

$IT3021 \\ Data Warehousing and Business \\ Intelligence \\ 3^{rd} Year 1^{st} Semester$

Assignment 2

Student NO: IT19960814

Name: ALWIS. P. L. A.I

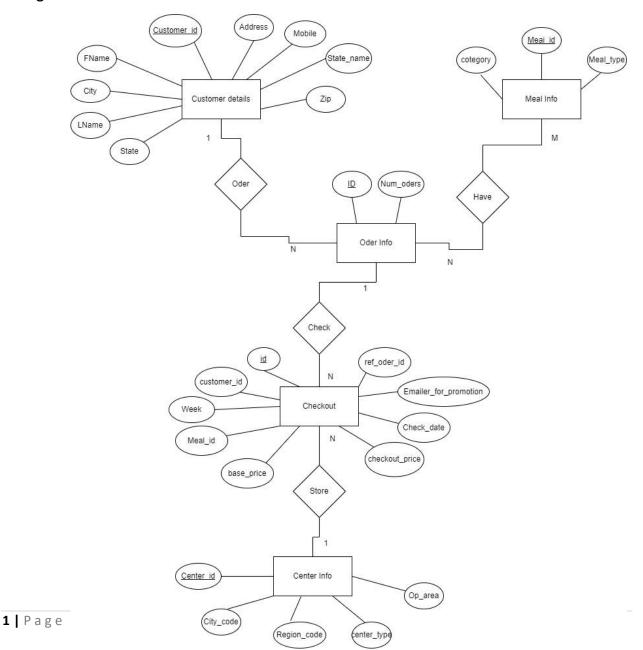
Submitted to:

Sri Lanka Institute of Information Technology

Content of the Dataset

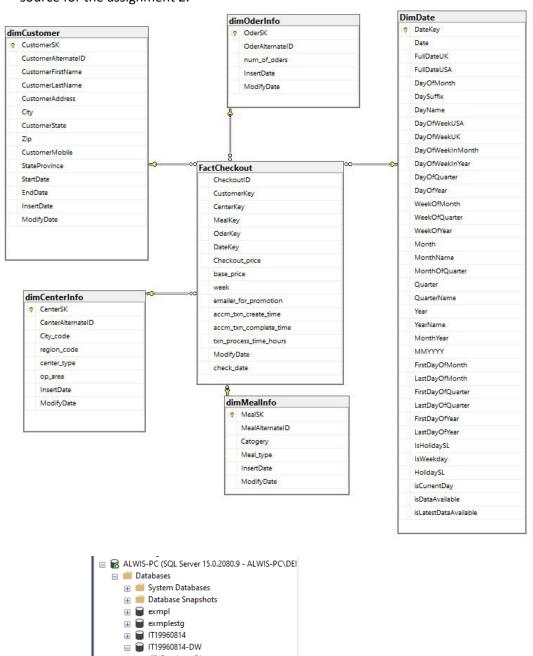
This dataset mainly focused on fulfillment centers in these cities for dispatching meal orders to their customers. The replenishment of majority of raw materials is done on weekly basis and since the raw material is perishable, the procurement planning is of utmost importance. Secondly, staffing of the 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.

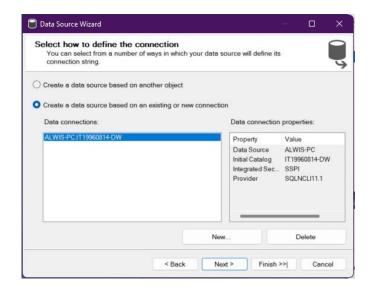
R Diagram of the Dataset

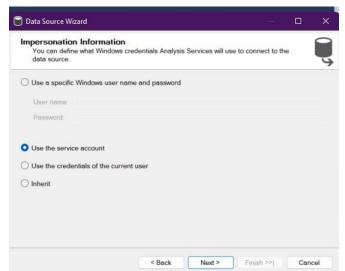


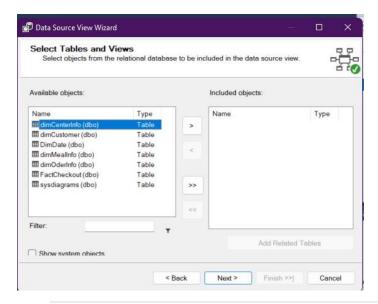
Step 1: Data source for the assignment 2

