Assignment 2

Submitted by

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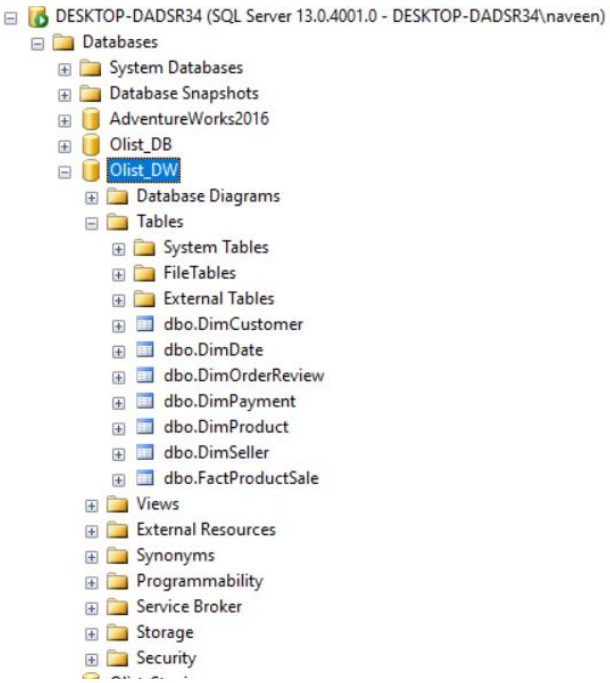
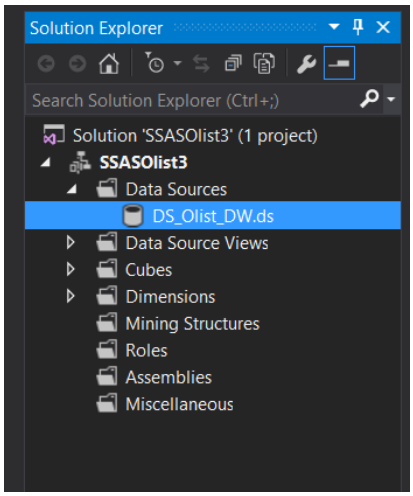
Step 1 – Data Source

When I created analysis services multidimensional and data mining project, I have used the data warehouse model (Olisi_DW), that I created in assignment one. At the below DW data source has been shown.

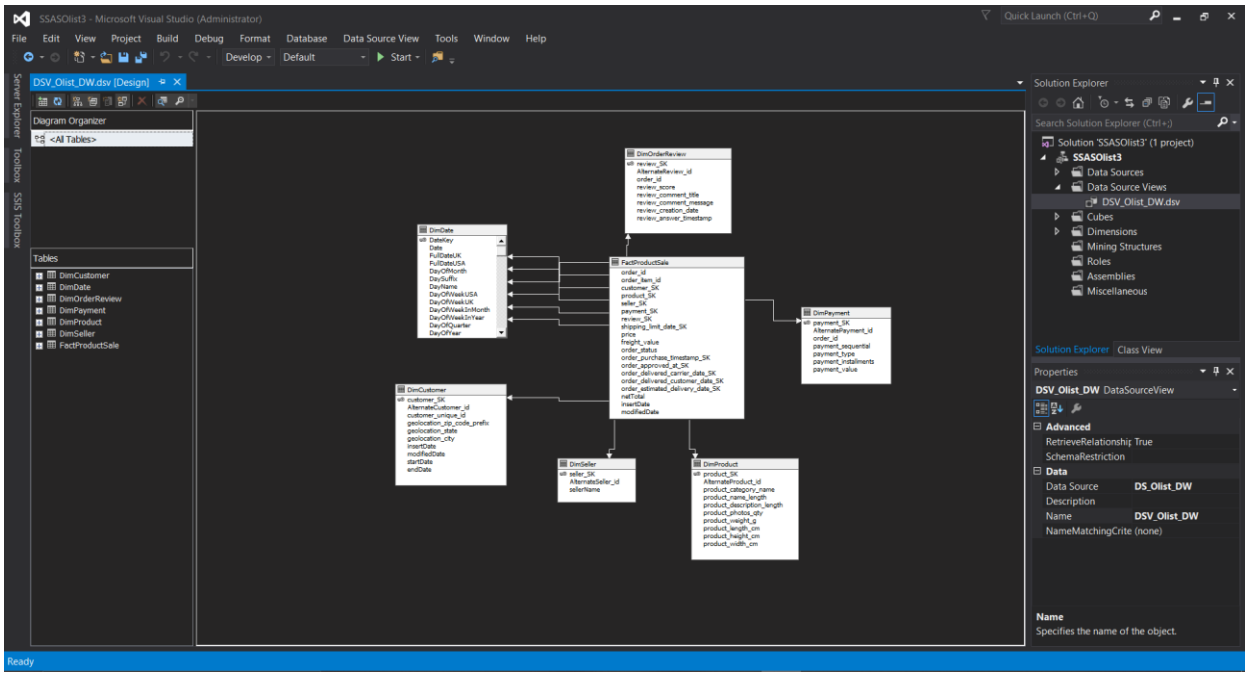


Step 2 - SSAS Cube implementation

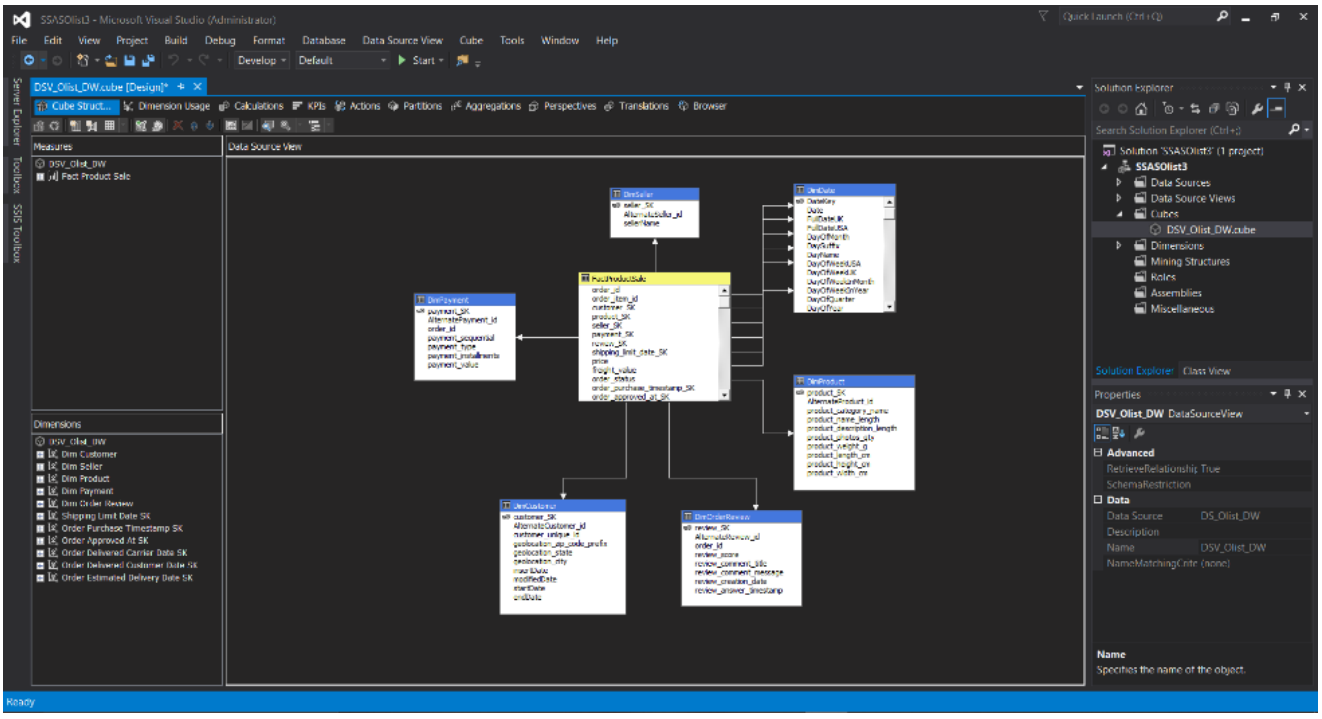
1. First create data source - When creating the multidimensional model, at the beginning I had configure data source (Olist_DW).



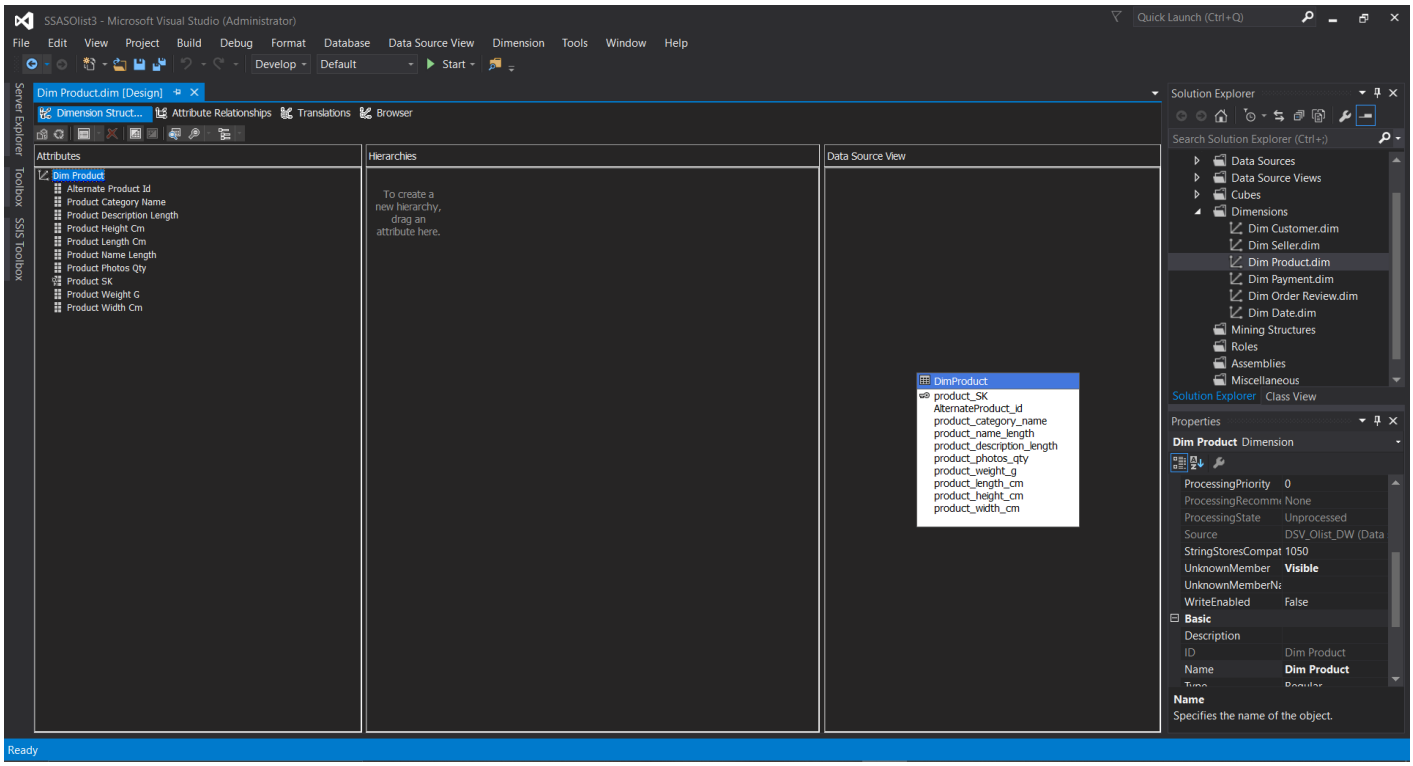
2. Next create data source view - After that I was creating data source view. There it has automatically selected and added the related dimension tables to fact table that I selected.

