Data Warehouses – Lab. 09

Wroclaw University of Science and Technology, Date: 18 May 2022

Student:	----------	Grade
Identifier	245784	
First name	Rahul	
Last name	Vijayvargiya	

This laboratory assignment consists of 1 task. If you cannot solve the task, try to give at least a partial solution or justification for the reason for the lack of a solution.

Task 1

Data source: AdventureWorksDW2019 (2017)

1. Develop a multidimensional analytical model for traditional and internet sales analysis, using the available data source:

1.1. Present the analytical model in the form of a copy of the screen, justifying the selection of measures and dimensions.

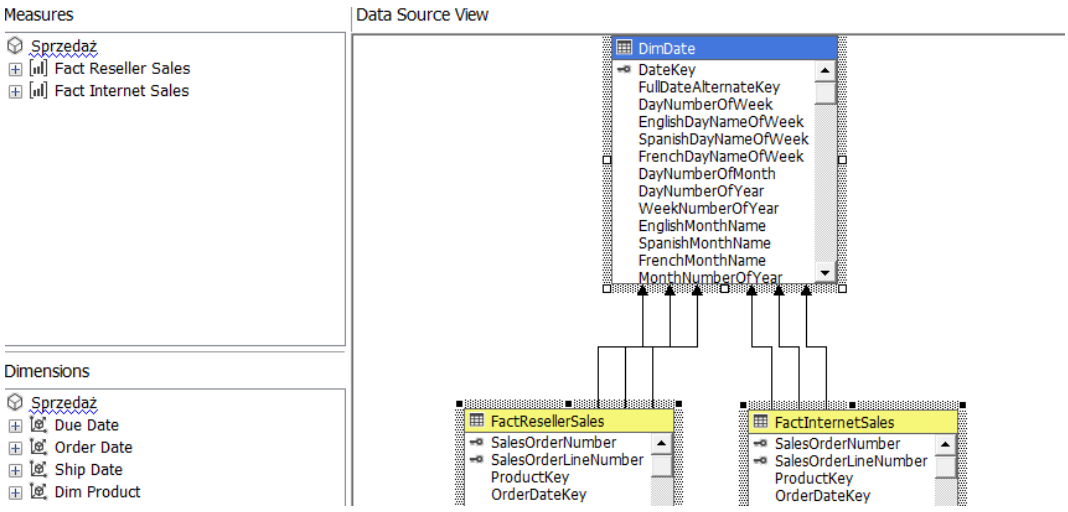
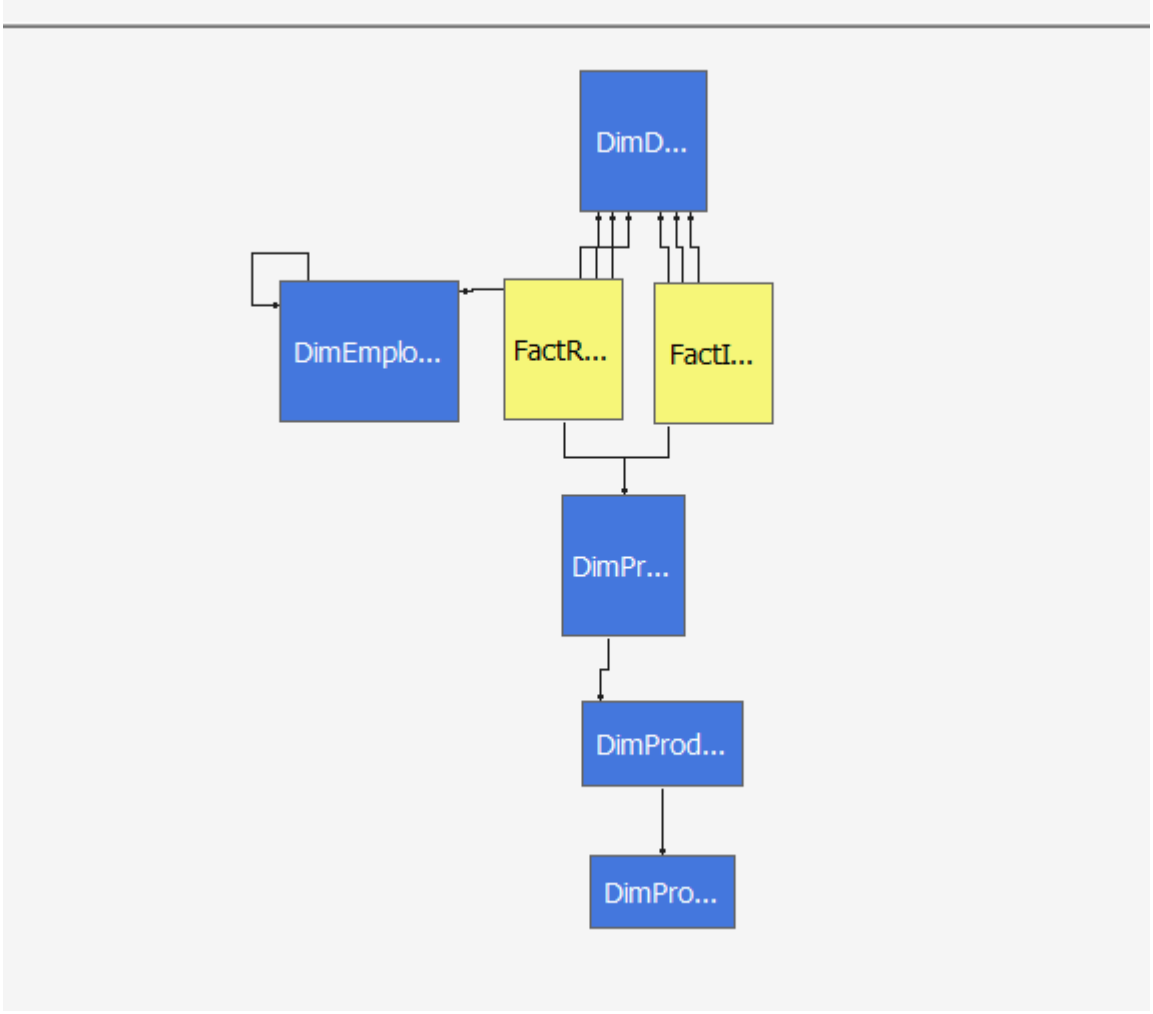
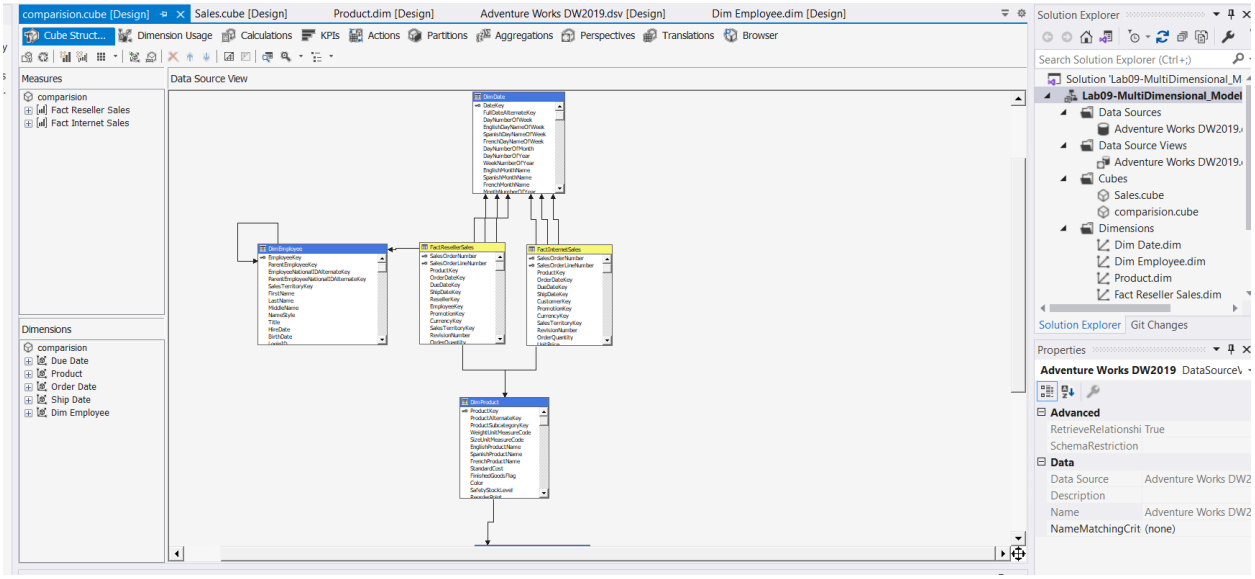


