



IT3021
Data Warehousing and Business
Intelligence
3rd Year 1st Semester

Assignment 2

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Name: ALWIS. P. L. A.I

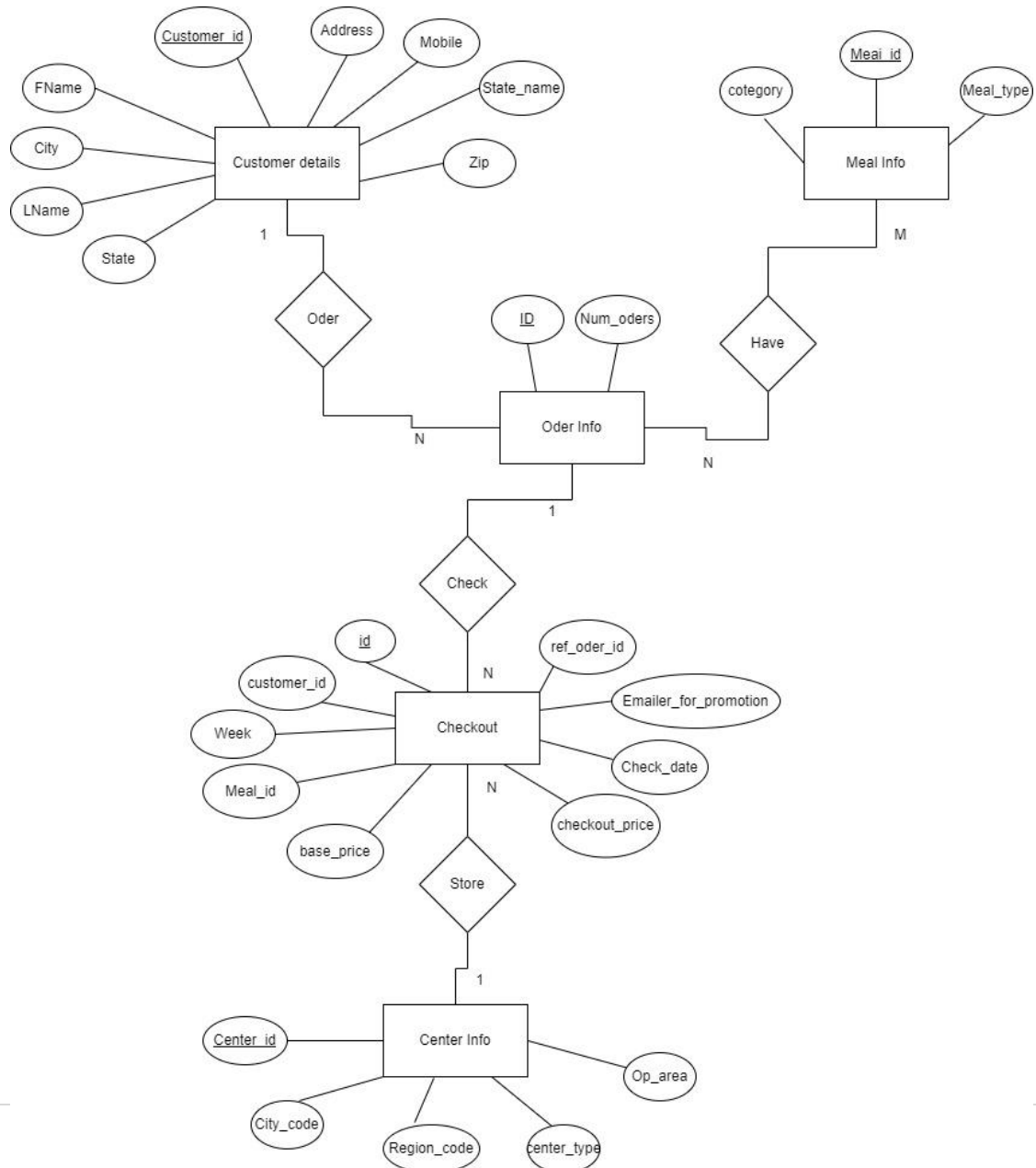
Submitted to:

Sri Lanka Institute of Information Technology

Content of the Dataset

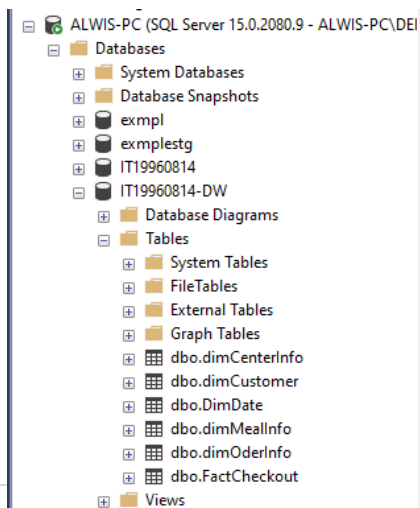
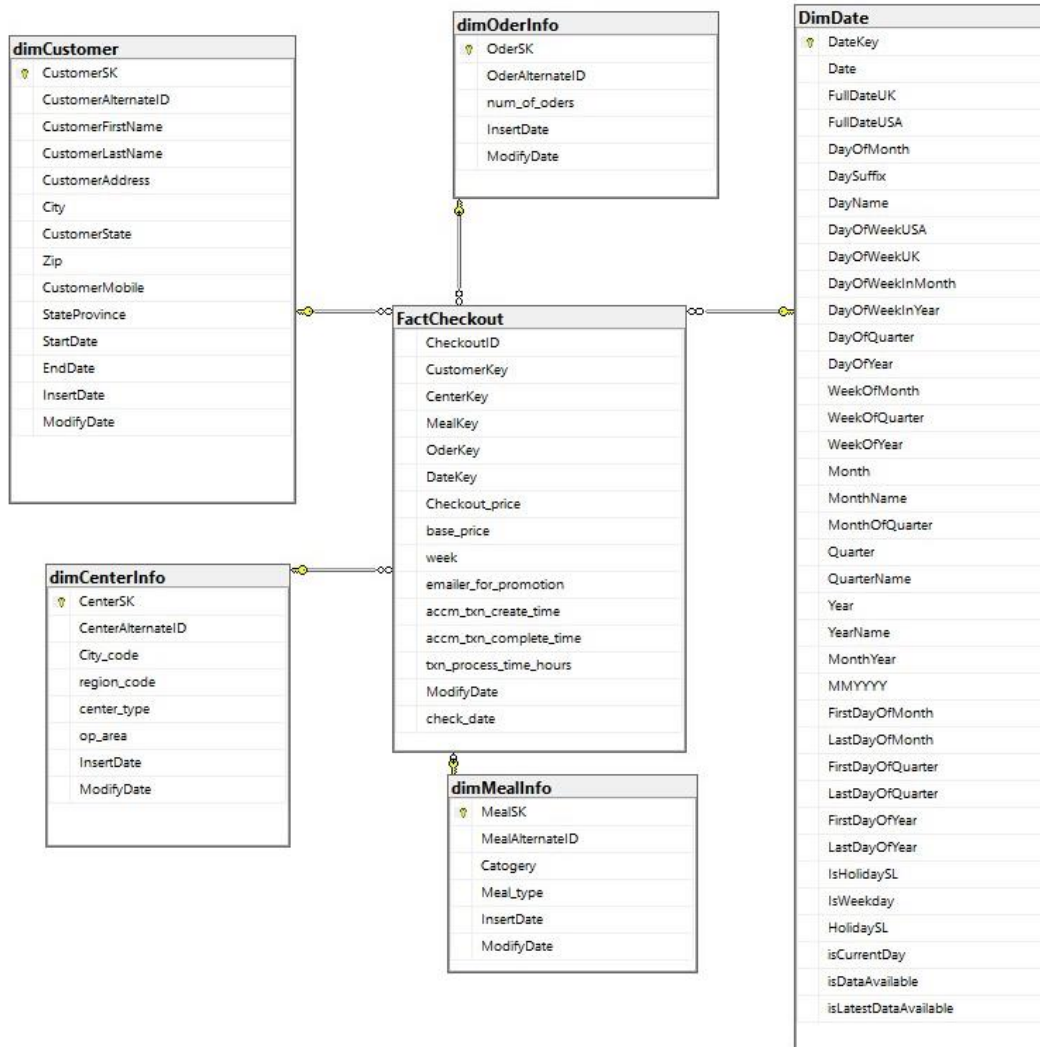
This dataset mainly focused on fulfillment centers in these cities for dispatching meal orders to their customers. The replenishment of majority of raw materials is done on weekly basis and since the raw material is perishable, the procurement planning is of utmost importance. Secondly, staffing of the centers is also one area wherein accurate demand forecasts are helpful. Given the following information, the task is to predict the demand for the next weeks for the center-meal combinations in the test set.

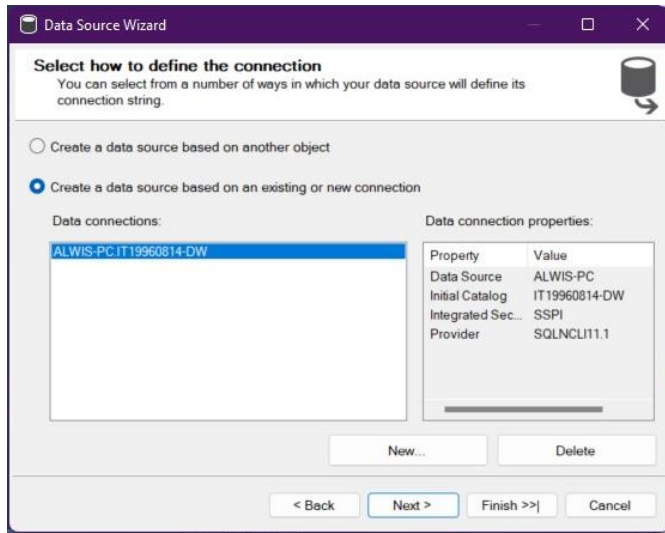
R Diagram of the Dataset



Step 1: Data source for the assignment 2

- IT19960814_DW that I have implemented and loaded with data in Assignment 1 as the data source for the assignment 2.