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







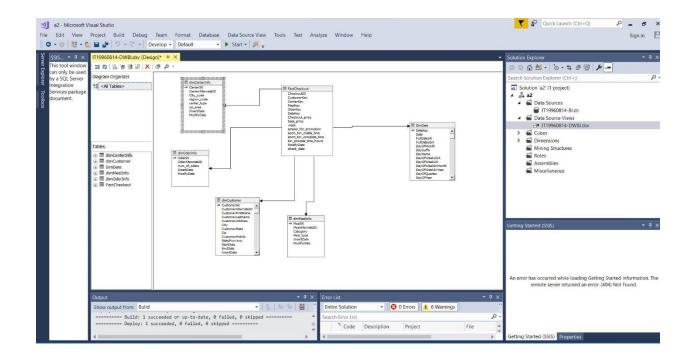


Create Data Source:

- 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

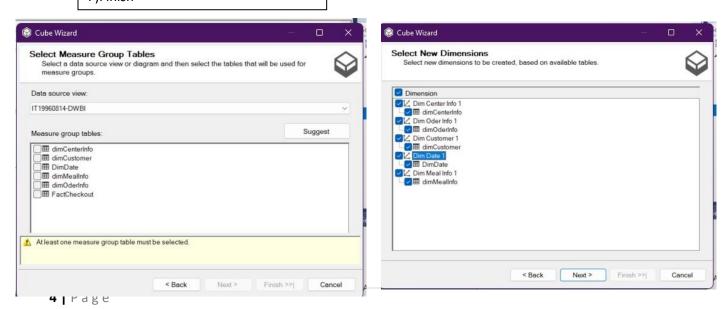
Create Data Source Views:

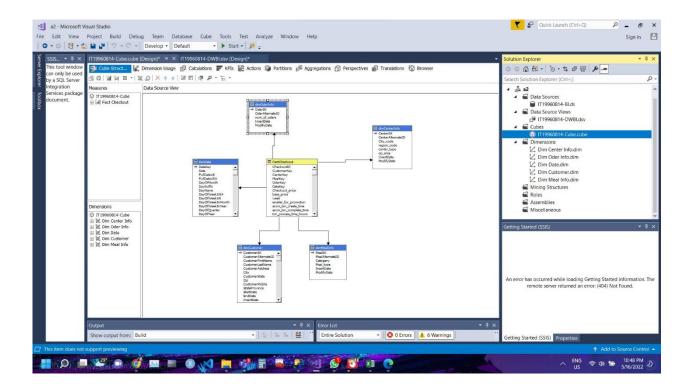
- A) Right click on the New Data Source View under SSAS Project
- B) Select All the Available dimension tables into Included Objects and click Finish



Step 2: SSAS Cube implementation

- A) Under SSAS project right click on the cube and New Cube
- B) Use Existing table -> Next
- C) Select the All Fact tables and Next
- D) Select all the transaction attributes and Next.
- E) Select all the dimension tables and Next.
- F)Finish

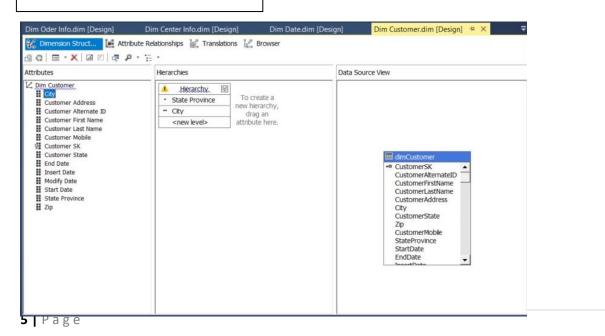


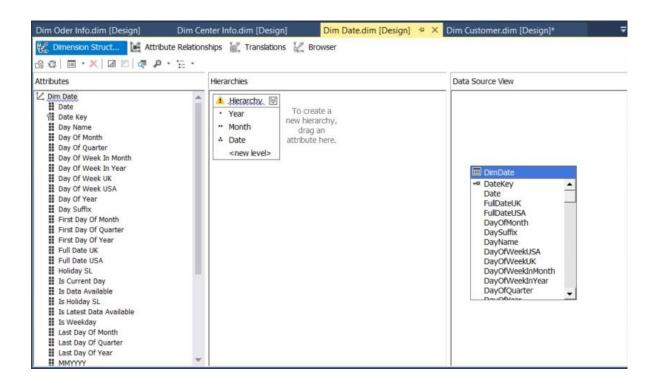


Create Hierarchies

Hierarchies are useful in visual reporting tools to show the parent/child relationship between attributes.