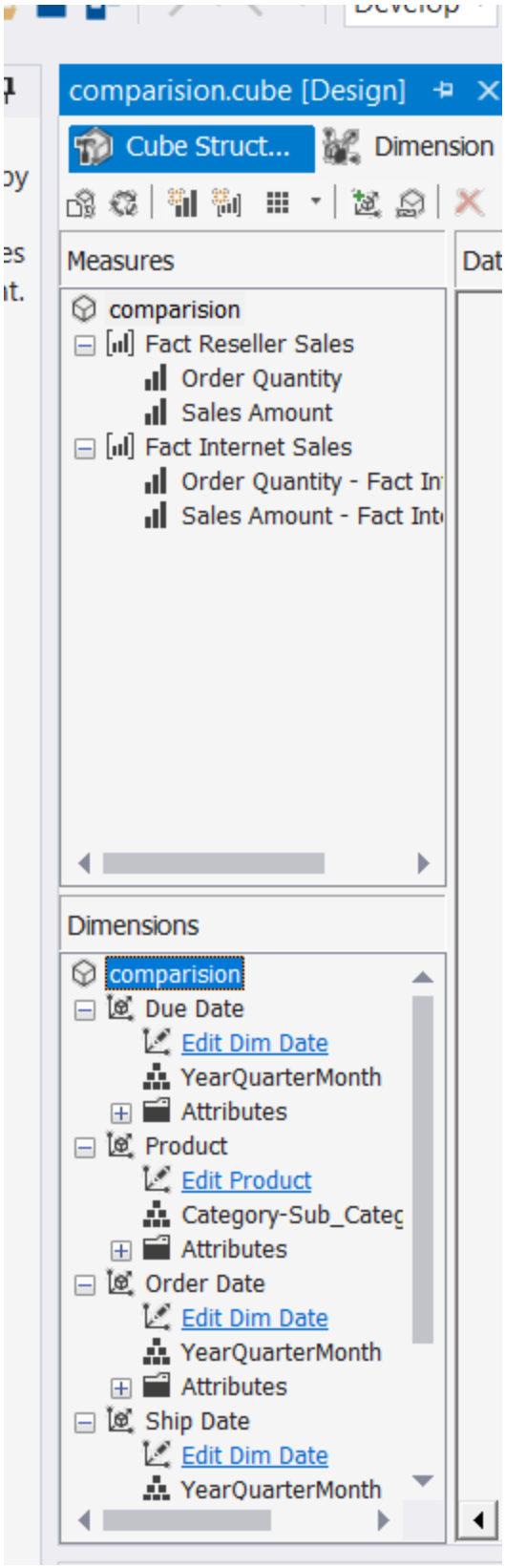
Figure 1. A fragment of the multidimensional model prepared for comparative online and traditional sales analysis