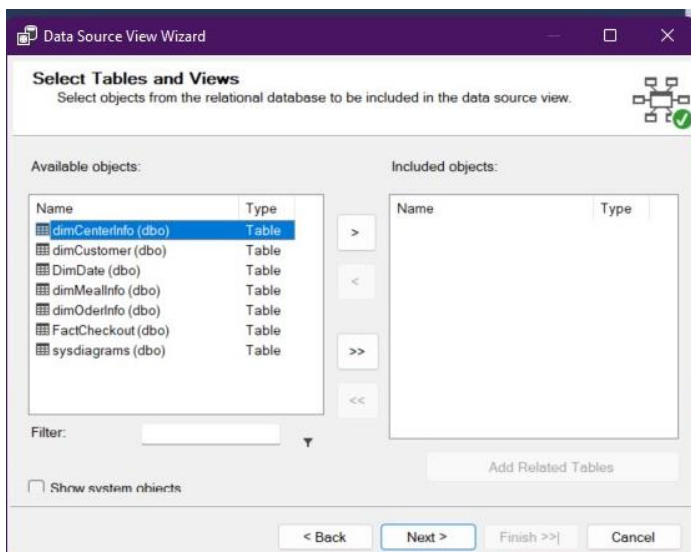
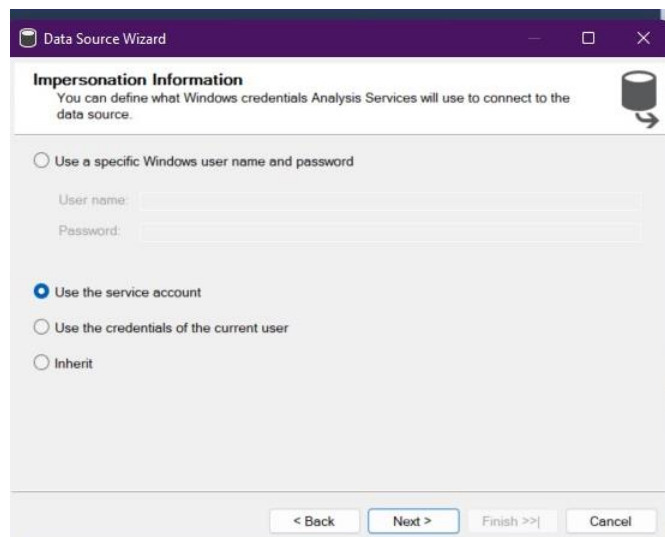




Create Data Source :

A) Right click on the Data Sources under created project and click on New Data Source

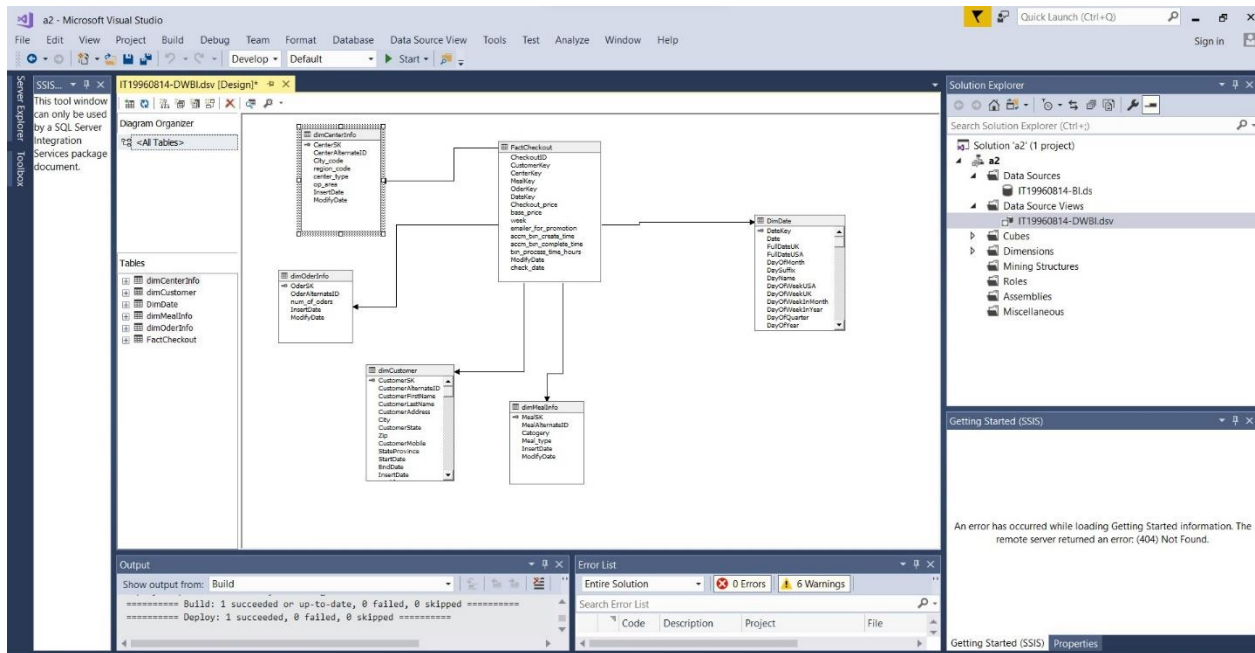
B) Click correct data base schema (Data warehouse) and next



Create Data Source Views :

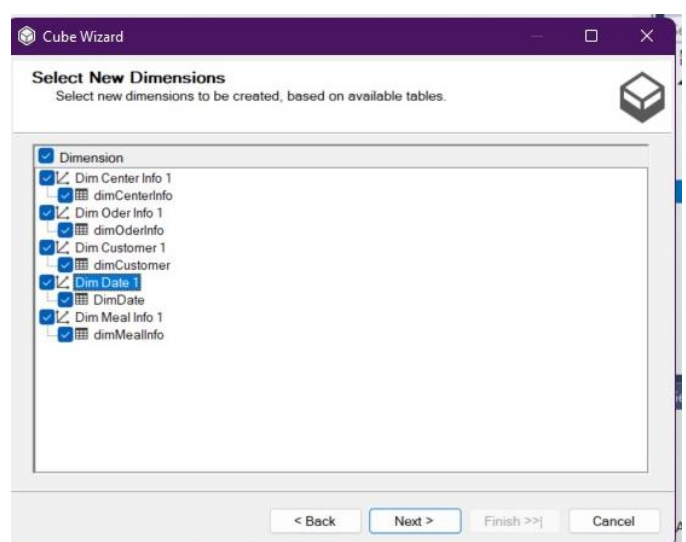
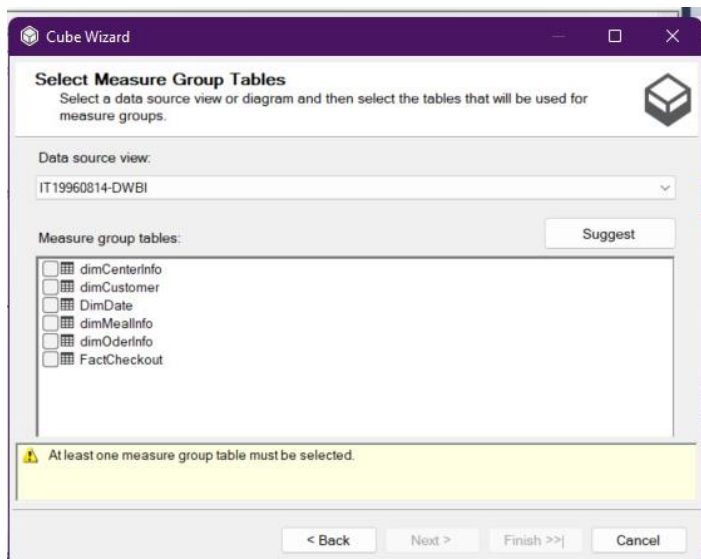
A) Right click on the New Data Source View under SSAS Project

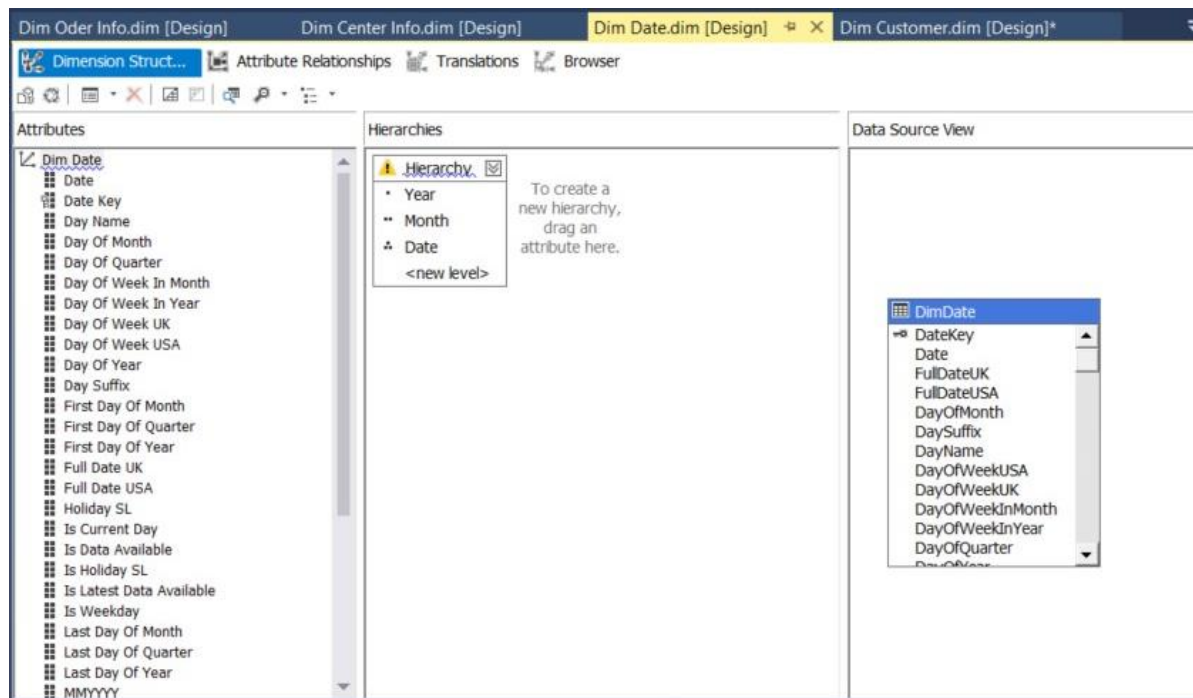
B) Select All the Available dimension tables into Included Objects and click Finish



Step 2: SSAS Cube implementation

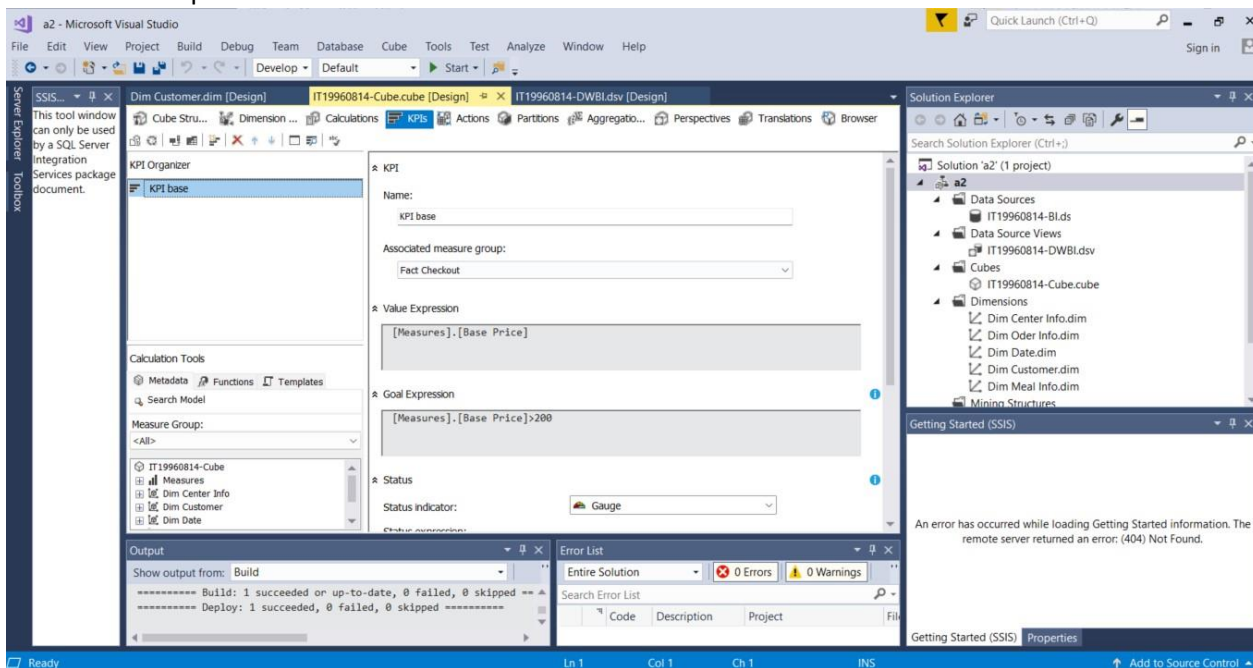
- Under SSAS project right click on the cube and New Cube
- Use Existing table -> Next
- Select the All Fact tables and Next
- Select all the transaction attributes and Next.
- Select all the dimension tables and Next.
- Finish