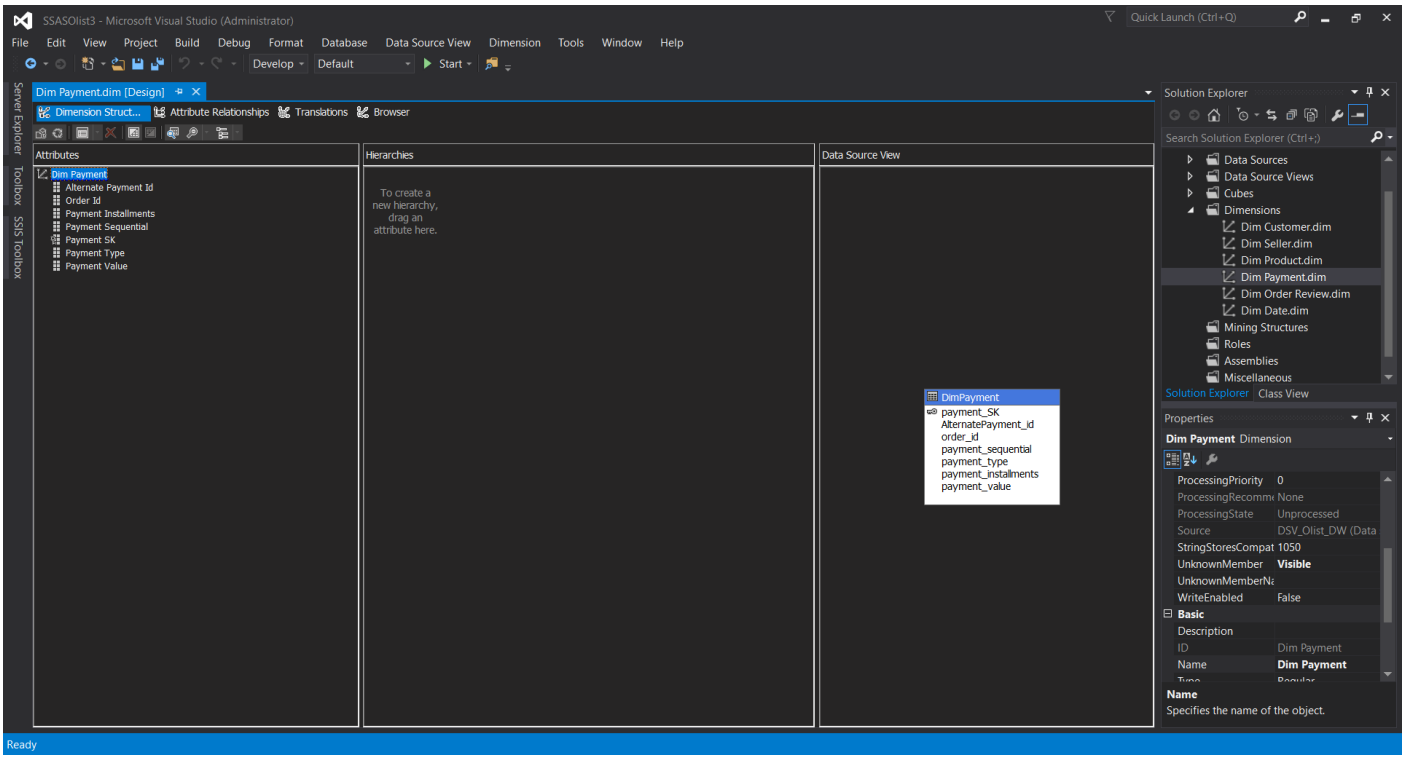


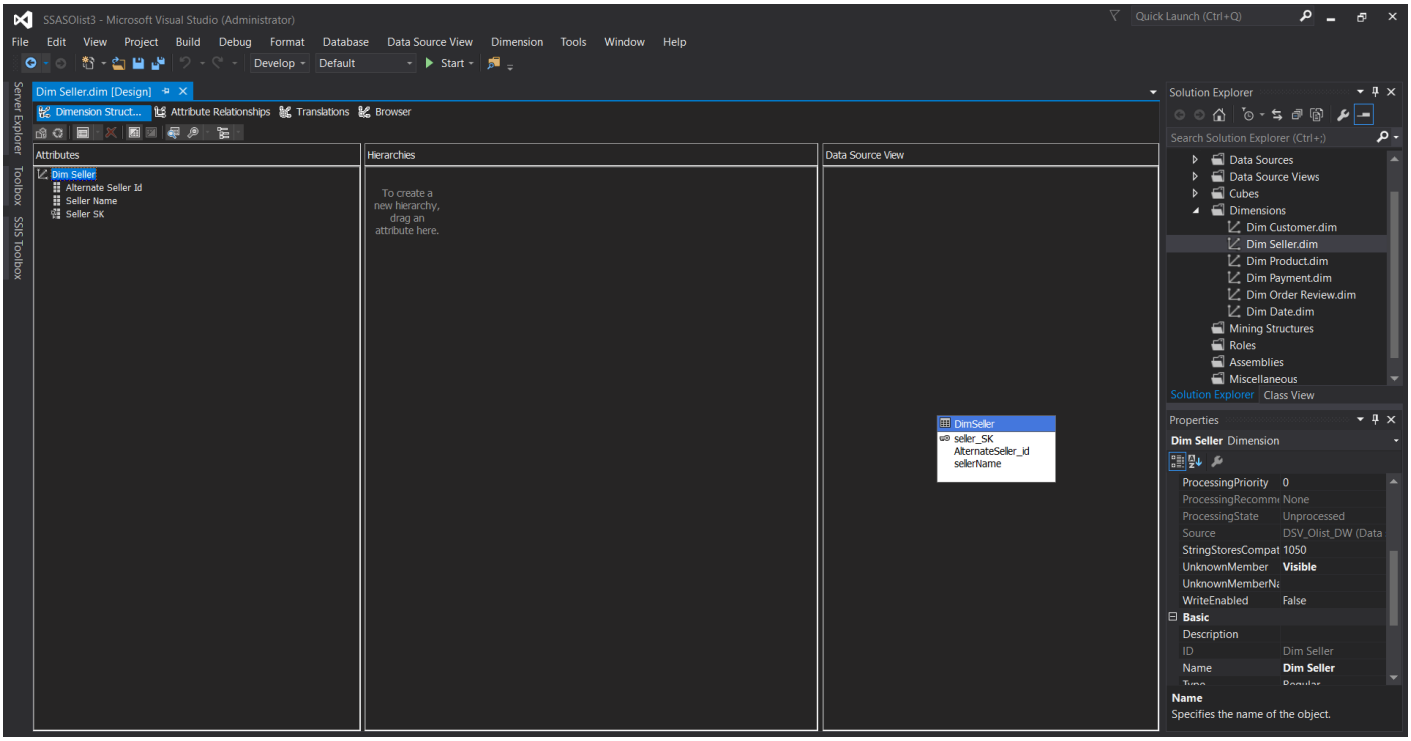
3. Creating a cube – Now I have created data source view including the tables that I needed to create the cubes. So here, I have used the existing data source to create the cubes.

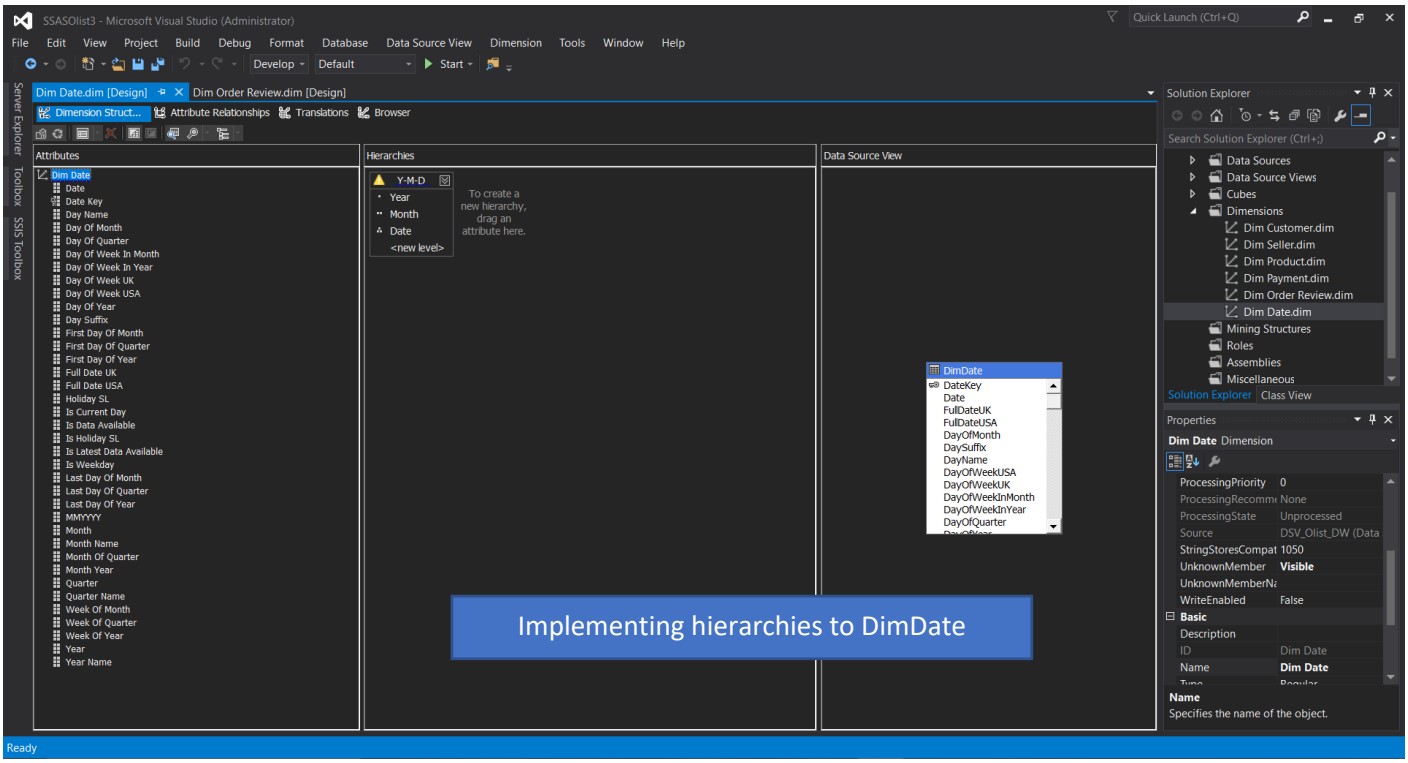


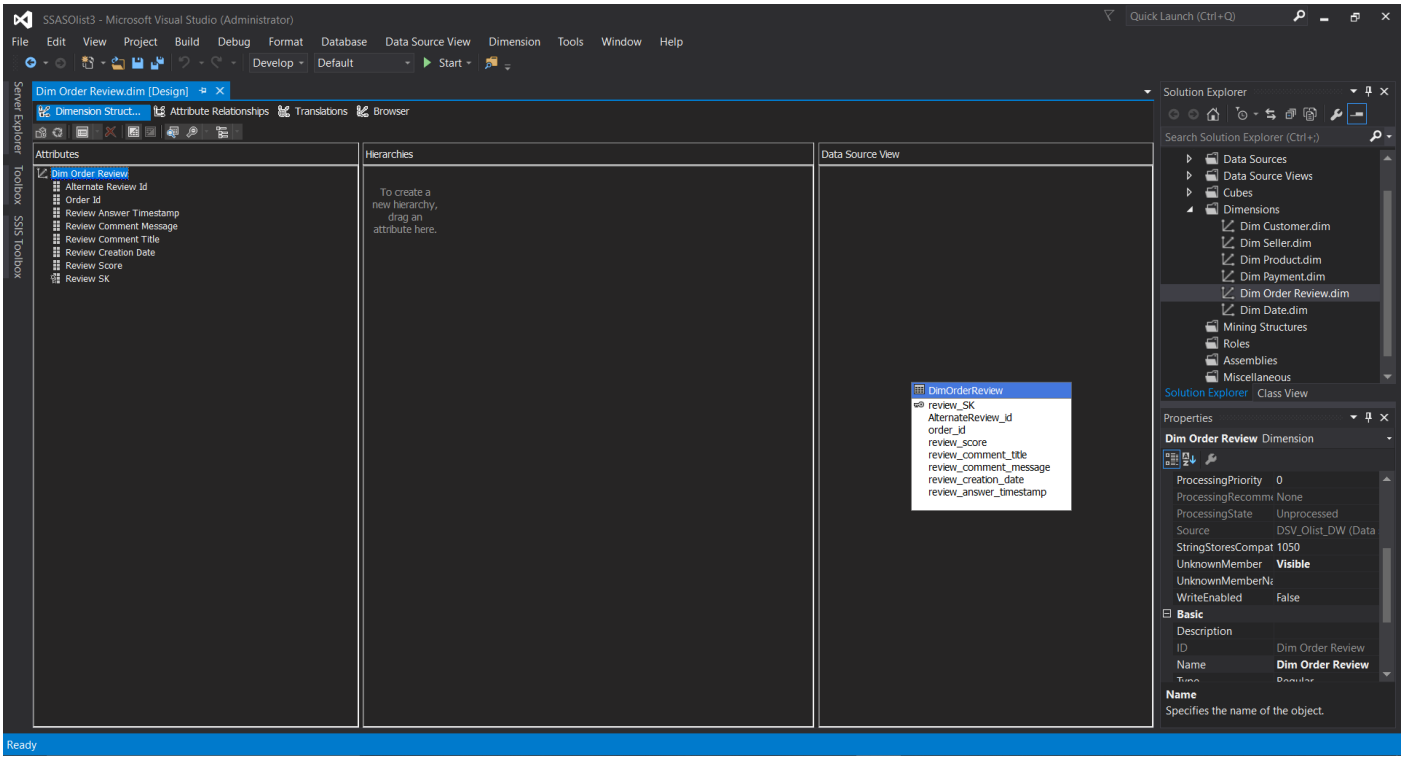
Then I had to configure all the dimensions to list all attributes as show in below.