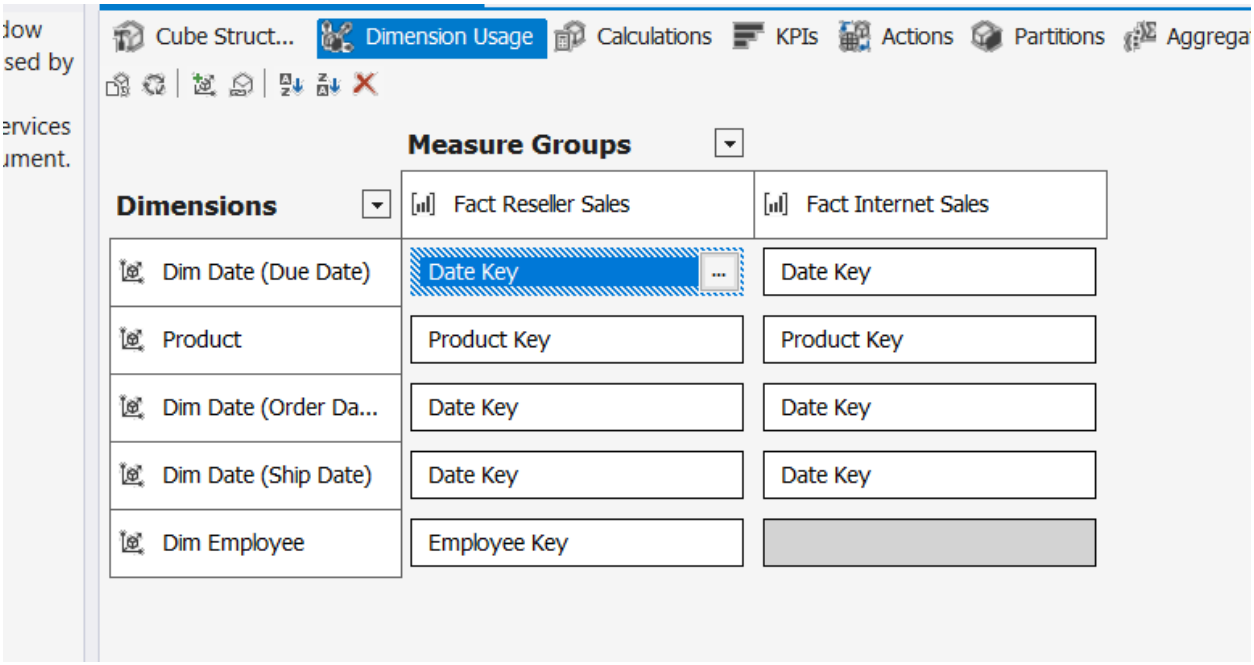
Multi-Dimensional Cube Structure

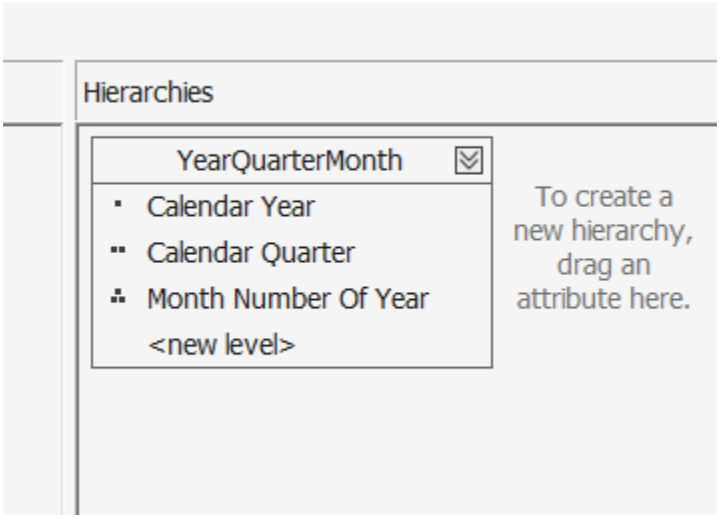

DimD...
DimEmplo...
FactR...
FactI...
DimPr...
DimProd...
DimPro...

Solution:


comparision.cube [Design]
Sales.cube [Design]
Product.dim [Design]
Adventure Works DW2019.dsv [Design]
Dim Employee.dim [Design]
Cube Struct...
Dimension Usage
Calculations
KPIs
Actions
Partitions
Aggregations
Perspectives
Translations
Browser
Measures
comparision
Fact Reseller Sales
Fact Internet Sales
Data Source View
Dimensions
comparision
Due Date
Product
Order Date
Ship Date
Dim Employee
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Lab09-MultiDimensional_M
Lab09-MultiDimensional_Model
Data Sources
Adventure Works DW2019
Data Source Views
Adventure Works DW2019
Cubes
Sales.cube
comparision.cube
Dimensions
Dim Date.dim
Dim Employee.dim
Product.dim
Fact Reseller Sales.dim
Solution Explorer
Git Changes
Properties
Adventure Works DW2019 DataSourceV
Advanced
RetrieveRelationshi True
SchemaRestriction
Data
Data Source
Description
Name
NameMatchingCrit (none)


comparision.cube [Design]
Cube Struct...
Dimension
Measures
comparision
Fact Reseller Sales
Order Quantity
Sales Amount
Fact Internet Sales
Order Quantity - Fact In
Sales Amount - Fact Int
Dimensions
comparision
Due Date
Edit Dim Date
YearQuarterMonth
Attributes
Product
Edit Product
Category-Sub_Categ
Attributes
Order Date
Edit Dim Date
YearQuarterMonth
Attributes
Ship Date
Edit Dim Date
YearQuarterMonth


Cube Struct...
Dimension Usage
Calculations
KPIs
Actions
Partitions
Measure Groups
Dimensions
Fact Reseller Sales
Fact Internet Sales
Dim Date (Due Date)
Date Key
Date Key
Product
Product Key
Product Key
Dim Date (Order Da...
Date Key
Date Key
Dim Date (Ship Date)
Date Key
Date Key
Dim Employee
Employee Key


Hierarchies
YearQuarterMonth
Calendar Year
Calendar Quarter
Month Number Of Year
<new level>
To create a new hierarchy, drag an attribute here.