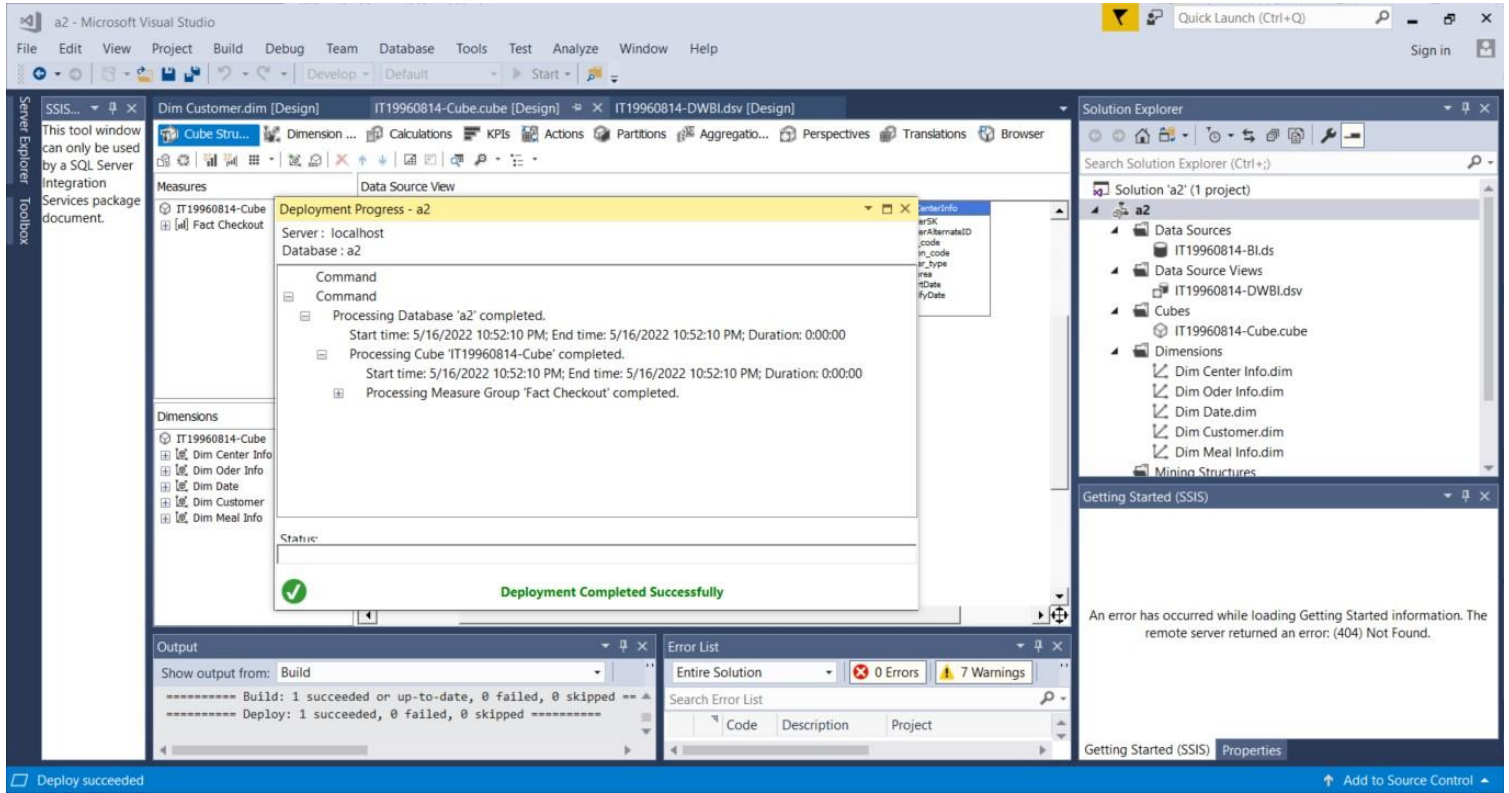


Creating KPI

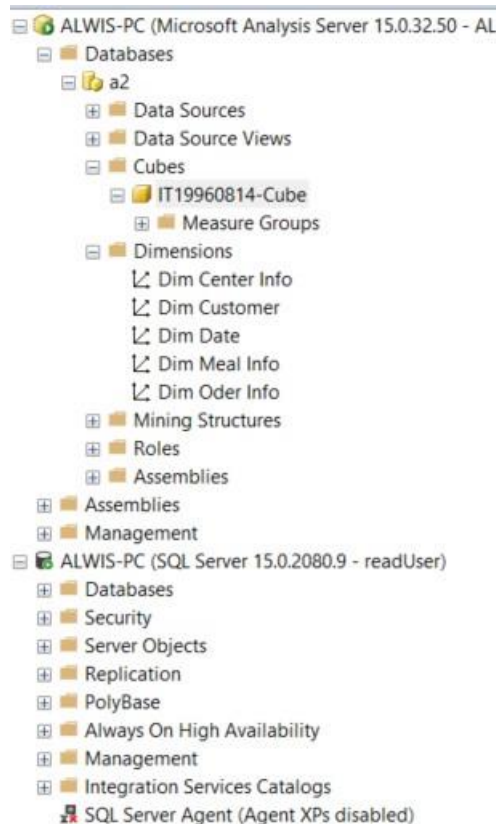
KPI for Base price



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



data cube



Step 3: Demonstration of OLAP operations

Connect an Excel workbook to the Cube. You may use connecting Excel workbook using features available in Data tab or POWERPIVOT mode

- A) Data tab and getData-> From Database ->From Analysis Services
- B) Set the credentials for database and select SSAS cube and finish

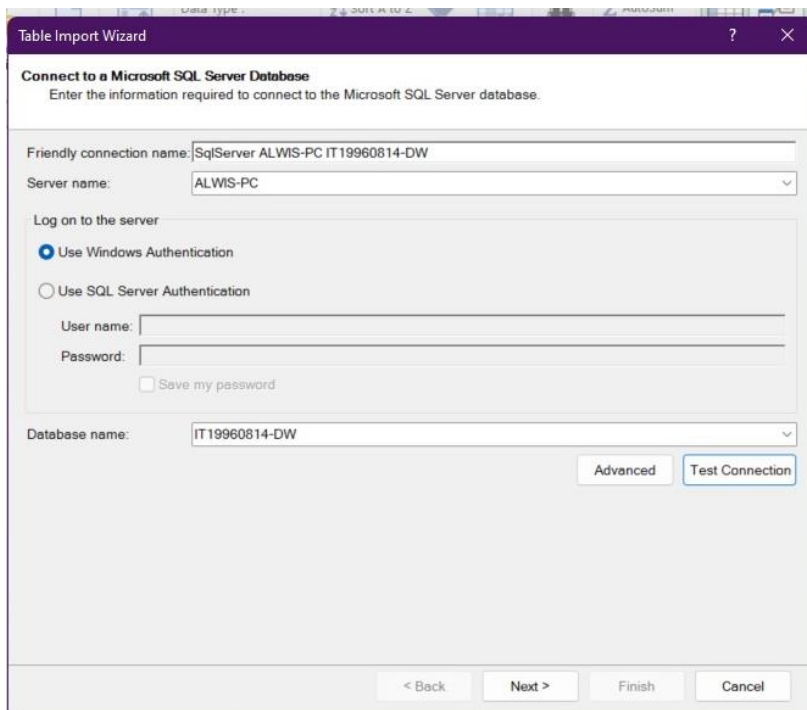
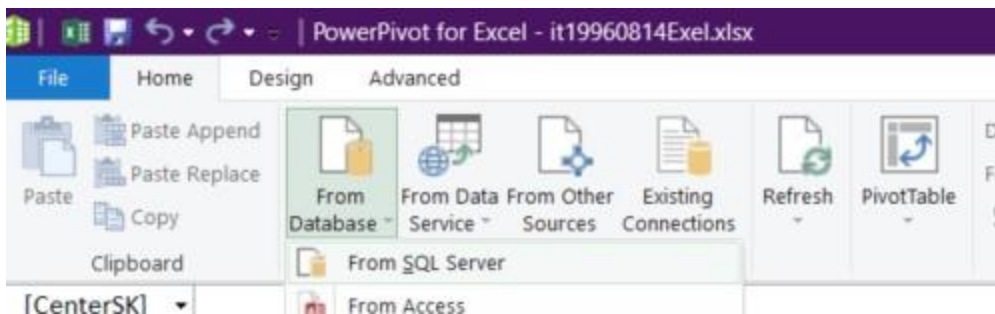


Table Import Wizard

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Choose How to Import the Data

You can either import all of the data from tables or views that you specify, or you can write a query using SQL that specifies the data to import.

☒
Select from a list of tables and views to choose the data to import

☐
Write a query that will specify the data to import

< Back

Next >

Finish

Cancel

Table Import Wizard

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Select Tables and Views

Select the tables and views that you want to import data from.

Server: ALWIS-PC

Database: IT19960814-DW

Tables and Views:

<input checked="" type="checkbox"/>	Source Table	Schema	Friendly Name	Filter Details
<input checked="" type="checkbox"/>	dimCenterInfo	dbo	dimCenterInfo	
<input checked="" type="checkbox"/>	dimCustomer	dbo	dimCustomer	
<input checked="" type="checkbox"/>	DimDate	dbo	DimDate	
<input checked="" type="checkbox"/>	dimMealInfo	dbo	dimMealInfo	
<input checked="" type="checkbox"/>	dimOrderInfo	dbo	dimOrderInfo	
<input checked="" type="checkbox"/>	FactCheckout	dbo	FactCheckout	
<input checked="" type="checkbox"/>	sysdiagrams	dbo	sysdiagrams	