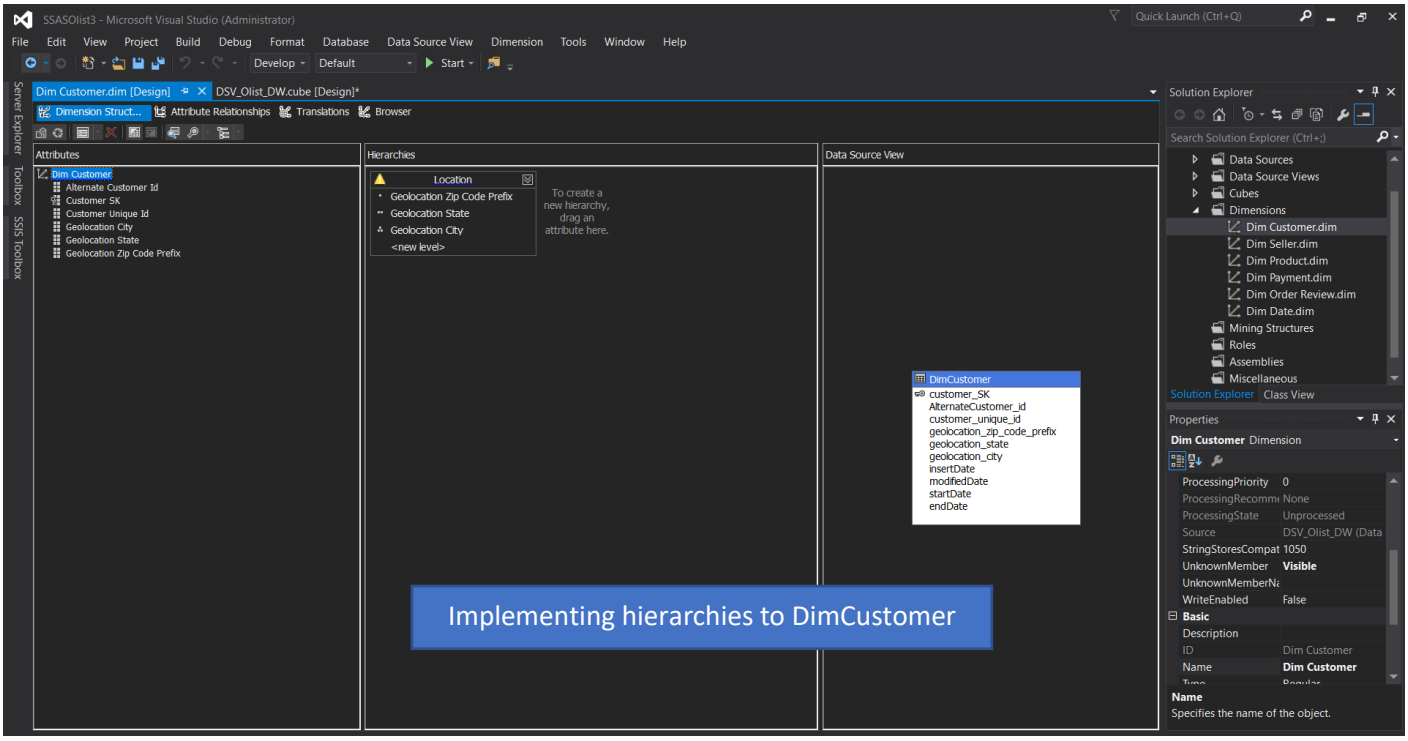




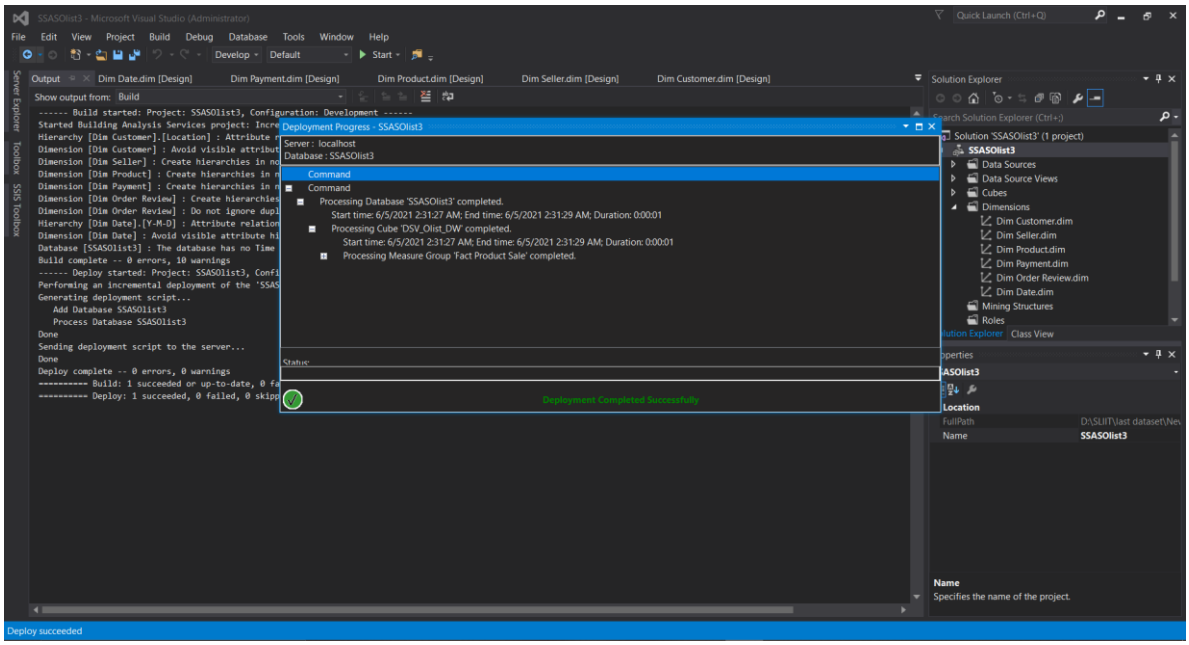

SSASOlist3 - Microsoft Visual Studio (Administrator)
File Edit View Project Build Debug Format Database Data Source View Dimension Tools Window Help
Develop Default Start
Dim Seller.dim [Design]
Dimension Struct... Attribute Relationships Translations Browser
Attributes
Dim Seller
Alternate Seller Id
Seller Name
Seller SK
Hierarchies
To create a new hierarchy, drag an attribute here.
Data Source View
DimSeller
seller_SK
AlternateSeller_id
sellerName
Solution Explorer
Search Solution Explorer (Ctrl+;)
Data Sources
Data Source Views
Cubes
Dimensions
Dim Customer.dim
Dim Seller.dim
Dim Product.dim
Dim Payment.dim
Dim Order Review.dim
Dim Date.dim
Mining Structures
Roles
Assemblies
Miscellaneous
Solution Explorer Class View
Properties
Dim Seller Dimension
ProcessingPriority 0
ProcessingRecomm None
ProcessingState Unprocessed
Source DSV_Olist_DW (Data
StringStoresCompat 1050
UnknownMember Visible
UnknownMemberNa
WriteEnabled False
Basic
Description
ID Dim Seller
Name Dim Seller
Name
Specifies the name of the object.


SSASOlist3 - Microsoft Visual Studio (Administrator)
File Edit View Project Build Debug Format Database Data Source View Dimension Tools Window Help
Develop Default Start
Dim Date.dim [Design]
Dim Order Review.dim [Design]
Dimension Struct... Attribute Relationships Translations Browser
Attributes
Dim Date
Date
Date Key
Day Name
Day Of Month
Day Of Quarter
Day Of Week In Month
Day Of Week In Year
Day Of Week UK
Day Of Week USA
Day Of Year
Day Suffix
First Day Of Month
First Day Of Quarter
First Day Of Year
Full Date UK
Full Date USA
Holiday SL
Is Current Day
Is Data Available
Is Holiday SL
Is Latest Data Available
Is Weekday
Last Day Of Month
Last Day Of Quarter
Last Day Of Year
MMYYYY
Month
Month Name
Month Of Quarter
Month Year
Quarter
Quarter Name
Week Of Month
Week Of Quarter
Week Of Year
Year
Year Name
Hierarchies
Y-M-D
Year
Month
Date
<new level>
To create a new hierarchy, drag an attribute here.
Data Source View
DimDate
DateKey
Date
FullDateUK
FullDateUSA
DayOfMonth
DaySuffix
DayName
DayOfWeekUSA
DayOfWeekUK
DayOfWeekInMonth
DayOfWeekInYear
DayOfQuarter
Implementing hierarchies to DimDate
Solution Explorer
Search Solution Explorer (Ctrl+;)
Data Sources
Data Source Views
Cubes
Dimensions
Dim Customer.dim
Dim Seller.dim
Dim Product.dim
Dim Payment.dim
Dim Order Review.dim
Dim Date.dim
Mining Structures
Roles
Assemblies
Miscellaneous
Solution Explorer Class View
Properties
Dim Date Dimension
ProcessingPriority 0
ProcessingRecomm None
ProcessingState Unprocessed
Source DSV_Olist_DW (Data
StringStoresCompat 1050
UnknownMember Visible
UnknownMemberNa
WriteEnabled False
Basic
Description
ID Dim Date
Name Dim Date
Name
Specifies the name of the object.
Ready

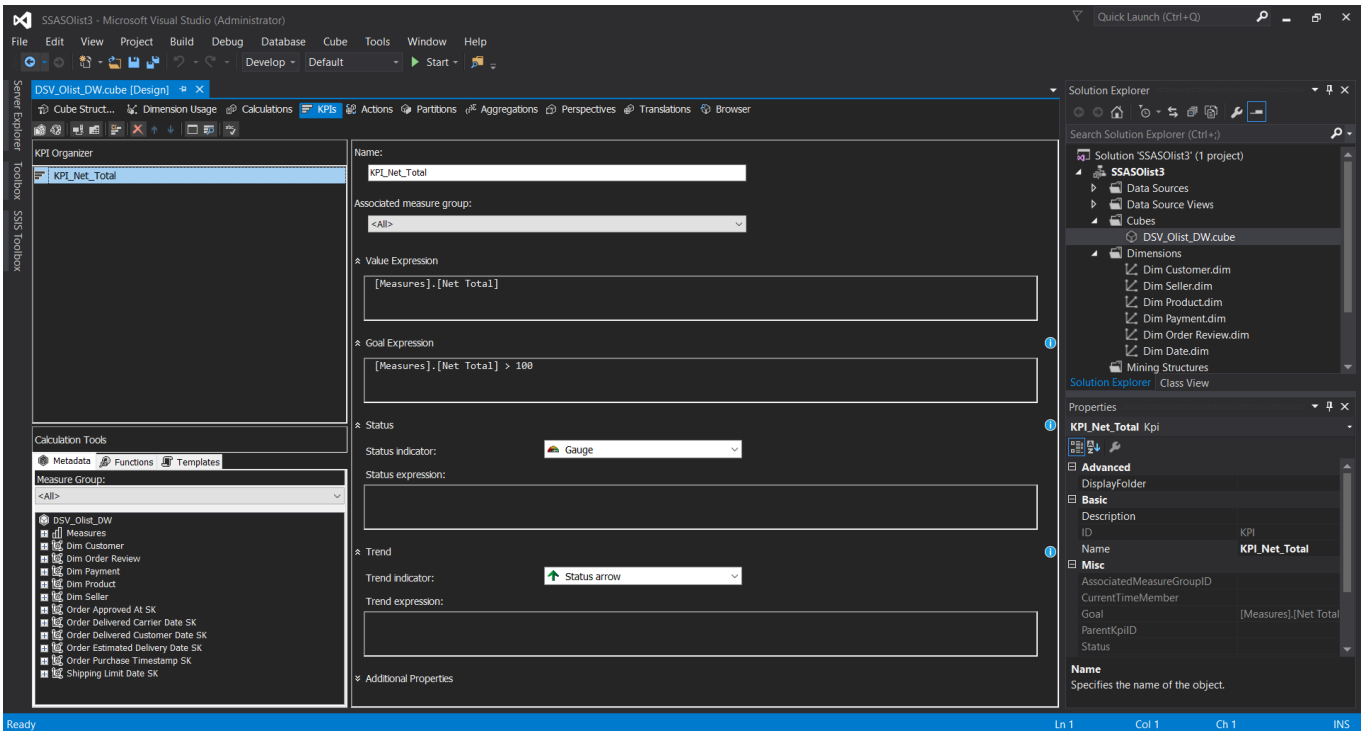

SSASOlist3 - Microsoft Visual Studio (Administrator)
Dim Order Review.dim [Design]
Dimension Struct...
Attribute Relationships
Translations
Browser
Attributes
Dim Order Review
Alternate Review Id
Order Id
Review Answer Timestamp
Review Comment Message
Review Comment Title
Review Creation Date
Review Score
Review SK
Hierarchies
To create a new hierarchy, drag an attribute here.
Data Source View
DimOrderReview
review_SK
AlternateReview_id
order_id
review_score
review_comment_title
review_comment_message
review_creation_date
review_answer_timestamp
Solution Explorer
Data Sources
Data Source Views
Cubes
Dimensions
Dim Customer.dim
Dim Seller.dim
Dim Product.dim
Dim Payment.dim
Dim Order Review.dim
Dim Date.dim
Mining Structures
Roles
Assemblies
Miscellaneous
Properties
Dim Order Review Dimension
Name
Specifies the name of the object.
Ready


