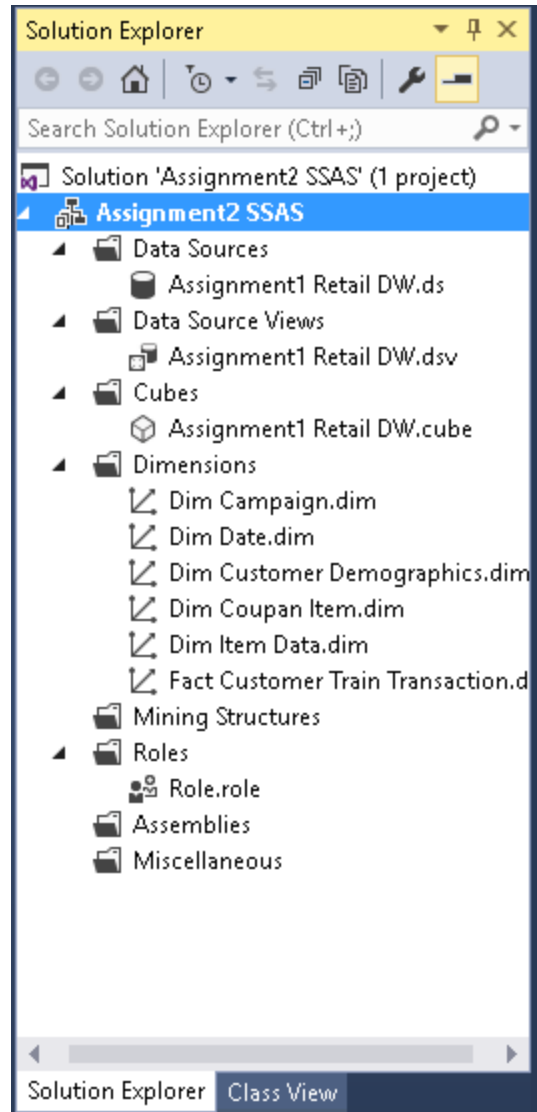
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**Submitted To:**

MR. Jesuthasan Alosius

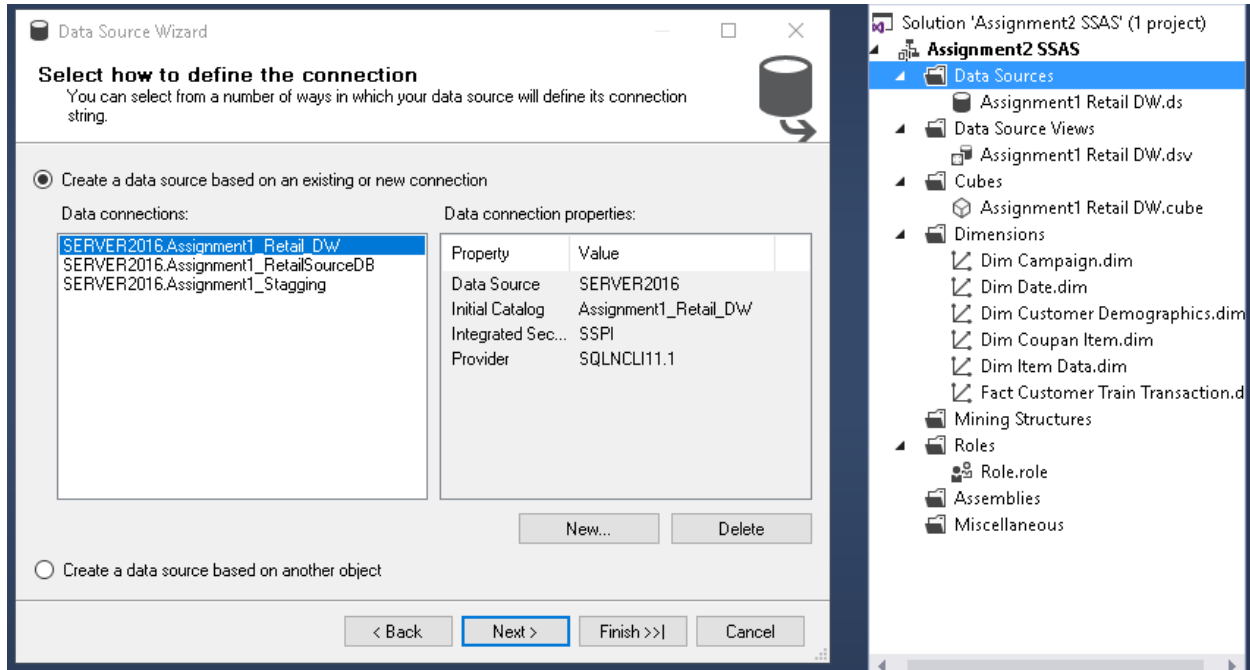
## Step 1: Data Source Selection

In previous assignment, finally I have created my Data Warehouse by using transformation method. In this case, I had to use that warehouse database for my cube creation. In below, you can see my Cube structure.

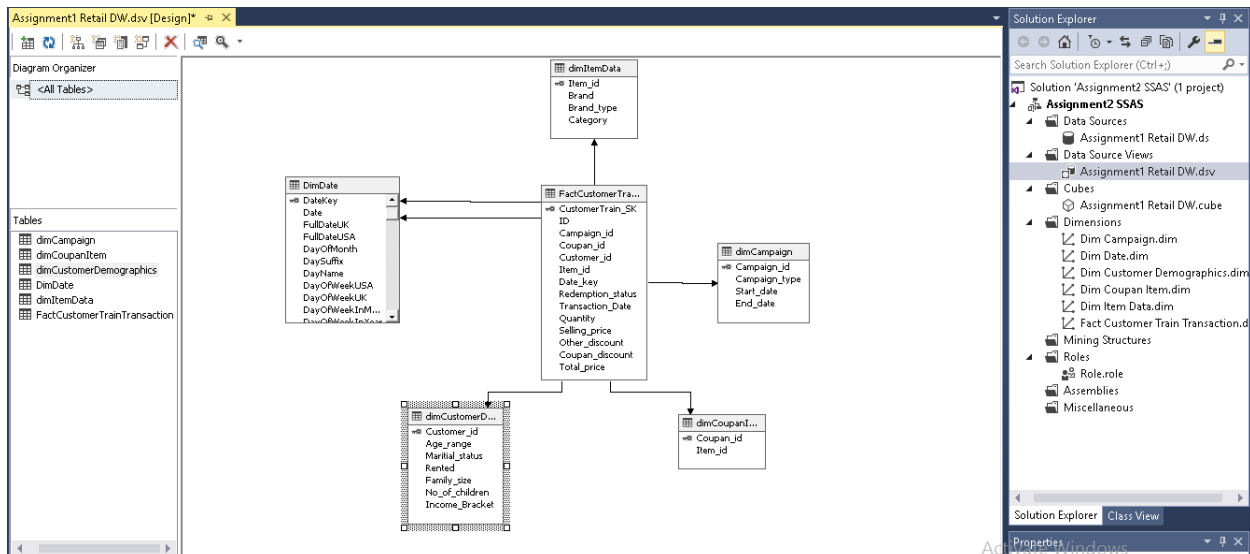


## Step 2: SSAS Cube Implementation

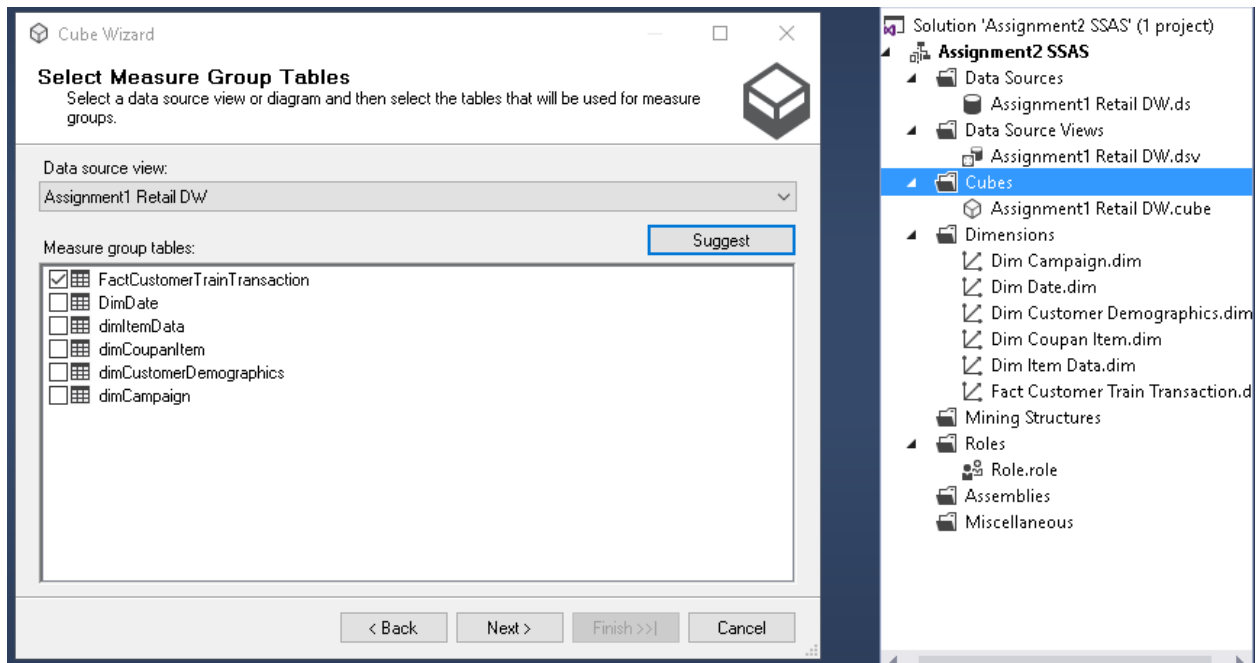
When Cube creation, first we have to configure our data source. For the data source, we will define our Data Warehouse database.



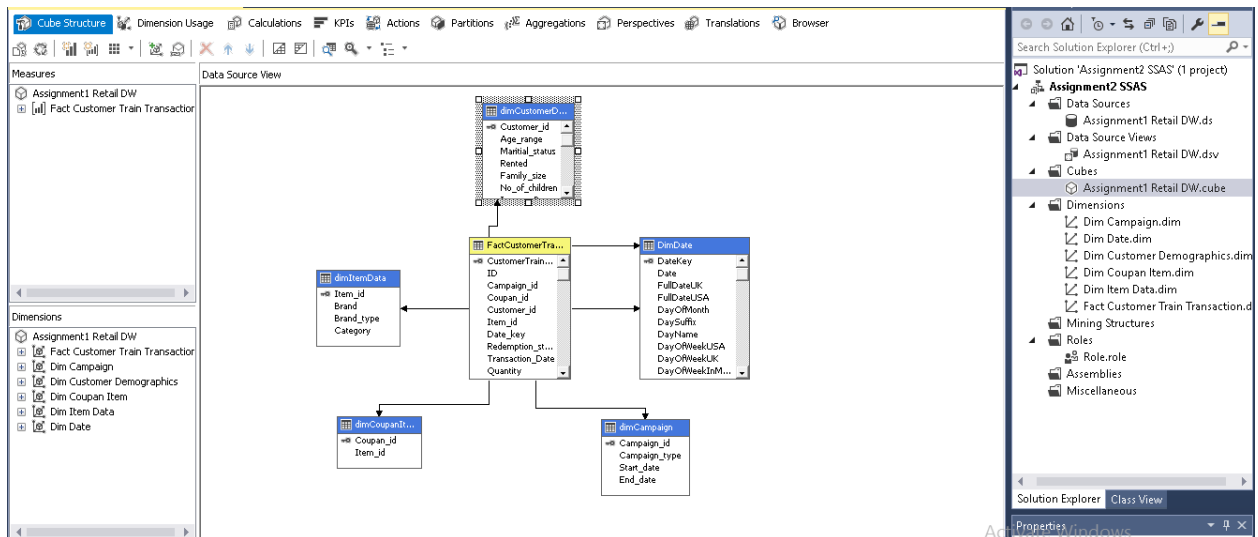
After that, I have created data source view. It represent diagram view of my star schema by showing connection of my tables.



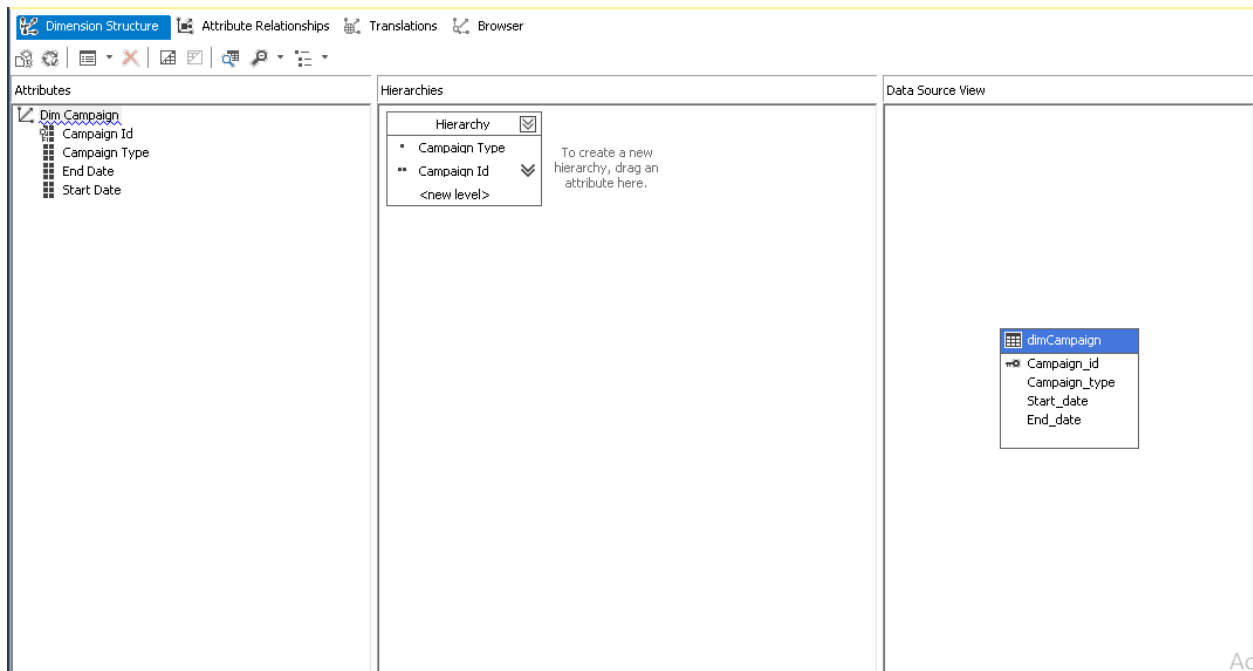
Next part is creating my cube. First, I had to run Cube wizard for configuration my tables. In this wizard, I had to choose only my fact table and rest of dim tables automatically connect with my fact table.