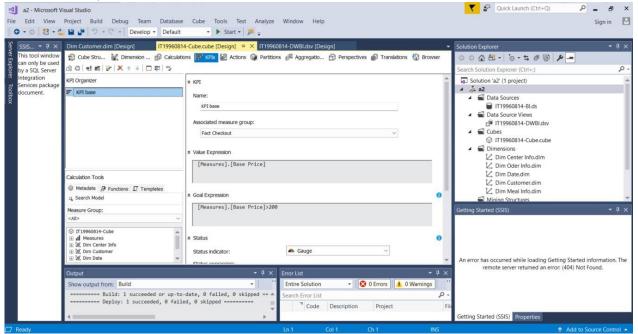
Created 2 hierarchies shown below



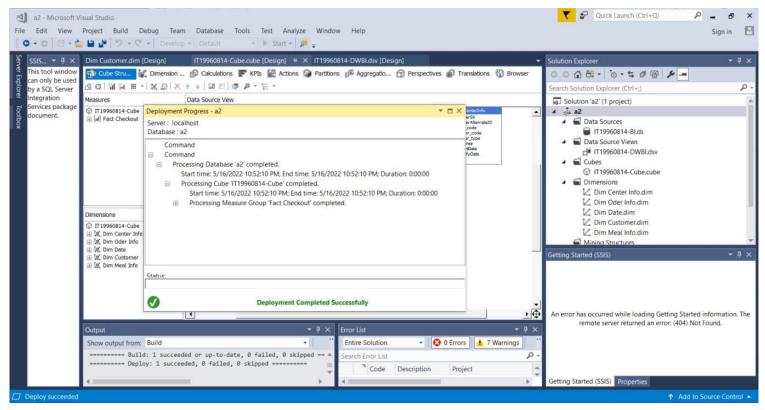


Creating KPI

KPI for Base price



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



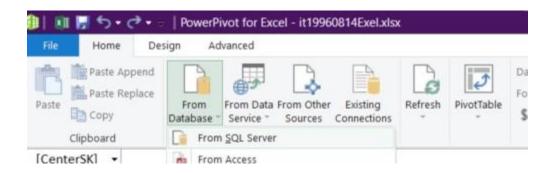
data cube

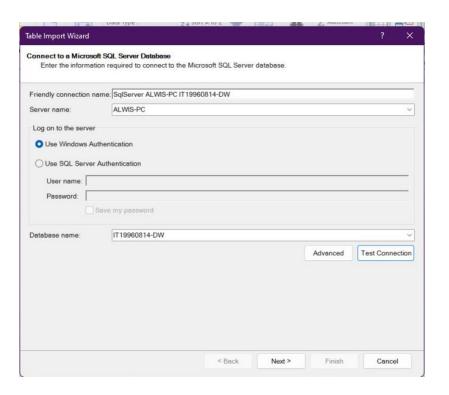


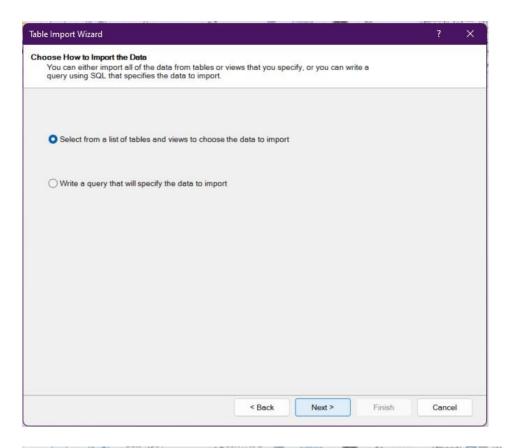
Step 3: Demonstration of OLAP operations

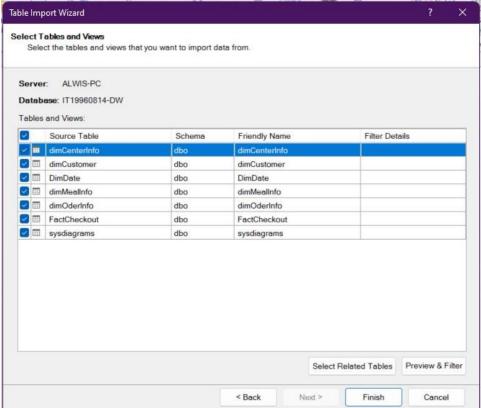
Connect an Excel workbook to the Cube. You may use connecting Excel workbook using features available in Data tab or POWERPIVOT mode

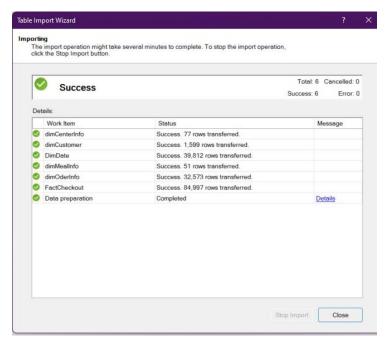
- A) Data tab and getData-> From Database -> From Analysis Services
- B) Set the credentials for database and select SSAS cube and finish