SSASOlist3 - Microsoft Visual Studio (Administrator)
Dim Customer.dim [Design]
DSV_Olist_DW.cube [Design]*
Dimension Struct...
Attribute Relationships
Translations
Browser
Attributes
Dim Customer
Alternate Customer Id
Customer SK
Customer Unique Id
Geolocation City
Geolocation State
Geolocation Zip Code Prefix
Hierarchies
Location
Geolocation Zip Code Prefix
Geolocation State
Geolocation City
<new level>
To create a new hierarchy, drag an attribute here.
Data Source View
DimCustomer
customer_SK
AlternateCustomer_id
customer_unique_id
geolocation_zip_code_prefix
geolocation_state
geolocation_city
insertDate
modifiedDate
startDate
endDate
Solution Explorer
Properties
Dim Customer Dimension
Name
Specifies the name of the object.
Implementing hierarchies to DimCustomer

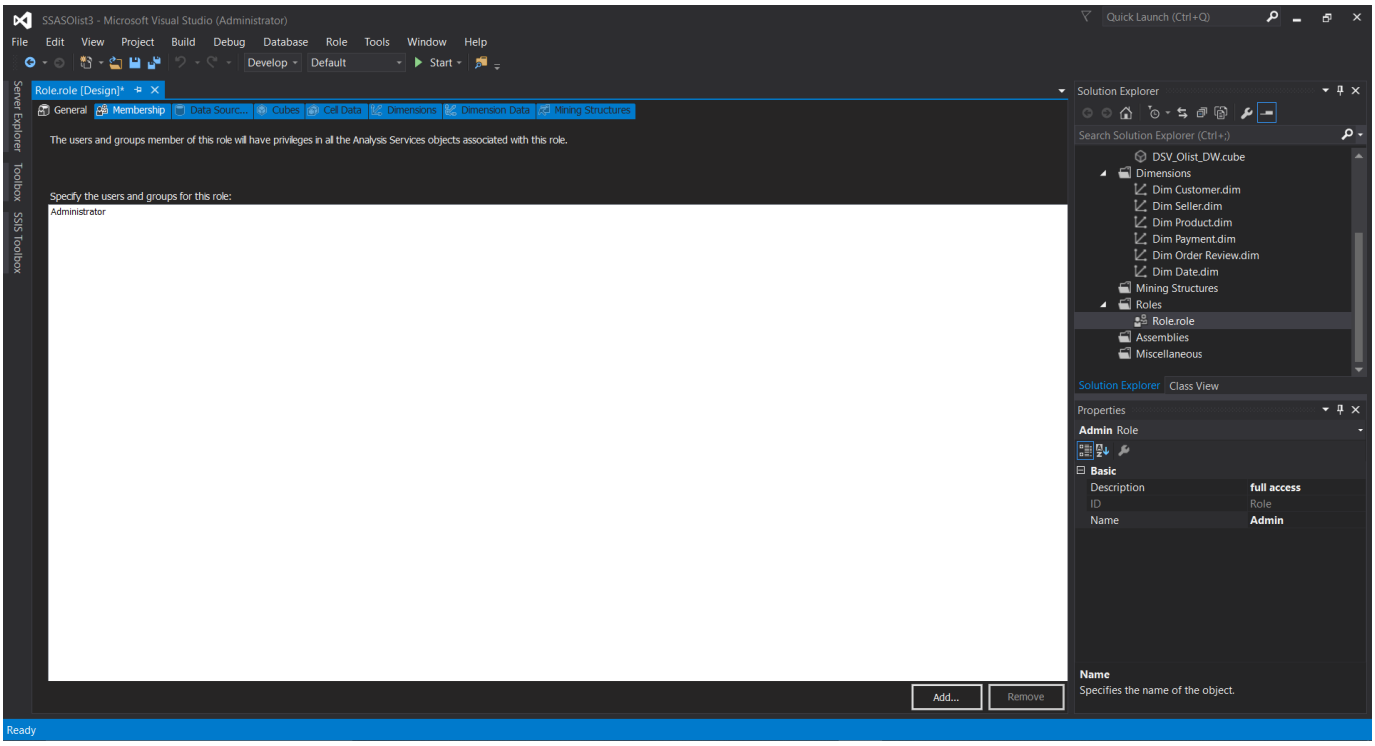
4. Deploy the cube – There were some deployment errors, when I was running the process. I tried to solve the error. First, I built the project and click process button. Then I saw the error in some dimensions those have null values. In that case I go the table properties and changed allow to null values.



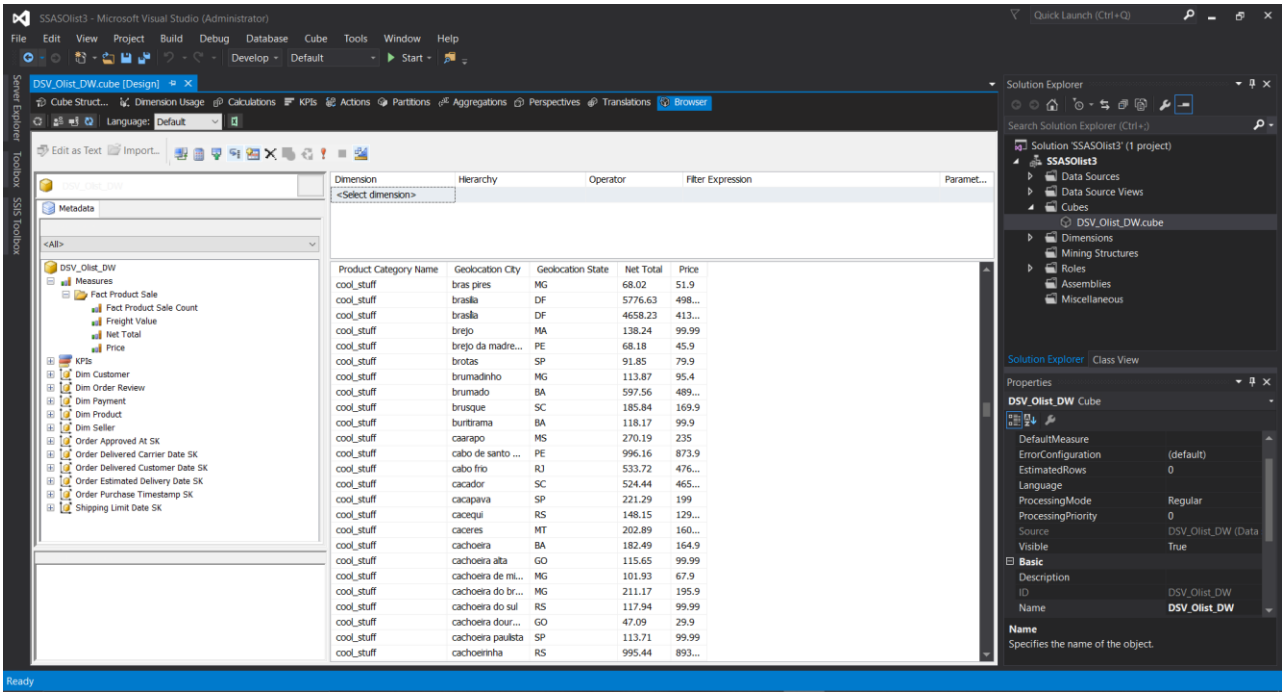
5. Create KPI – after deploying the cubes, I started to create KPI. I have created one KPI as the blow shown.



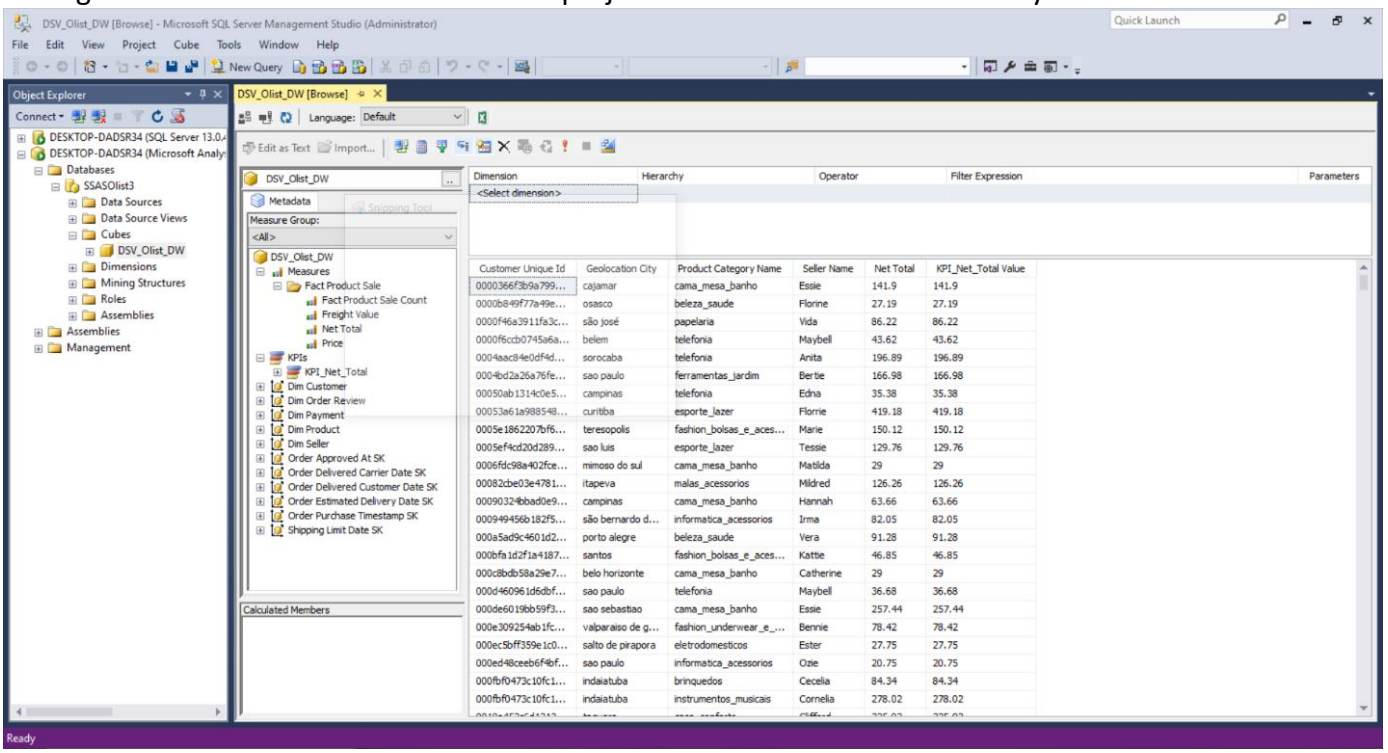
6. Create a role – user roles are created to provide permissions on who has access to the data cubes



7. Browse cube data – done all the necessary things and deploy cube, then go to browse tab

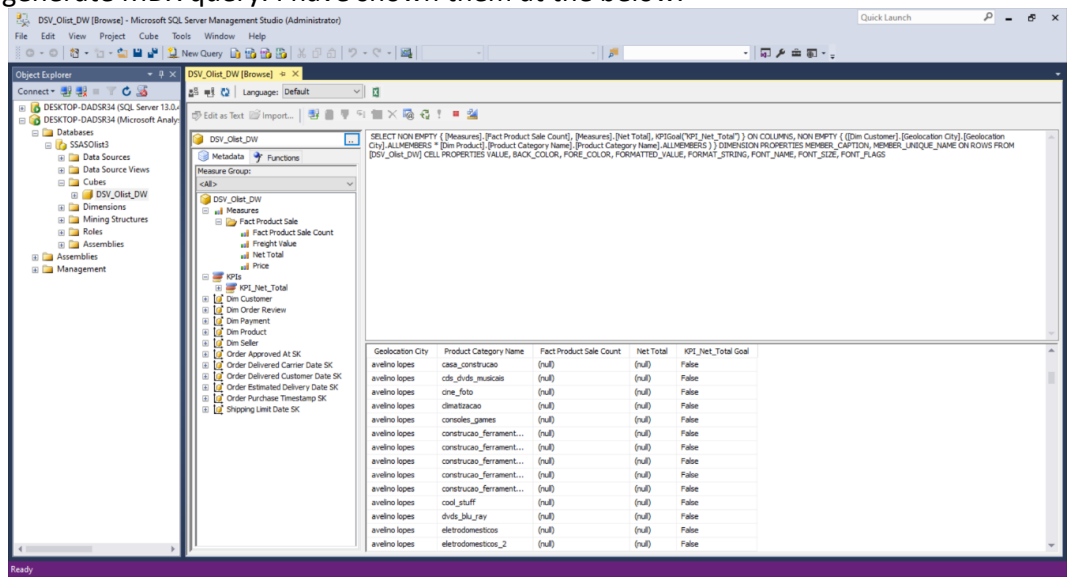


After all these steps are done successfully, data has loaded into the cube inside the SQL server management studio and multidimensional project has been created successfully.