After apply correct configurations my cube is displaying like this.

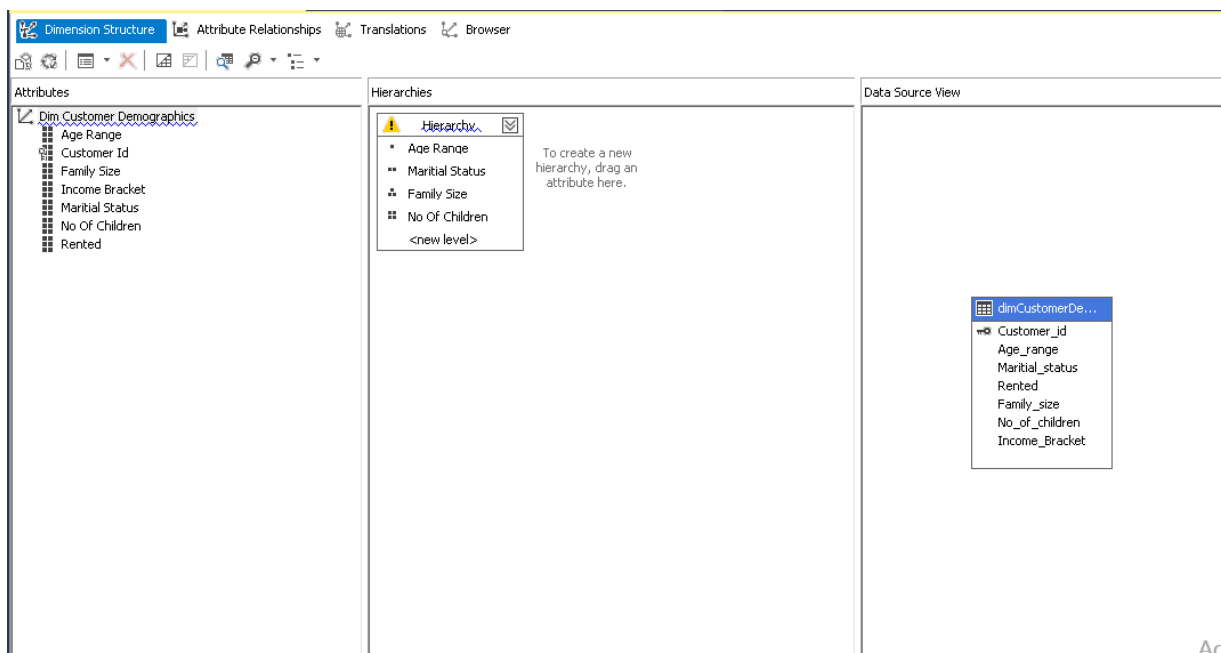


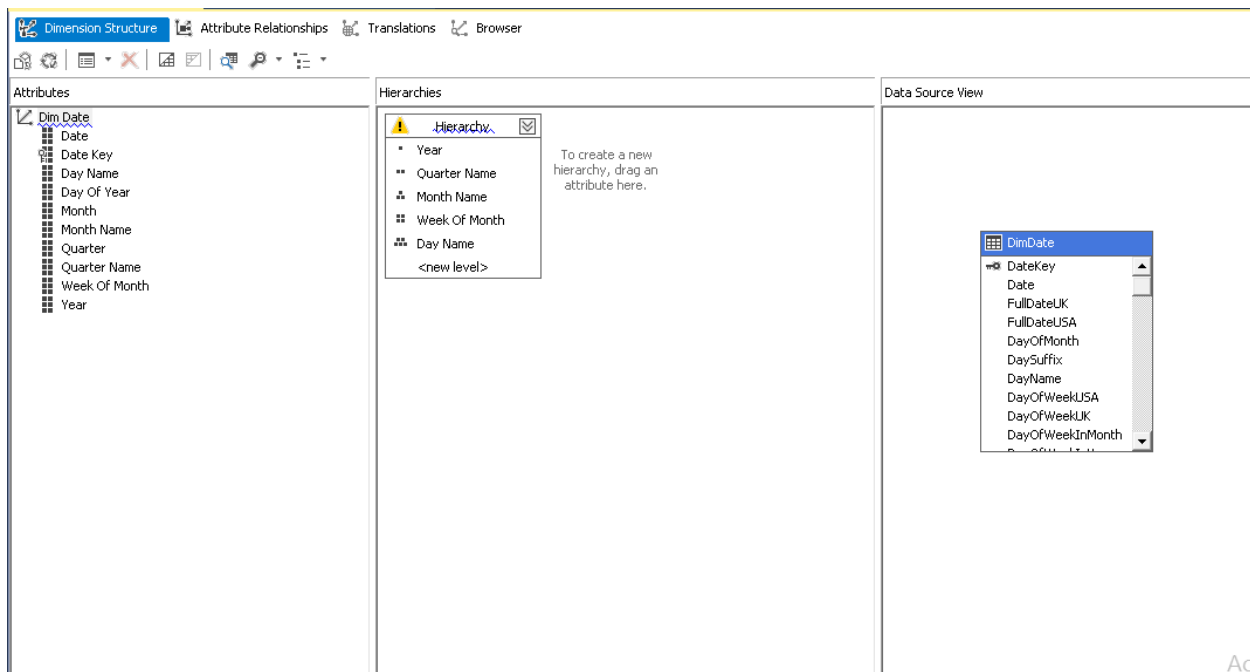
After creating cubes, there is one configuration missing. Mistake is, in attribute section all dim tables selected with their primary key and other columns not selected. There for we have to manually drag and drop those columns into attribute section.



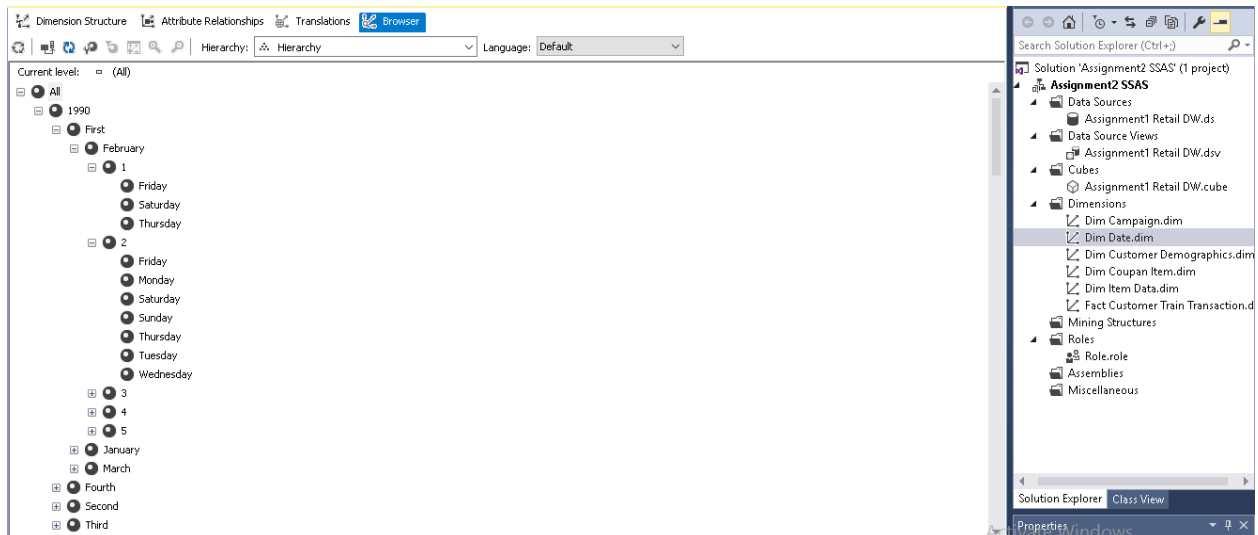
## Creating Hierarchies

In above image, you can see one hierarchy, which I have created. In below I have inserted other tables with their hierarchies.

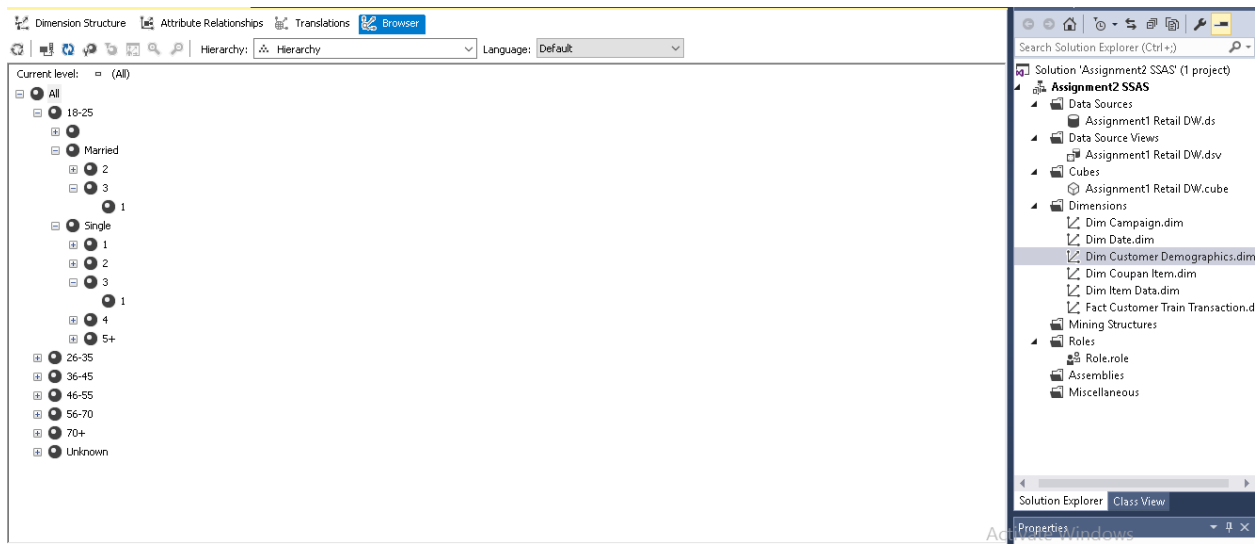




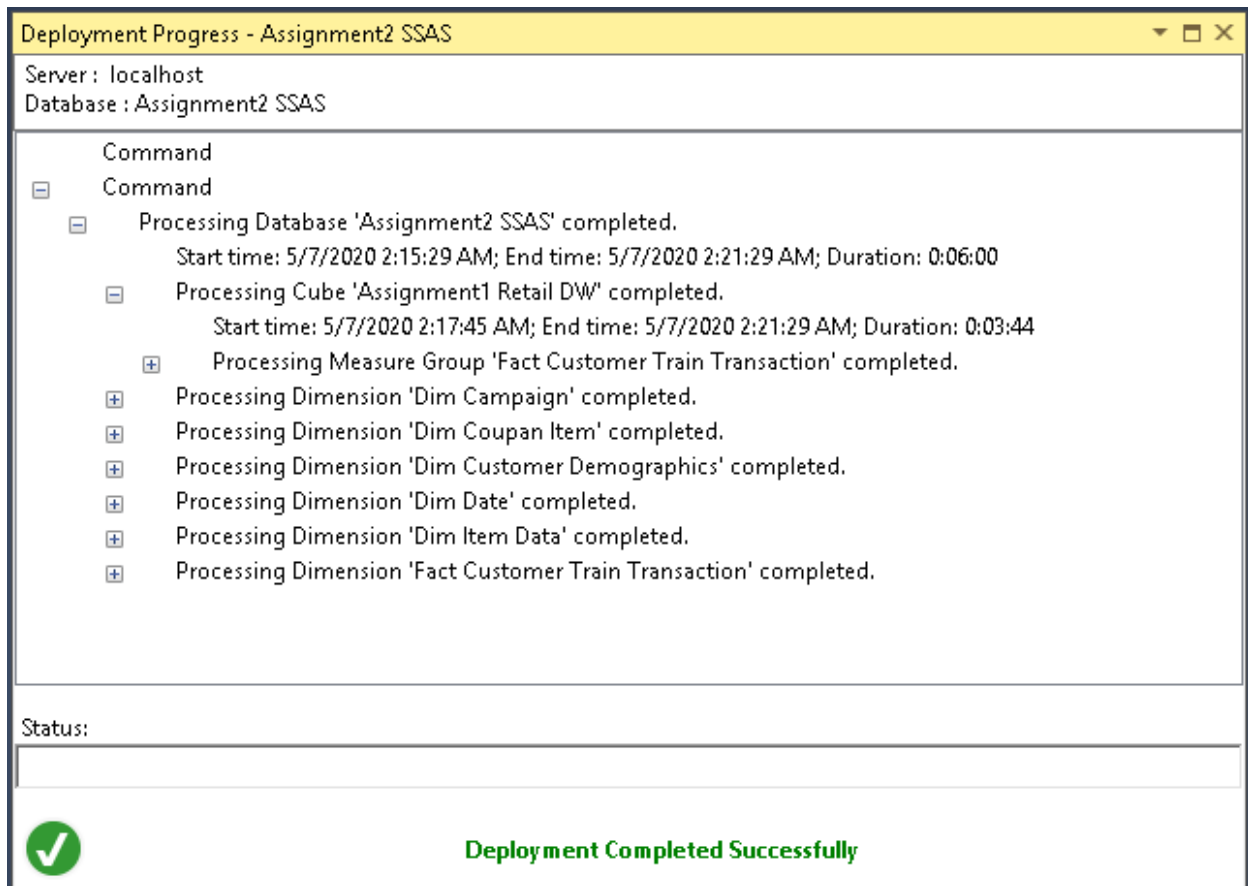
## Date Wise



## Personal detail wise



After these configurations, in first time I am going to deploy my Cube. After the deploying deployment result showed like this.