Select Related Tables

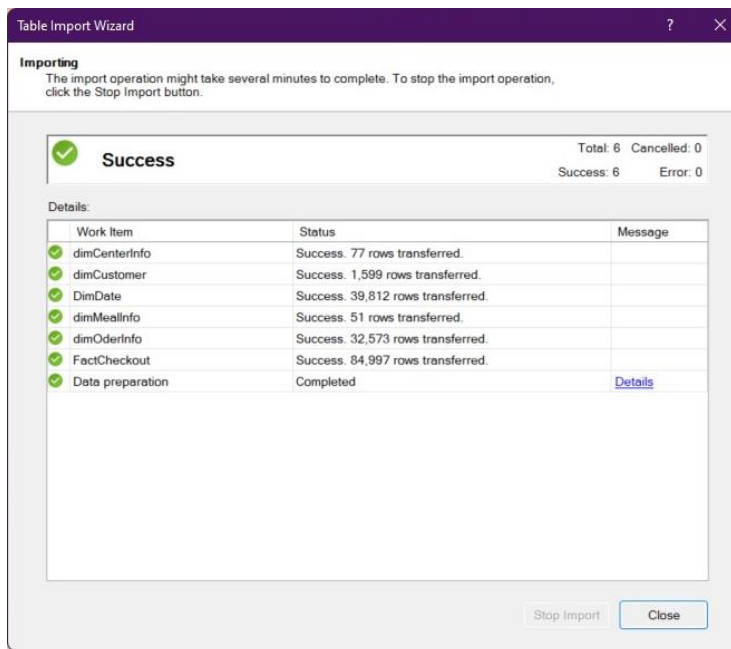
Preview & Filter

< Back

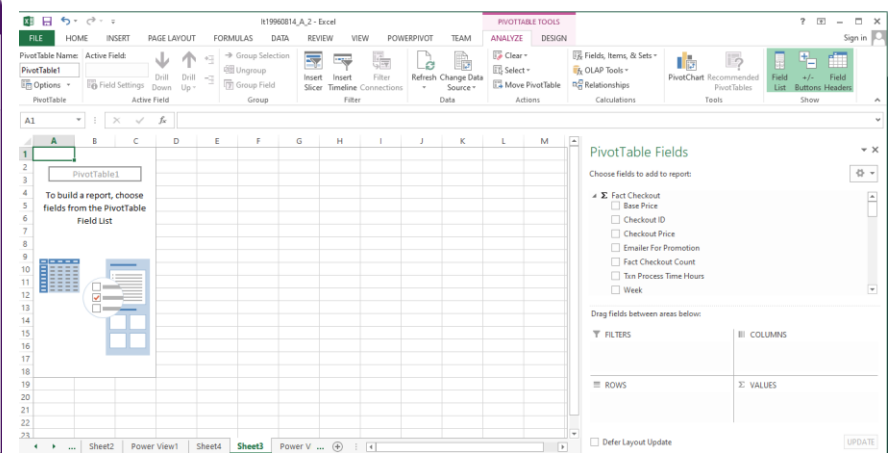
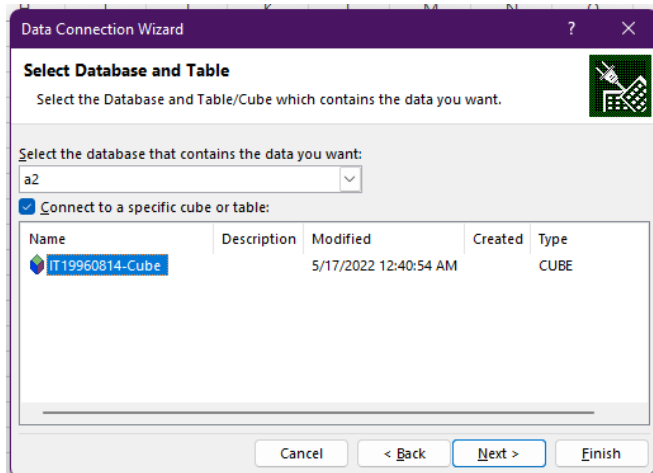
Next >

Finish

Cancel

[illegible]

Extract using cube

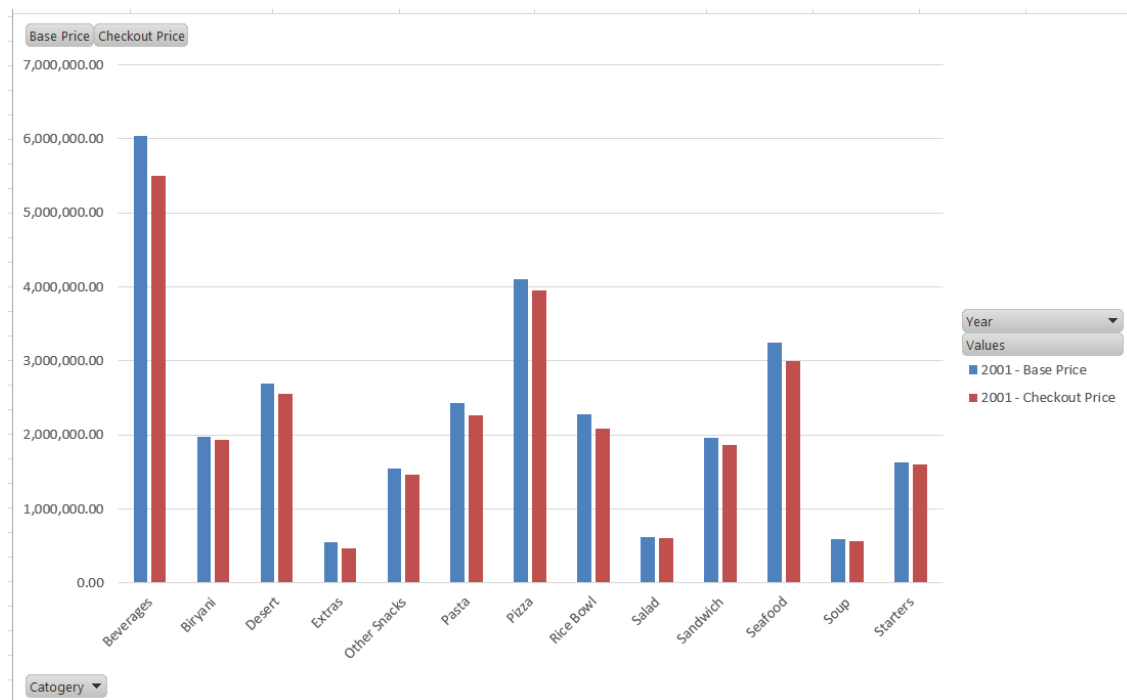


Excel report

Pivot

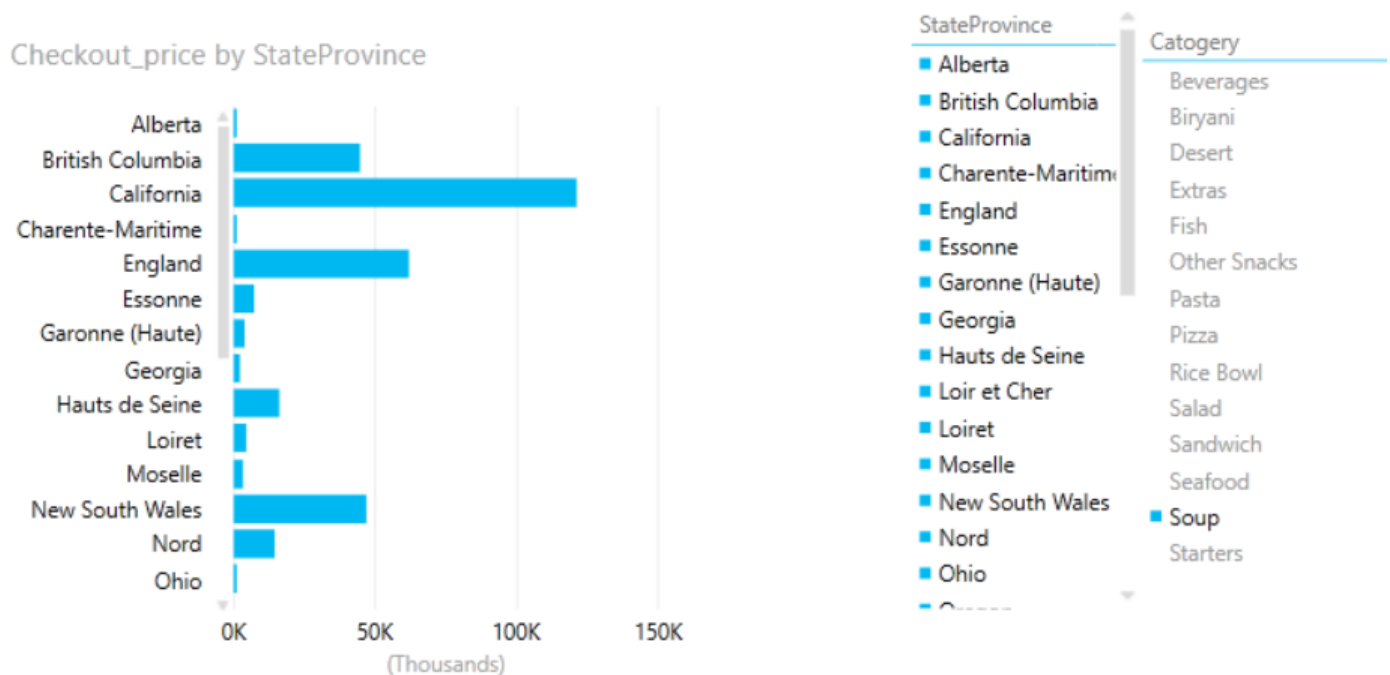
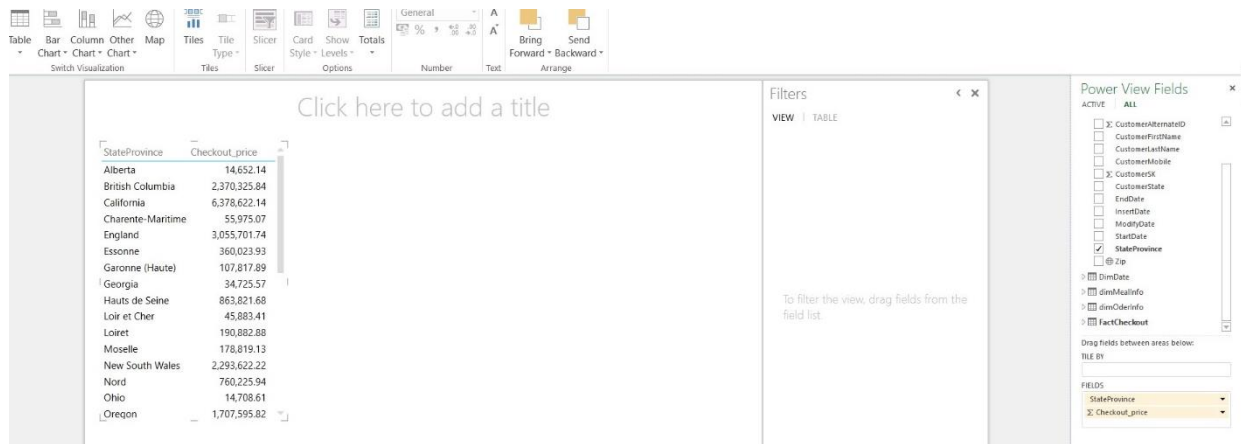
In the below pivot table, I have statically summarized the data. This summary includes base price ,check out price, category, month year, which the pivot table groups together in a descriptive manner in Category. And using this pivot table we can visualize our data by giving them a different perspective and view. We can rotate the axis of the dimension and see different pattern of the same data.

