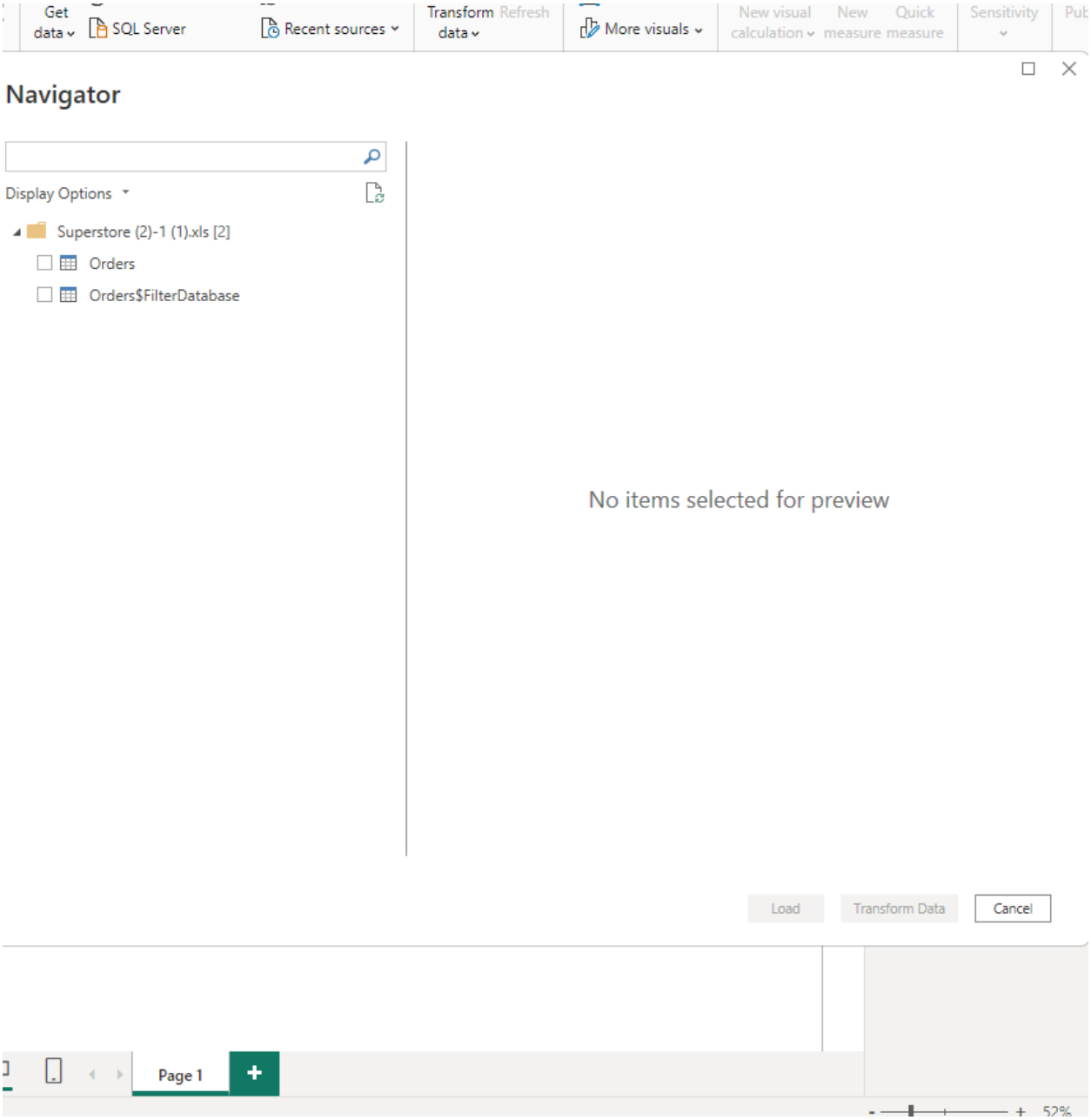
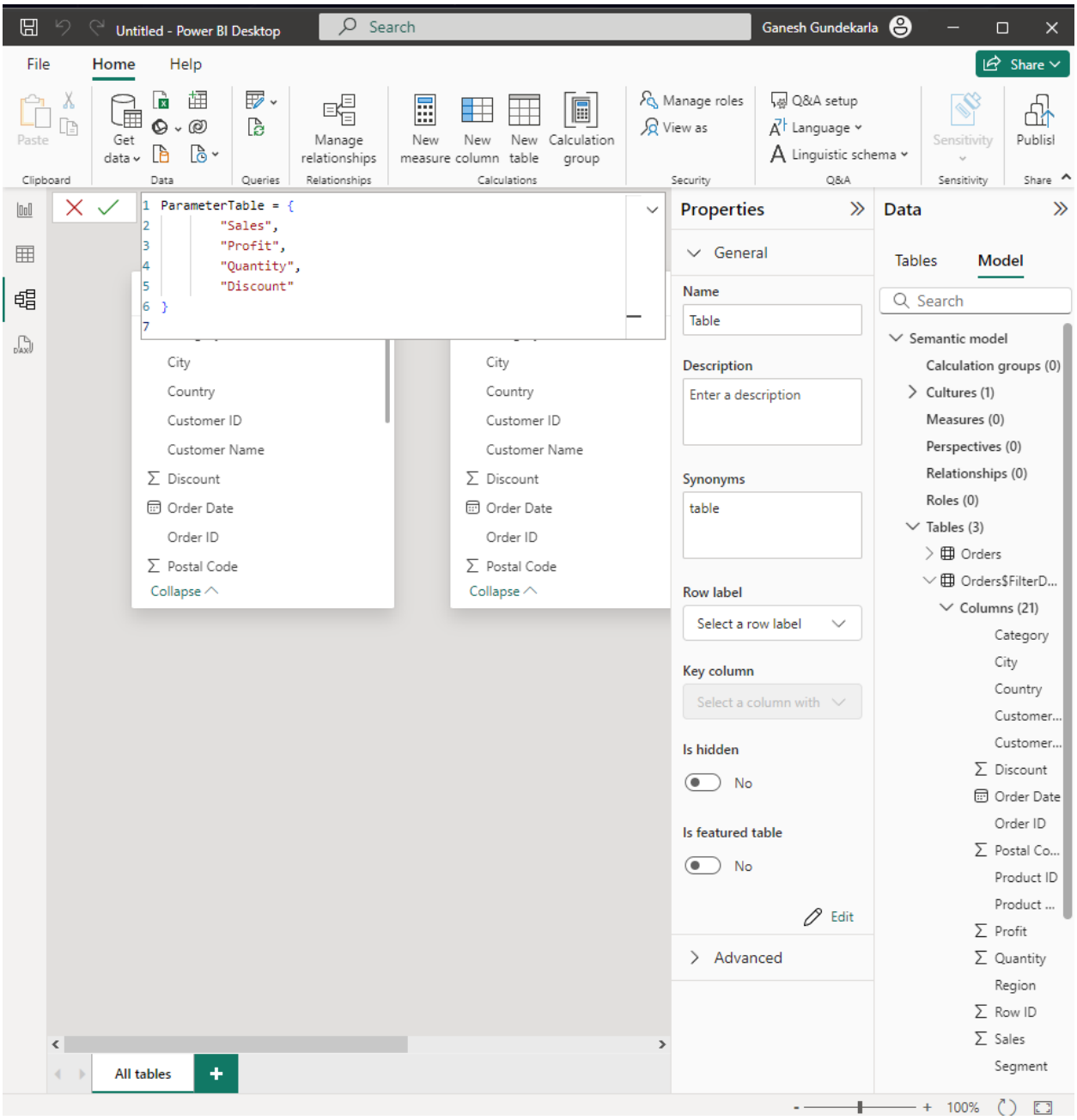
Tutorial 1 : Power Bi