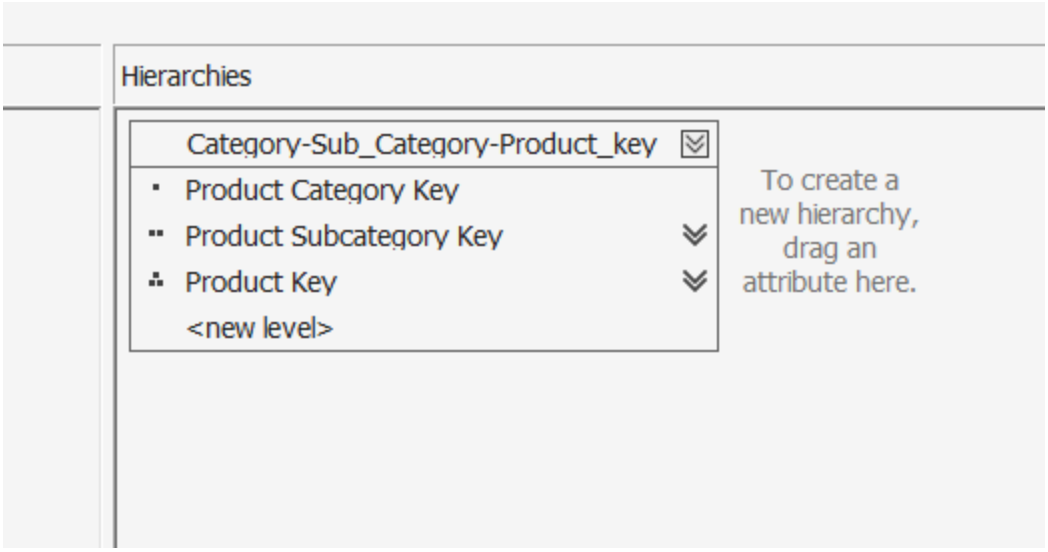


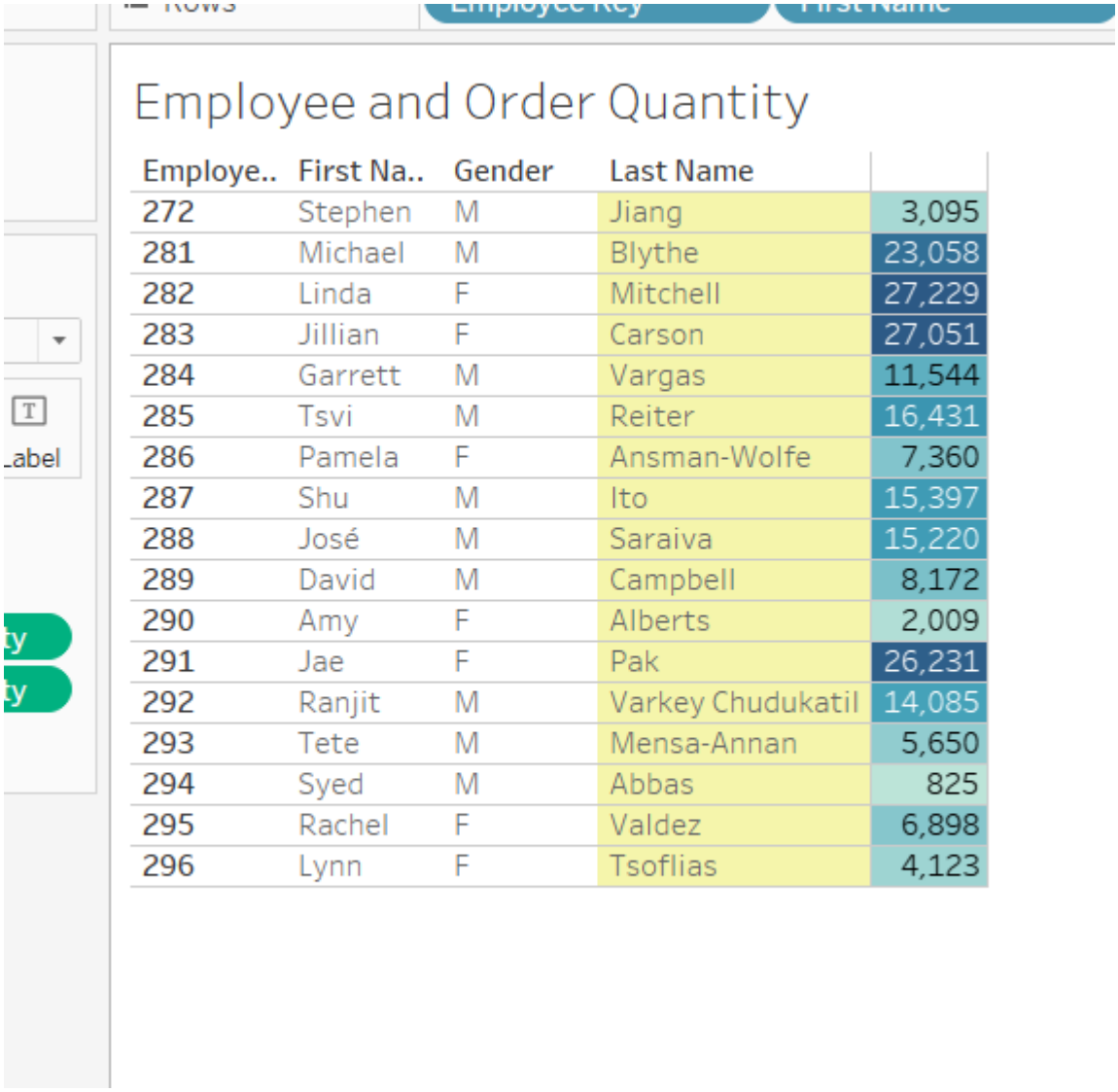
Figure 2 Multidimensional model of comparative online and traditional sales analysis

1.2. Propose sample data analyzes (examples of reports in graphic form using Excel or Tableau) along with applications resulting from data analysis.