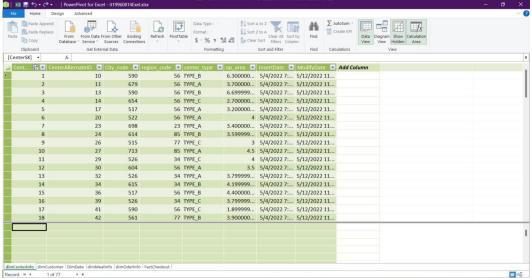




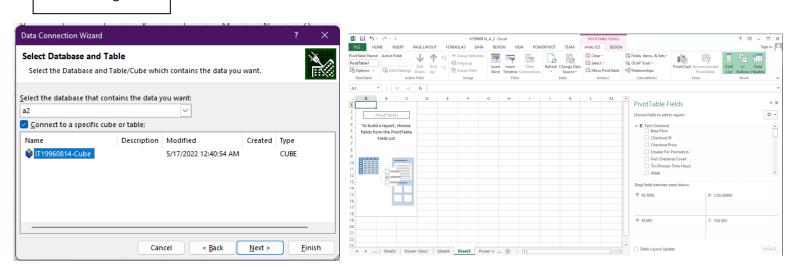








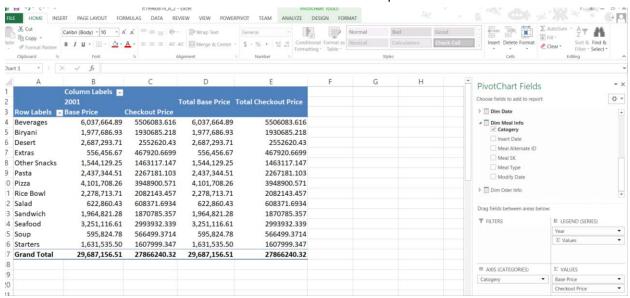
Extract using cube

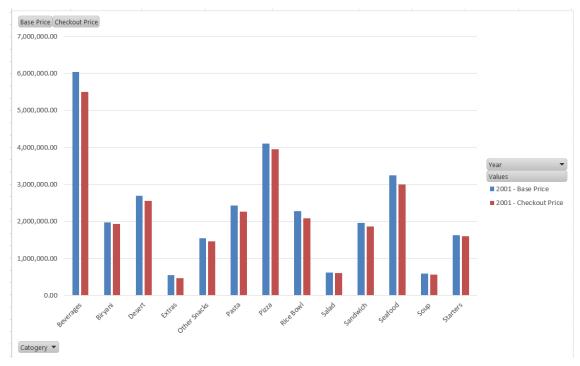


Excel report

Pivot

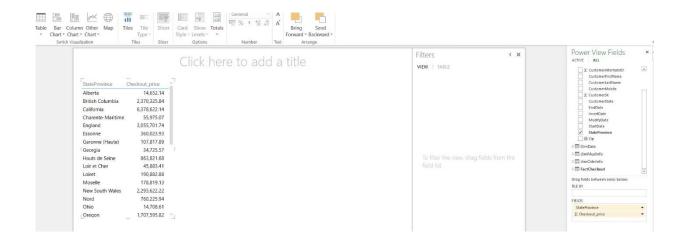
In the below pivot table, I have statically summarized the data. This summary includes base price, check out price, category, month year, which the pivot table groups together in a descriptive manner in Category. And using this pivot table we can visualize our data by giving them a different perspective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