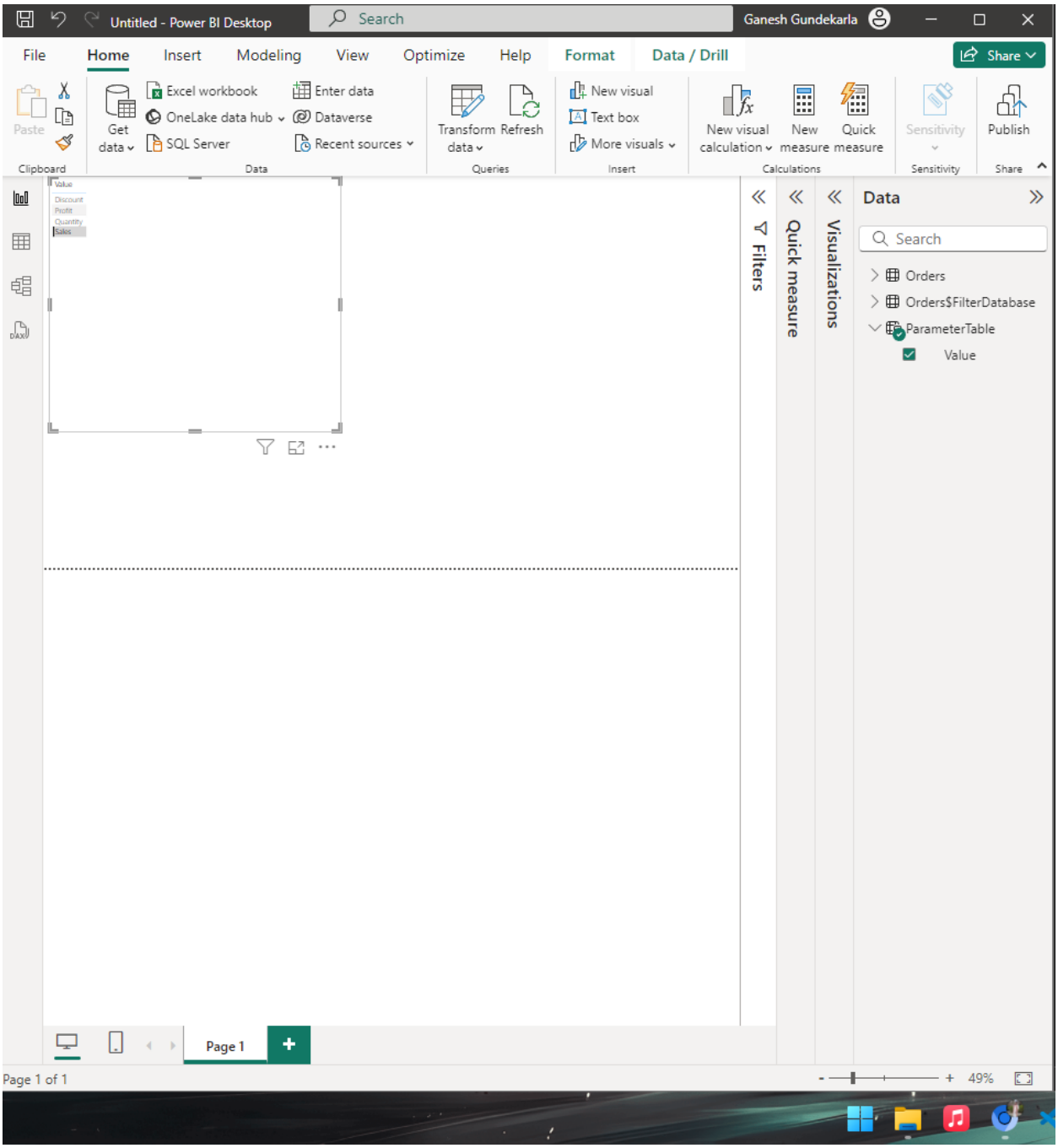
Step 1 : load the data given



Step 2 : creating a parameter table.



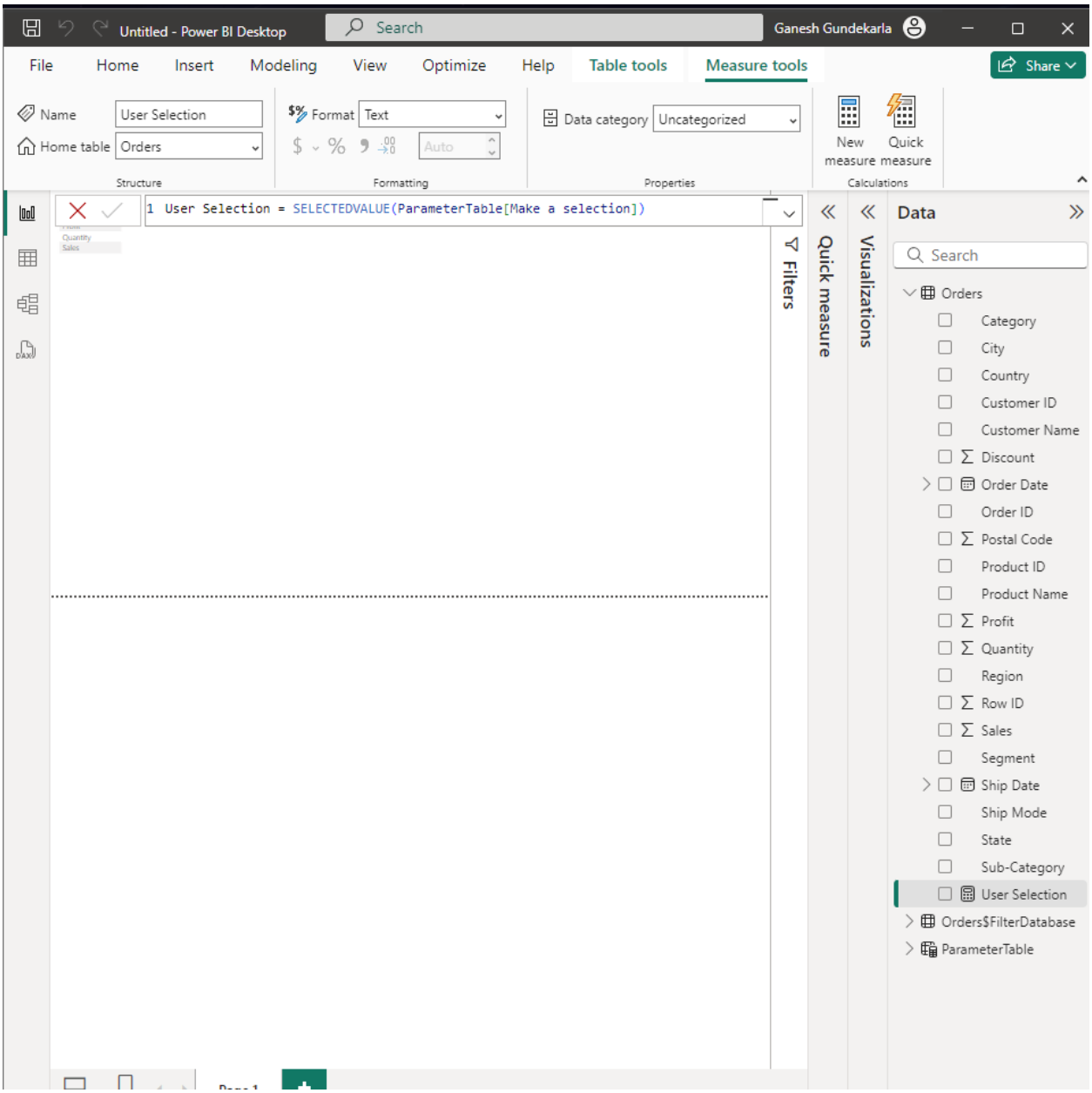
Step 3 : perform a slicer visual in the report view



Step 4 : renaming the value to “make a selection “ .