Solution:

Picture 1:

Employee First Name and Last Name, Gender and Sales AM



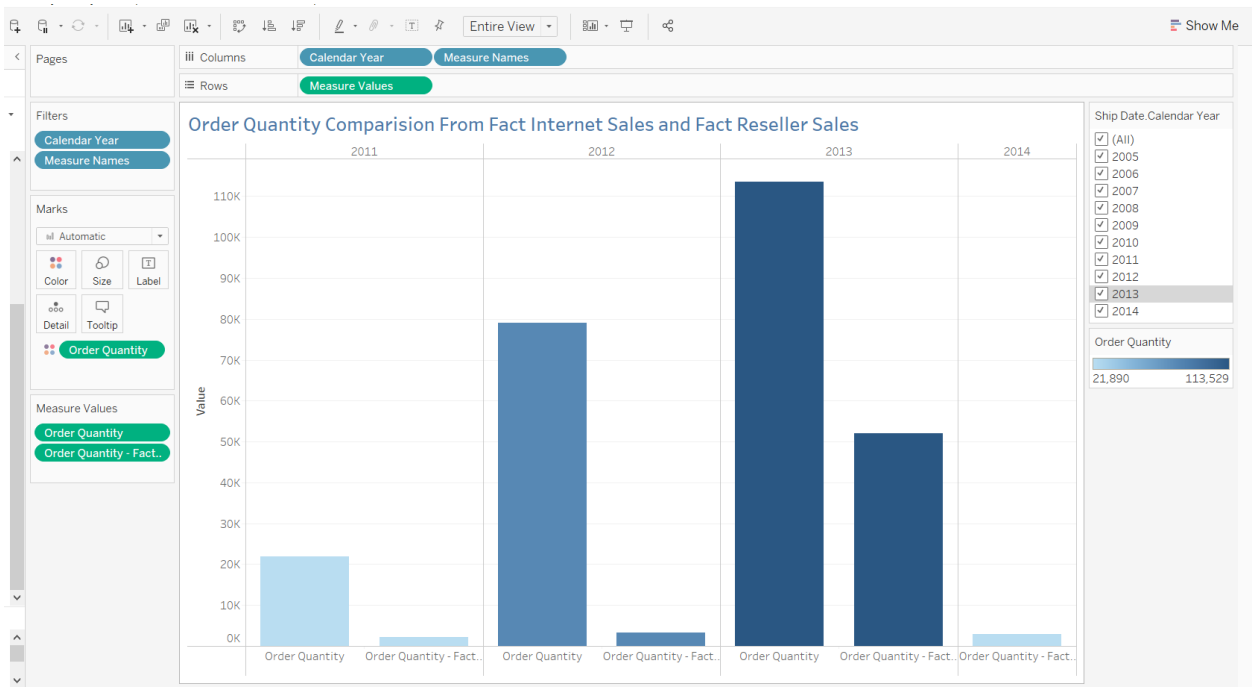
Employee and Order Quantity

Employe..	First Na..	Gender	Last Name	
272	Stephen	M	Jiang	3,095
281	Michael	M	Blythe	23,058
282	Linda	F	Mitchell	27,229
283	Jillian	F	Carson	27,051
284	Garrett	M	Vargas	11,544
285	Tsvi	M	Reiter	16,431
286	Pamela	F	Ansman-Wolfe	7,360
287	Shu	M	Ito	15,397
288	José	M	Saraiva	15,220
289	David	M	Campbell	8,172
290	Amy	F	Alberts	2,009
291	Jae	F	Pak	26,231
292	Ranjit	M	Varkey Chudukatil	14,085
293	Tete	M	Mensa-Annan	5,650
294	Syed	M	Abbas	825
295	Rachel	F	Valdez	6,898
296	Lynn	F	Tsoflias	4,123

Picture 2:

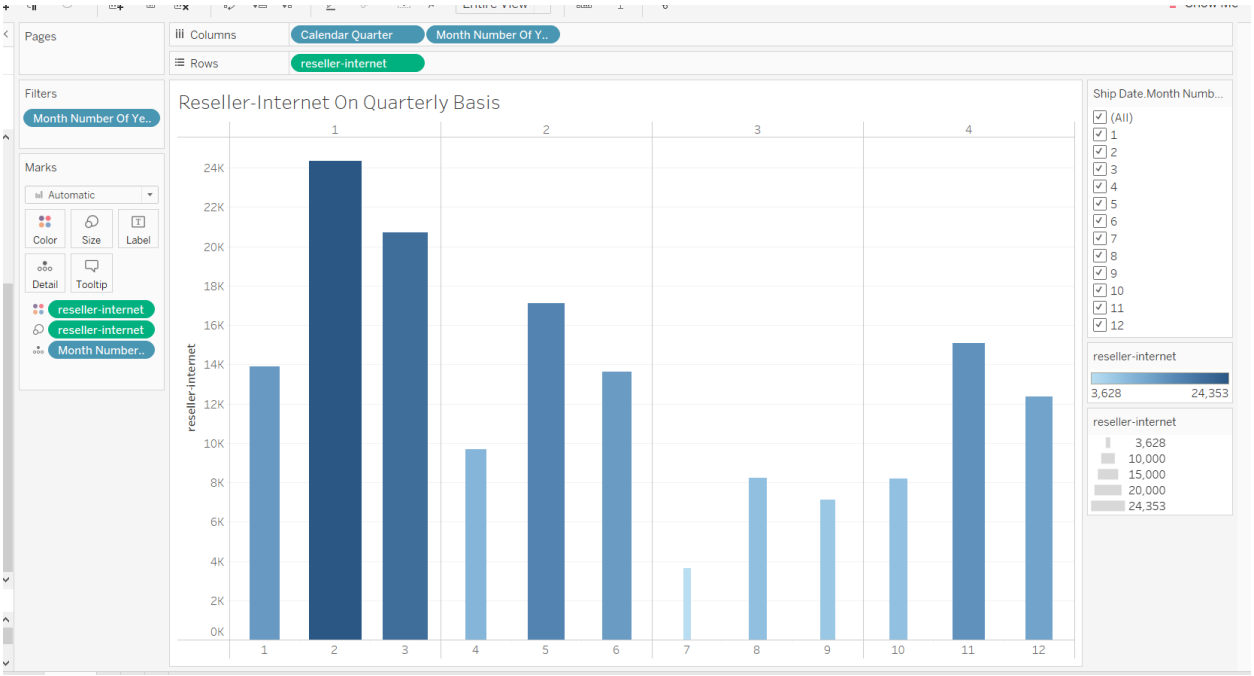
Order Quantity comparison from both fact tables