Column Labels				
2001				
		Total Base Price	Total Checkout Price	
Row Labels	Base Price	Checkout Price		
Beverages	6,037,664.89	5506083.616	6,037,664.89	5506083.616
Biryani	1,977,686.93	1930685.218	1,977,686.93	1930685.218
Desert	2,687,293.71	2552620.43	2,687,293.71	2552620.43
Extras	556,456.67	467920.6699	556,456.67	467920.6699
Other Snacks	1,544,129.25	1463117.147	1,544,129.25	1463117.147
Pasta	2,437,344.51	2267181.103	2,437,344.51	2267181.103
Pizza	4,101,708.26	3948900.571	4,101,708.26	3948900.571
Rice Bowl	2,278,713.71	2082143.457	2,278,713.71	2082143.457
Salad	622,860.43	608371.6934	622,860.43	608371.6934
Sandwich	1,964,821.28	1870785.357	1,964,821.28	1870785.357
Seafood	3,251,116.61	2993932.339	3,251,116.61	2993932.339
Soup	595,824.78	566499.3714	595,824.78	566499.3714
Starters	1,631,535.50	1607999.347	1,631,535.50	1607999.347
Grand Total	29,687,156.51	27866240.32	29,687,156.51	27866240.32



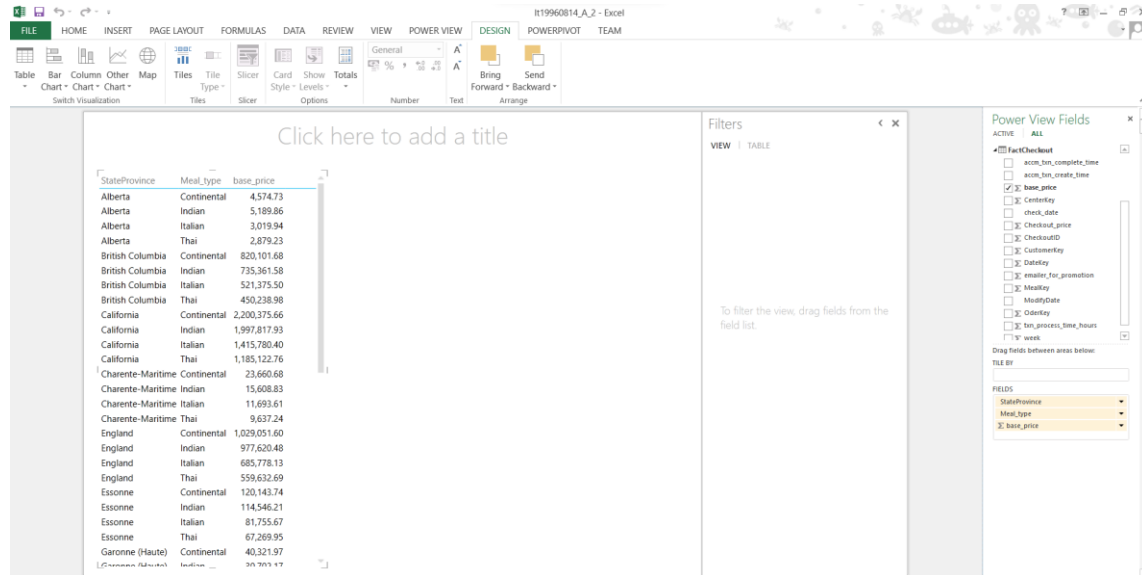
Slice

Rectangular subset of a cube, by choosing a single value for one of its dimensions. So here I have used a slicer to filter data in table and graph by State wise.

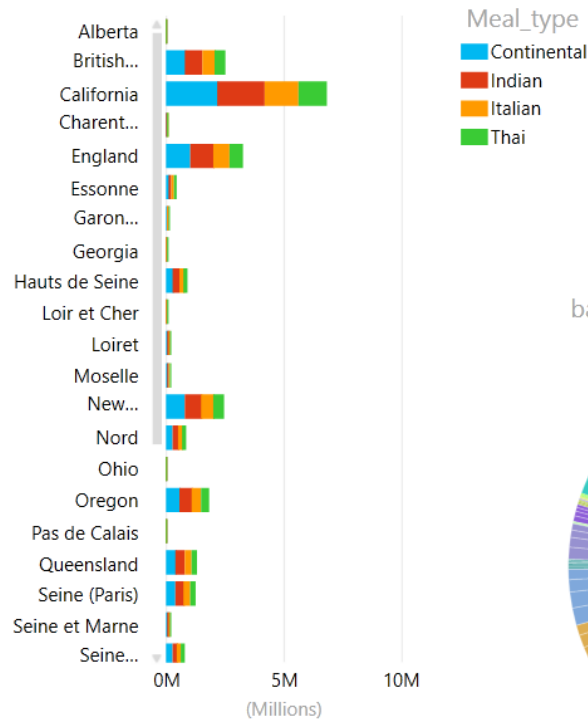


Dice

Selects two or more dimensions from a given cube and provides new sub-cube by selecting specific values on those selected dimensions. This report shows states specific values on those selected meal type.

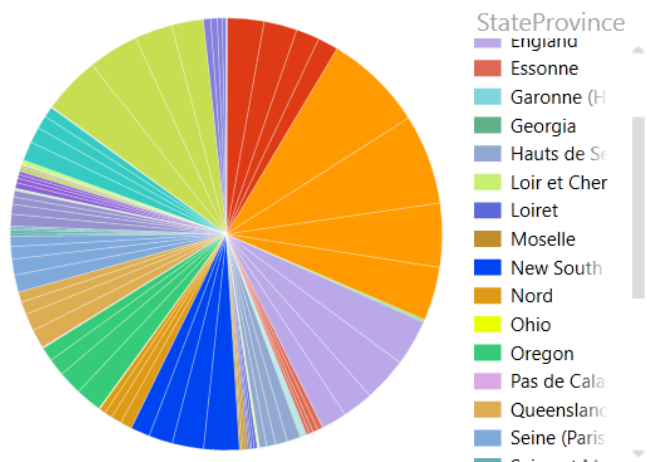


base_price by StateProvince, and Meal_type

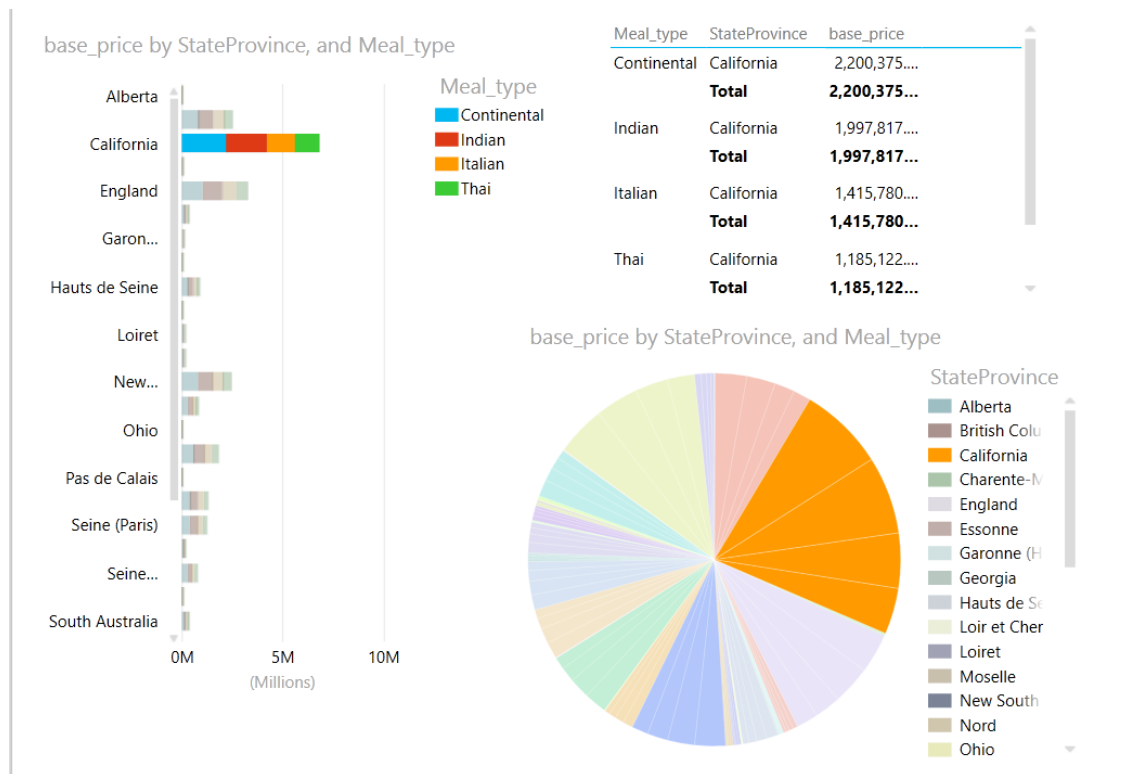


Meal_type	StateProvince	base_price
Continental	Alberta	4,574.73
	British...	820,101.68
	California	2,200,375....
	Charente-...	23,660.68
	England	1,029,051....
	Essonne	120,143.74
	Garonne...	40,321.97
	Georgia	10,752.08
	Hauts de Seine	300,489.37

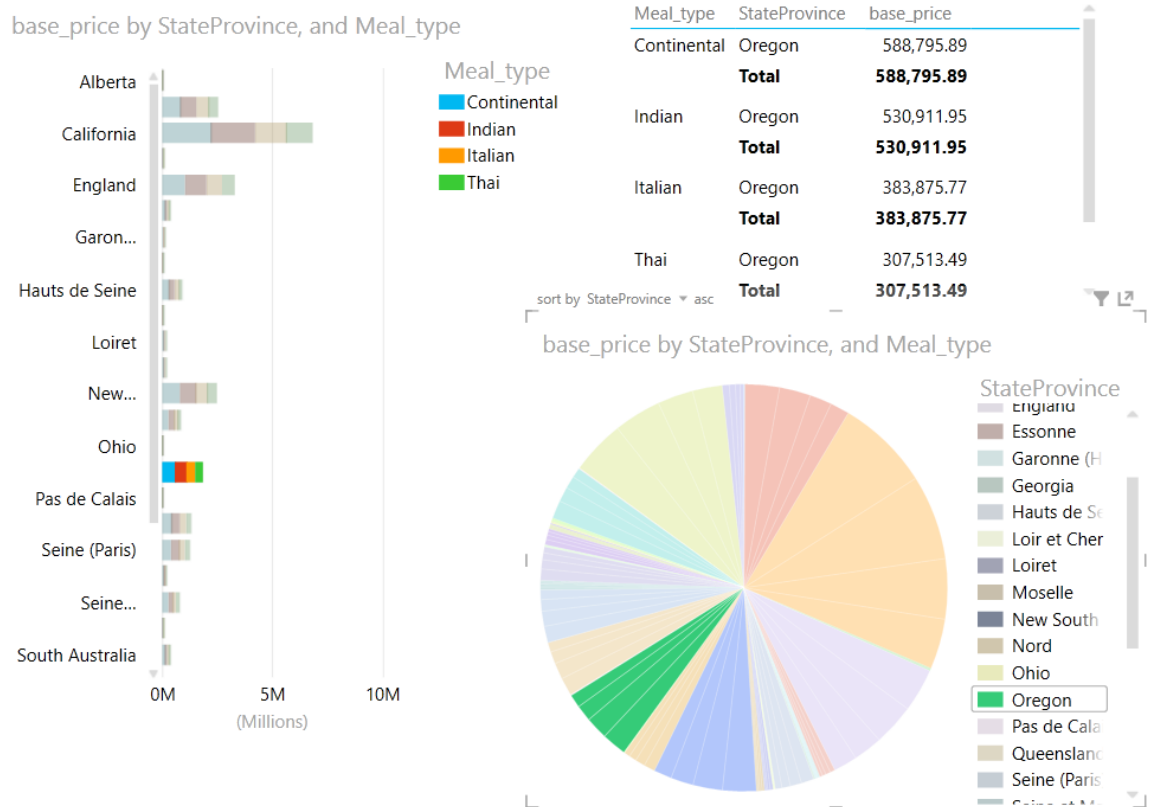
base_price by StateProvince, and Meal_type



different types belongs to state of California.