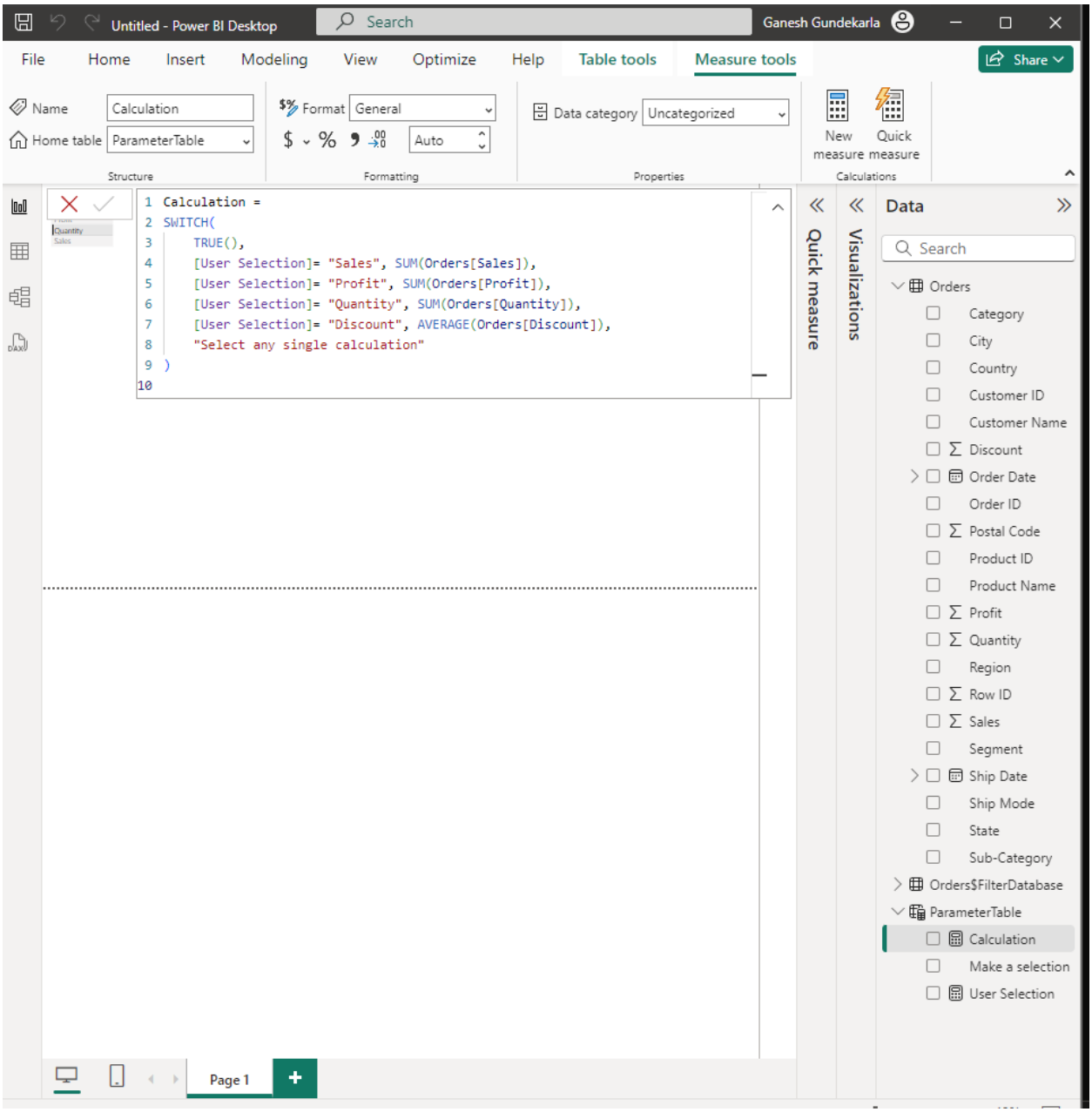
Step 5 :

Creating a dynamic measure that will automatically change which is based on the value that is being selected on the slicer .



Step 6 :