Step 3: Demonstration of OLAP operations

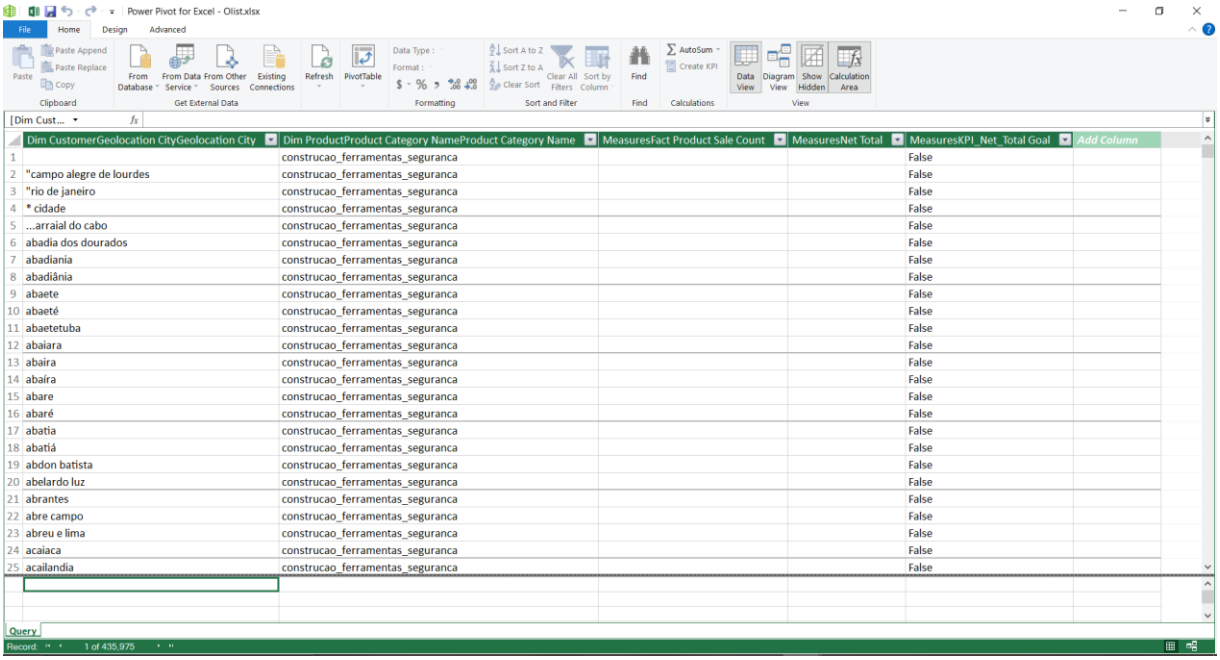
Now I have created the data cube, then I had to create a report in Microsoft excel using the data in the cube. To access data in the cube that I created, I used MDX queries. There is a simple way to generate MDX query. I have shown them at the below.



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

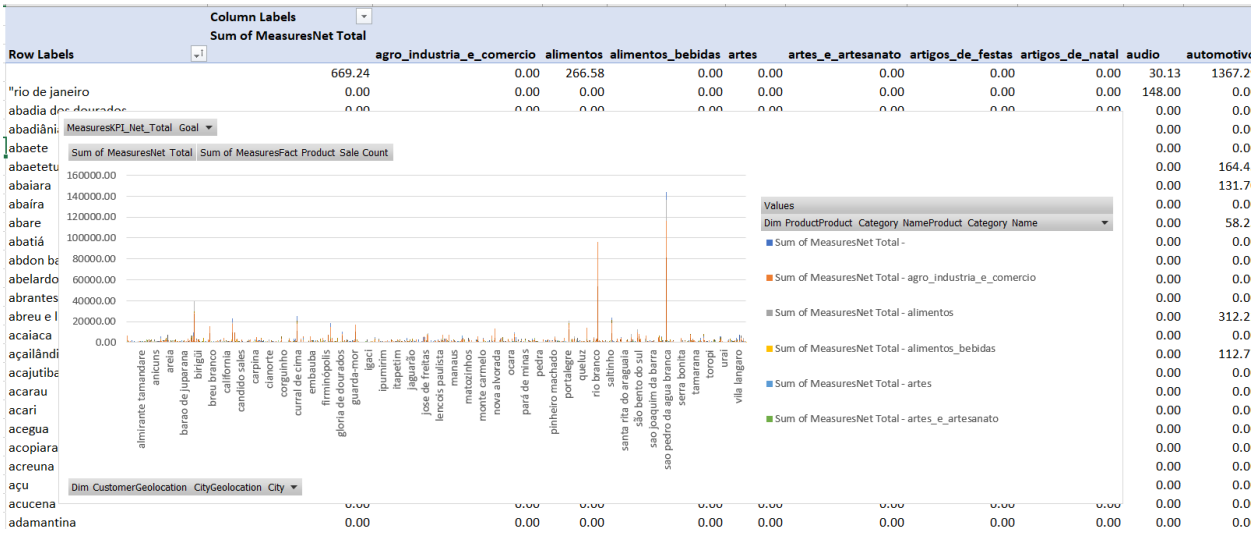
Loading data into the excel sheet using power pivot

Connecting excel to SSAS cube using MDX query using power pivot.



OLAP Operations

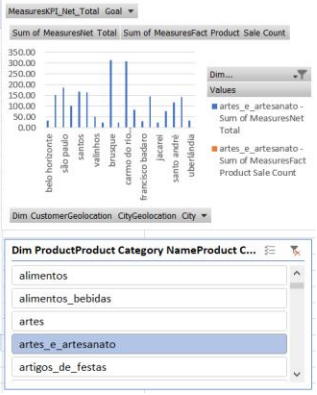
1. Pivot



2. Slicer

MeasuresKPI_Net_Total Goal | All

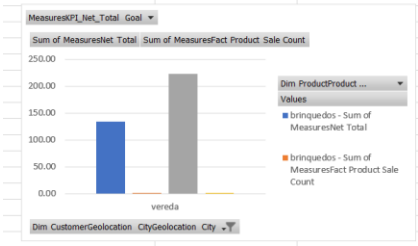
Row Labels	Column Labels: artes_e_artesanato — Sum of MeasuresNet Total	Sum of MeasuresFact Product Sale Count	Total Sum of MeasuresNet Total	Total Sum of MeasuresFact Product Sale Count
belo horizonte	33.69	1	33.69	1
brasilia	151.70	1	151.70	1
são paulo	186.83	2	186.83	2
sorocaba	101.05	1	101.05	1
santos	167.88	2	167.88	2
sao jose dos campos	164.56	2	164.56	2
valinhos	51.20	1	51.20	1
americana	25.39	1	25.39	1
brusque	314.32	1	314.32	1
campinas	23.48	1	23.48	1
carmo do rio claro	306.72	1	306.72	1
diadema	84.63	2	84.63	2
francisco badaro	29.66	1	29.66	1
guaxupé	145.56	1	145.56	1
jacarei	24.69	1	24.69	1
joao monlevade	77.50	1	77.50	1
santo andré	118.00	2	118.00	2
sao sebastiao	143.06	1	143.06	1
uberlândia	34.22	1	34.22	1
Grand Total	**2184.14**	**24**	**2184.14**	**24**

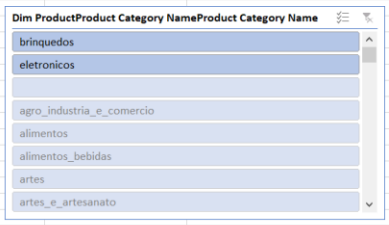


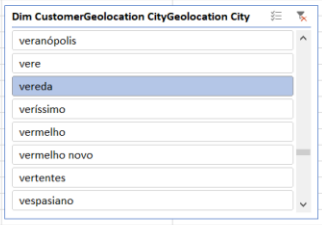
3. Dice

MeasuresKPI_Net_Total Goal | All

Row Labels	Column Labels: brinquedos — Sum of MeasuresNet Total	Sum of MeasuresFact Product Sale Count	eletronicos — Sum of MeasuresNet Total	Sum of MeasuresFact Product Sale Count	Total Sum of MeasuresNet Total	Total Sum of MeasuresFact Product Sale
vereda	133.72	1	222.93	1	356.65	
Grand Total	**133.72**	**1**	**222.93**	**1**	**356.65**	



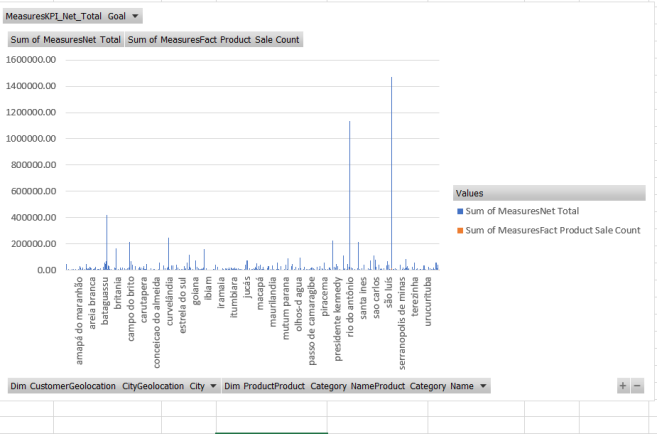




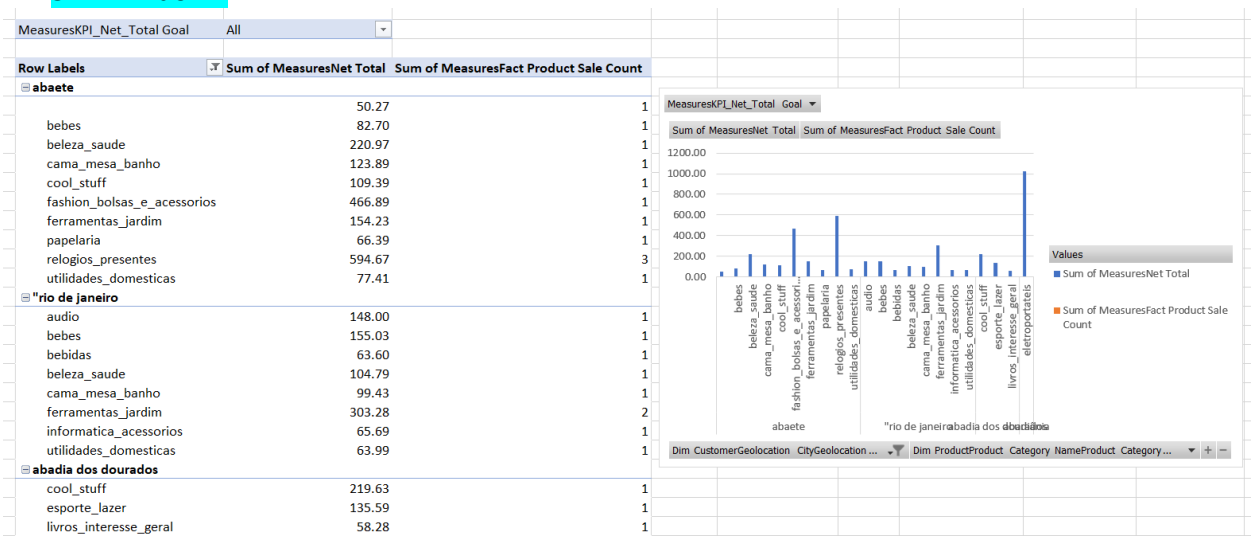
4. Roll up

MeasuresKPI_Net_Total Goal | All

Row Labels	Sum of MeasuresNet Total	Sum of MeasuresFact Product Sale Count
⊞	44519.53	302
⊞ "rio de janeiro	1003.81	9
⊞ abadia dos dourados	413.50	3
⊞ abadiânia	1025.52	1
⊞ abaete	1946.81	12
⊞ abaetetuba	4672.27	14
⊞ abaiara	332.15	2
⊞ abaíra	203.00	2
⊞ abare	224.73	2
⊞ abatiá	220.19	3
⊞ abdon batista	156.70	2
⊞ abelardo luz	797.58	6
⊞ abrantes	2861.74	7
⊞ abreu e lima	2871.92	14
⊞ acaiaca	207.90	2
⊞ açailândia	1233.48	7
⊞ acajutiba	50.95	1
⊞ acarau	1639.94	9
⊞ acari	412.43	1
⊞ acegua	282.39	2
⊞ acopiara	901.67	8
⊞ acreuna	1306.45	9
⊞ açu	749.59	4
⊞ acucena	54.11	1