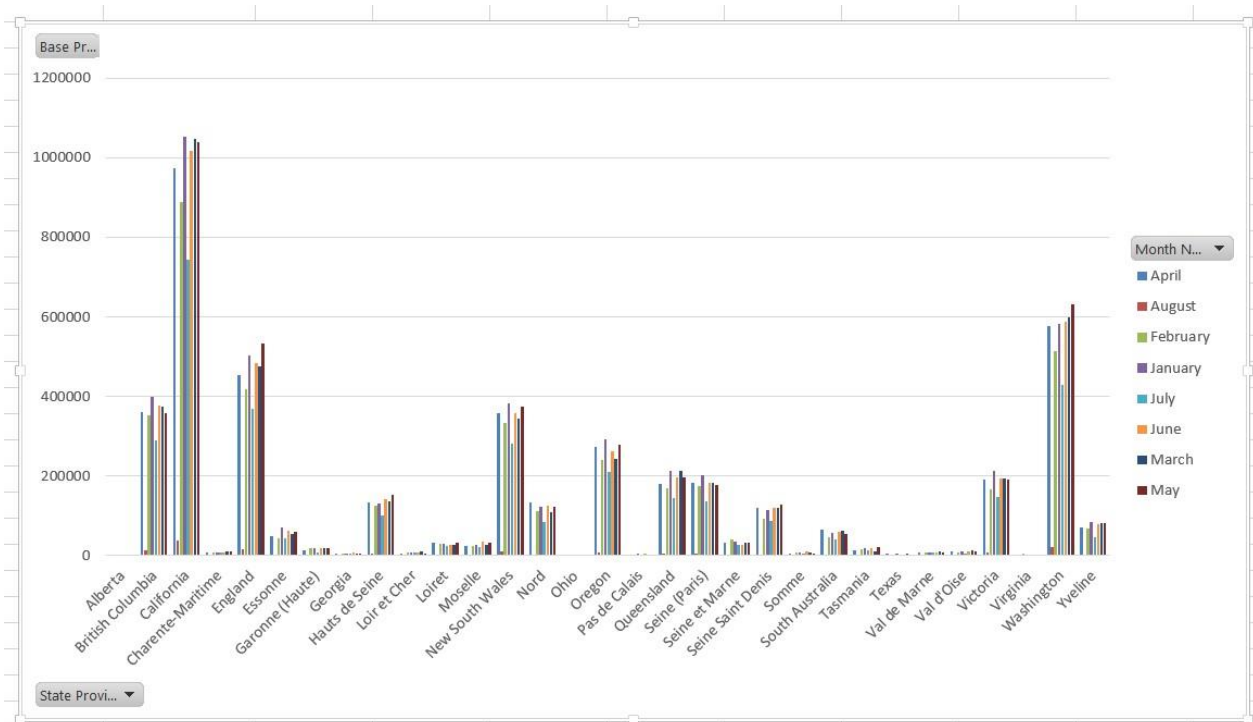
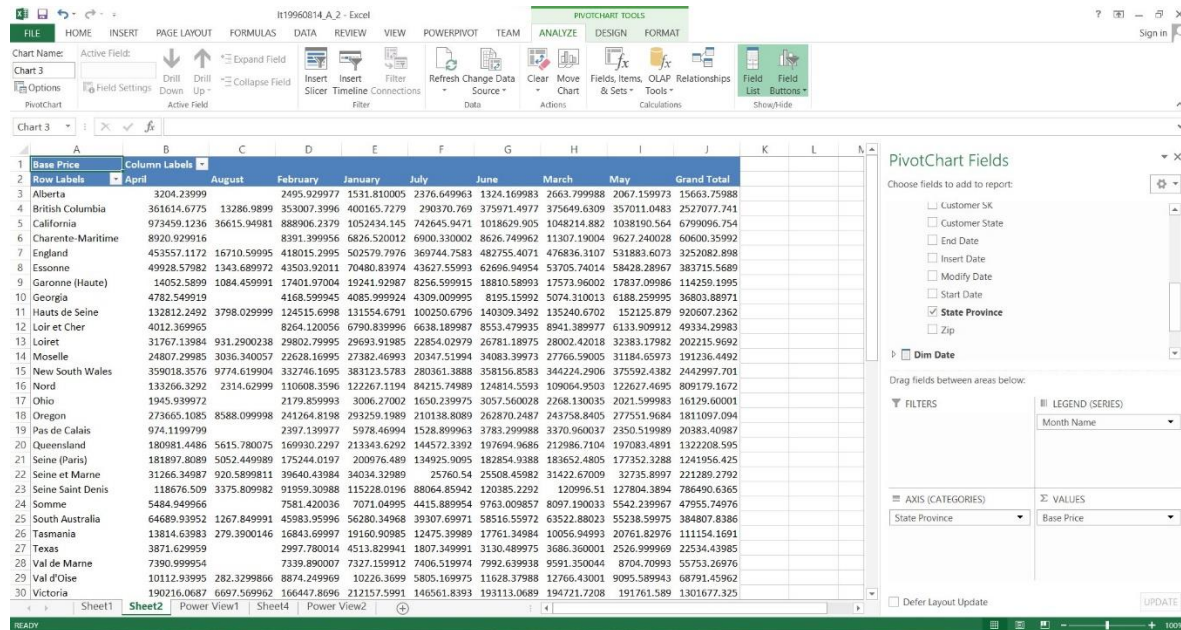
As an instance in below figure, pie chart's highlighted area emphasizes all values of 4 of base prices different types belongs to state of Oregon.



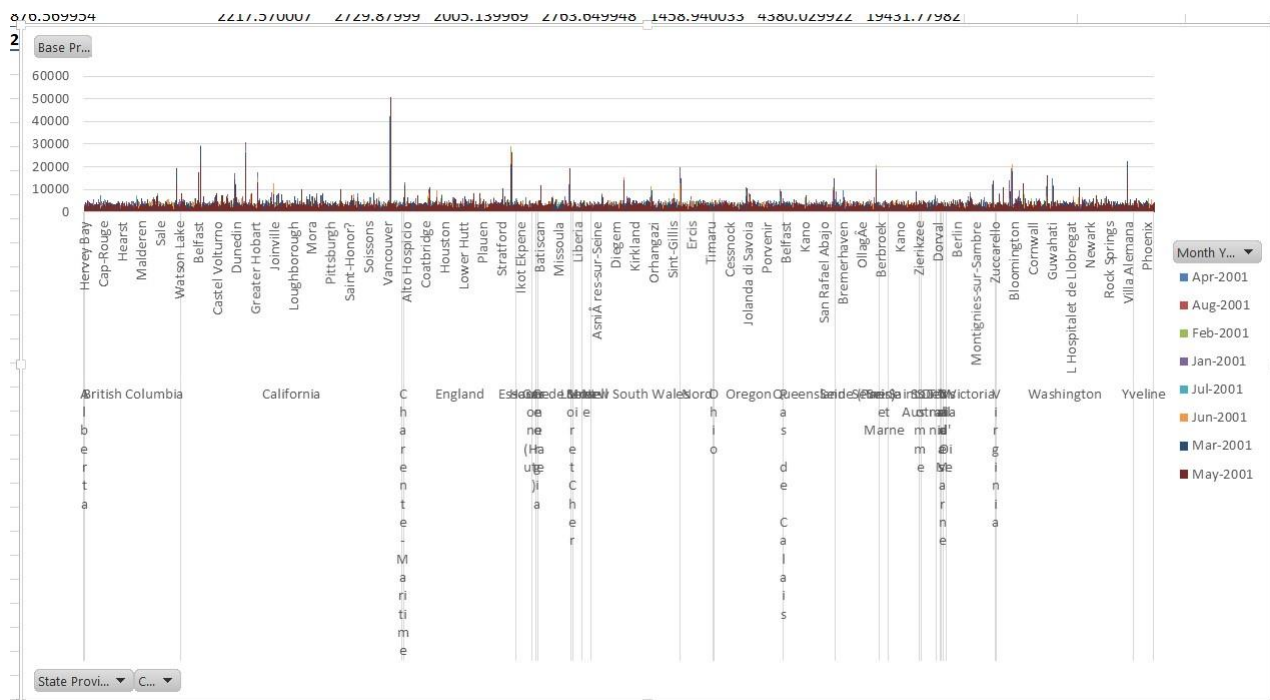
Roll-up and drill-down

Roll-Up

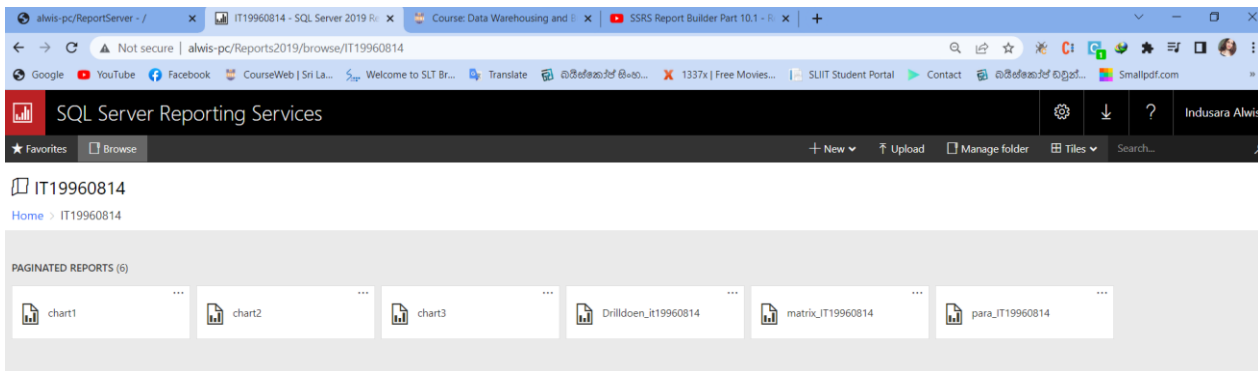
Climbing up a hierarchy of the dimension to aggregate data means the roll up OLAP operation in cubes



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



Step 4: SSRS Reports



Report 1: Report with a matrix

- A) Using Report Builder tool define the data set
(Use a data set embedded in my report -> New -> declare the DW)
- B) In Query Designer define the relationship between fact table and other dimensions.
- C) Insert -> Matrix -> Matrix wizard and declare the row groups and column groups and measures.
- D) Row group : Meal Type, Category
Column group : Month Name
Measures : base price

Design view

	Meal type	Catogery	[MonthName]	Total
	[Meal_type]	[Catogery]	Sum(base_price	um(base_price
		Total	Sum(base_price	Sum(base_price
	Total		um(base_price	um(base_price

Preview

Meal type	Catogery	April	August	February	January	July	June	March	May	Total
Continental	Total	1397969.51098633	41329.8300170898	1304610.01171875	1484092.95254517	1059034.64761353	1417569.70977783	1473709.04452515	1456281.35992432	9634597.06710815
Indian	Total	1256431.30220032	42105.3597106934	1167162.70455933	1429959.66410828	868490.916435242	1202596.68621826	1304629.35627747	1304441.28451538	8575817.27402496
Italian	Total	873905.988456726	37106.2802429199	756101.666870117	891430.903305054	798070.931411743	1053620.5118103	866797.737869263	1022015.65223694	6299049.67220306
Thai	Total	761080.370101929	24580.159576416	700484.000144958	803430.068702698	559115.320304871	761329.866928101	781651.820045471	786020.889457703	5177692.49526215
Total		4289387.1717453	145121.629547119	3928358.38329315	4608913.58866119	3284711.81576538	4435116.7747345	4426787.95871735	4568759.18613434	29687156.5085983

Final report view

alwis-pc/ReportServer - /

matrix_IT19960814 - SQL Server

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Meal type	Catogery	April	August	February	January	July	June	March	May	Total
Continental	Total	1397969.51098633	41329.8300170898	1304610.01171875	1484092.95254517	1059034.64761353	1417569.70977783	1473709.04452515	1456281.35992432	9634597.06710815
Indian	Beverages	234,257.15	10,177.50	201,467.12	269,317.92	173,800.57	254,442.59	247,563.94	241,096.16	1632122.93097687
	Biryani	279,612.13	7,961.33	291,452.59	349,505.24	197,035.69	249,127.37	307,950.90	295,041.67	1977686.92999268
	Desert	407,821.70	13,202.60	362,676.44	443,148.18	256,594.62	366,255.45	411,866.97	425,727.75	2687293.70605469
	Rice Bowl	334,740.33	10,763.93	311,566.56	367,988.33	241,060.04	332,771.28	337,247.55	342,575.71	2278713.70700073
	Total	1256431.30220032	42105.3597106934	1167162.70455933	1429959.66410828	868490.916435242	1202596.68621826	1304629.35627747	1304441.28451538	8575817.27402496
Italian	Total	873905.988456726	37106.2802429199	756101.666870117	891430.903305054	798070.931411743	1053620.5118103	866797.737869263	1022015.65223694	6299049.67220306
Thai	Total	761080.370101929	24580.159576416	700484.000144958	803430.068702698	559115.320304871	761329.866928101	781651.820045471	786020.889457703	5177692.49526215
Total		4289387.1717453	145121.629547119	3928358.38329315	4608913.58866119	3284711.81576538	4435116.7747345	4426787.95871735	4568759.18613434	29687156.5085983

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Report 2 : Report with more than one parameter

A) Define the data set (use a data set embedded in my report -> New -> declare the DW) B)

In Query Designer write a query to get all the customer states

C) Declare a parameter and set “available values” to “Get values from a query” and set previous declared data set into it.