Creating a new measure called as calculation.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Measure tools
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Calculation
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ParameterTable
Structure
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General
Auto
Formatting
Data category
Uncategorized
Properties
New measure
Quick measure
Calculations
1 Calculation =
2 SWITCH(
3 TRUE(),
4 [User Selection]= "Sales", SUM(Orders[Sales]),
5 [User Selection]= "Profit", SUM(Orders[Profit]),
6 [User Selection]= "Quantity", SUM(Orders[Quantity]),
7 [User Selection]= "Discount", AVERAGE(Orders[Discount]),
8 "Select any single calculation"
9)
10
Quick measure
Visualizations
Data
Search
Orders
Category
City
Country
Customer ID
Customer Name
Discount
Order Date
Order ID
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Product ID
Product Name
Profit
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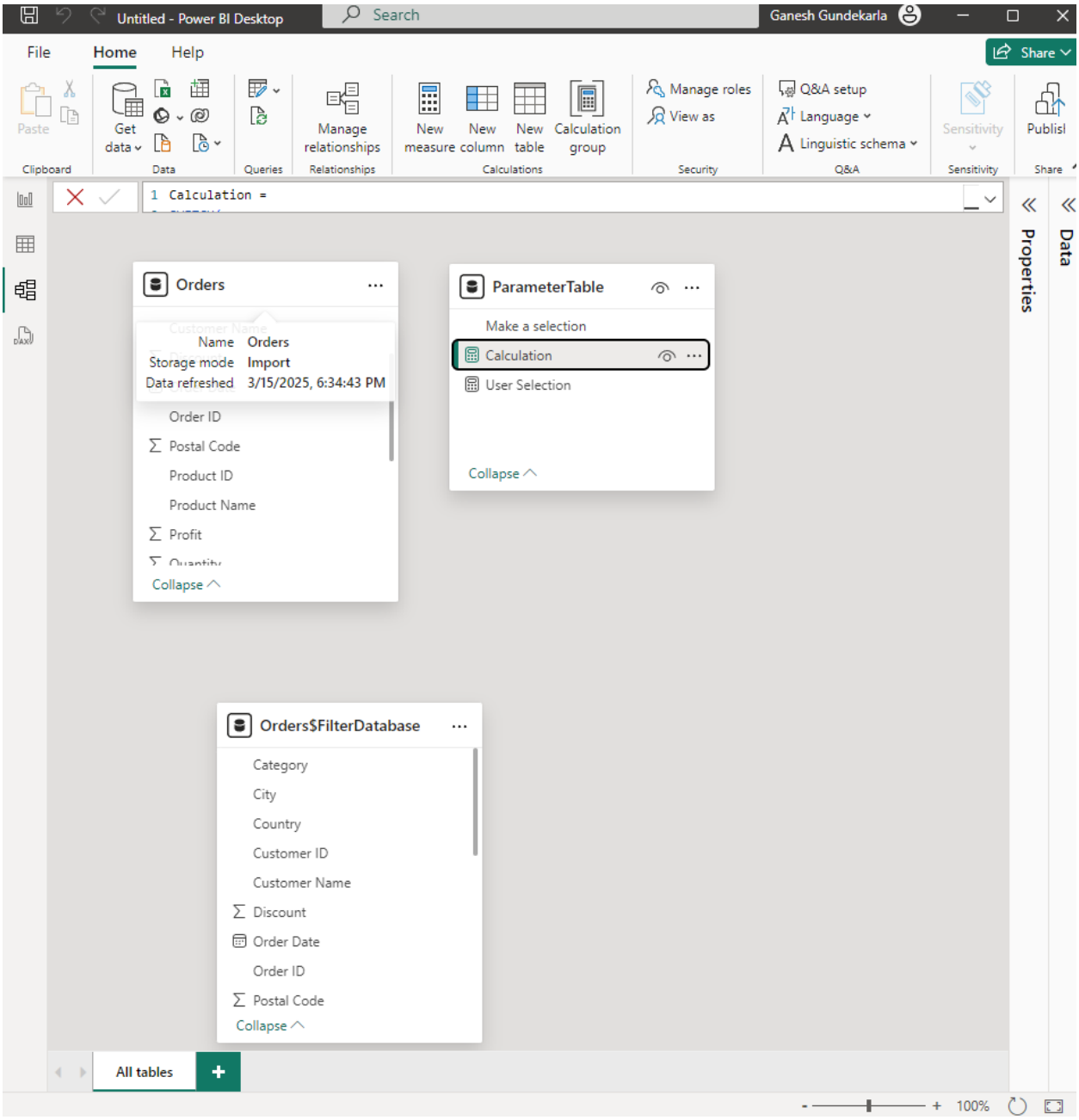
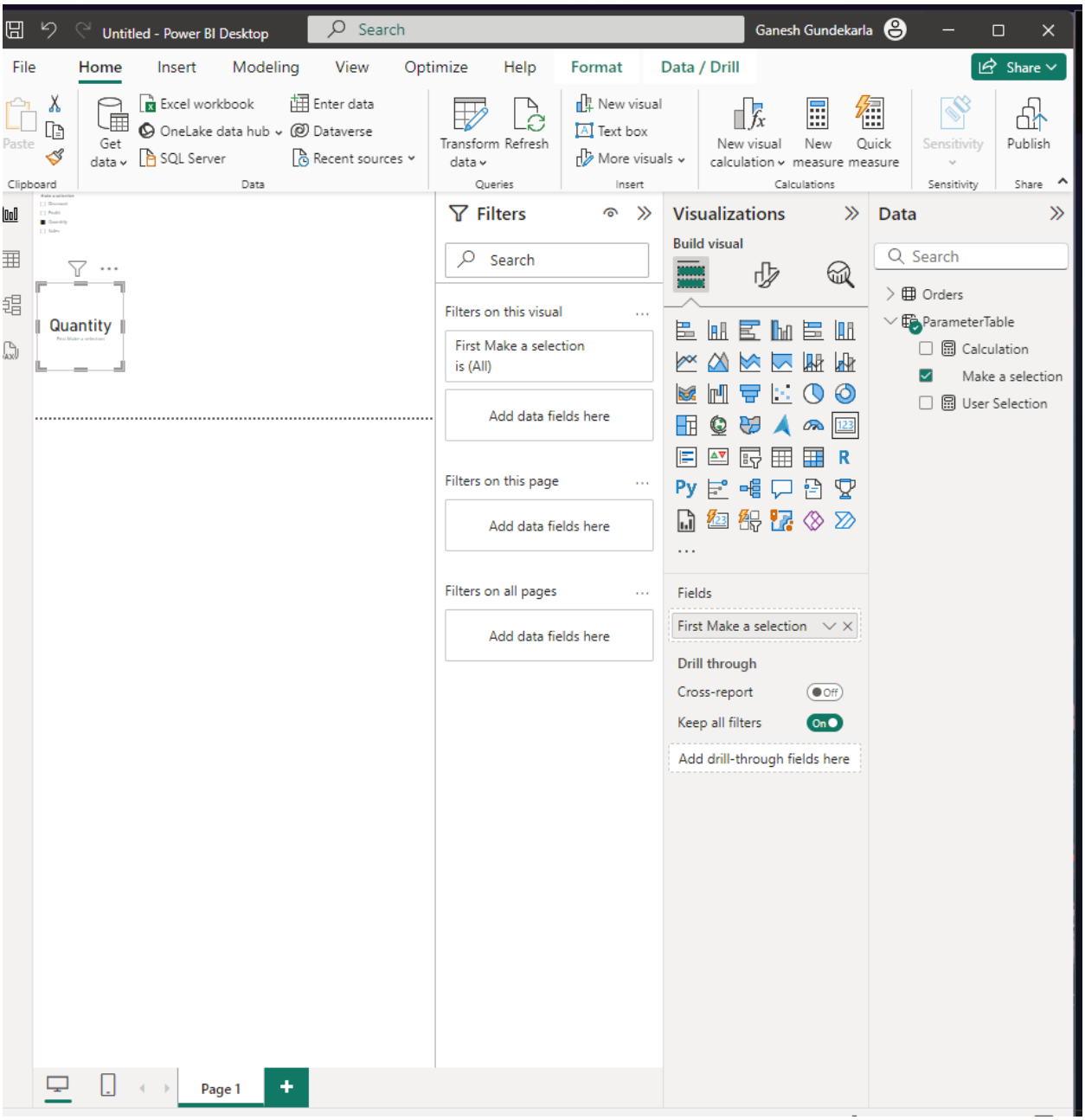
Calculation
Make a selection
User Selection
Page 1



Step 7 :