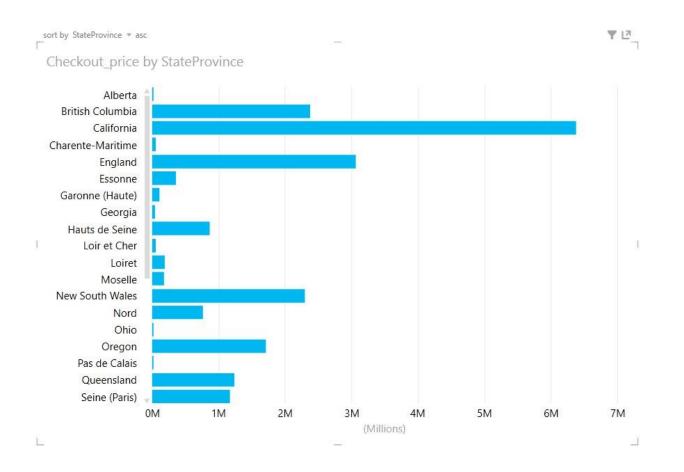




Slice

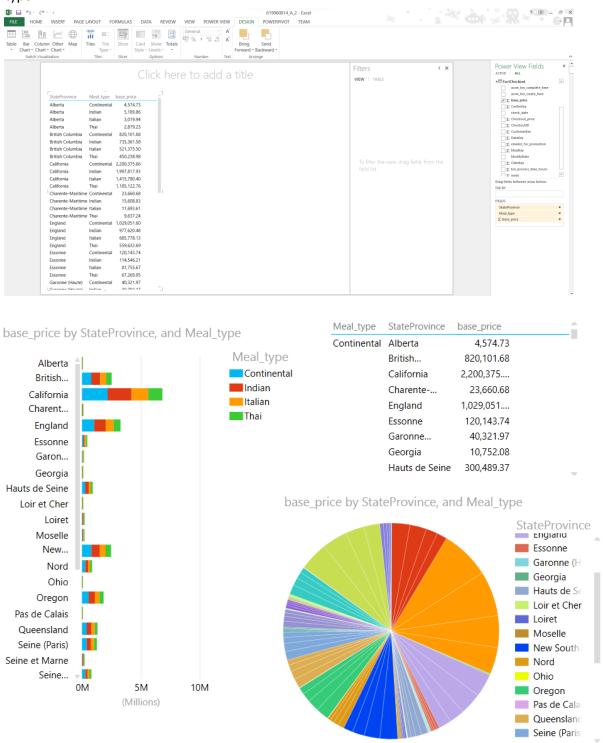
Rectangular subset of a cube, by choosing a single value for one of its dimensions. So here I have used a slicer to filter data in table and graph by State wise.



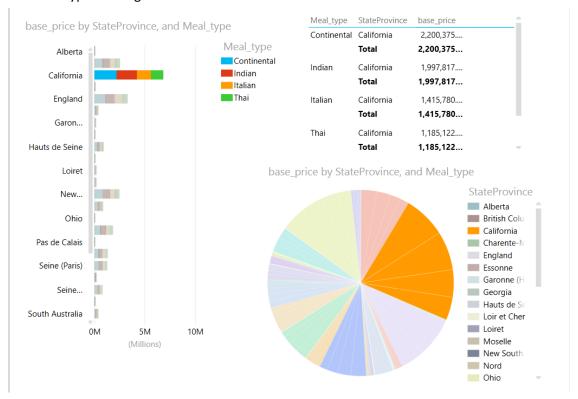


Dice

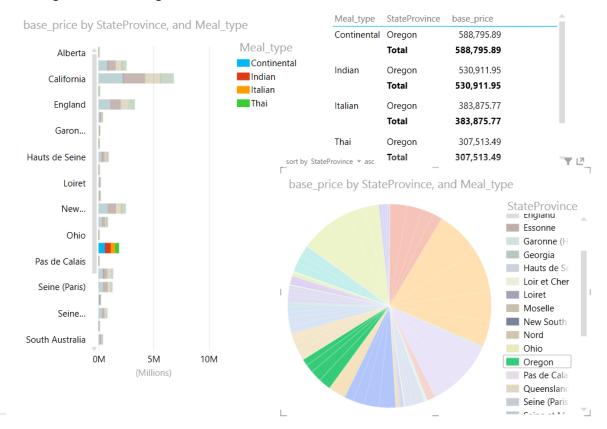
Selects two or more dimensions from a given cube and provides new sub-cube by selecting specific values on those selected dimensions. This report shows states specific values on those selected meal type.



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 California.



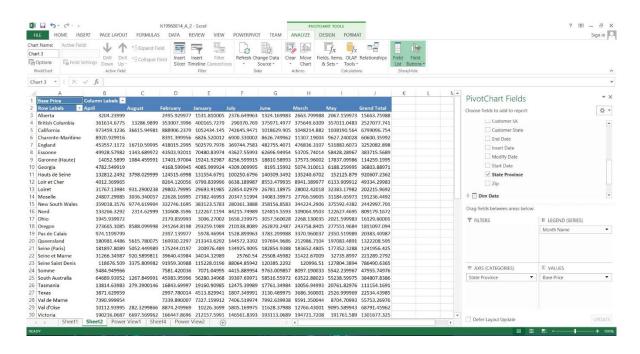
As an instance in below figure, pie chart's highlighted area emphasizes all values of 4 of base prices different types belongs to state of Oregon.