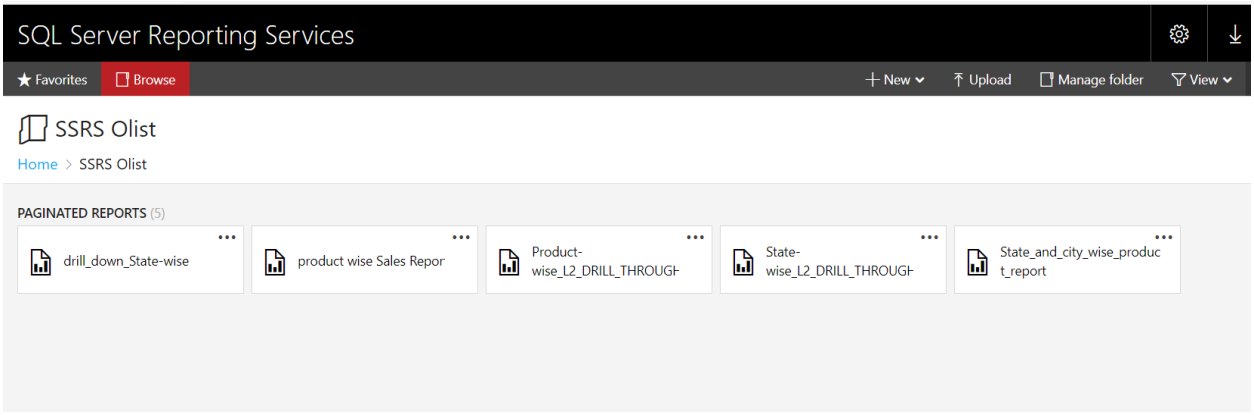


5. Drill down



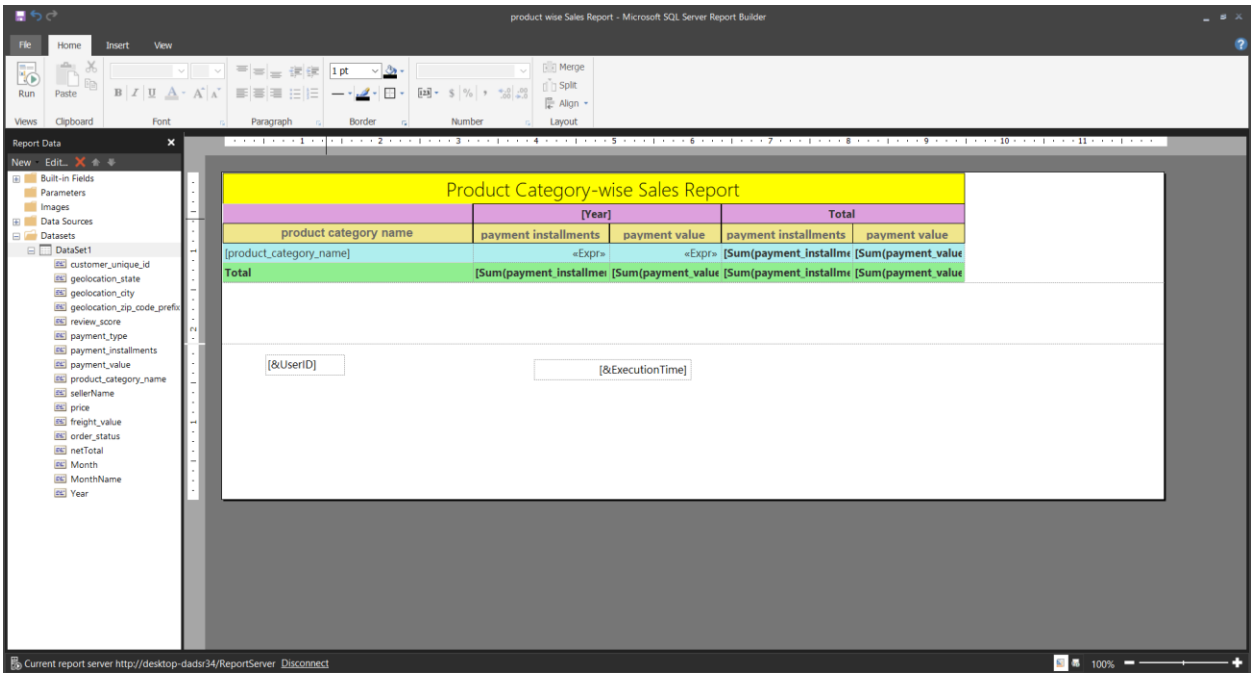
MeasuresKPI_Net_Total Goal	All	
Row Labels	**Sum of MeasuresNet Total**	**Sum of MeasuresFact Product Sale Count**
abaete		
	50.27	1
bebes	82.70	1
beleza_saude	220.97	1
cama_mesa_banho	123.89	1
cool_stuff	109.39	1
fashion_bolsas_e_acessorios	466.89	1
ferramentas_jardim	154.23	1
papelaria	66.39	1
relogios_presentes	594.67	3
utilidades_domesticas	77.41	1
"rio de janeiro		
audio	148.00	1
bebes	155.03	1
bebidas	63.60	1
beleza_saude	104.79	1
cama_mesa_banho	99.43	1
ferramentas_jardim	303.28	2
informatica_acessorios	65.69	1
utilidades_domesticas	63.99	1
abadia dos dourados		
cool_stuff	219.63	1
esporte_lazer	135.59	1
livros_interesse_geral	58.28	1

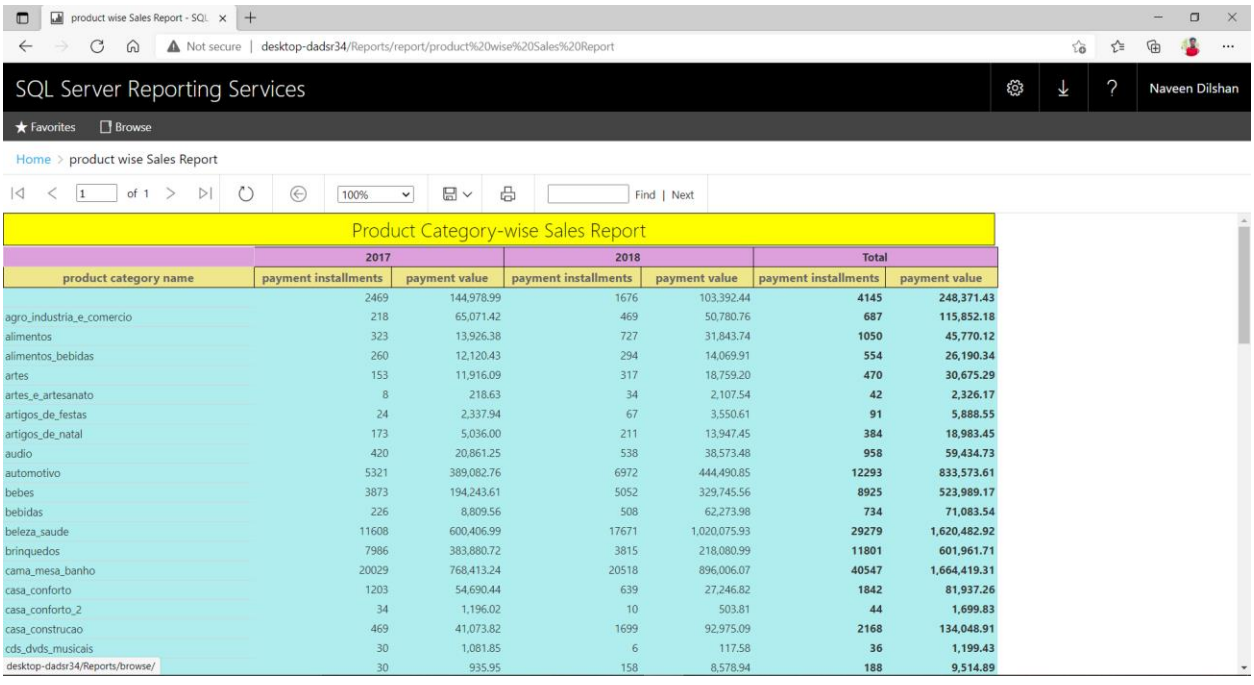
Step 4: SSRS Reports



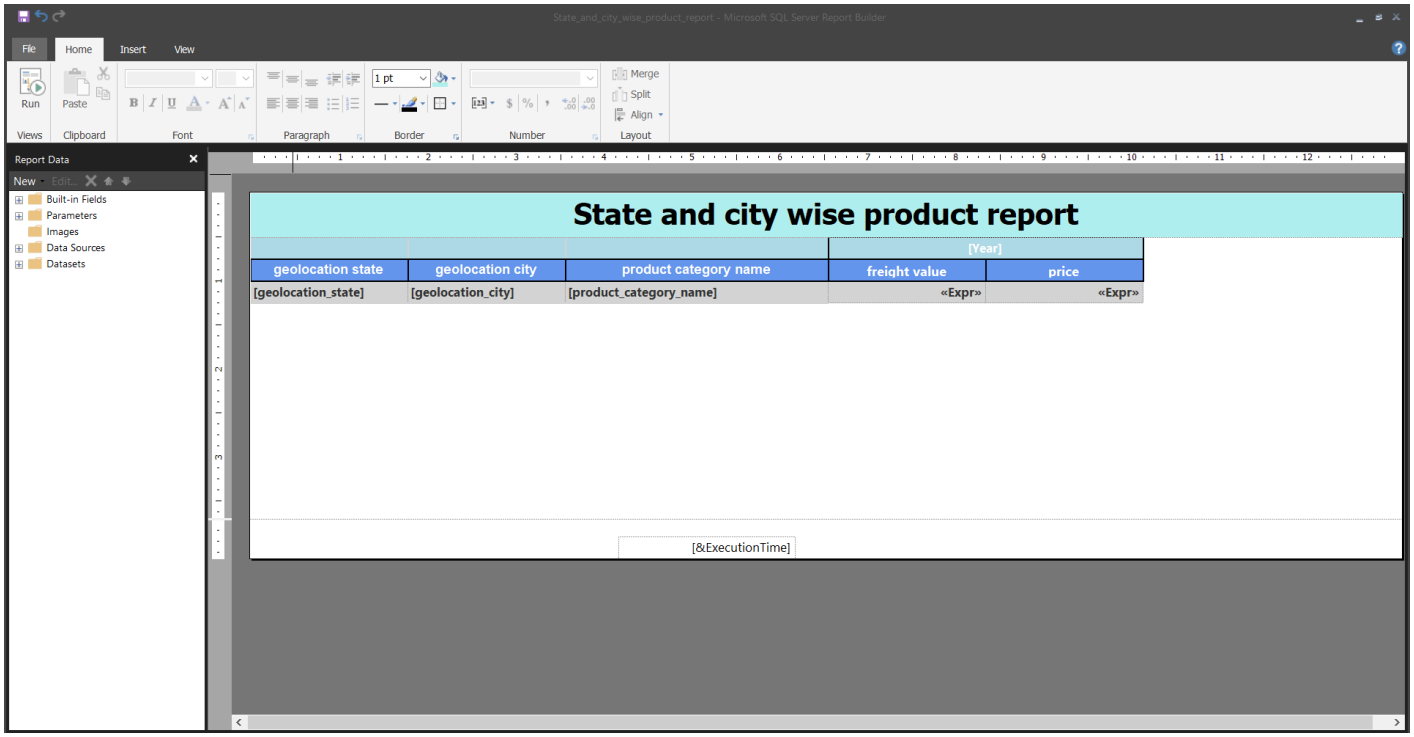
As the first step in here, I had to open the ‘Report builder’ and created a new project.