Dragging a card.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Add data fields here
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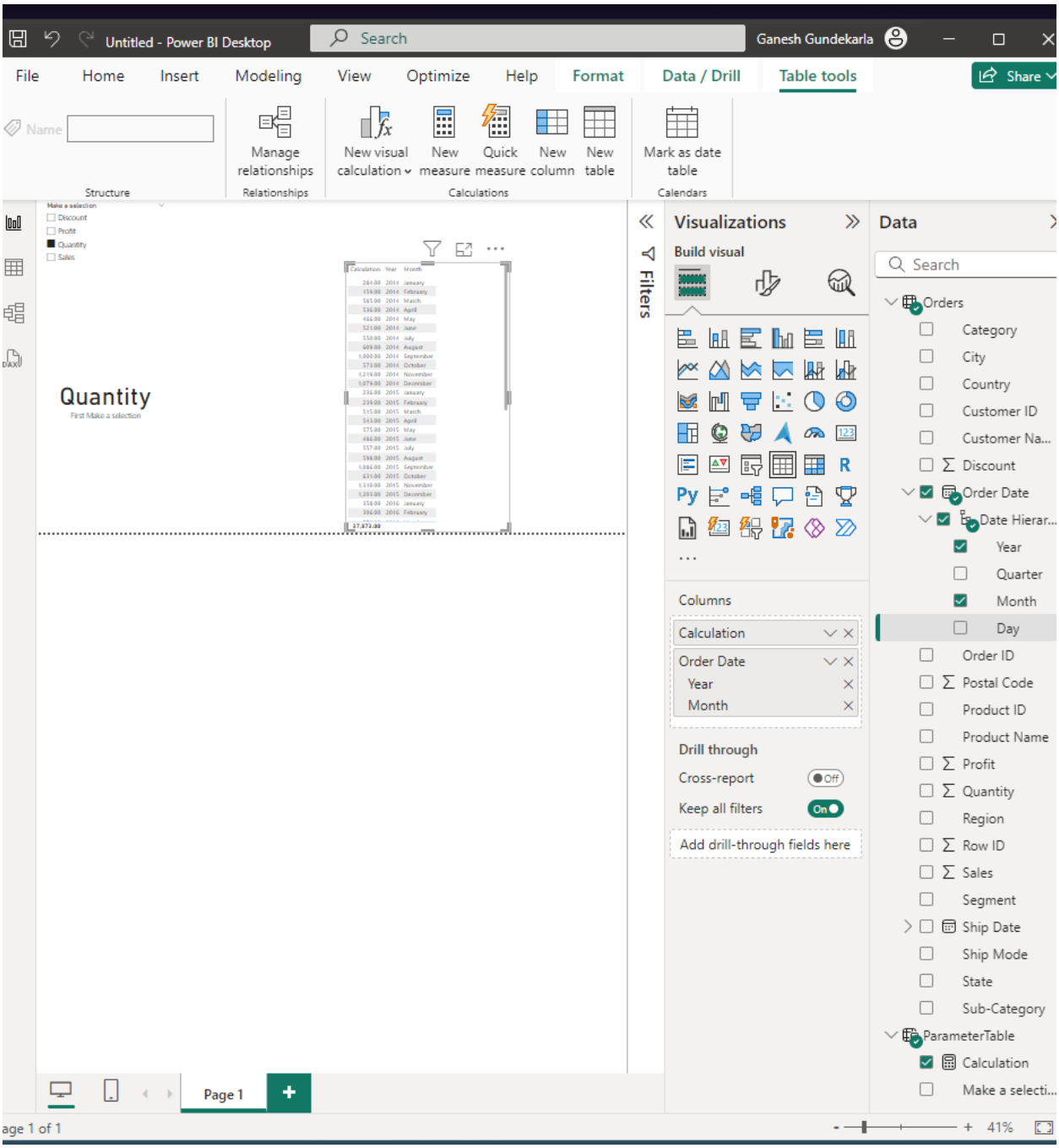
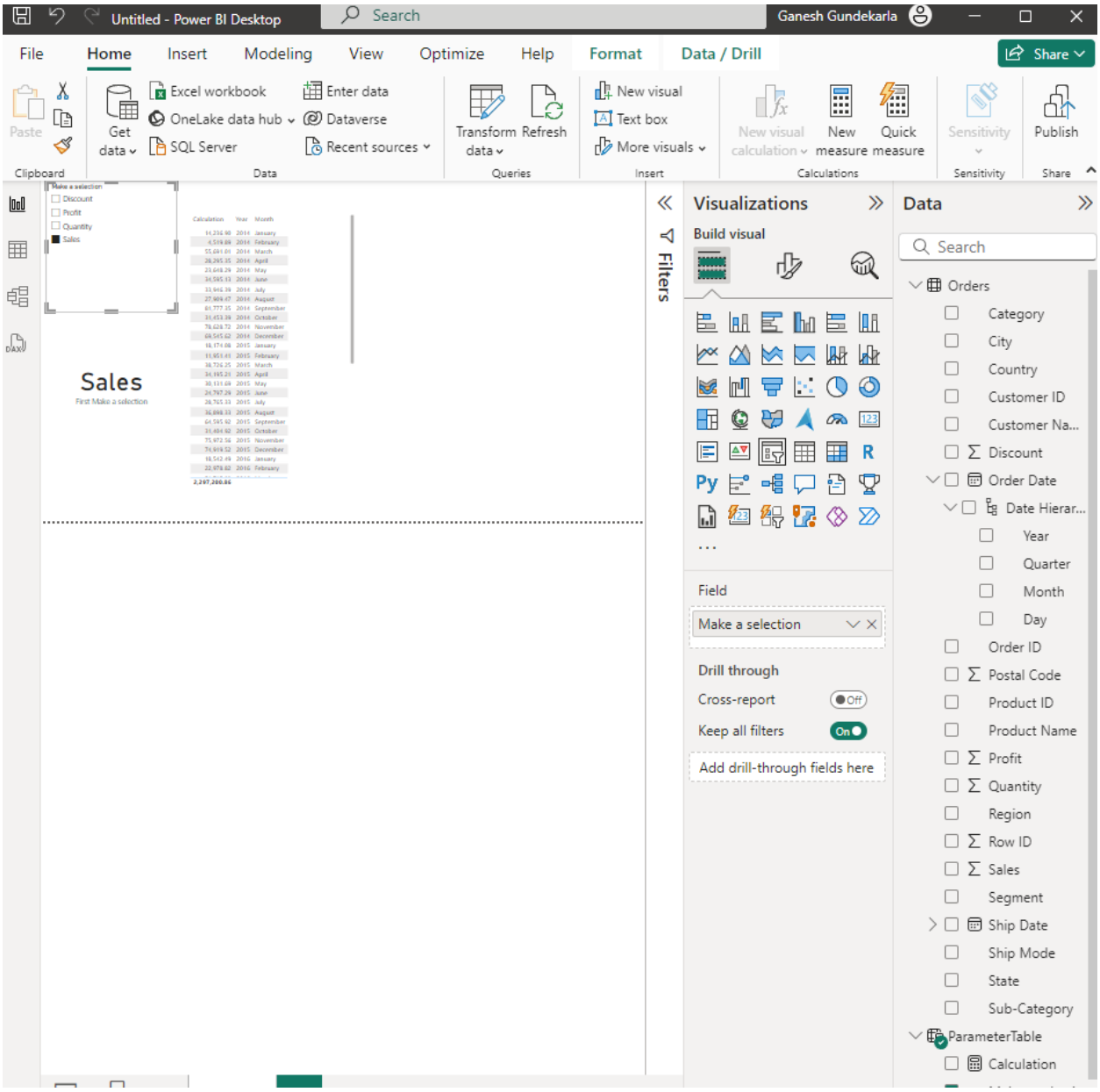
User Selection
Page 1

Step 8 :