After deploying the cube, now you can customize your hierarchies with your measures.

Customer Id	Month Name	KPI Total Price Value	KPI Total Price Goal
1	April	(null)	False
1	August	(null)	False
1	December	(null)	False
1	February	237538	True
1	January	(null)	False
1	July	(null)	False
1	June	(null)	False
1	March	150682	True
1	May	(null)	False
1	November	(null)	False
1	October	(null)	False
1	September	(null)	False
1	Unknown	(null)	False
6	April	(null)	False
6	August	(null)	False
6	December	(null)	False
6	February	119264	True

Then finally, I have created role, which give user or user group to access to my database.

Role name: Role

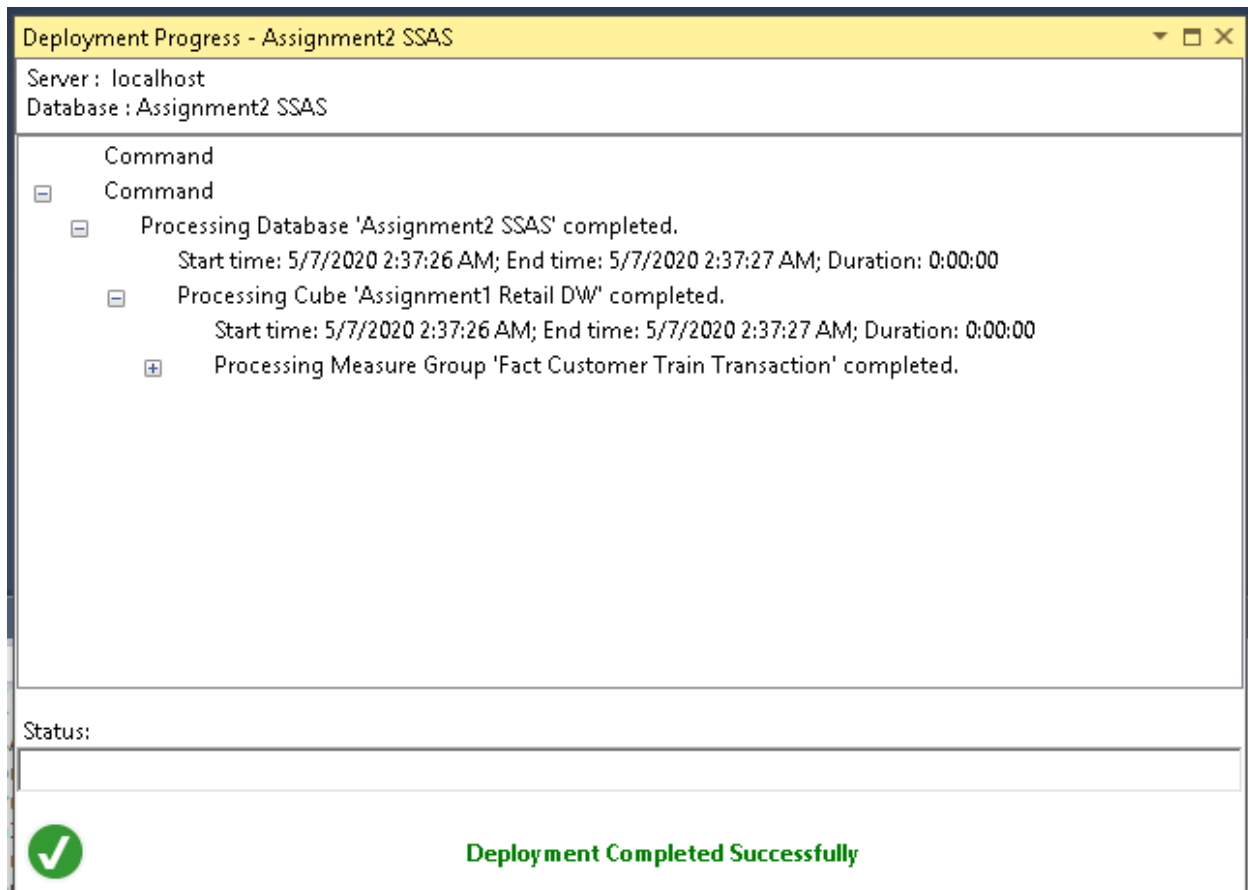
Role description: Admin

Set the database permissions for this role:

- ☒ Full control (Administrator)
- ☒ Process database
- ☒ Read definition



Then I have deploy again to apply my new creation which is role section.



### Step 3: OLAP Operations using PowerPivot

After the deployment, my deployed database send to SQL Server Management Studio. In there, again I have right clicked my cube and gone to brows section. In here, I have added again my hierarchies with measures.

#### Date hierarchy with measures

Customer Id	Year	Quarter Name	Month Name	Week Of Month	Day Name	Selling Price	Quantity	Coupan Discount	Other Discount	Total Price
1	2012	First	February	4	Tuesday	243648	2914	-3290	-50008	237538
1	2012	First	March	2	Thursday	134044	1222	0	-28482	150682
6	2012	First	February	1	Friday	90560	1152	0	-26144	105376
6	2012	First	February	3	Tuesday	14656	64	0	-768	13888
6	2012	First	January	4	Tuesday	63776	832	0	-9056	82304
6	2012	First	January	4	Wednesday	3776	64	0	-704	6848
7	2012	First	March	2	Tuesday	983625	11875	0	-204750	1106875
11	2012	First	February	1	Wednesday	137088	1008	0	-7416	254736
11	2012	First	February	2	Monday	77256	1584	0	-2952	149688
11	2012	First	February	3	Tuesday	352008	936	-40968	-10008	816192
11	2012	First	February	4	Saturday	95832	1296	0	-9000	167688
11	2012	First	February	4	Sunday	96480	1008	0	-10944	161784
11	2012	First	February	4	Tuesday	43560	621576	0	-2160	376051320
11	2012	First	January	4	Wednesday	398160	1512	-40968	-2808	1190592
11	2012	First	January	5	Sunday	43056	864	0	-5688	58104
11	2012	First	March	1	Thursday	47808	504	0	-14760	112104
11	2012	First	March	3	Monday	36432	576	0	-9072	104688
11	2012	First	March	3	Sunday	25632	371304	0	0	132184224
15	2012	First	February	1	Thursday	104520	1040	-3952	-6864	93704
15	2012	First	February	2	Friday	144040	1664	-2704	-10296	188240

Then I have execute this table for turn into SQL script. After converting, it looks like this.

```
SELECT NON EMPTY { [Measures].[Selling Price], [Measures].[Quantity], [Measures].[Coupan Discount], [Measures].[Other Discount], [Measures].[Total Price] } ON COLUMNS, NON EMPTY { ([Dim Customer Demographics].[Customer Id].[Customer Id].ALLMEMBERS * [Dim Date].[Hierarchy].[Day Name].ALLMEMBERS ) } DIMENSION PROPERTIES MEMBER_CAPTION, MEMBER_UNIQUE_NAME ON ROWS FROM ( SELECT ( { [Dim Date].[Hierarchy].[All] } ) ON COLUMNS FROM [Assignment1 Retail DW] ) CELL PROPERTIES VALUE, BACK_COLOR, FORE_COLOR, FORMATTED_VALUE, FORMAT_STRING, FONT_NAME, FONT_SIZE, FONT_FLAGS
```

Customer Id	Year	Quarter Name	Month Name	Week Of Month	Day Name	Selling Price	Quantity	Coupan Discount	Other Discount	Total Price
1	2012	First	February	4	Tuesday	243648	2914	-3290	-50008	237538
1	2012	First	March	2	Thursday	134044	1222	0	-28482	150682
6	2012	First	February	1	Friday	90560	1152	0	-26144	105376
6	2012	First	February	3	Tuesday	14656	64	0	-768	13888
6	2012	First	January	4	Tuesday	63776	832	0	-9056	82304
6	2012	First	January	4	Wednesday	3776	64	0	-704	6848
7	2012	First	March	2	Tuesday	983625	11875	0	-204750	1106875
11	2012	First	February	1	Wednesday	137088	1008	0	-7416	254736
11	2012	First	February	2	Monday	77256	1584	0	-2952	149688
11	2012	First	February	3	Tuesday	352008	936	-40968	-10008	816192
11	2012	First	February	4	Saturday	95832	1296	0	-9000	167688
11	2012	First	February	4	Sunday	96480	1008	0	-10944	161784

## Age range hierarchy with measures

The screenshot shows a BI tool interface with a table of data. The table has columns for dimensions and measures. The dimensions are Customer Id, Age Range, Marital Status, Family Size, No Of Children, and Hierarchy. The measures are Selling Price, Quantity, Coupan Discount, Other Discount, and Total Price. The table is filtered by the dimension Dim Customer Demographics.

Customer Id	Age Range	Marital Status	Family Size	No Of Children	Selling Price	Quantity	Coupan Discount	Other Discount	Total Price
1	70+	Married	2		377692	4136	-3290	-78490	388220
6	46-55	Married	2		172768	2112	0	-36672	208416
7	26-35		3	1	983625	11875	0	-204750	1106875
11	70+	Single	2		1353312	1002168	-81936	-74808	511251120
15	46-55	Married	2		1308216	4709640	-12064	-155272	7673911...
17	36-45		1		478737	3969	0	-56826	662319
19	46-55		1		236128	3572	0	-4794	328906
27	36-45	Married	2		1321875	15225	0	-185475	1472325
33	46-55	Married	5+	3+	296401	3136	0	-53557	382641
36	36-45	Married	2		131553	1457	0	-11703	194345
38	46-55	Single	2		308574	2686	-2765	-17933	456304
39	70+	Married	2		47025	330	0	-440	56485
41	46-55	Single	2		208208	2548	0	-33332	207220
48	36-45	Married	2		59430	240	0	-5115	116685
51	70+	Married	2		169386	4116	-1806	-73920	201390
52	36-45	Married	5+	3+	287574	3416	-1470	-56210	289646
55	46-55		2		16680	300	0	-2265	25110
58	26-35		1		577512	724152	0	-115986	484882554
59	70+	Single	1		67956	567	0	-7245	84189
66	46-55		1		378522	2295	0	-34119	351645