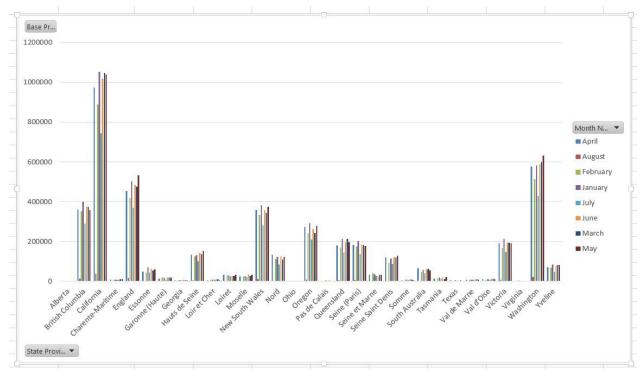


Roll-up and drill-down

Roll-Up

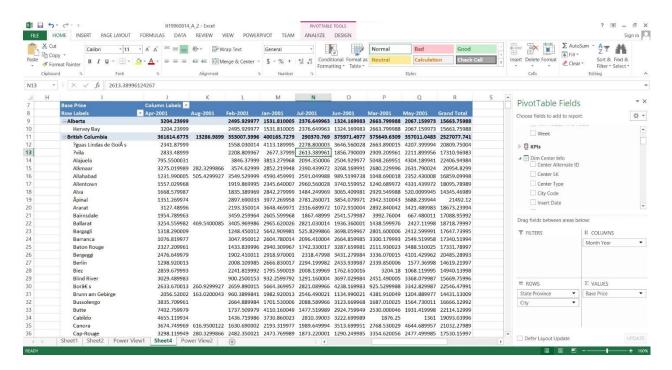
Climbing up a hierarchy of the dimension to aggregate data means the roll up OLAP operation in cubes

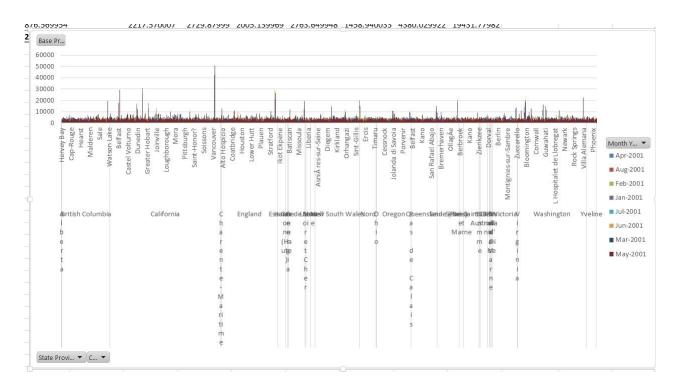




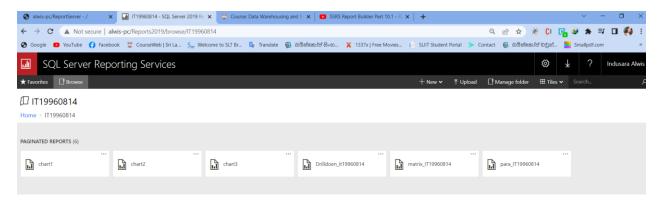
Drill Down

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.

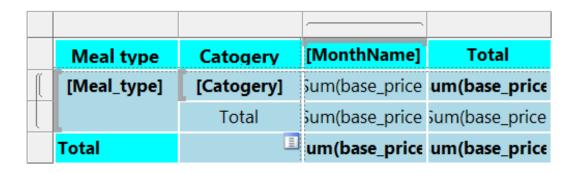
C) Insert -> Matrix -> Matrix wizard and declare the row groups and column groups and measures.