Step 9 : changing tables accordingly and creating another table using sub category and category.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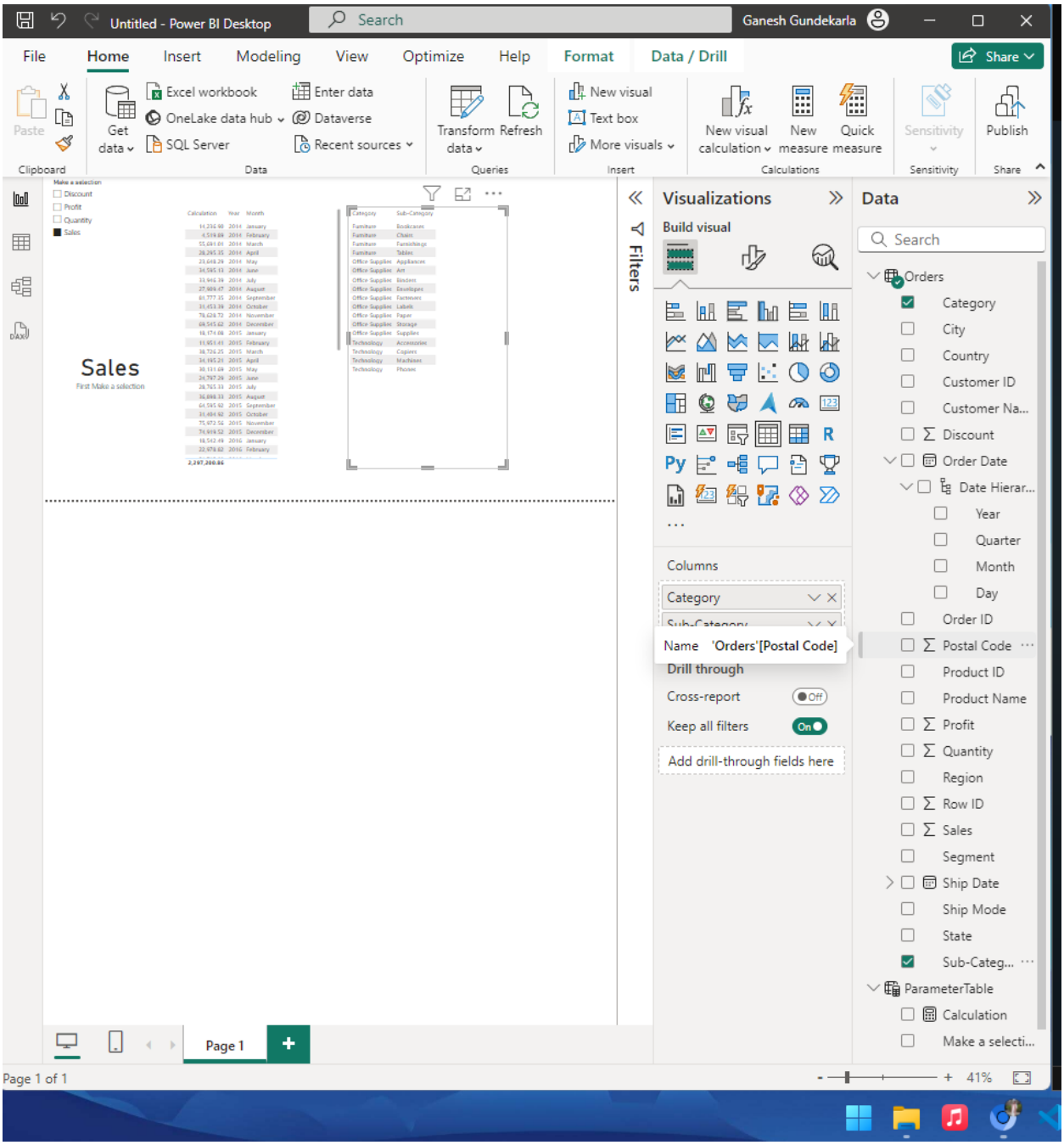
Month
Day
Order ID
Postal Code
Product ID
Product Name
Profit
Quantity
Region
Row ID
Sales
Segment
Ship Date
Ship Mode
State
Sub-Category
ParameterTable
Calculation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First Make a selection
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Name 'Orders'[Postal Code]
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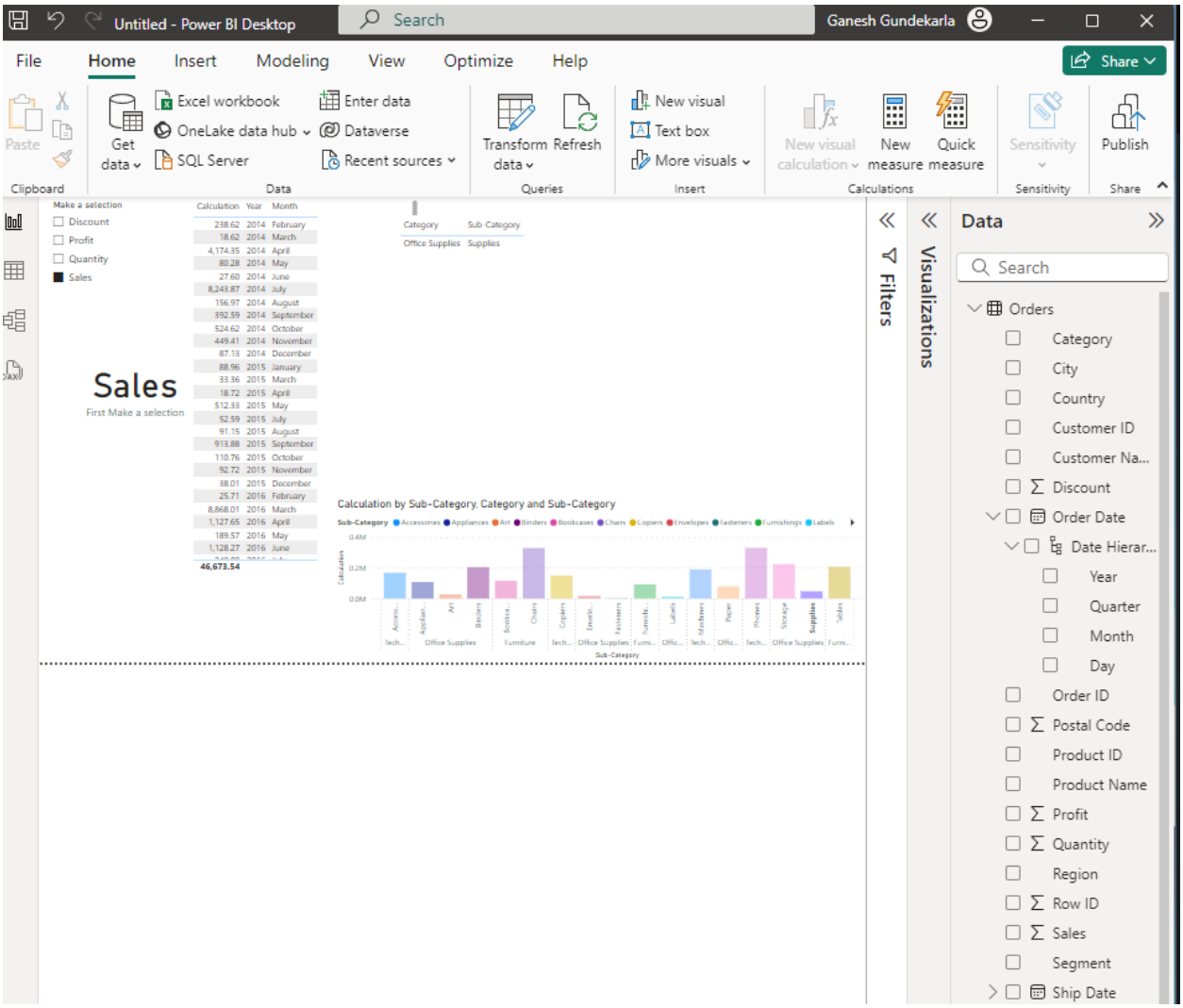
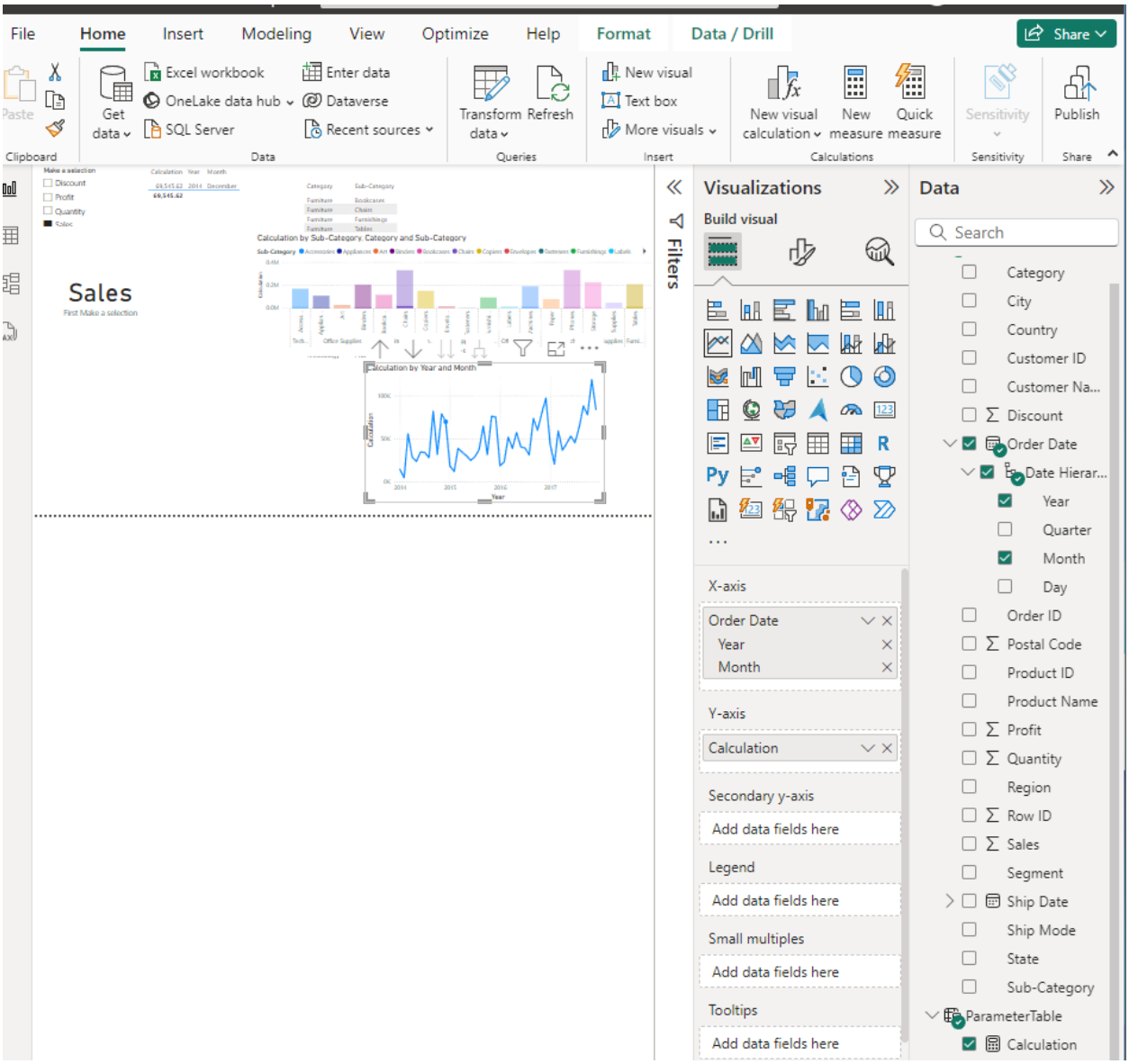
Page 1
Page 1 of 1
41%