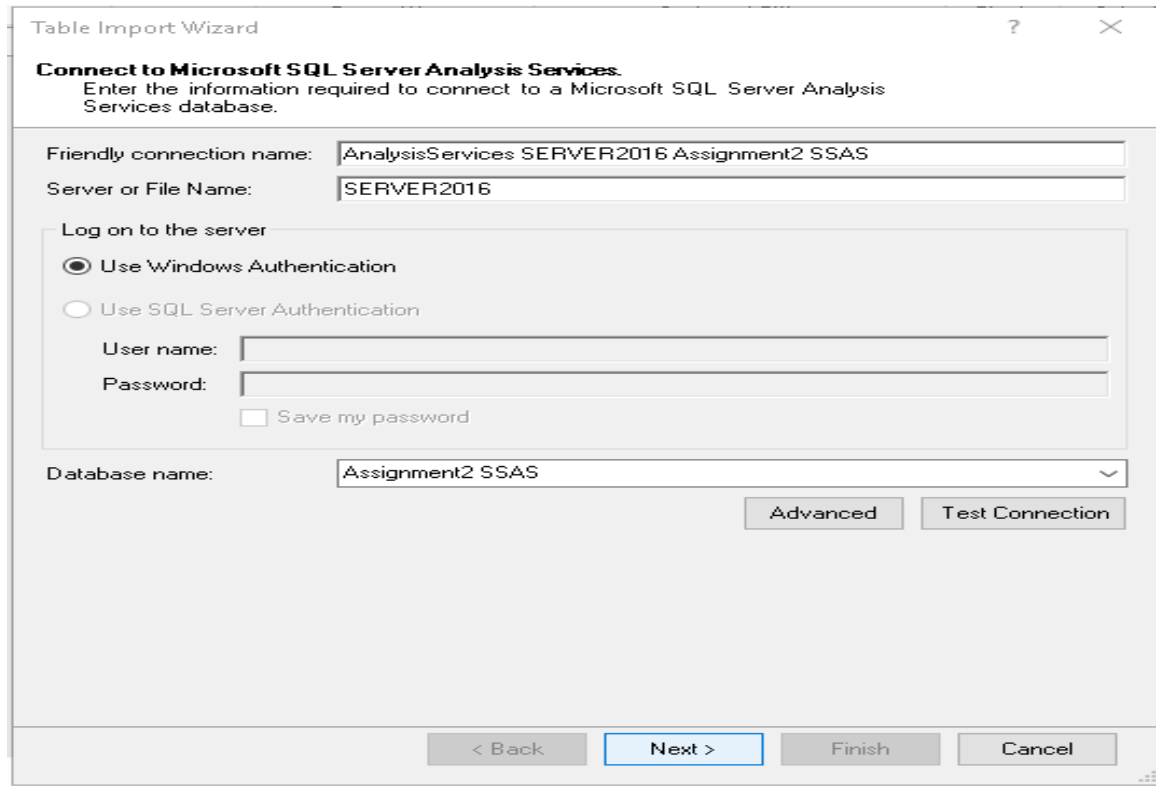
## SQL script

The screenshot shows a BI tool interface with a SQL script. The script is a SELECT statement that joins the Fact Customer Train Transaction table with the Dim Customer Demographics table. The script is filtered by the dimension Dim Customer Demographics.

```
SELECT NON EMPTY ([Measures].[Selling Price], [Measures].[Quantity], [Measures].[Coupan Discount], [Measures].[Other Discount], [Measures].[Total Price]) ON COLUMNS, NON EMPTY ([Dim Customer Demographics].[Customer Id],[Customer Id].ALLMEMBERS * [Dim Customer Demographics].[Hierarchy],[No Of Children].ALLMEMBERS)) DIMENSION PROPERTIES MEMBER_CAPTION, MEMBER_UNIQUE_NAME ON ROWS FROM ( SELECT ( { [Dim Customer Demographics].[Hierarchy].[All]} ) ON COLUMNS FROM [Assignment1 Retail DW]) CELL PROPERTIES VALUE, BACK_COLOR, FORE_COLOR, FORMATTED_VALUE, FORMAT_STRING, FONT_NAME, FONT_SIZE, FONT_FLAGS
```

Customer Id	Age Range	Marital Status	Family Size	No Of Children	Selling Price	Quantity	Coupan Discount	Other Discount	Total Price
1	70+	Married	2		377692	4136	-3290	-78490	388220
6	46-55	Married	2		172768	2112	0	-36672	208416
7	26-35		3	1	983625	11875	0	-204750	1106875
11	70+	Single	2		1353312	1002168	-81936	-74808	511251120
15	46-55	Married	2		1308216	4709640	-12064	-155272	7673911...
17	36-45		1		478737	3969	0	-56826	662319
19	46-55		1		236128	3572	0	-4794	328906
27	36-45	Married	2		1321875	15225	0	-185475	1472325
33	46-55	Married	5+	3+	296401	3136	0	-53557	382641
36	36-45	Married	2		131553	1457	0	-11703	194345
38	46-55	Single	2		308574	2686	-2765	-17933	456304
39	70+	Married	2		47025	330	0	-440	56485

After those steps, now I can establish connection with cube using PowerPivot option in Excel.



The screenshot shows the 'Table Import Wizard' window with the title 'Connect to Microsoft SQL Server Analysis Services'. The instructions state: 'Enter the information required to connect to a Microsoft SQL Server Analysis Services database.' The 'Friendly connection name' is 'AnalysisServices SERVER2016 Assignment2 SSAS'. The 'Server or File Name' is 'SERVER2016'. Under 'Log on to the server', 'Use Windows Authentication' is selected. The 'Database name' is 'Assignment2 SSAS'. At the bottom, the 'Next >' button is highlighted.

Table Import Wizard

**Connect to Microsoft SQL Server Analysis Services.**  
Enter the information required to connect to a Microsoft SQL Server Analysis Services database.

Friendly connection name: AnalysisServices SERVER2016 Assignment2 SSAS

Server or File Name: SERVER2016

Log on to the server

☒ Use Windows Authentication

☐ Use SQL Server Authentication

User name:

Password:

☐ Save my password

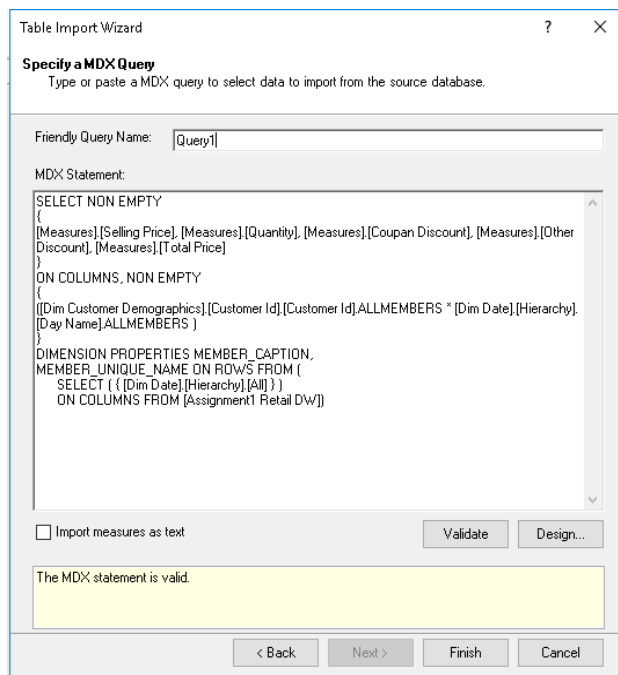
Database name: Assignment2 SSAS

Advanced Test Connection

< Back Next > Finish Cancel

Then I have created two queries by including SQL scripts, which I have implemented in management studio.

### Query 1



The screenshot shows the 'Table Import Wizard' window with the title 'Specify a MDX Query'. The instructions state: 'Type or paste a MDX query to select data to import from the source database.' The 'Friendly Query Name' is 'Query1'. The MDX Statement is: 

```
SELECT NON EMPTY { [Measures].[Selling Price], [Measures].[Quantity], [Measures].[Coupon Discount], [Measures].[Other Discount], [Measures].[Total Price] } ON COLUMNS, NON EMPTY { ([Dim Customer Demographics].[Customer Id].[Customer Id]ALLMEMBERS * [Dim Date].[Hierarchy].[Day Name]ALLMEMBERS ) } DIMENSION PROPERTIES MEMBER_CAPTION, MEMBER_UNIQUE_NAME ON ROWS FROM ( SELECT ( { [Dim Date].[Hierarchy].[All] } ) ON COLUMNS FROM [Assignment1 Retail Dw])
```

 The 'Validate' button is highlighted. The status bar at the bottom says 'The MDX statement is valid.'

Table Import Wizard

**Specify a MDX Query**  
Type or paste a MDX query to select data to import from the source database.

Friendly Query Name: Query1

MDX Statement:

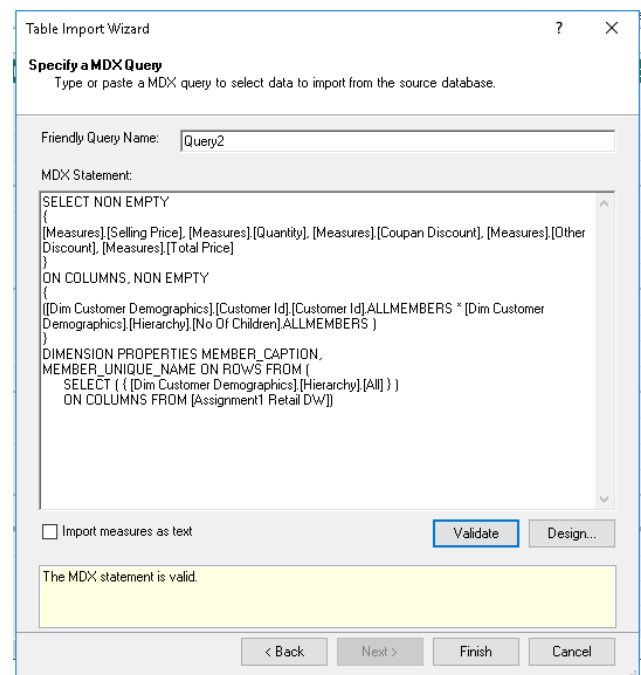
```
SELECT NON EMPTY { [Measures].[Selling Price], [Measures].[Quantity], [Measures].[Coupon Discount], [Measures].[Other Discount], [Measures].[Total Price] } ON COLUMNS, NON EMPTY { ([Dim Customer Demographics].[Customer Id].[Customer Id]ALLMEMBERS * [Dim Date].[Hierarchy].[Day Name]ALLMEMBERS ) } DIMENSION PROPERTIES MEMBER_CAPTION, MEMBER_UNIQUE_NAME ON ROWS FROM ( SELECT ( { [Dim Date].[Hierarchy].[All] } ) ON COLUMNS FROM [Assignment1 Retail Dw])
```

☐ Import measures as text Validate Design...

The MDX statement is valid.

< Back Next > Finish Cancel

### Query 2



The screenshot shows the 'Table Import Wizard' window with the title 'Specify a MDX Query'. The instructions state: 'Type or paste a MDX query to select data to import from the source database.' The 'Friendly Query Name' is 'Query2'. The MDX Statement is: 

```
SELECT NON EMPTY { [Measures].[Selling Price], [Measures].[Quantity], [Measures].[Coupon Discount], [Measures].[Other Discount], [Measures].[Total Price] } ON COLUMNS, NON EMPTY { ([Dim Customer Demographics].[Customer Id].[Customer Id]ALLMEMBERS * [Dim Customer Demographics].[Hierarchy].[No Of Children]ALLMEMBERS ) } DIMENSION PROPERTIES MEMBER_CAPTION, MEMBER_UNIQUE_NAME ON ROWS FROM ( SELECT ( { [Dim Customer Demographics].[Hierarchy].[All] } ) ON COLUMNS FROM [Assignment1 Retail Dw])
```

 The 'Validate' button is highlighted. The status bar at the bottom says 'The MDX statement is valid.'

Table Import Wizard

**Specify a MDX Query**  
Type or paste a MDX query to select data to import from the source database.

Friendly Query Name: Query2

MDX Statement:

```
SELECT NON EMPTY { [Measures].[Selling Price], [Measures].[Quantity], [Measures].[Coupon Discount], [Measures].[Other Discount], [Measures].[Total Price] } ON COLUMNS, NON EMPTY { ([Dim Customer Demographics].[Customer Id].[Customer Id]ALLMEMBERS * [Dim Customer Demographics].[Hierarchy].[No Of Children]ALLMEMBERS ) } DIMENSION PROPERTIES MEMBER_CAPTION, MEMBER_UNIQUE_NAME ON ROWS FROM ( SELECT ( { [Dim Customer Demographics].[Hierarchy].[All] } ) ON COLUMNS FROM [Assignment1 Retail Dw])
```

☐ Import measures as text Validate Design...

The MDX statement is valid.

< Back Next > Finish Cancel

After running that two queries, I have got those two tables in excel which is same as management studio tables.

	Dim Customer D...	Dim Dat...	Dim Date...	Dim Date...	Dim ...	Dim DateH...	Measu...	M...	M...	Measu...	Measure...
1	17	2012	First	February	3	Friday	15624	63	0	0	15624
2	17	2012	First	February	4	Monday	2205	63	0	0	2205
3	19	2012	First	February	3	Sunday	13912	188	0	0	13912
4	19	2012	First	February	4	Monday	34028	470	0	0	51700
5	19	2012	First	February	4	Saturday	19270	282	0	0	36942
6	19	2012	First	February	4	Tuesday	25568	470	0	0	27542
7	38	2012	First	February	3	Tuesday	11613	237	0	0	11613
8	51	2012	First	February	3	Sunday	1764	42	0	0	1764
9	52	2012	First	February	5	Tuesday	6692	42	0	0	6692
10	58	2012	First	February	1	Thursday	83304	78	0	0	83304
11	66	2012	First	February	3	Friday	16320	51	0	0	16320
12	66	2012	First	February	3	Saturday	41106	204	0	0	41106
13	67	2012	First	February	2	Saturday	4256	280	0	0	5432
14	79	2012	First	February	5	Tuesday	9450	168	0	0	13272
15	79	2012	First	February	5	Wednesday	13608	420	0	0	18144
16	90	2012	First	February	2	Thursday	4140	92	0	0	4140
17	90	2012	First	February	3	Sunday	3220	184	0	0	6440