D) Define another data set to get customer city according to state(pass the state parameter value into where clause)

E) After declaring a new parameter and set correct data set(2nd data set)

F) After that as the first report follow the steps and set the column values , Row values and measures.

G) Row group : State , City

Column group : Month Name

Measures : Base price

Design view

Customer Sta	City	[MonthName]	Total
[CustomerState]	[City]	[Sum(base_pric	[Sum(base_pri
	Total	[Sum(base_pric	[Sum(base_pric
Total		[Sum(base_pri	[Sum(base_pri

Preview

Customer State	City	April	August	February	January	July	June	March	May	Total
Ile-de-France	Asnières-sur-Seine	1826.71997833	151.380004882	2023.59997558	3597.17999267	2076.94998168	2434.85000610	2903.44998168	3440.91996765	18455.04988
	Aubervilliers	8332.86991882	324	5465.31002044	6945.77005004	5433.41999816	6720.54997253	4368.23999023	5465.27997589	42731.43992
	Levallois-Perret	3048.91998291	016	2147.82000732	1802.50000762	804.219985961	2551.22000122	2822.91003417	2292.44001770	15470.03003
	Nanterre	2709.54000854	492	2286.52998352	2653.33996582	2540.66998291	2580.40997314	1639.42001342	4085.11999511	18495.02992
	Rueil-Malmaison	2935.42997741	699	3049.85993957	3139.21994018	483.119995117	2552.39997863	3072.23001861	2976.13995361	18208.39980
	Total	18853.4798660	278	14973.1199264	18138.0099563	11338.3799438	16839.4299316	14806.2500381	18259.8999099	113359.949577
A	Alajuela	12307.3800354	004	840.079986572	14992.7899246	17913.5198974	9496.16996002	13699.7799835	18162.8999710	105414.4396
	Quesada	4859.09004211	426	4171.47997283	4807.73997497	4771.90991210	2391.37998962	5181.15993499	4503.06995391	31414.35980
	San Rafael	4518.68003082	275	3976.35998535	4758.32999420	2717.24000549	4596.15995788	4294.60997772	7276.59992980	32137.97988
	Total	21685.1501083	374	1568.61001586	23140.6298828	27479.5898666	16985.3198776	20687.3199310	29781.4897689	168966.779335
Île-de-France	Total	11747.8099822	292	292.09998779	9824.05994415	14189.2999267	9810.59991455	12496.7699432	13333.0299606	12738.9399719
	Total	998	297	283	507	078	373	323	238	84432.5396423
AB	Bonnyville	2772.53001403	809	3321.60997009	2581.44001007	2399.05000305	1546.29996490	2104.20002746	2870.34999084	17595.47998
	Boo	4984.48997497	559	3556.16998291	7799.43001556	5736.21004486	5625.56999969	3876.36001586	4528.28997039	36106.52000
	Breton	2830.69998931	154	259994506	1605.43998718	4685.36996459	1158.26998901	4195.67002105	2517.32998657	5281.91998291
	Total	885	836	262	961	367	713	227	016	22428.95991

Final report view

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Customer State	City	April	August	February	January	July	June	March	May	Total
Wie	Total	114801.969146	4918.32003784	108256.909584	108346.349449	86152.0398483	105672.309455	115091.940055	110507.149505	753746.987083
		729	18	045	158	276	872	847	615	435
Total		114801.96914	4918.3200378	108256.90958	108346.34944	86152.039848	105672.30945	115091.94005	110507.14950	753746.98708
		6729	418	4045	9158	3276	5872	5847	5615	3435

Final report view

Home > IT19960814 > para_IT19960814										
<div><div>1 of 2 ?</div><div>100%</div><div>Find Next</div></div>										
Customer State	City	April	August	February	January	July	June	March	May	Total
Wie-de-France	Total	18853.4798660	151.380004802	14973.1199264	18138.0099563	11338.3799438	16839.4299316	14806.2500381	18259.8999099	113359.949577
		278	813	526	599	477	406	47	731	332
A	Alajuela	12307.3800354	840.079986572	14992.7899246	17913.5198974	9496.16996002	13699.7799835	18162.8999710	18001.8198852	105414.43964
		004	266	216	609	197	205	083	539	386
	Quesada	4859.09004211	728.530029296	4171.47997283	4807.73997497	4771.90991210	2391.37998962	5181.15993499	4503.06995391	31414.359809
		426	875	936	559	938	402	756	846	8755
	San Rafael	4518.68003082		3976.35998535	4758.32999420	2717.24000549	4596.15995788	4294.60997772	7276.59992980	32137.979881
		275		156	166	316	574	217	957	2866
	Total	21685.1501083	1568.61001586	23140.6298828	27479.5898666	16985.3198776	20687.3199310	27638.6698837	29781.4897689	168966.779335
		374	914	125	382	245	303	28	819	022
A-stergãdt lands lãtzn	Total	11747.8099822	292.029998779	9824.05994415	14189.2999267	9810.59991455	12496.7699432	13333.0299606	12738.9399719	84432.5396423
		998	297	283	578	078	373	323	238	34
B	Bonnyville	2772.53001403		3321.60997009	2581.44001007	2399.05000305	1546.29996490	2104.20002746	2870.34999084	17595.479980
		809		277	08	176	479	582	473	4688
	Boo	4984.48997497		3556.16998291	7799.43001556	5736.21004486	5625.56999969	3876.36001586	4528.28997039	36106.520004
		559		016	396	084	482	914	795	2725
	Breton	2830.69998931	154.259994506	1605.43998718	4685.36996459	1158.26998901	4195.67002105	2517.32998657	5281.91998291	22428.959915
		885	836	262	961	367	713	227	016	1611
	Lidingo	4247.98992919		7218.19004058	6131.81995391	6422.08999633	5260.05999755	5470.34002685	3617.48995208	38367.979896
		922		838	846	789	859	547	74	5454
	Mãtztst	5249	447.230010986	2175.97998046	3808.60992431	1947.91001892	3296.17997741	3866.72003936	3234.37001037	24025.999961
		328		875	641	09	699	768	598	853

Report 3 : SSRS Drill-down Report

A) As the earlier define the data set and follow the steps

B) In Column and Row groups set multiple categories into Row group C) Row group : State , CustomerFName , CustomerLName , CustomerAddress

Measures : week , base price

Design view

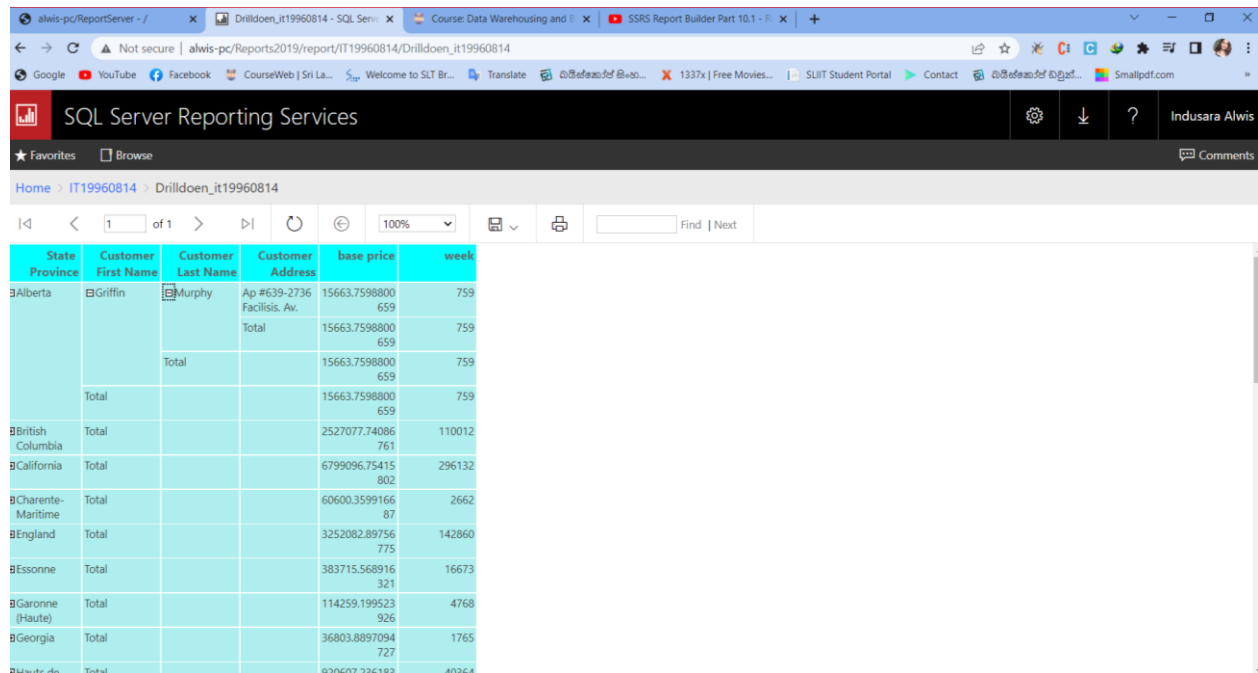
State Province	Customer First Name	Customer Last Name	Customer Address	base price	week
Alberta	Griffin	Murphy	Ap #639-2736 Facilis. Av.	15663.7598800 659	759
		Total		15663.7598800 659	759
				15663.7598800 659	759
	Total			15663.7598800 659	759
British Columbia	Total			2527077.74086 761	110012
California	Total			6799096.75415 802	296132
Charente-Maritime	Allegra	Burns	P.O. Box 790, 8986 Vel. Rd.	20507.4198989 868	862
		Total		20507.4198989 868	862
				20507.4198989 868	862
	Darrel	Total		17630.4900131 226	789
	Drew	Total		22462.4500045 776	1011
	Total			60600.3599166 87	2662
England	Total			3252082.89756 775	142860
Essonne	Total			383715.568916 321	16673
Garonne (Haute)	Total			114259.199523 926	4768

Preview

State Province	Customer First Name	Customer Last Name	Customer Address	base price	week
StateProvince	CustomerFirst	CustomerLast	CustomerAdd	Sum(base_pric	Sum(week)
		Total	Total	Sum(base_pric	Sum(week)
	Total			Sum(base_pric	Sum(week)
Total				Sum(base_pri	Sum(week)