Step 10 :



Questions :

a. Implementing a line chart.



b. Analysis of sales , profits and also the quantity across different sub categories over time .

1. Patterns in sales and profits and quantity over time : sales are basically showing an upward trend with also an occasional seasonal tweaks in sales which are most likely to be influenced by holidays or any trends.
2. When it comes to profit trends, profit does not align with the amount of the sales trends which can be observed on the given data , profits can be impacted because of the discounts or any costs.
3. When it comes to quantity trend , a steady rise in the quantity that has been sold will not be an accountable factor for a higher amount of profit.

Shifting trends between all the metrics considered :

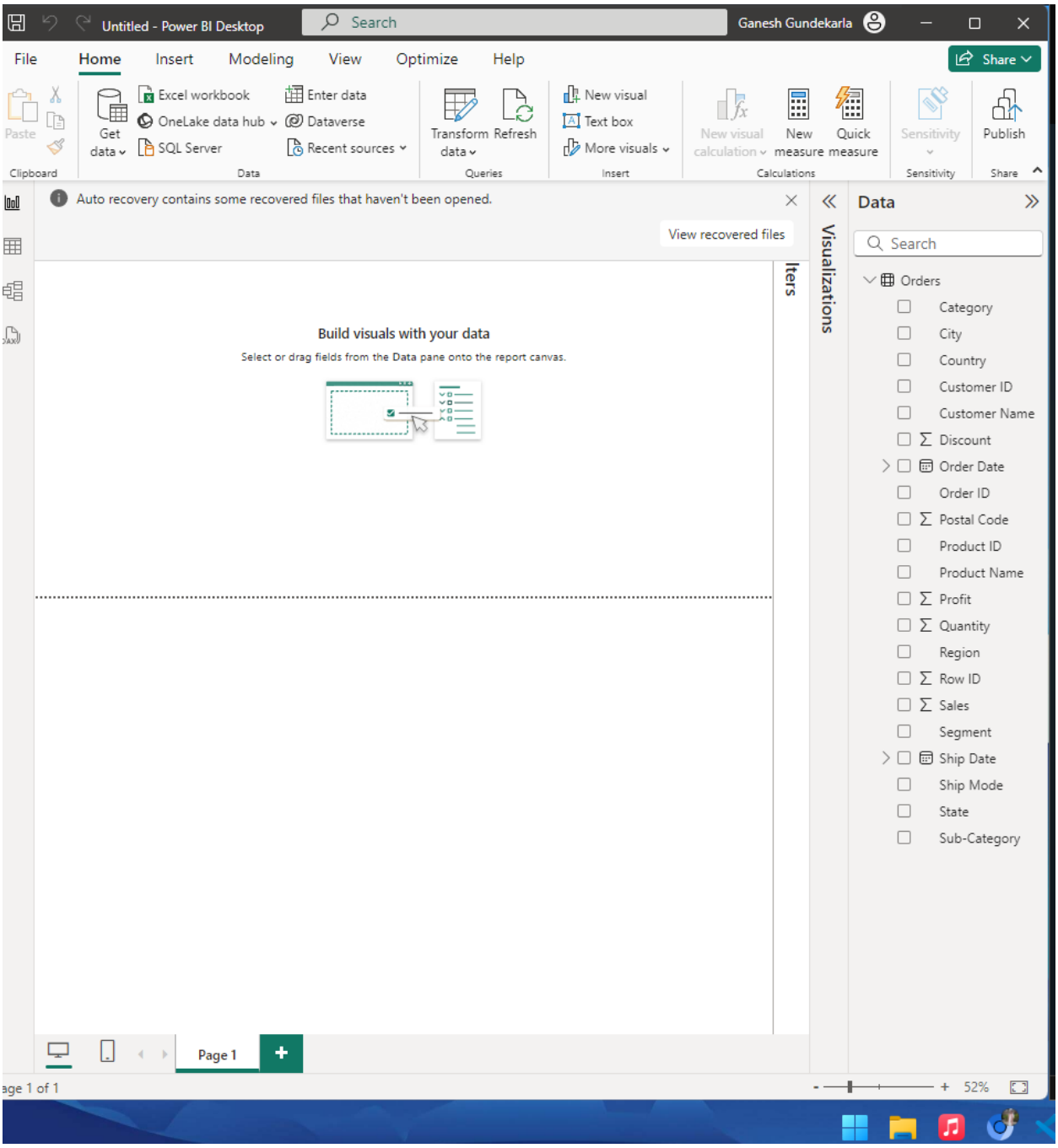
a. Here, some high sales can account for lower profits due to discounts.
b. Seasonal patters can be also be considered and sub categories tend to be performing a bit better in specific months.

Question c : use of switch function in Dax for a dynamic metric selection : the switch function in Dax can be capable of selection of dynamic metrics which allows users to change between the sales and profits and quantity without having to go for a different visualization .