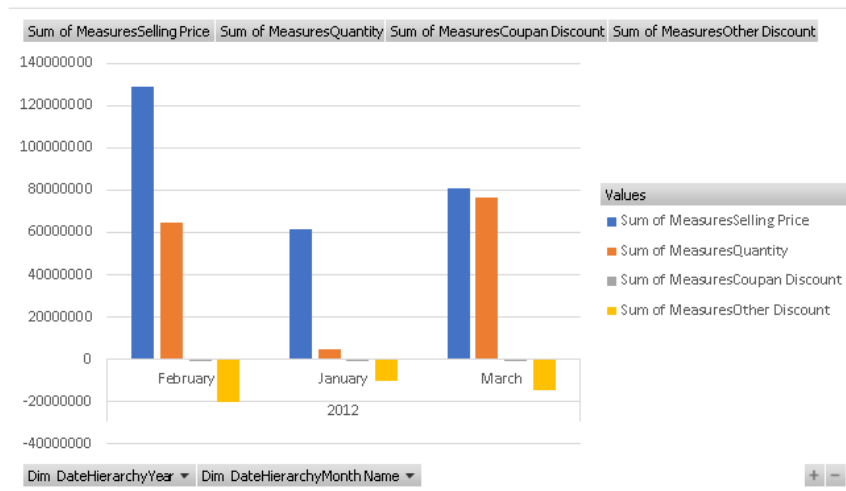
	Dim Cu...	Dim Cus...	Dim Custom...	Dim Cust...	Dim Cust...	Measures...	Measu...	MeasuresCo...	MeasuresOt...	MeasuresTot...	Add column
1	17	36-45		1		478737	3969	0	-56826	662319	
2	19	46-55		1		236128	3572	0	-4794	328906	
3	58	26-35		1		577512	724152	0	-115986	484882554	
4	66	46-55		1		378522	2295	0	-34119	351645	
5	75	26-35		1		12296	232	0	-1450	10846	
6	84	46-55		1		85896	984	0	-7464	103584	
7	138	36-45		1		66516	782	0	-17526	63296	
8	179	46-55		1		188354	1230	0	-17138	190076	
9	207	46-55		1		1200738	11752	0	-83620	1160058	
10	231	46-55		1		1867548	32262	0	-598272	2661102	
11	232	70+		1		283185	3780	0	-37665	272880	
12	269	46-55		1		232135	2465	0	-31450	307105	
13	279	18-25		1		485296	4200	0	-37296	594888	
14	298	70+		1		14630	220	0	-6182	8448	
15	313	46-55		1		70855	1073	0	-20313	122174	
16	348	26-35		1		46458	594	0	-5148	56556	
17	361	18-25		1		92092	1196	0	-22880	78312	

## OLAP Operations

### Drill Down

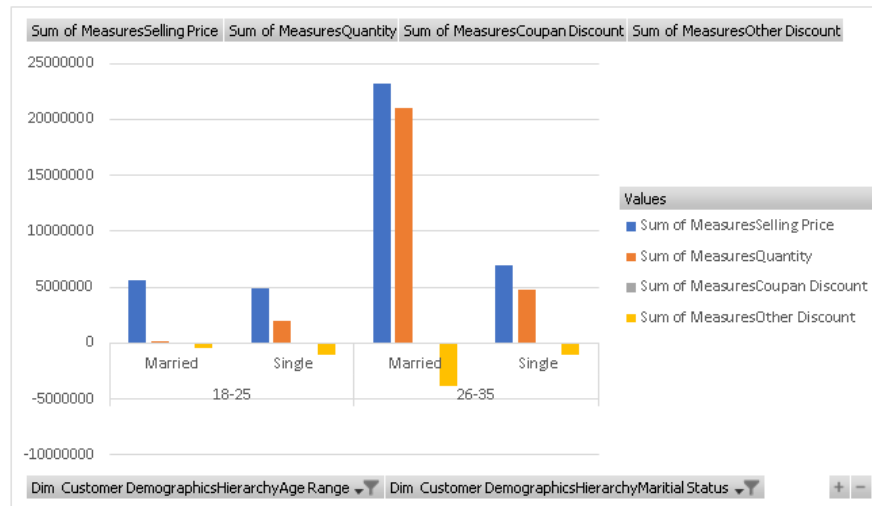
For the hierarchy, I have selected (Year -> Month -> week of the month -> day). I have drilled down this hierarchy and added selling price, quantity, coupon discount and other discount as measures.

Row Labels	Sum of MeasuresSelling Price	Sum of MeasuresQuantity	Sum of MeasuresCoupan Discount	Sum of MeasuresOther Discount
2012				
February	128968933	64936310	-554750	-20136589
January				
1				
Friday	727489	8682	0	-121356
Monday	1513056	22699	-55575	-386872
Saturday	1066336	11779	-632	-277222
Thursday	1450838	19886	0	-186767
Tuesday	698613	8187	-2850	-86493
Wednesday	743788	7493	0	-155092
2	13147500	432884	-14966	-2390947
3	15362743	1589773	-151173	-2476832
4	18439703	1331780	-84602	-2903129
5	8405355	1606404	-26698	-1311434
March	80763198	76412686	-350490	-14453759
Grand Total	271287552	146388563	-1241736	-44886492



In the other hand, I have selected (Age range -> marital status -> family size) and I have drilled down this hierarchy and added selling price, quantity, coupon discount and other discount as measures.

Row Labels	Sum of MeasuresSelling Price	Sum of MeasuresQuantity	Sum of MeasuresCoupon Discount	Sum of MeasuresOther Discount
18-25				
1	1915086	25301	0	-313709
2	2870900	1975724	-4192	-367984
Married				
3	5633031	63813	0	-402702
Single				
1	2020355	1027159	0	-335208
2	2676876	1018428	-7881	-633141
5+	176958	1566	0	-35032
26-35	53472106	32675187	-203518	-8782707
36-45	80161775	51482348	-263792	-12999197
46-55	89382233	48880337	-577907	-15215539
56-70	15861306	3811464	-78478	-3333587
70+	17116926	5427236	-105968	-2467686
Grand Total	271287552	146388563	-1241736	-44886492



## Roll up

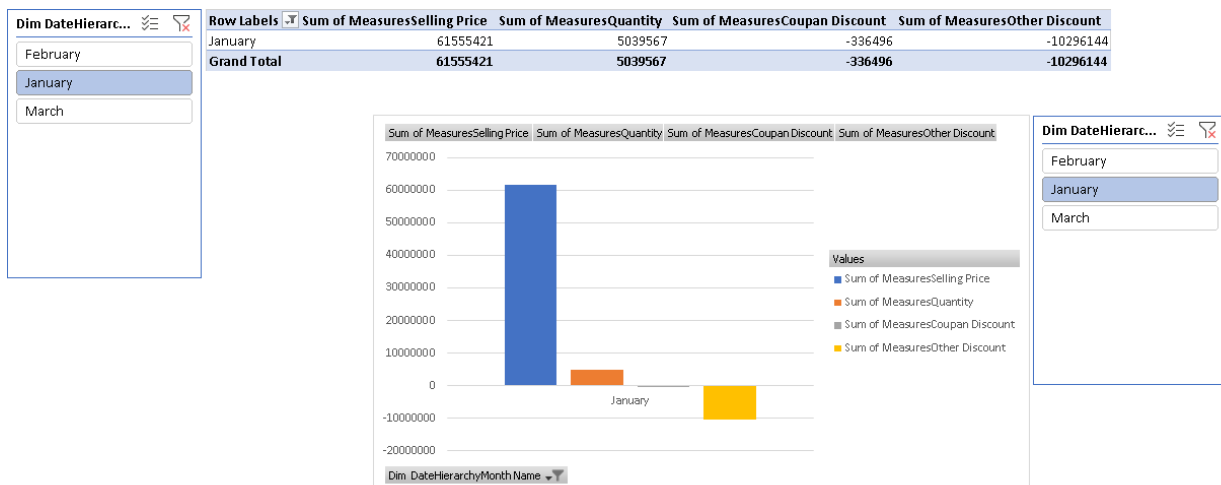
This OLAP operation is complete opposite of drill down operation. This use hierarchy with less drop downs. For the hierarchy, I have selected (Year -> Month). I have drilled down this hierarchy and added selling price, quantity, coupon discount and other discount as measures.

Row Labels	Sum of MeasuresSelling Price	Sum of MeasuresQuantity	Sum of MeasuresCoupan Discount	Sum of MeasuresOther Discount
2012				
February	128968933	64936310	-554750	-20136589
January	61555421	5039567	-336496	-10296144
March	80763198	76412686	-350490	-14453759
Grand Total	271287552	146388563	-1241736	-44886492



## Slicing

For the slicing, first we need to create one slice for graph and one slice for table. By using slice, we select one dim with column to get report. It will give result only for our specified selection.



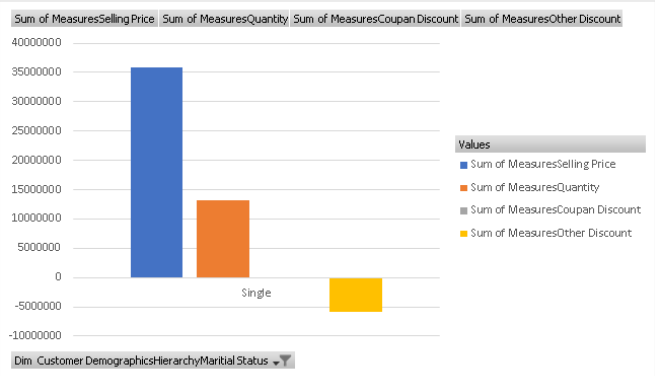


Dim Customer De...

Married

Single

Row Labels	Sum of MeasuresSelling Price	Sum of MeasuresQuantity	Sum of MeasuresCoupan Discount	Sum of MeasuresOther Discount
Single	35882992	13176072	-208541	-5784378
Grand Total	35882992	13176072	-208541	-5784378



Dim Customer De...

Married

Single

## Dicing

This is improvement of slicing. In here, we need to select more than one dimensions with columns. It will give exact specified value by searching deep.

Row Labels	Sum of MeasuresSelling Price	Sum of MeasuresQuantity	Sum of MeasuresCoupan Discount	Sum of MeasuresOther Discount
January				
1				
Saturday	1066336	11779	-632	-277222
Grand Total	1066336	11779	-632	-277222

Dim DateHierarc...  
February  
January  
March

Dim DateHierarchyWeek Of Month  
1  
2  
3  
4  
5

Dim DateHierarc...  
Friday  
Monday  
Saturday  
Thursday  
Tuesday  
Wednesday  
Sunday

Dim DateHierarc...  
February  
January  
March

Dim DateHierarchyWeek Of Month  
1  
2  
3  
4  
5

Dim DateHierarc...  
Friday  
Monday  
Saturday  
Thursday  
Tuesday  
Wednesday  
Sunday



Row Labels	Sum of MeasuresSelling Price	Sum of MeasuresQuantity	Sum of MeasuresCoupan Discount	Sum of MeasuresOther Discount
18-25				
Single	4874189	2047153	-7881	-1003381
<b>Grand Total</b>	<b>4874189</b>	<b>2047153</b>	<b>-7881</b>	<b>-1003381</b>

**Dim Customer DemographicsHierarchyAge Range**

- 18-25
- 26-35
- 36-45
- 46-55
- 56-70
- 70+

**Dim Customer D...**

- Married
- Single

**Dim Customer DemographicsHierarchyAge Range**

- 18-25
- 26-35
- 36-45
- 46-55
- 56-70
- 70+

**Dim Customer De...**

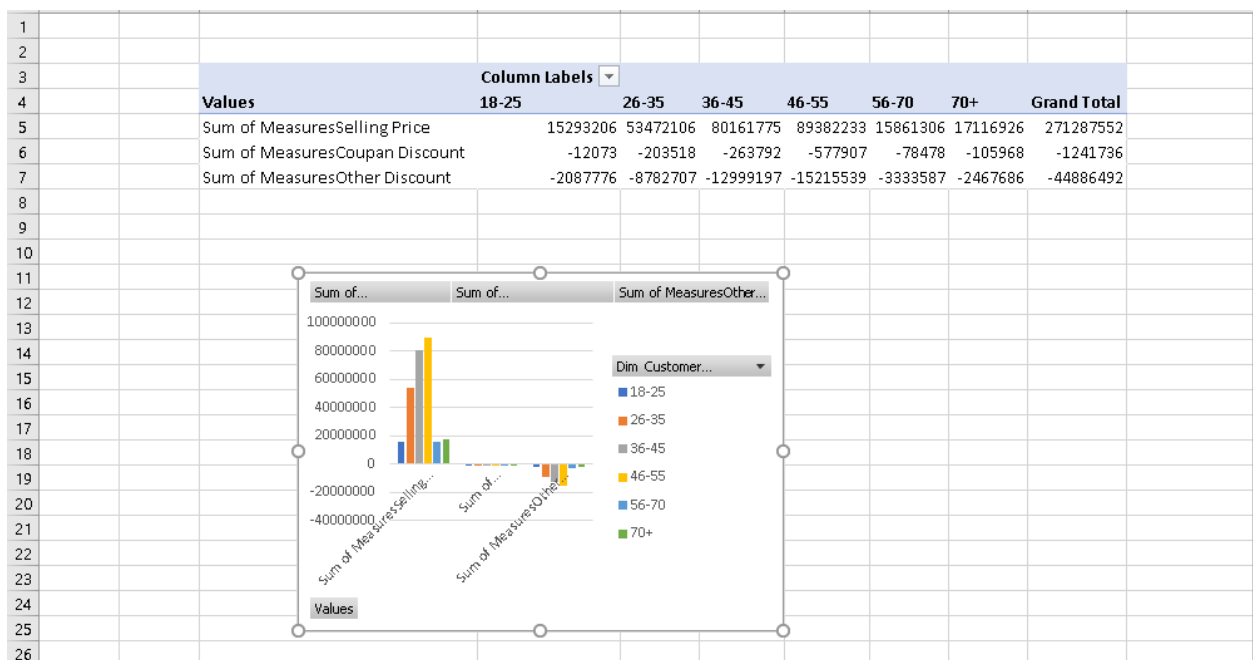
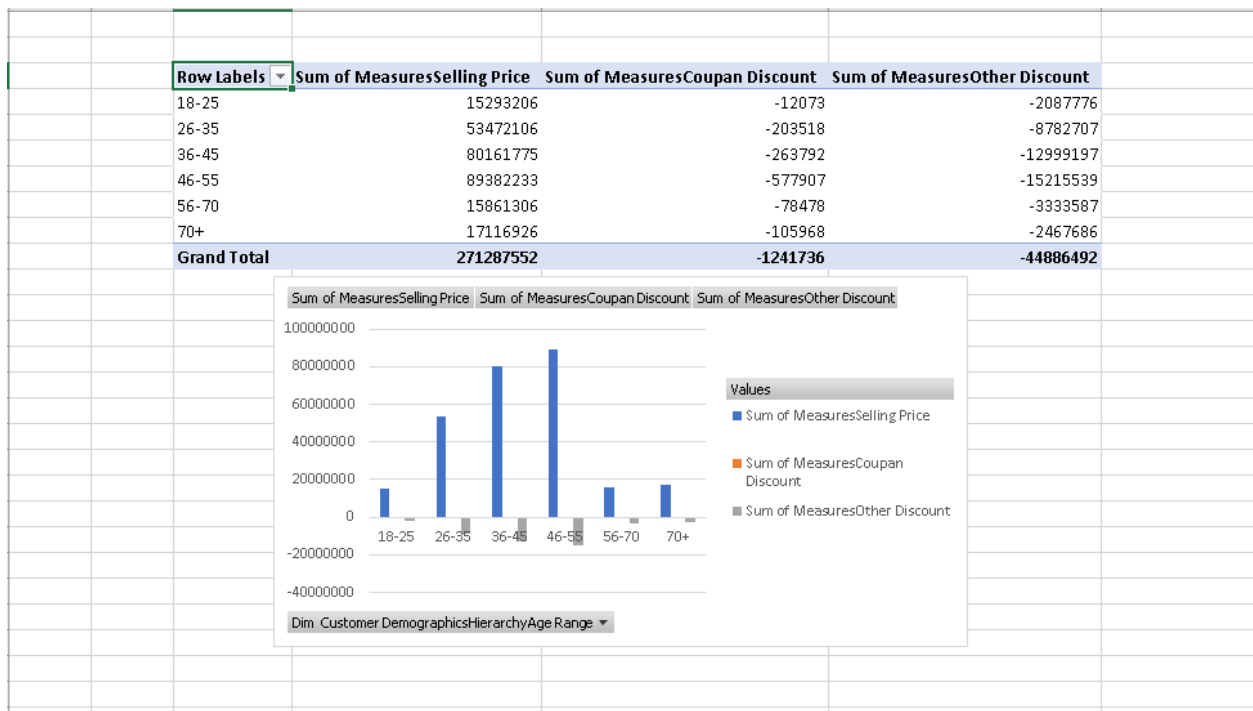
- Married
- Single