D) Row group: Meal Type, Category

Column group: Month Name

Measures: base price

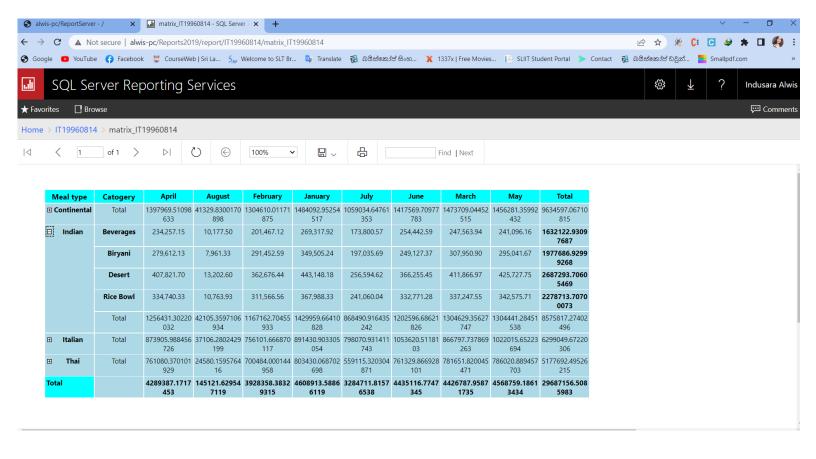
Design view



Preview

	Meal type	Catogery	April	August	February	January	July	June	March	May	Total
	□ Continenta	Total	1397969.51098	41329.8300170	1304610.01171	1484092.95254	1059034.64761	1417569.70977	1473709.04452	1456281.35992	9634597.06710
	1		633	898	875	517	353	783	515	432	815
[Indian	Total	1256431.30220	42105.3597106	1167162.70455	1429959.66410	868490.916435	1202596.68621	1304629.35627	1304441.28451	8575817.27402
			032	934	933	828	242	826	747	538	496
[1 Italian	Total	873905.988456	37106.2802429	756101.666870	891430.903305	798070.931411	1053620.51181	866797.737869	1022015.65223	6299049.67220
			726	199	117	054	743	03	263	694	306
	1 Thai	Total	761080.370101	24580.1595764	700484.000144	803430.068702	559115.320304	761329.866928	781651.820045	786020.889457	5177692.49526
			929	16	958	698	871	101	471	703	215
Т	otal		4289387.171	145121.6295	3928358.383	4608913.588	3284711.815	4435116.774	4426787.958	4568759.186	29687156.50
			7453	47119	29315	66119	76538	7345	71735	13434	85983

Final report view



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.

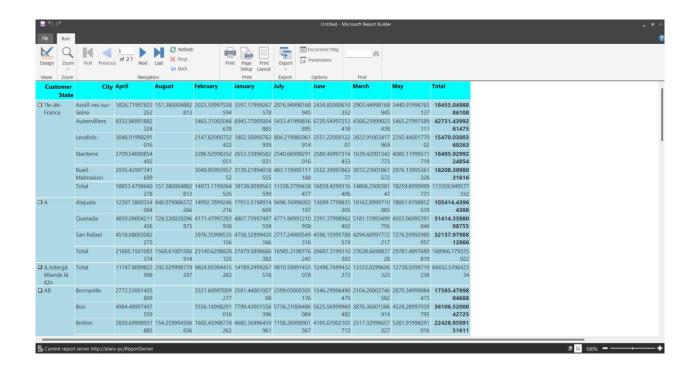
G) Row group : State , City Column group : Month Name

Measures : Base price

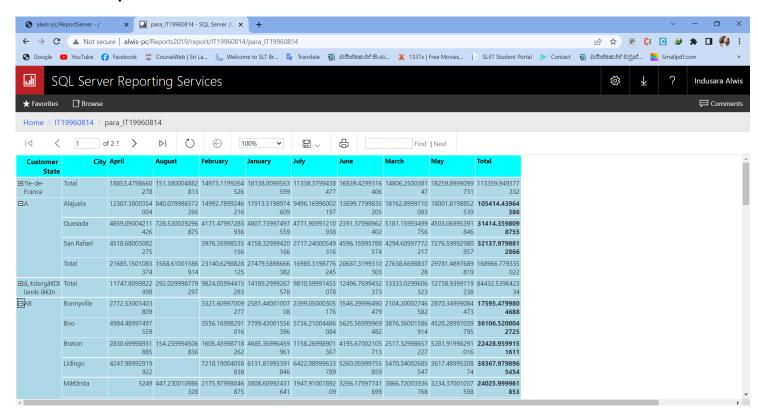
Design view

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



Final report view



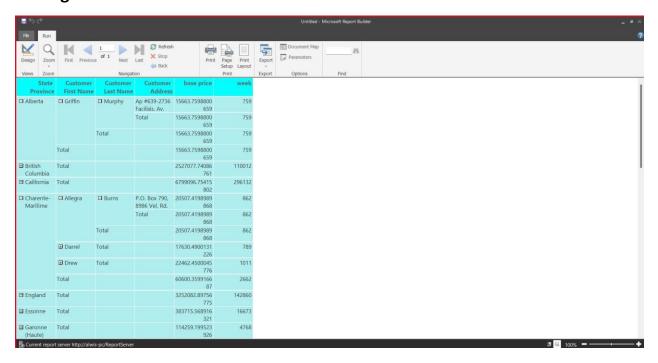
Report 3: SSRS Drill-down Report

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

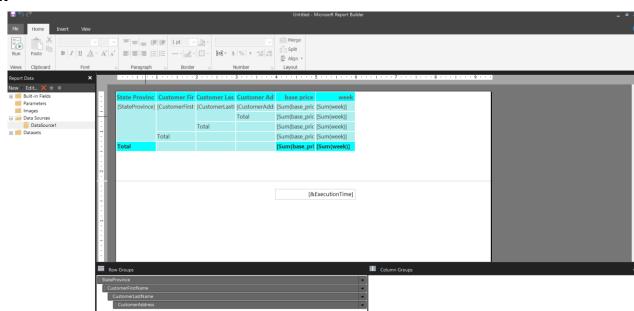
B) In Column and Row groups set multiple categories into Row group C) Row group : State , CustomerFName , CustomerAddress