Seems like order quantity is higher in fact reseller compared to fact internet sales



Picture 3:

Substituting resellers sales from fact internet sales and plotting on quarterly basis

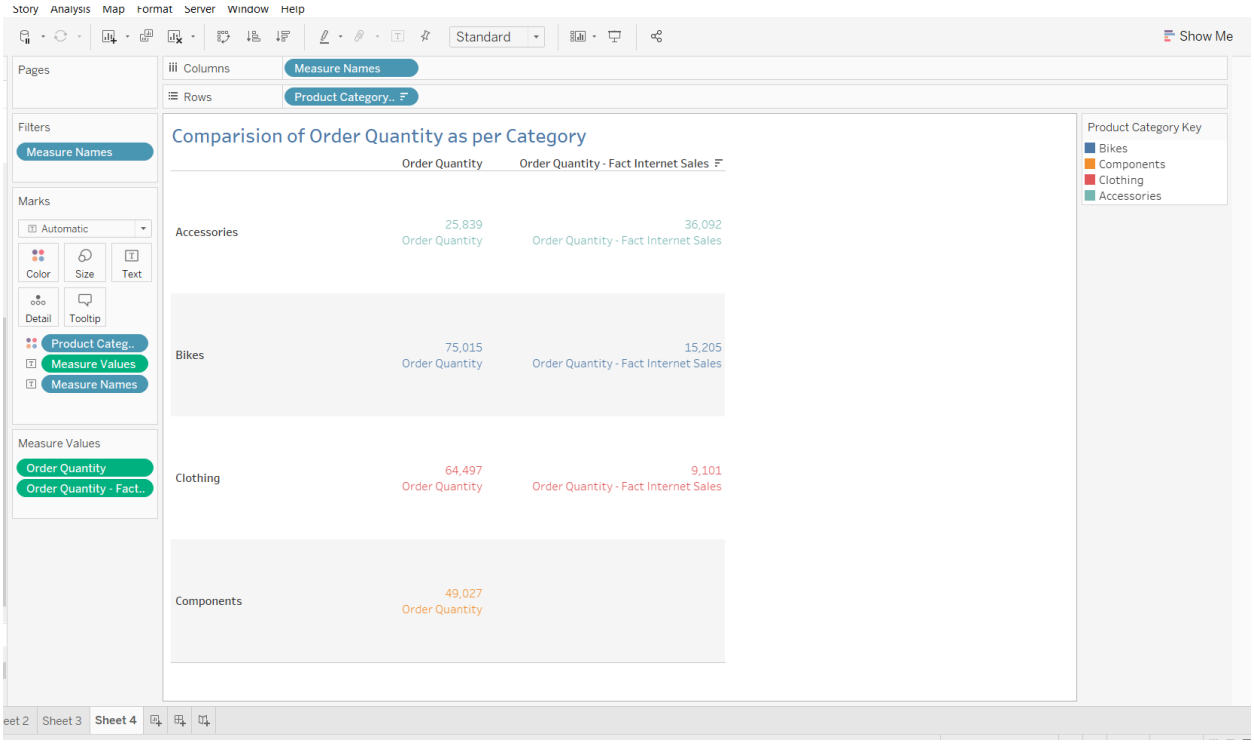


Picture 4:

Comparing order quantity as per category and seems like

From fact reseller bikes has most orders

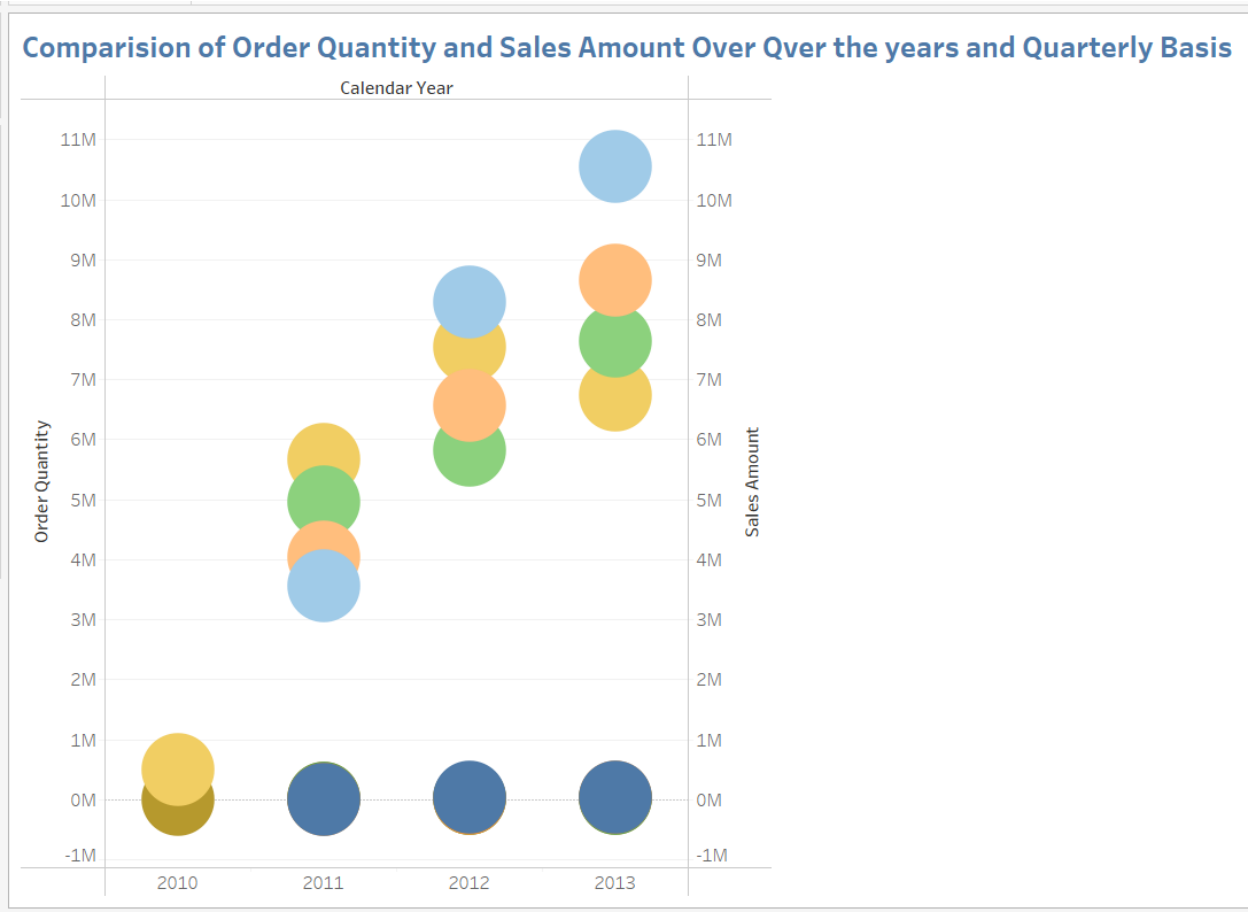
And from fact internet sales Accessories has most orders