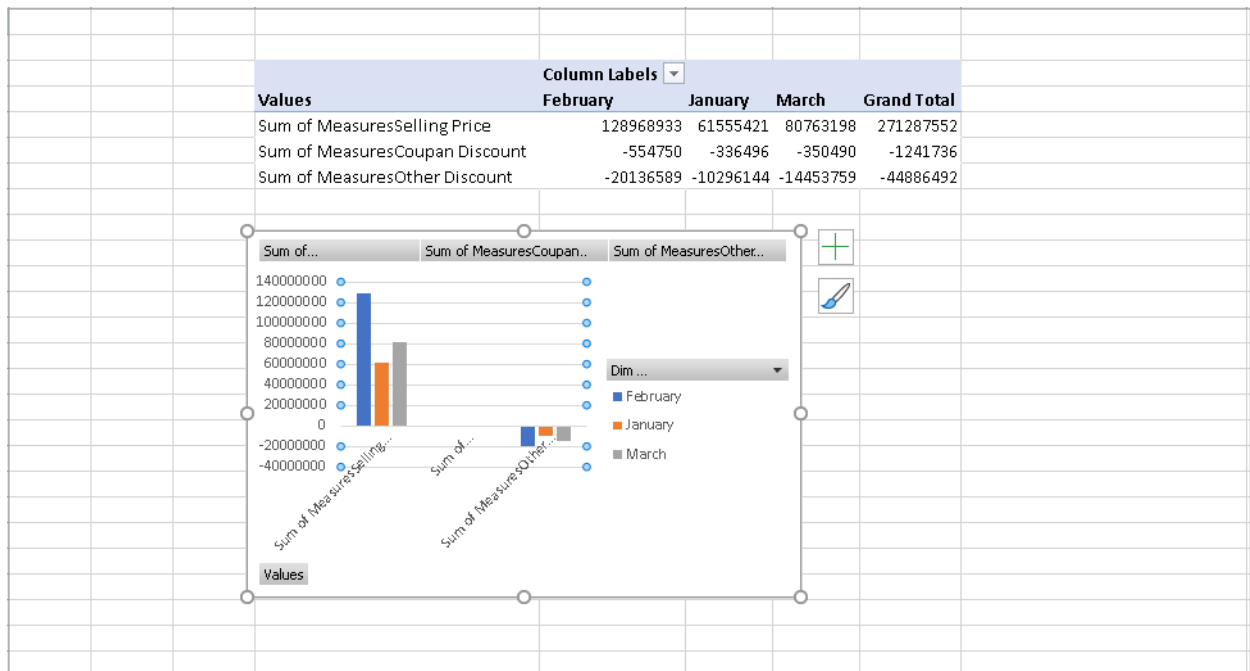
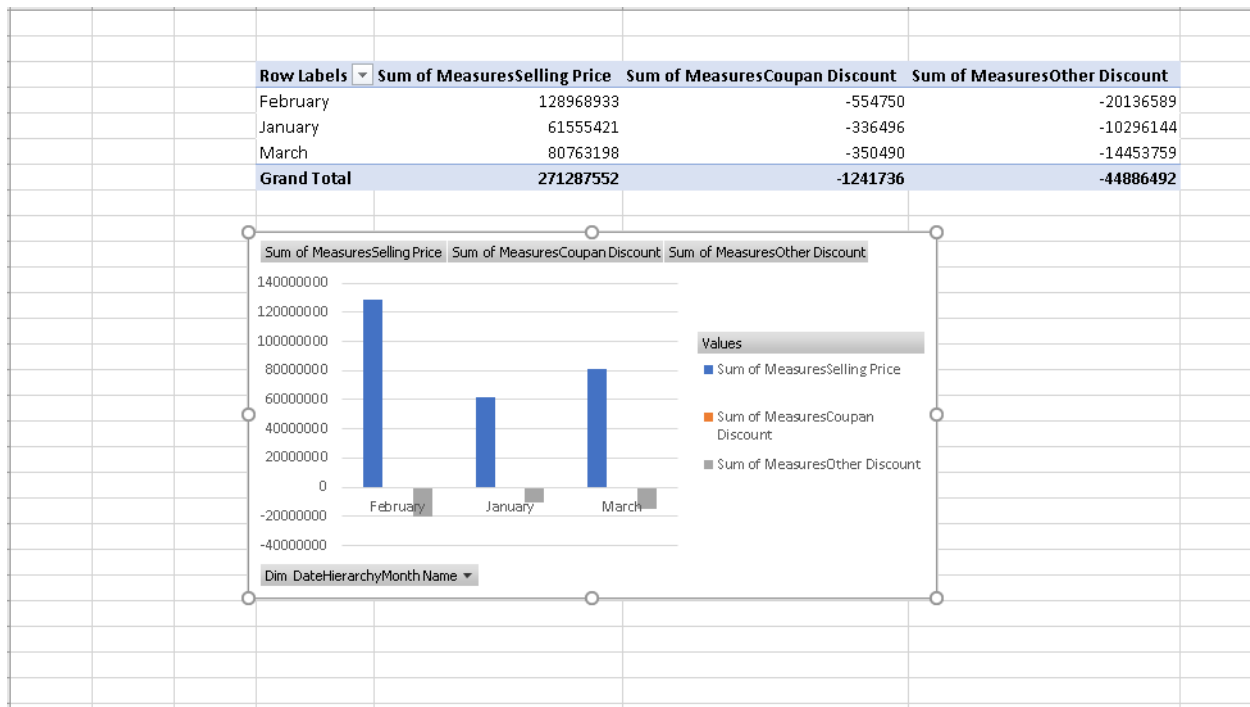
## Pivot

This is 2D representation of our table. You have define 2 sides only in here. And also, this can generate by slice operation. Then you can pivot this table.

Age range wise



Date wise



## Step 4: SSRS Report

Before creating SSRS reports, we have to create report analysis project in visual studio and then we have to define our analysis database when creating report. Then we have to go to query builder and then create table in there by using hierarchy and measurements and build SQL script of it.

The screenshot shows the 'Report Wizard' window in SQL Server Reporting Services (SSRS). The title bar reads 'Report Wizard'. The main heading is 'Design the Query', with a subtitle 'Specify a query to execute to get the data for the report.' Below this, there is a button labeled 'Query Builder...'. Underneath the button, the text 'Query string:' is followed by a large text area containing a SQL query. The query is as follows:

```
SELECT DimDate.Year, DimDate.QuarterName, DimDate.MonthName, DimDate.WeekOfMonth, DimDate.DayName,
dimCustomerDemographics.Age_range, dimCustomerDemographics.Marital_status,
FactCustomerTrainTransaction.Selling_price, FactCustomerTrainTransaction.Quantity,
FactCustomerTrainTransaction.Coupan_discount, FactCustomerTrainTransaction.Other_discount
FROM FactCustomerTrainTransaction INNER JOIN
DimDate ON FactCustomerTrainTransaction.Date_key = DimDate.DateKey INNER JOIN
dimCustomerDemographics ON FactCustomerTrainTransaction.Customer_id =
dimCustomerDemographics.Customer_id
```

At the bottom of the window, there are five buttons: 'Help', '< Back', 'Next >', 'Finish >>|', and 'Cancel'.

Then you have to build matrix by selecting matrix option. And you have to add column names into suitable fields.

**Report Wizard**

**Design the Matrix**  
Choose the fields that you want to display in the matrix.

Available fields:

Displayed fields:

Page >

Columns >

Rows >

Details >

< Remove

Age\_range  
Marital\_status

Year  
QuarterName  
MonthName  
WeekOfMonth

Selling\_price  
Quantity  
Coupan\_discount  
Other\_discount

☐ Enable drilldown

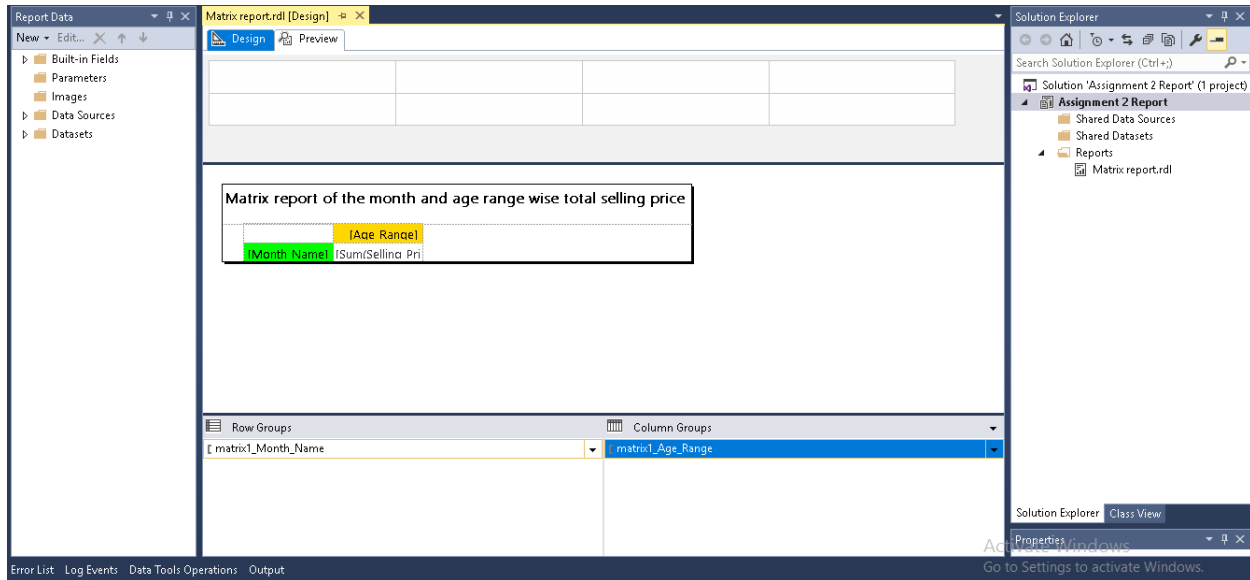
Help < Back Next > Finish >>| Cancel

XXXX  
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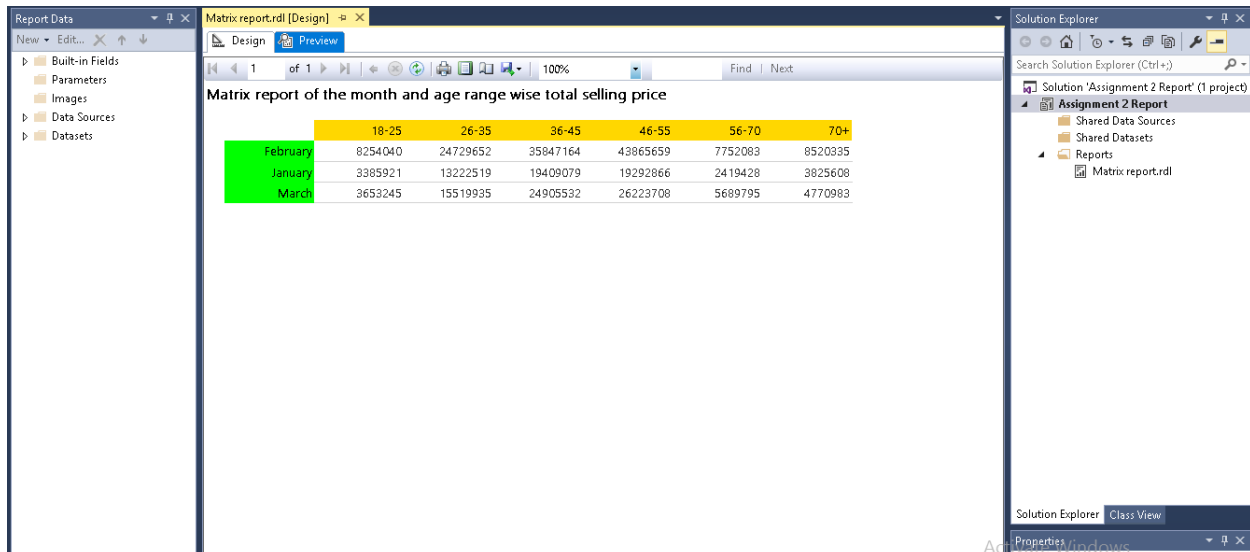
Finally, you can give report name for your report and finish it.