[&ExecutionTime]

Final report view

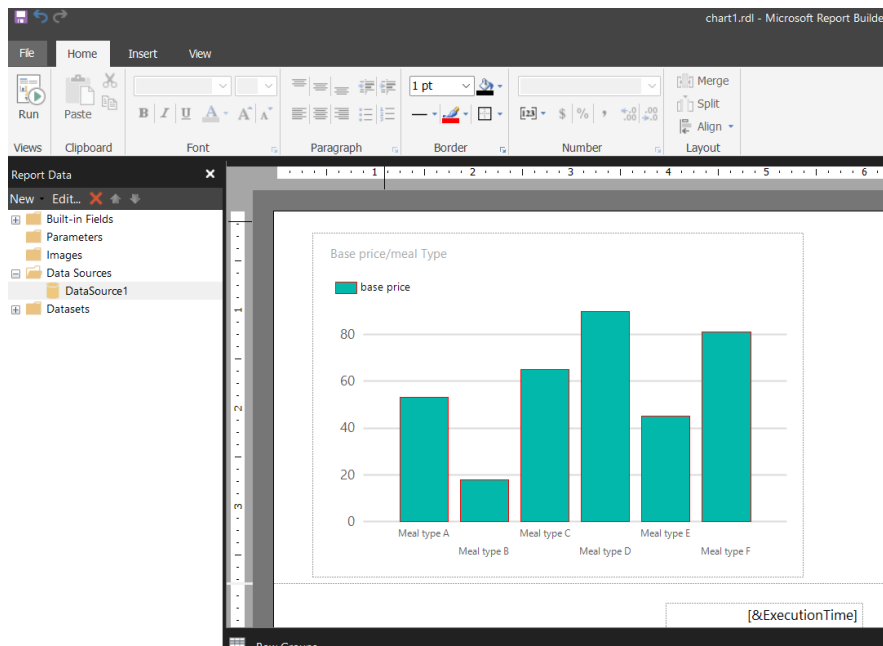


State Province	Customer First Name	Customer Last Name	Customer Address	base price	week
Alberta	Griffin	Murphy	Ap #639-2736 Facilis. Av.	15663.7598800659	759
			Total	15663.7598800659	759
			Total	15663.7598800659	759
			Total	15663.7598800659	759
British Columbia	Total			2527077.74086761	110012
California	Total			6799096.75415802	296132
Charente-Maritime	Total			60600.359916687	2662
England	Total			3252082.89756775	142860
Essonne	Total			383715.568916321	16673
Garonne (Haute)	Total			114259.199523926	4768
Georgia	Total			36803.8897094727	1765
Hauts-de	Total			920607.236183	40364

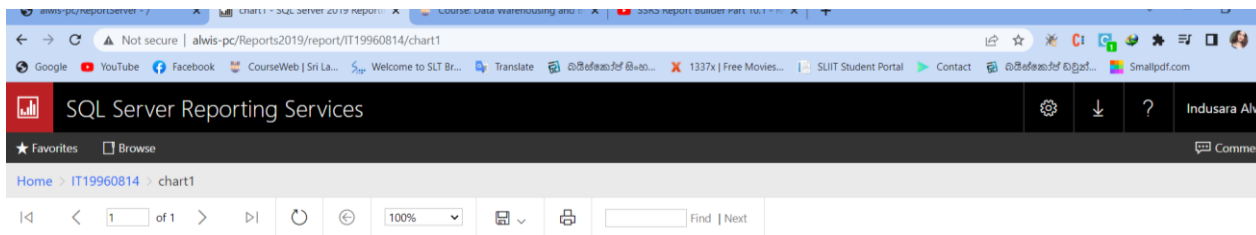
Report 4 : SSRS Drill-Through Report

- A) As before creating 2 reports with charts
- B) Categories : meal type ,Values : base price

Preview

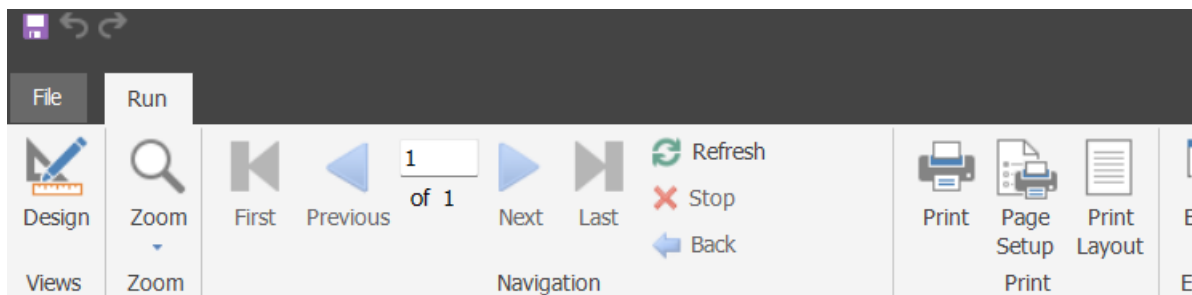


Final report view

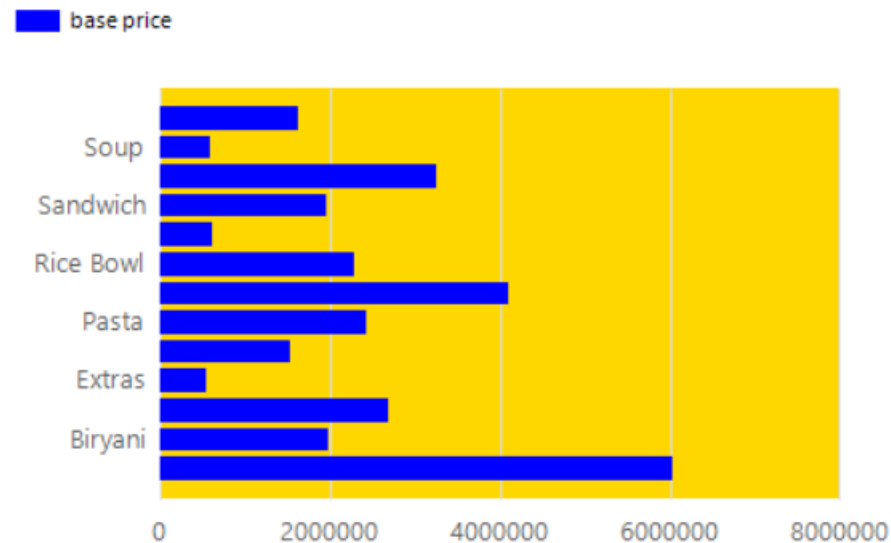


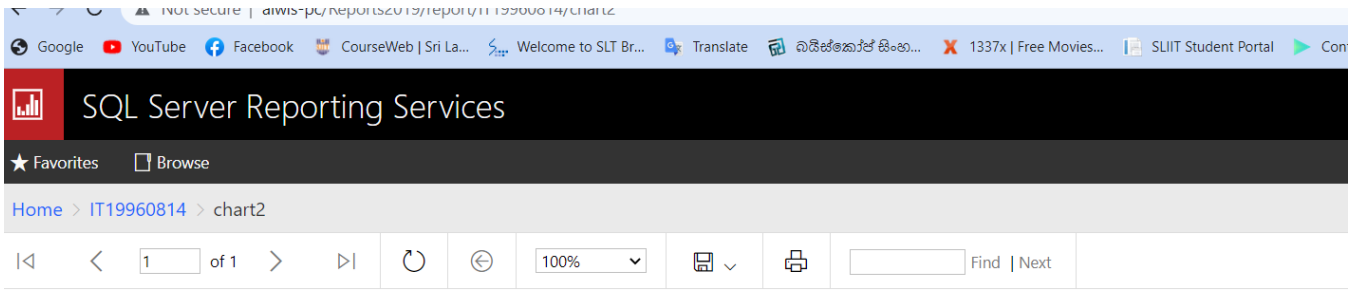
Categories : category, Values : base price

Preview

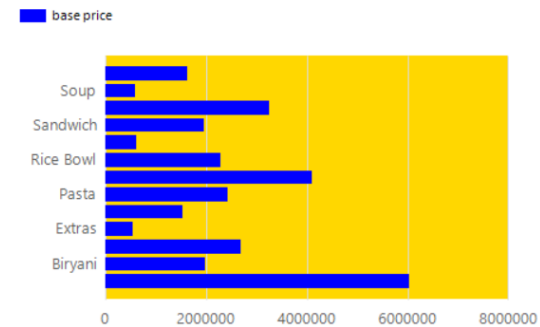


Catogery/Base price

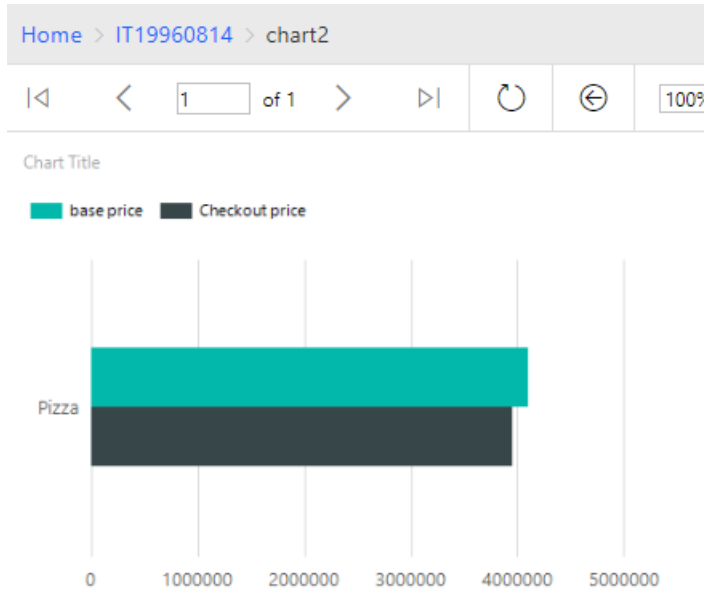




Category/Base price



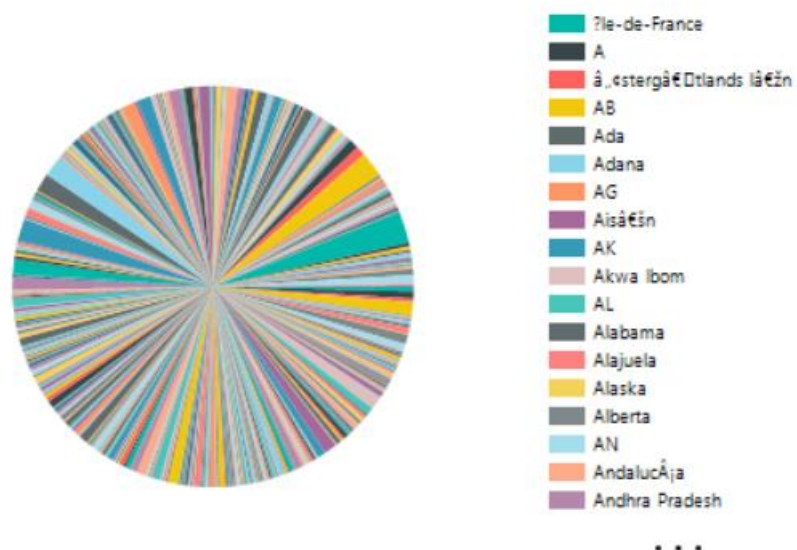
5/17/2022 9:48:42 PM



Preview

Categories : customer state, Values : checkout price

Customer state / checkout price



Final report view