Picture 5:

Comparison of Order Quantity and Sales Amount Over the Years and Quarterly Basis

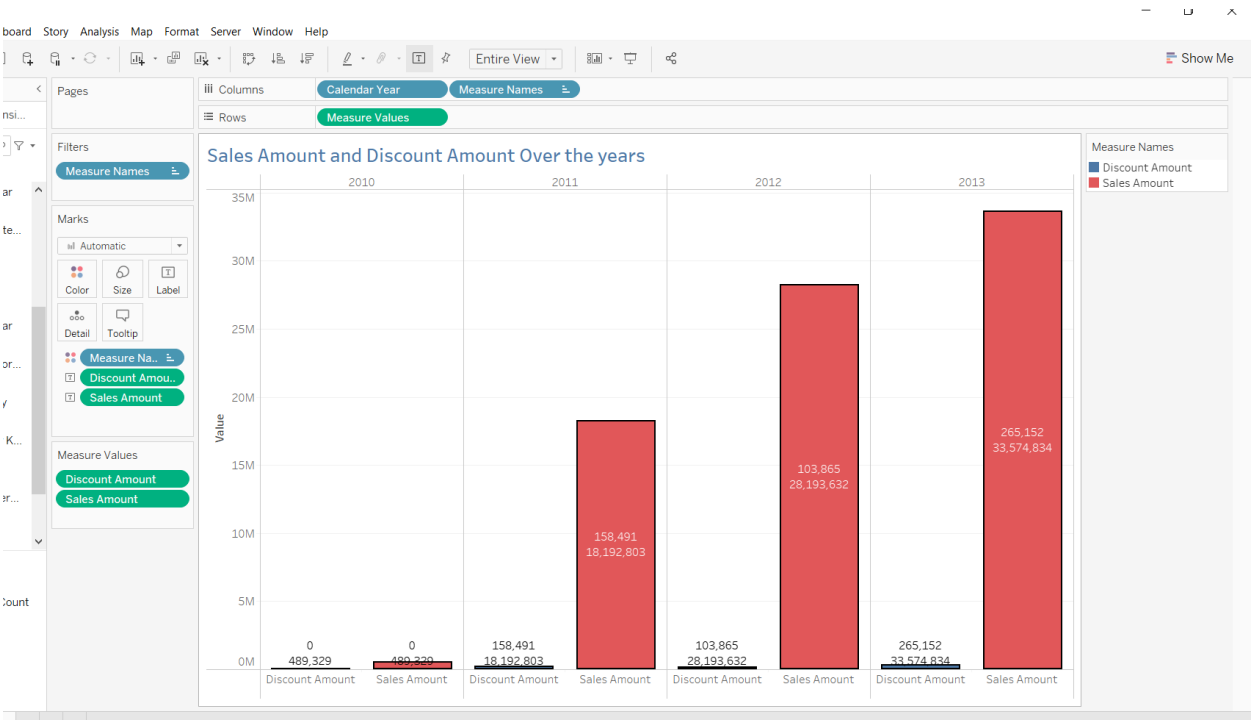
Dual axis on and sync the axis as well, scatter plot controlled by filters



Picture 6:

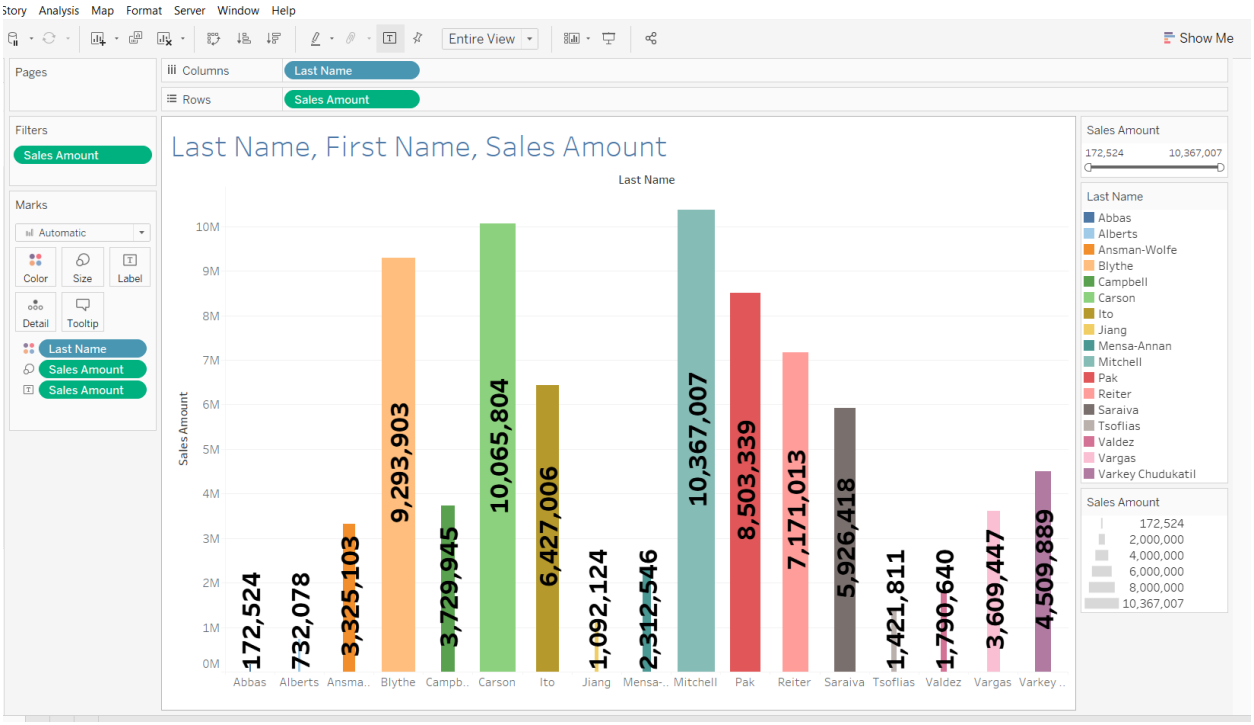
Very Good-Looking Bar plot, with label of sales amount and discount amount