## Report 1 -: Matrix report

### Design of matrix reports



### Preview of those matrix reports





Matrix reports on web portal

Matrix report - SQL Server Repi

+

← → ↻ 🏠

http://server2016/Reports/report/Assignment 2 Report/Matrix report

⋮ 🔒 ☆

🔍 📄 👤 🏠 ☰

SQL Server Reporting Services

⚙️ ⬇️ ? ds

★ Favorites 📁 Browse

Home > Assignment 2 Report > Matrix report

⏪ < 1 of 1 > ⏩ ↺ ⏴ 100% 📁 🖨️ Find | Next

Matrix report of the month and age range wise total selling price

	18-25	26-35	36-45	46-55	56-70	70+
February	8254040	24729652	35847164	43865659	7752083	8520335
January	3385921	13222519	19409079	19292866	2419428	3825608
March	3653245	15519935	24905532	26223708	5689795	4770983

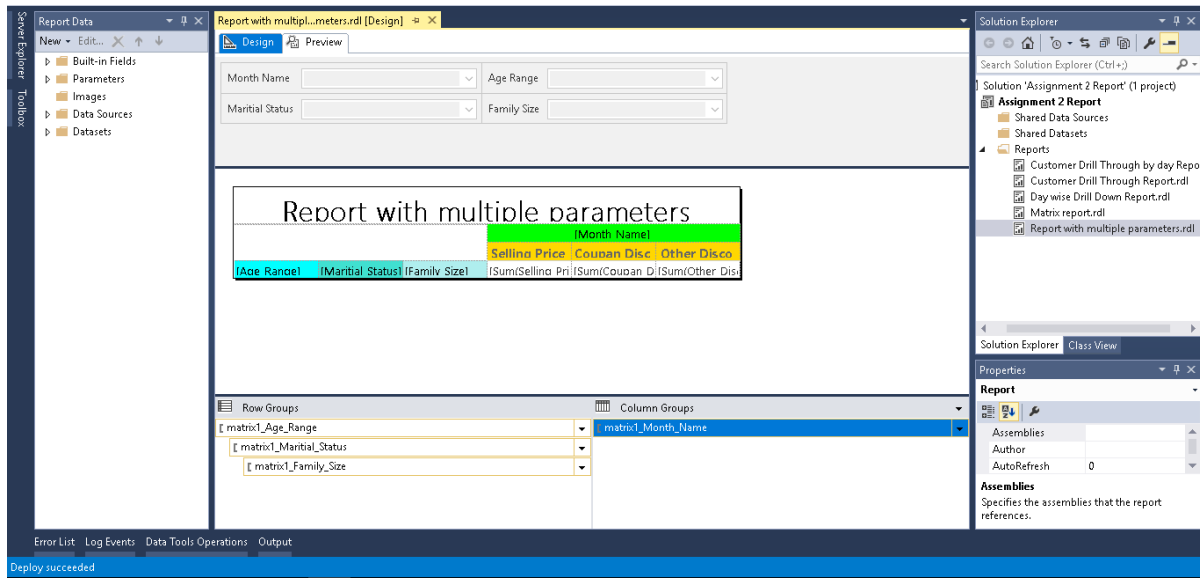
Activate Windows  
Go to Settings to activate Windows.



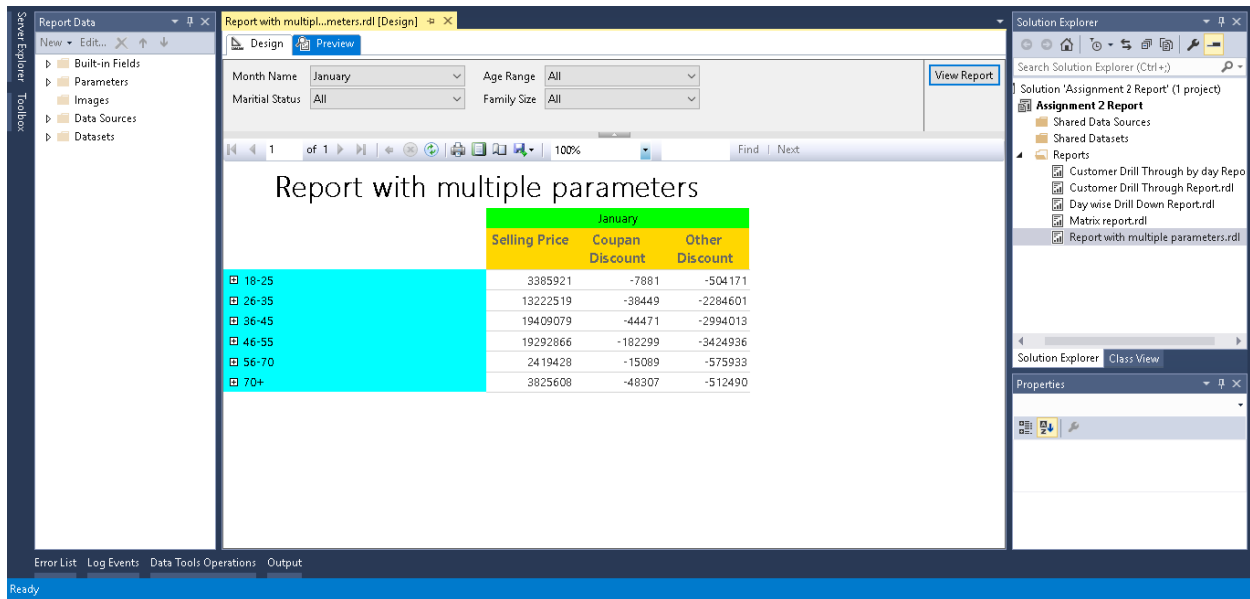
## Report 2: Reports with Multiple Parameters

Before create report we have to define parameters. In upper line, you can see my parameters.

### Design



### Preview



[Home](#) > [Assignment 2 Report](#) > Report with multiple parameters

Month Name	<input type="text" value="All"/>	Age Range	<input type="text" value="All"/>	<input type="button" value="View Report"/>
Marital Status	<input type="text" value="All"/>	Family Size	<input type="text" value="All"/>	

Navigation: |< < 1 of 1 > >| |↺| |↻| |100%| |📄| |🖨| | Find | Next

★ Favorites

🔍 Browse

Home > Assignment 2 Report > Report with multiple parameters

Month Name

February

▼

Age Range

36-45

▼

View Report

Marital Status

Married

▼

Family Size

All

▼

◀

<

1

of 1

>

▶

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100%

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Find | Next

## Report 3: Drill-Down Report

Using drill down hierarchies (month -> week of month -> day) we will create these reports.

### Design

Day wise Drill Down Report

(Fact Customer Train Transaction Count)

Year1	Month Name1	Week Of Month	Day Name1	Selling Price	Quantity	Coupon Disc	Other Disc
				ISum(Selling Pri	ISum(Quantitv1	ISum(Coupon Di	ISum(Other Dis

Row Groups:

- matrix1\_Year
- matrix1\_Month\_Name
- matrix1\_Week\_Of\_Month
- matrix1\_Day\_Name

Column Groups:

Properties:

Report

Assemblies

Author

AutoRefresh: 0

Assemblies

Specifies the assemblies that the report references.

Go to Settings to activate Windows.

### Preview

Day wise Drill Down Report

48674

Year	Month	Week of Month	Day Name	Selling Price	Quantity	Coupon Discount	Other Discount
2012	February	1	Friday	128968933	64936310	-554750	-20136589
	January	2	Monday	6200120	78726	-59057	-1213802
			Saturday	2896101	305572	0	-567812
			Sunday	2531759	36246	-5225	-577294
			Thursday	1123638	12895	-5197	-167158
			Tuesday	2020370	25284	0	-295850
			Wednesday	2666778	29267	0	-358413
				928163	11086	0	-176974
				980691	12534	-4544	-247446
	March	3		15362743	1589773	-151173	-2476832
		4		18439703	1331780	-84602	-2903129
		5		8405355	1606404	-26698	-1311434
				80763198	76412686	-350490	-14453759

Properties:

Report

Assemblies

Author

AutoRefresh: 0

Assemblies

Specifies the assemblies that the report references.

Go to Settings to activate Windows.

## Web portal view

SQL Server Reporting Services

★ Favorites

📁 Browse

Home > Assignment 2 Report > Day wise Drill Down Report

1 of 1

100%

Find | Next

Day wise Drill Down Report

48674

			Selling Price	Quantity	Coupon Discount	Other Discount
2012	February		128968933	64936310	-554750	-20136589
	January	1	6200120	78726	-59057	-1213802
		2	2896101	305572	0	-567812
		Friday	2531759	36246	-5225	-577294
		Monday	1123638	12895	-5197	-167158
		Saturday	2020370	25284	0	-295850
		Sunday	2666778	29267	0	-358413
		Thursday	928163	11086	0	-176974
		Tuesday	980691	12534	-4544	-247446
		Wednesday	15362743	1589773	-151173	-2476832
		3	18439703	1331780	-84602	-2903129
		4	8405355	1606404	-26698	-1311434
		5	80763198	76412686	-350490	-14453759
	March					

Activate Windows  
Go to Settings to activate Windows.

## Report 4: Drill Through

In these types when we click one report it should take us into another report. There is parent report and child report.

## Design – Parent

Report Data

Customer Drill Thro...Report.rdl [Design] Customer Drill Thro...Report.rdl [Design]

Design Preview

Customer Drill Through Report

[Customer Id] [Age Range] [Fact Customer Train Transaction Count]

Row Groups

(table1\_Details\_Group)

Column Groups

Solution Explorer

Search Solution Explorer (Ctrl+J)

Solution 'Assignment 2 Report' (1 project)

- Assignment 2 Report
  - Shared Data Sources
  - Shared Datasets
  - Reports
    - Day wise Drill Down Report.rdl
    - Matrix report.rdl
    - Report with multiple parameters.rdl
    - Customer Drill Through Report.rdl
    - Customer Drill Through by day Rep

Properties

Report

Assemblies

Author

AutoRefresh 0

Assemblies

Specifies the assemblies that the report reference.

Ready

## Design – child

The screenshot shows the SSRS Design view for a report titled "Customer Drill Through by day Report". The report is in the Design view, showing a table structure. The table has columns: [Month Name], [Week Of Month], [Day Name], [Sum(Selling Pri)], [Sum(Quantitv)], [Sum(Coupon D)], and [Sum(Other Dis)]. The table is grouped by [matrix1\_Month\_Name] and [matrix1\_Week\_Of\_Month]. The [matrix1\_Week\_Of\_Month] group is further grouped by [matrix1\_Day\_Name]. The report is titled "Customer Drill Through by day Report" and has a subtitle "(Year)". The report is displayed in a table format with a header row and a body row. The report is displayed in a table format with a header row and a body row. The report is displayed in a table format with a header row and a body row.

[Month Name]	[Week Of Month]	[Day Name]	[Sum(Selling Pri)]	[Sum(Quantitv)]	[Sum(Coupon D)]	[Sum(Other Dis)]

## Preview – Parent

The screenshot shows the SSRS Preview view for a report titled "Customer Drill Through Report". The report is in the Preview view, showing a table structure. The table has columns: [matrix1\_Month\_Name], [matrix1\_Week\_Of\_Month], [matrix1\_Day\_Name], [Sum(Selling Pri)], [Sum(Quantitv)], [Sum(Coupon D)], and [Sum(Other Dis)]. The table is grouped by [matrix1\_Month\_Name] and [matrix1\_Week\_Of\_Month]. The [matrix1\_Week\_Of\_Month] group is further grouped by [matrix1\_Day\_Name]. The report is titled "Customer Drill Through Report" and has a subtitle "(Year)". The report is displayed in a table format with a header row and a body row. The report is displayed in a table format with a header row and a body row. The report is displayed in a table format with a header row and a body row.