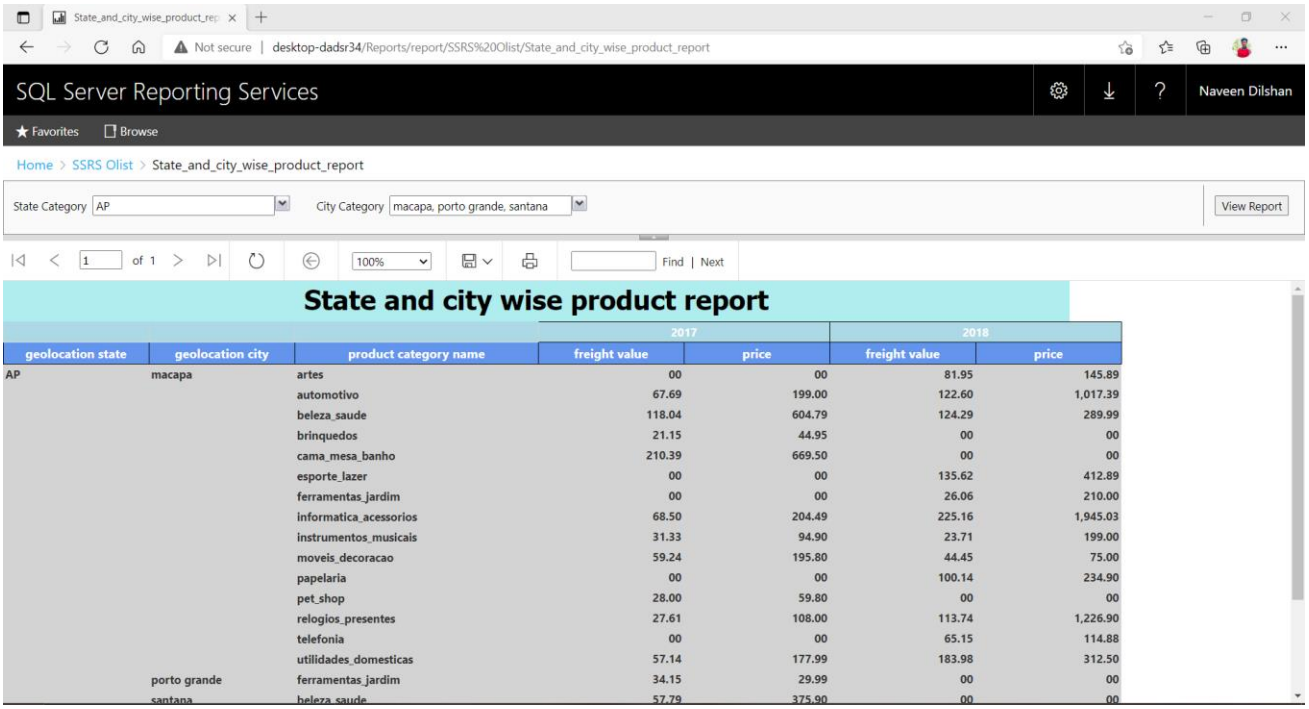
- Report 1 - Report with a matrix





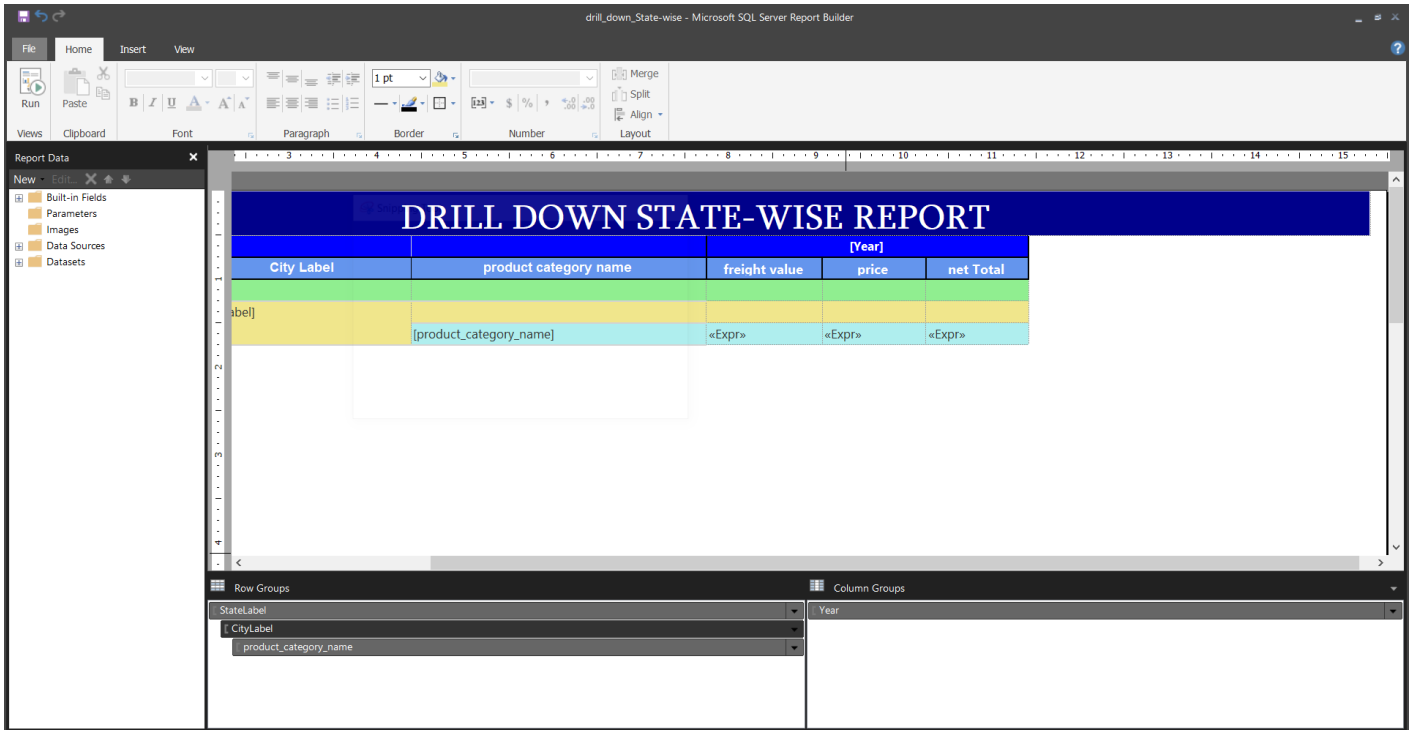
Report 2 - Report with two parameters, parameters have list of values and Selection of the value of first parameter changed the list of available values in the second parameter.

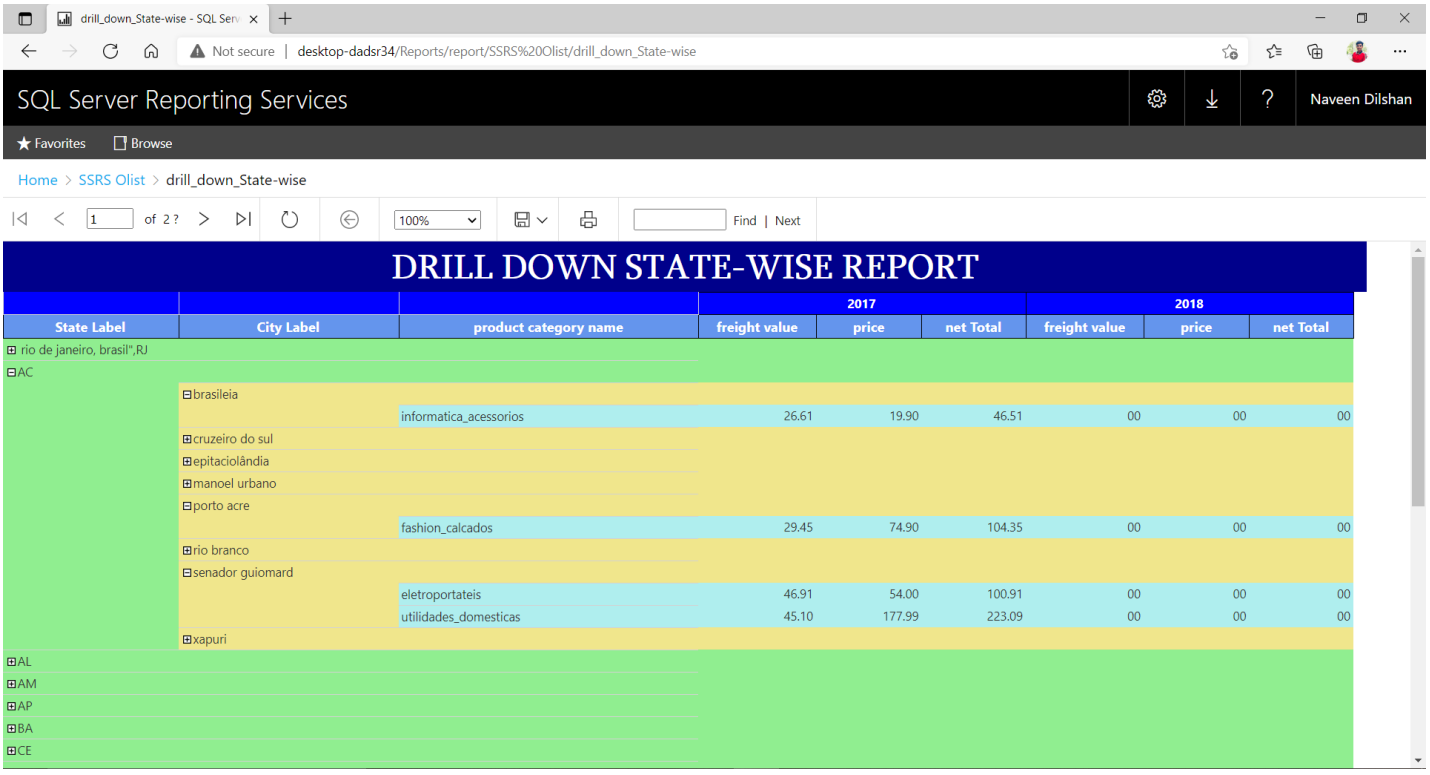




geolocation state	geolocation city	product category name	2017 freight value	2017 price	2018 freight value	2018 price
AP	macapa	artes	00	00	81.95	145.89
		automotivo	67.69	199.00	122.60	1,017.39
		beleza_saude	118.04	604.79	124.29	289.99
		brinquedos	21.15	44.95	00	00
		cama_mesa_banho	210.39	669.50	00	00
		esporte_lazer	00	00	135.62	412.89
		ferramentas_jardim	00	00	26.06	210.00
		informatica_acessorios	68.50	204.49	225.16	1,945.03
		instrumentos_musicais	31.33	94.90	23.71	199.00
		moveis_decoracao	59.24	195.80	44.45	75.00
		papelaria	00	00	100.14	234.90
		pet_shop	28.00	59.80	00	00
		relogios_presentes	27.61	108.00	113.74	1,226.90
		telefonia	00	00	65.15	114.88
		utilidades_domesticas	57.14	177.99	183.98	312.50
	porto grande	ferramentas_jardim	34.15	29.99	00	00
	santana	beleza_saude	57.79	375.90	00	00