And it seems over the years discount and order amount has increased



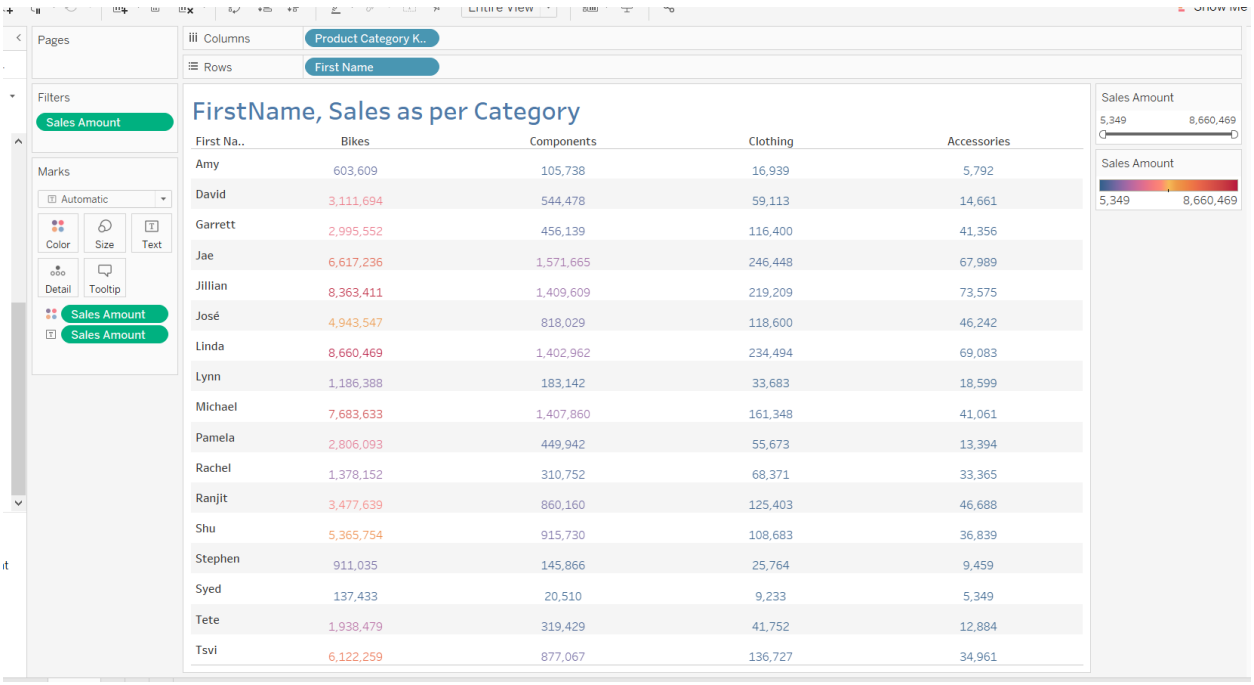
Picture 7:

Data with text, analyzing which employee sales the most



Picture 8:

Employee name, sales, also sales based on category



1.3. Based on the conclusions derived from the data analysis, propose a strategy for the sale of product groups in subsequent years with a recommendation of the sales method (online or traditional)

Solution:

Based on above data analysis using tableau I figure the sales are growing day by day over the years we can see people have placed a lot of orders both from reseller and internet from fact reseller bikes has most orders and from fact internet sales Accessories has most orders and we also figure out which employee sold the product from which category the most, what product sold the most and least as well, we can take decision accordingly as per data analysis.

GENERAL CONCLUSIONS:

Use this section to provide your general conclusions:

1. *As per our multidimensional model we figure out it a lot easier to analyze data with use of hierarchy*
2. *Using cube and deploying the view as per need of end user, what sort of data he is interested in*
3. *In tableau we already have specified tables for example reseller-fact internet sales, its more convenient*
4. *Overall, I learned more about SSAS and Data analysis with tableau*
5. *We have plotted a lot of different type of charts in tableau for data analysis and get the most out of our data*

REMARKS

- *A report without final conclusions will not be checked and results in a negative score!*
- *The report file should be named **Lab08DW-StudentID-Last name-2022**, please use the PDF format.*
- *You should use MS SQL SERVER 2019 (or 2017), Visual Studio, Excel, and Tableau Desktop (available at https://www.tableau.com/academic/students)*

Final project:

- *The final date of submission of the documentation of the mini project is 15 June at 23:59*
- *Persons who pass the project by 18.06.2022 will be exempt from the final test (the assessment of the course will be determined along with the receipt of the project).*

We can set the deadline for passing the project on June 16-18 (Thursday - Saturday)