[matrix1_Month_Name]	[matrix1_Week_Of_Month]	[matrix1_Day_Name]	[Sum(Selling Pri)]	[Sum(Quantitv)]	[Sum(Coupon D)]	[Sum(Other Dis)]
1	70+		3478			
6	46-55		1504			
7	26-35		9375			
11	70+		5760			
15	46-55		9048			
17	36-45		3276			
19	46-55		2914			
27	36-45		13425			
33	46-55		2205			
36	36-45		1081			
38	46-55		2212			
39	70+		275			
41	46-55		1976			
48	36-45		120			
51	70+		2688			
52	36-45		2912			
55	46-55		180			
58	26-35		5538			
59	70+		462			
66	46-55		2244			

## Preview – child

Customer Drill Through by day Report

Customer ID	Day of the Week	Transaction Amount
1	Friday	5542058
6	Saturday	2641738
7	Thursday	3526261
11	Wednesday	3197348
15	Friday	5134507
17	Monday	4298927
19	Saturday	4149494
27	Sunday	4832471
33	Thursday	6152630
36	Tuesday	2188319
38	Wednesday	2711402
39		30703139
41		35649410
48		18241229
51		61555421
52		80763198

## Web portal view – Parent

Customer Drill Through Report

Customer ID	Day of the Week	Transaction Amount
1	70+	3478
6	46-55	1504
7	26-35	9375
11	70+	5760
15	46-55	9048
17	36-45	3276
19	46-55	2914
27	36-45	13425
33	46-55	2205
36	36-45	1081
38	46-55	2212
39	70+	275
41	46-55	1976
48	36-45	120
51	70+	2688
52	36-45	2912
55	46-55	180

After clicking on the customer ID, it will take us to all transaction report

## Web portal view – child

SQL Server Reporting Services

Home > Assignment 2 Report > Customer Drill Through Report

Customer Drill Through by day Report

		2012			
		Billing Price	Quantity	Original Amount	Net Amount
February	1	14907405	2613492	-38963	-2293870
	2	5134507	59631	-27712	-897331
	Friday				
	Monday	4298927	1010559	-58470	-835399
	Saturday	4149494	1795473	-35530	-686776
	Sunday	4832471	329301	-7577	-881764
	Thursday	6152630	71507	-81107	-863604
	Tuesday	2188319	1754886	-7280	-417039
Wednesday	2711402	30229	-10214	-450491	
3	30703139	9891382	-125825	-4475793	
4	35649410	25169050	-119616	-5517495	
5	18241229	22210800	-42456	-2797027	
January		61555421	5039567	-336496	-10296144
March		80763198	76412686	-350490	-14453759

Activate Windows  
Go to Settings to activate Windows.

## After applying all reports my SQL server Reporting Service is looks like this

SQL Server Reporting Services

Assignment 2 Report

Home > Assignment 2 Report

PAGINATED REPORTS (5)

- Customer Drill Through by day Report
- Customer Drill Through Report
- Day wise Drill Down Repo
- Matrix report
- Report with multiple parameters

Activate Windows  
Go to Settings to activate Windows.



## Part 2 – Power BI

### Audience

This all thing based on customer credit card transaction. People who are age is more than or equal to 18 can have credit card and do transaction. Above 18 years, olds will be my audience. In addition, people who do not have our credit card service also our audience.

### The story, which is going to tell to audience

I am going prove that we are the one who give more discounts when customer purchase items from sales using our credit card. In addition, our credit card is the most used credit card in every month. I am going to prove those by using graphs.

Before prove that we need to import out data warehouse database into our Power BI. After importing database, we have select suitable tables for this experiment.

The screenshot shows the Power BI Navigator window. On the left, the 'Display Options' pane lists various data sources. Under 'SERVER2016 [8]', the 'FactCustomerTrainTransaction' table is selected. The main pane displays the 'FactCustomerTrainTransaction' table with the following columns: CustomerTrain\_SK, ID, Campaign\_id, Coupan\_id, Customer\_id, and Item. The table contains 23 rows of data, all with a Campaign\_id of 9960 and a Coupan\_id of 700. The Customer\_id values range from 1 to 23, and the Item values range from 1 to 23. At the bottom of the window, there are buttons for 'Select Related Tables', 'Load', 'Transform Data', and 'Cancel'.

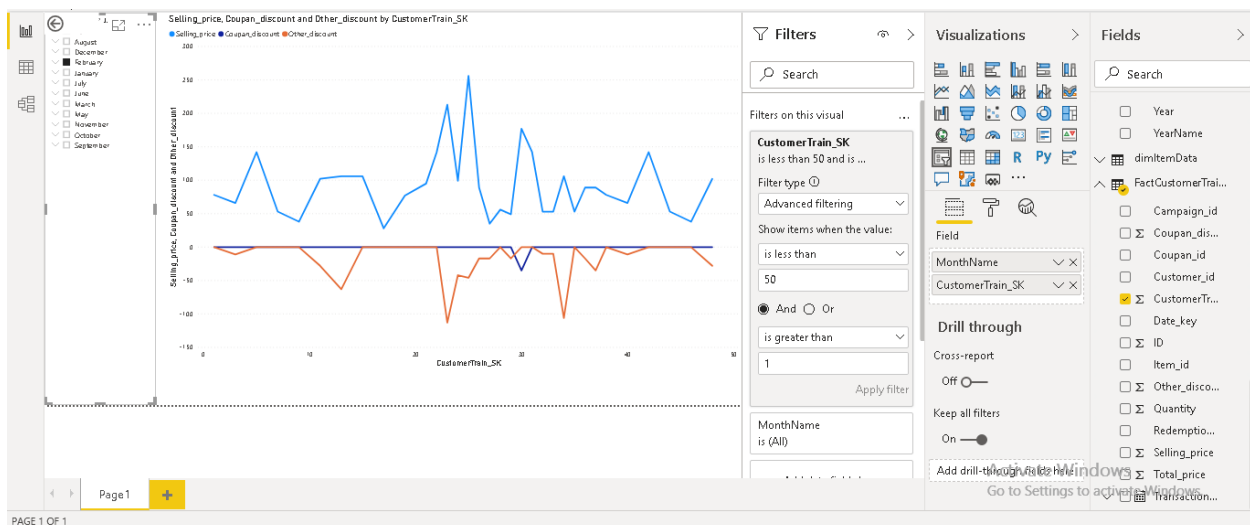
CustomerTrain_SK	ID	Campaign_id	Coupan_id	Customer_id	Item
1	9960	8	700	1	1
2	9960	8	700	1	1
3	9960	8	700	1	1
4	9960	8	700	1	1
5	9960	8	700	1	1
6	9960	8	700	1	1
7	9960	8	700	1	1
8	9960	8	700	1	1
9	9960	8	700	1	1
10	9960	8	700	1	1
11	9960	8	700	1	1
12	9960	8	700	1	1
13	9960	8	700	1	1
14	9960	8	700	1	1
15	9960	8	700	1	1
16	9960	8	700	1	1
17	9960	8	700	1	1
18	9960	8	700	1	1
19	9960	8	700	1	1
20	9960	8	700	1	1
21	9960	8	700	1	1
22	9960	8	700	1	1
23	9960	8	700	1	1

Then we can show our table connectivity by selecting table connect icon.

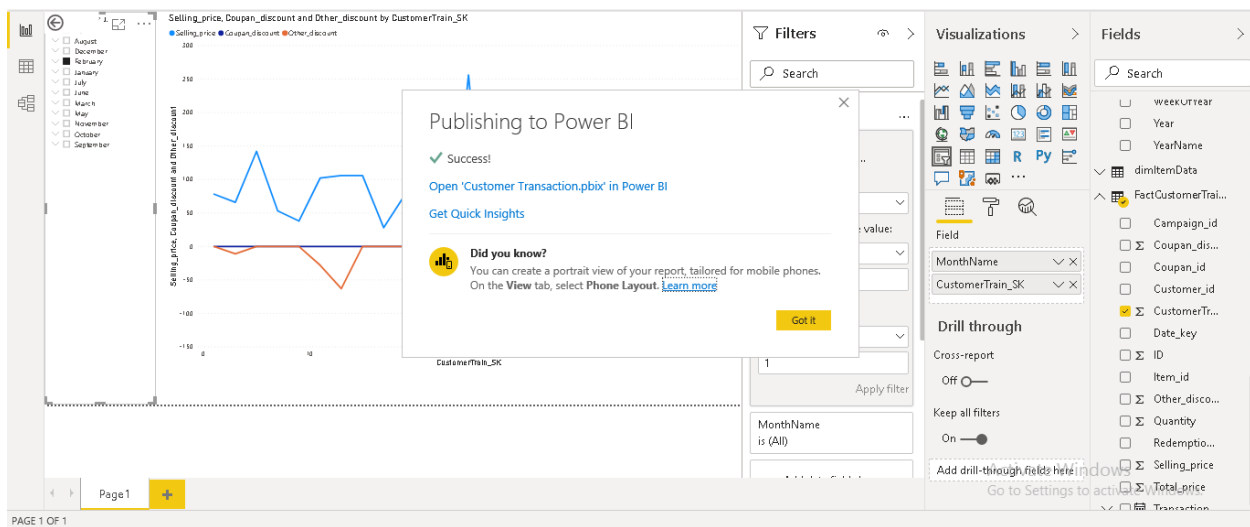


## KPI creation and reason of selecting it

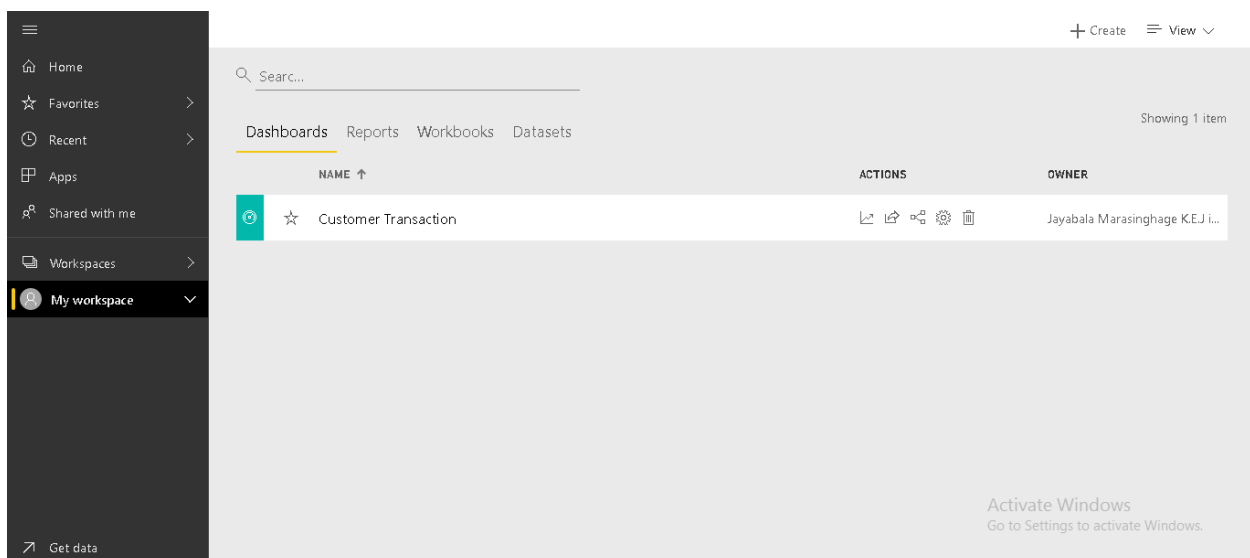
In KPI creation, I have select sample of all customers. There are huge number of customers do transaction using our credit cards. There for I created KPI, which is customer, ID must between 50 and 1. For each ID we can see price, customer had to pay and amount of discounts, which they have.



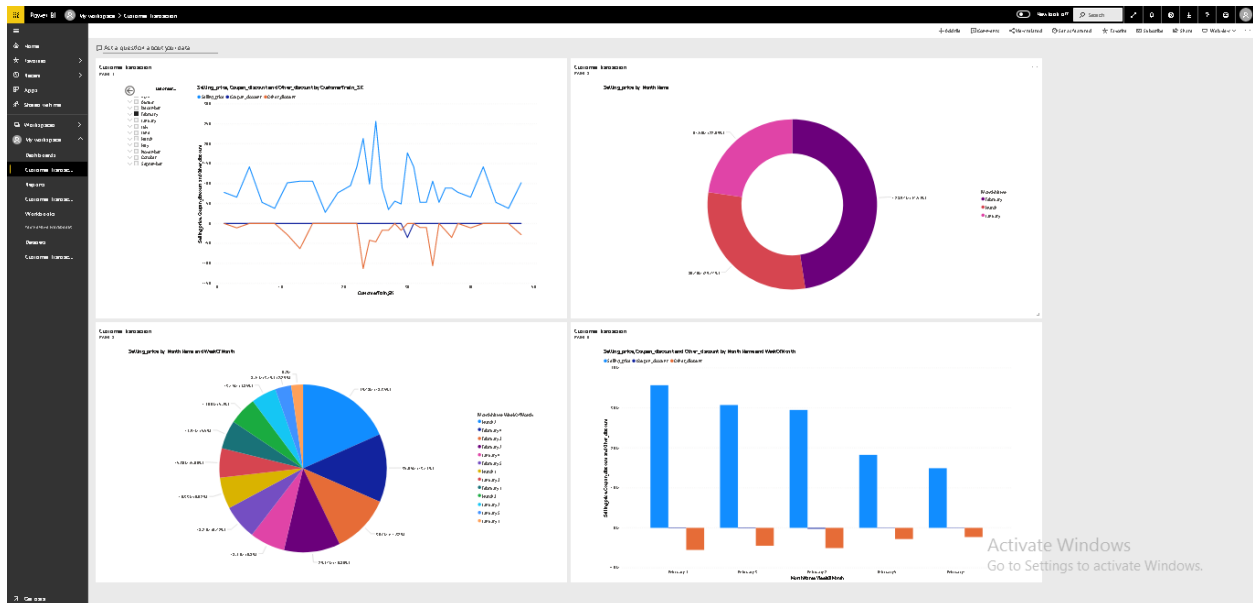
After that I have add that graph into my workspace and in workspace, I have created another 3 charts for understanding total customer transaction for given time period and total of discounts given in particular times.



## Dashboard



## Inside of my dashboard with all charts



End.