Measures: week, base price

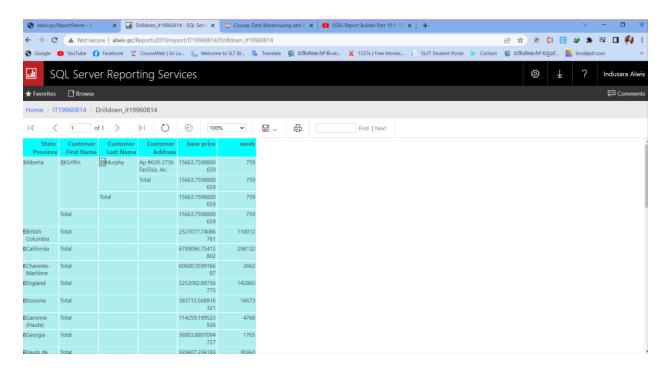
Design view



Preview



Final report view

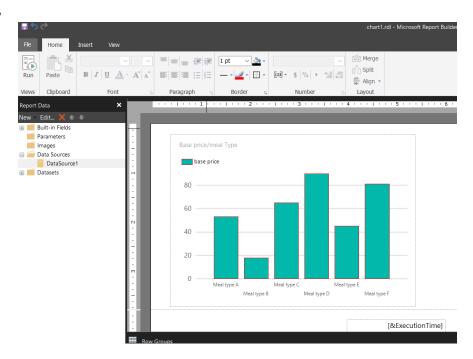


Report 4: SSRS Drill-Through Report

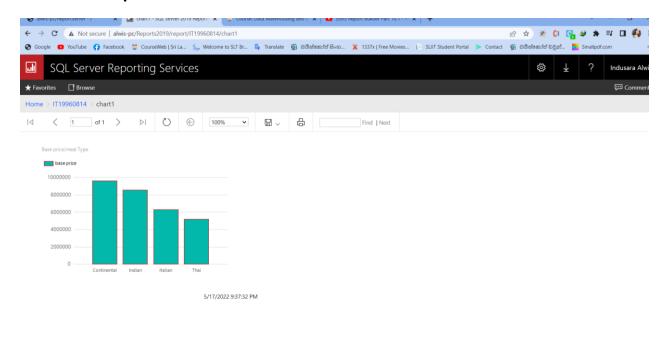
A) As before creating 2 reports with charts

B) Categories: meal type, Values: base price

Preview



Final report view



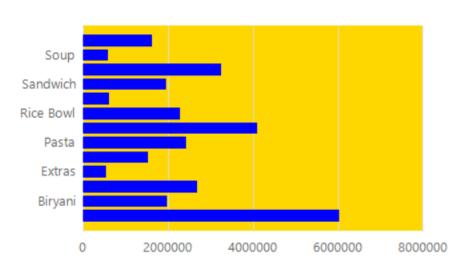
Categories: category, Values: base price

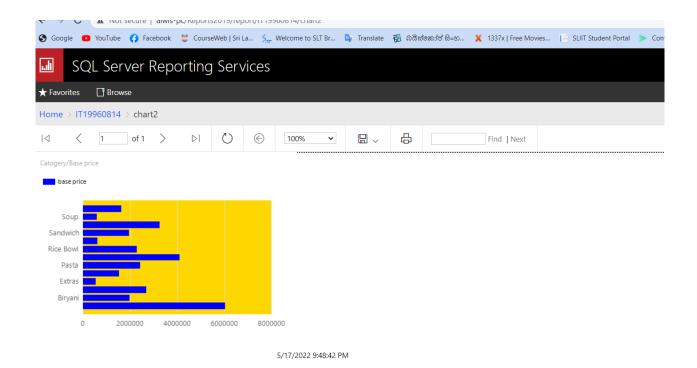
Preview



Catogery/Base price

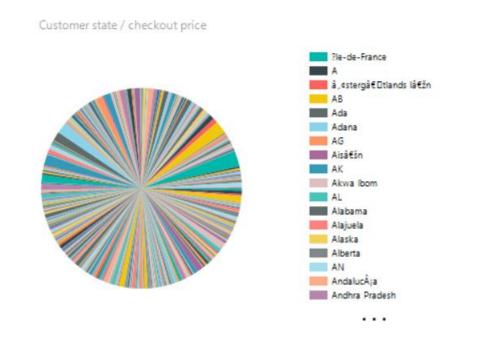
base price





Preview

Categories: customer state, Values: checkout price



Final report view