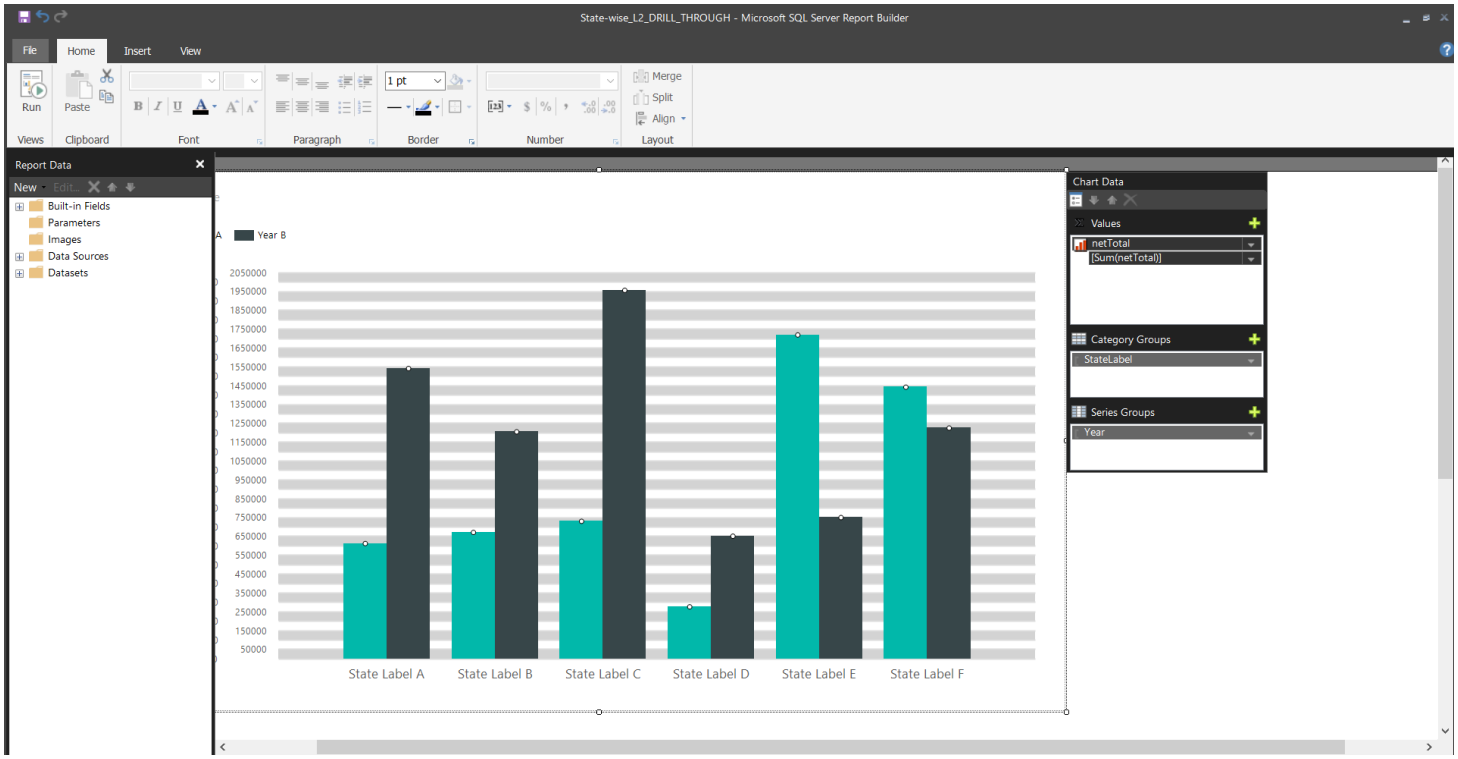
- Report 3 - Create an SSRS drill-down report

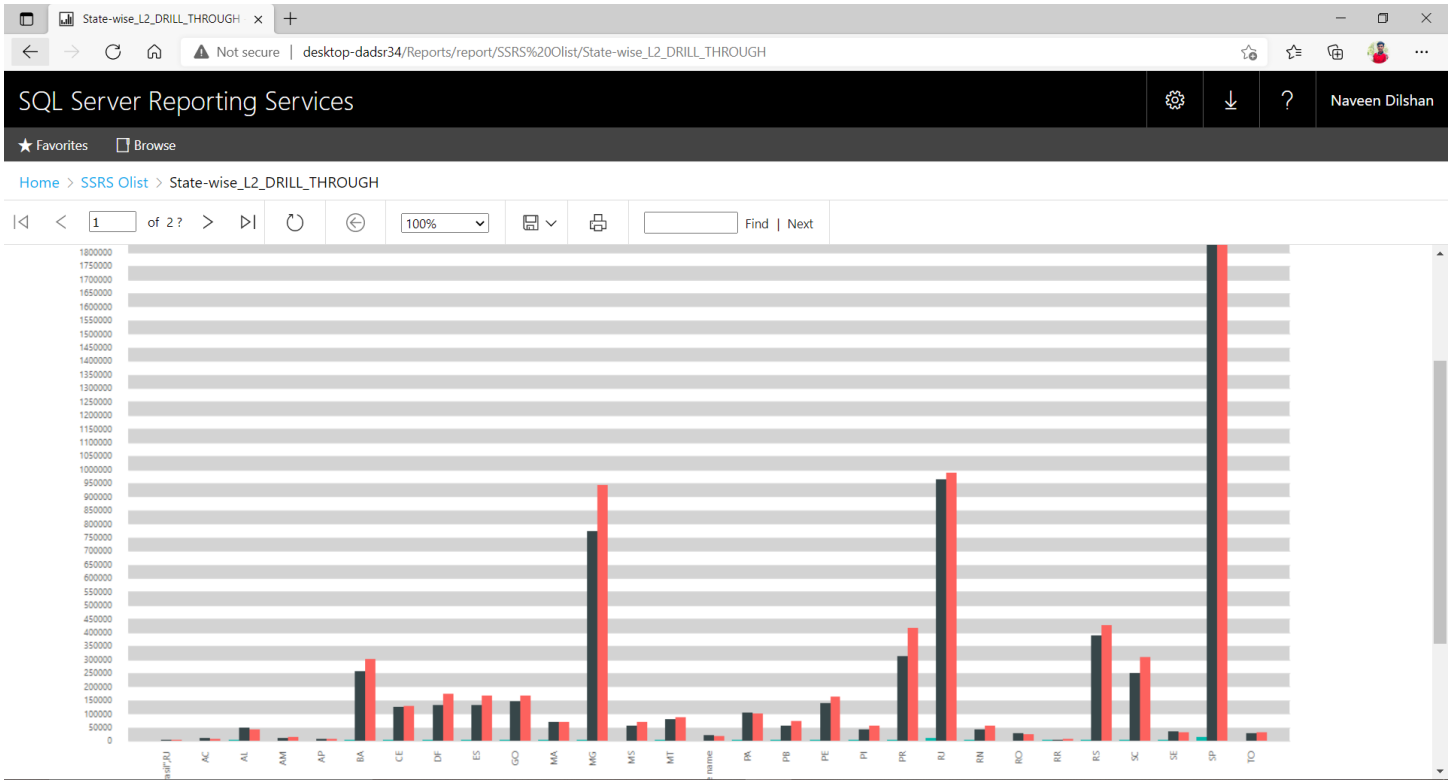




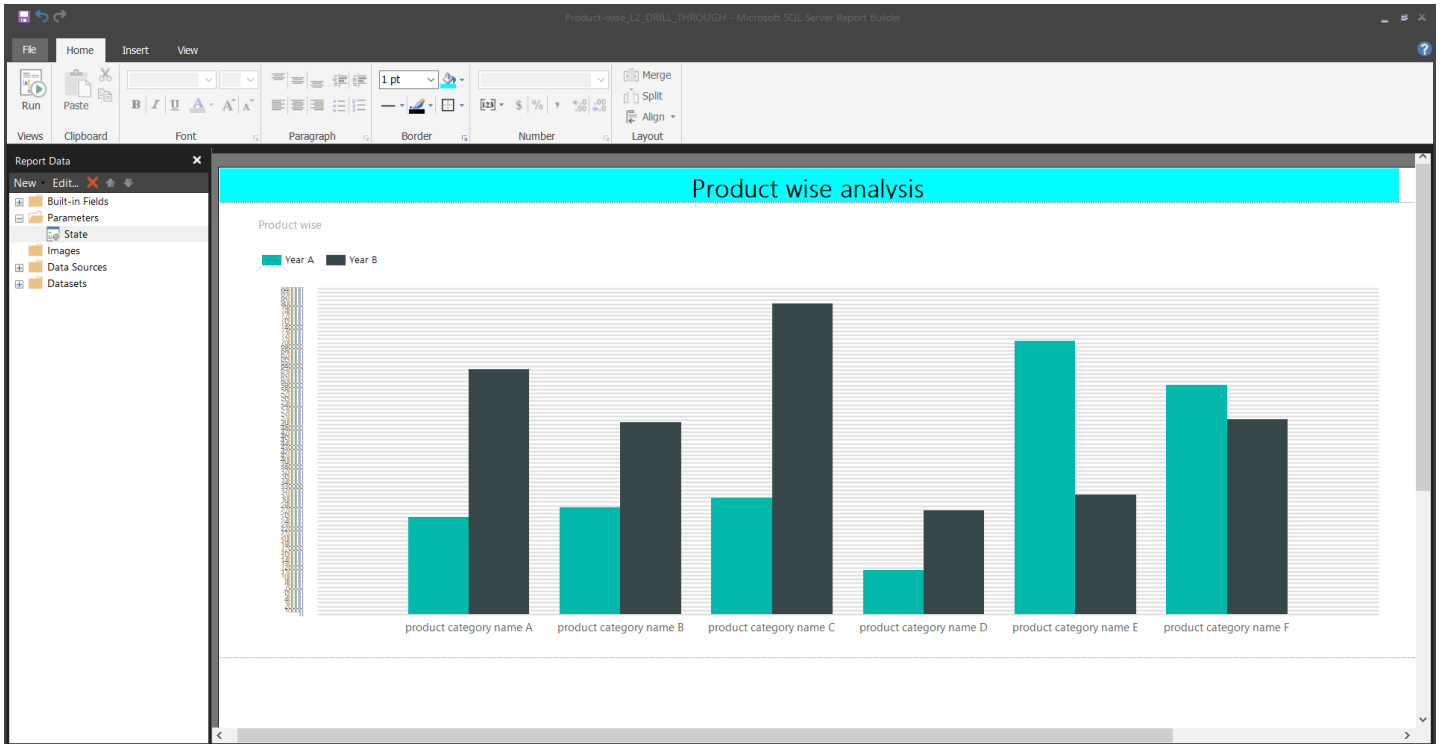
- Report 4 - Create an SSRS drill-through report

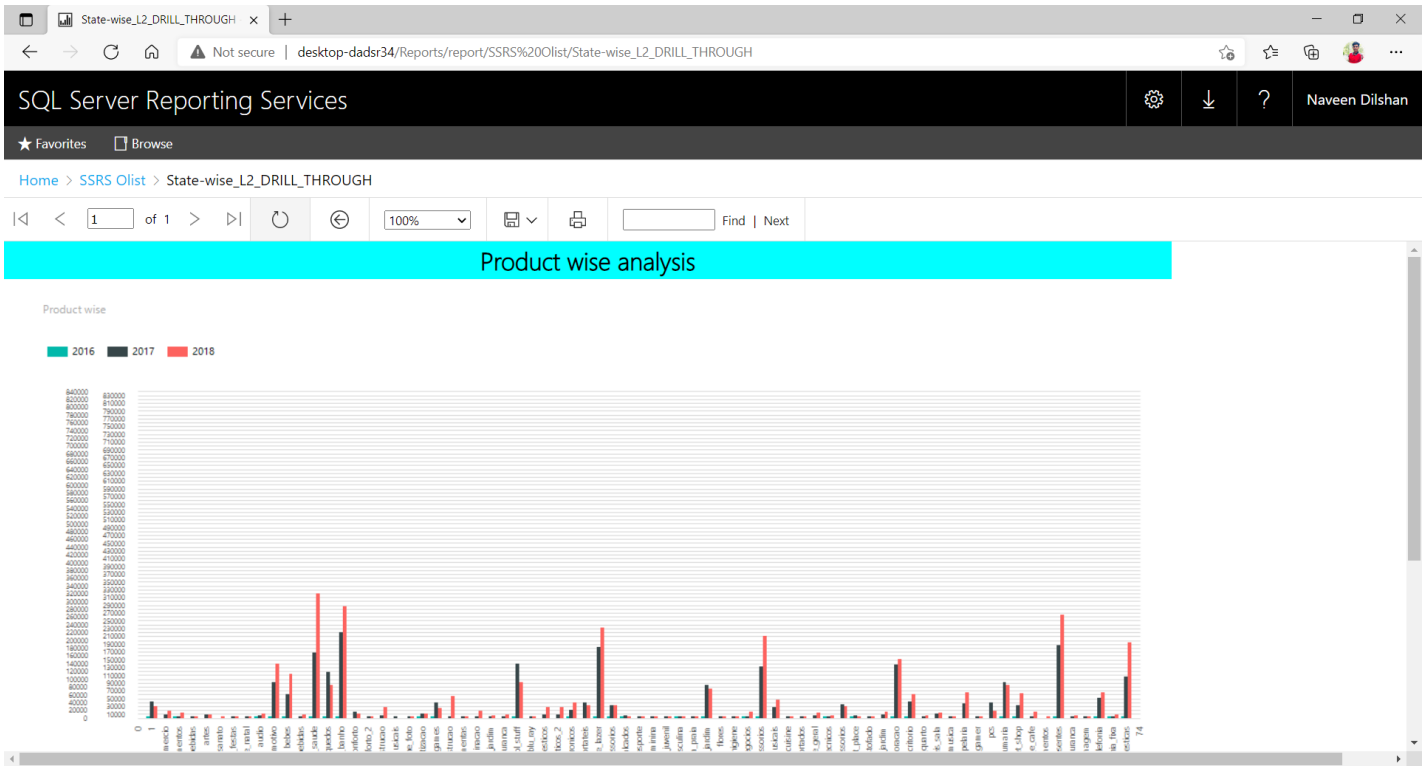
(Report 1) – State Wise Chart – we can click any of the State column in chart it navigates to product chart





(Report 2) – Product wise Chart- we can see products related to the state.





Dashboard using power BI

Model: -