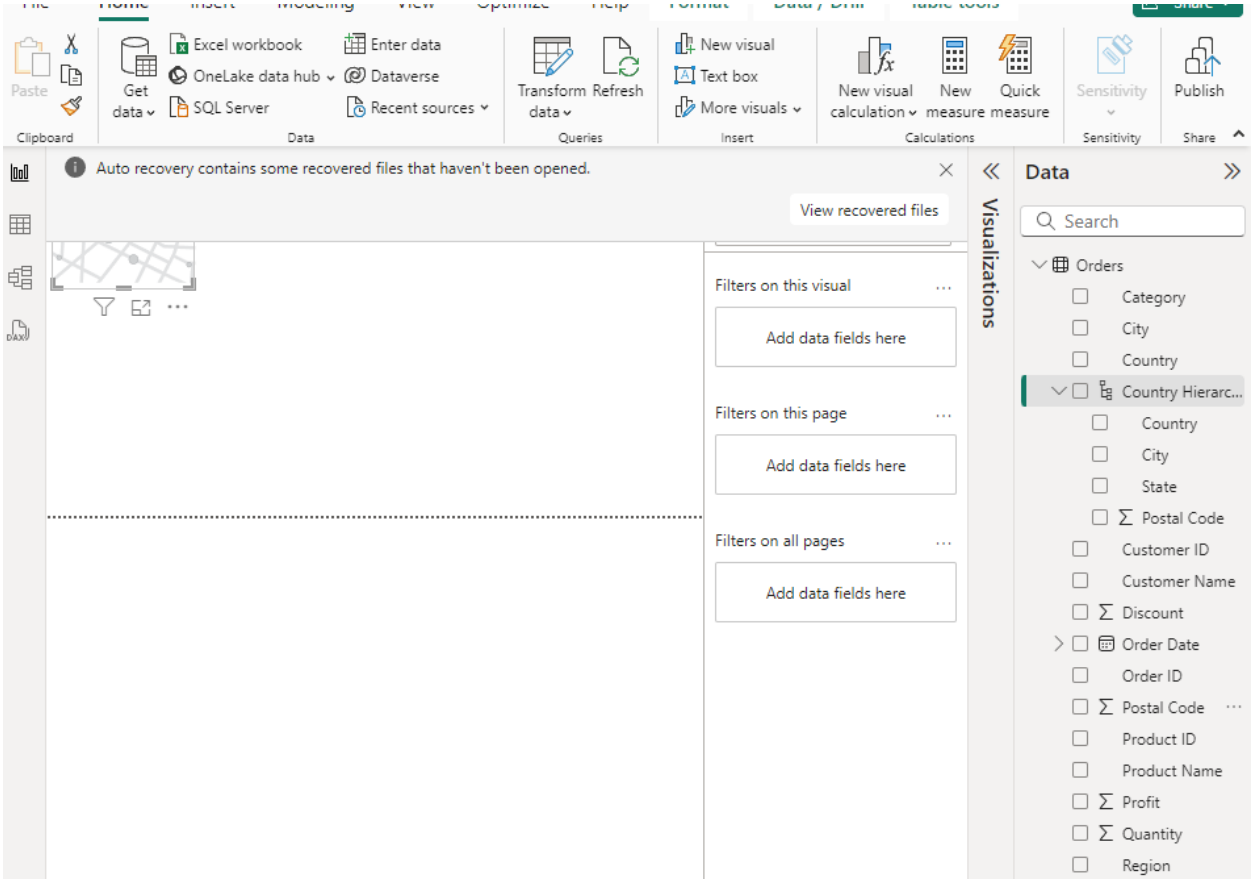
a. Here in the calculation measure , the switch function is used to select and then be able to retrieve the user selected measure and performs a sum to it applying the sum function to the selected ones which is the user selected value and the result can be dynamically updated automatically on all the graphs or the selected tables.
b. This is used to enhance interactivity and enable deeper insights without having multiple visualizations.

Tutorial 2 :

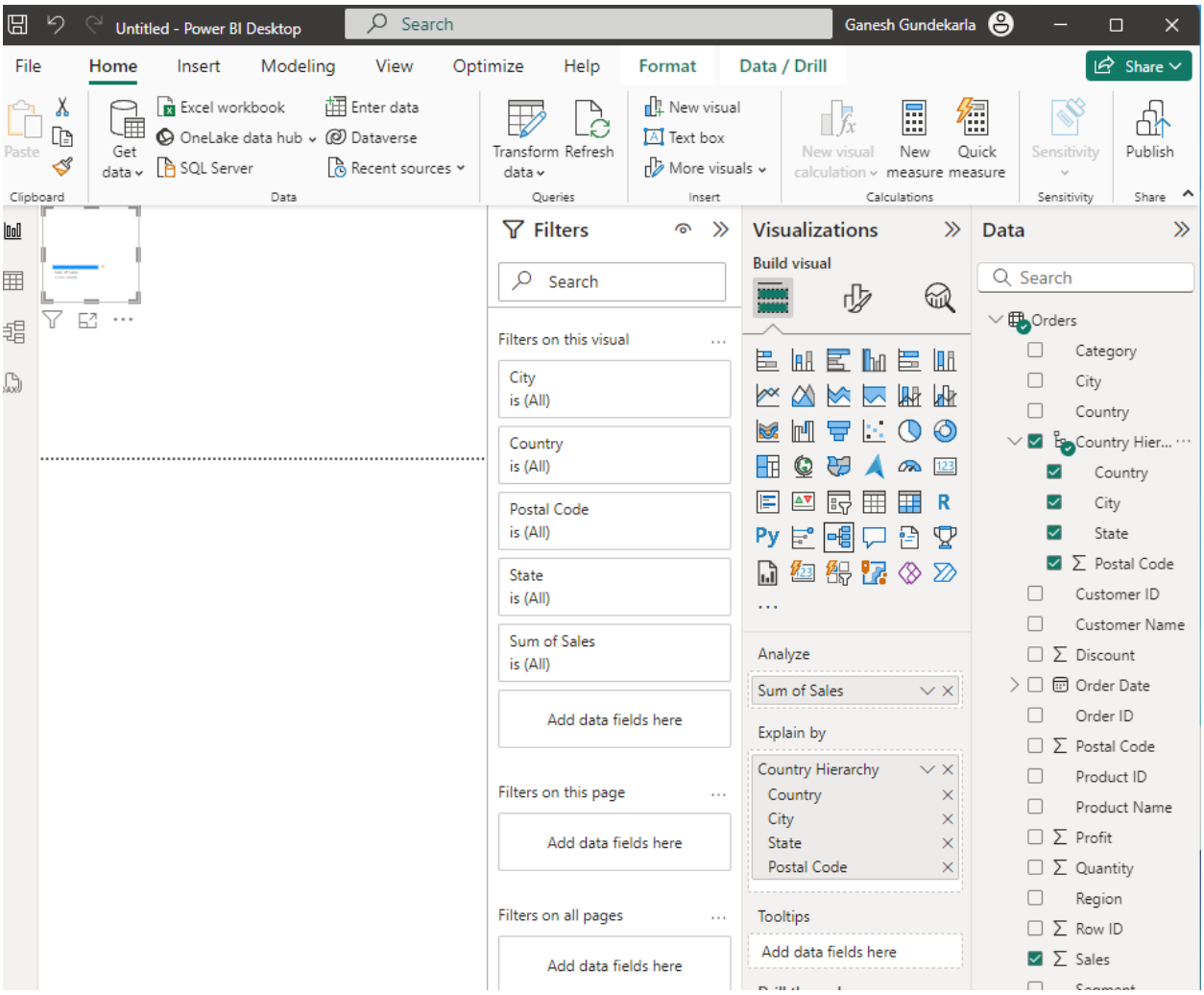
Step 1 : loading the superstore dataset.



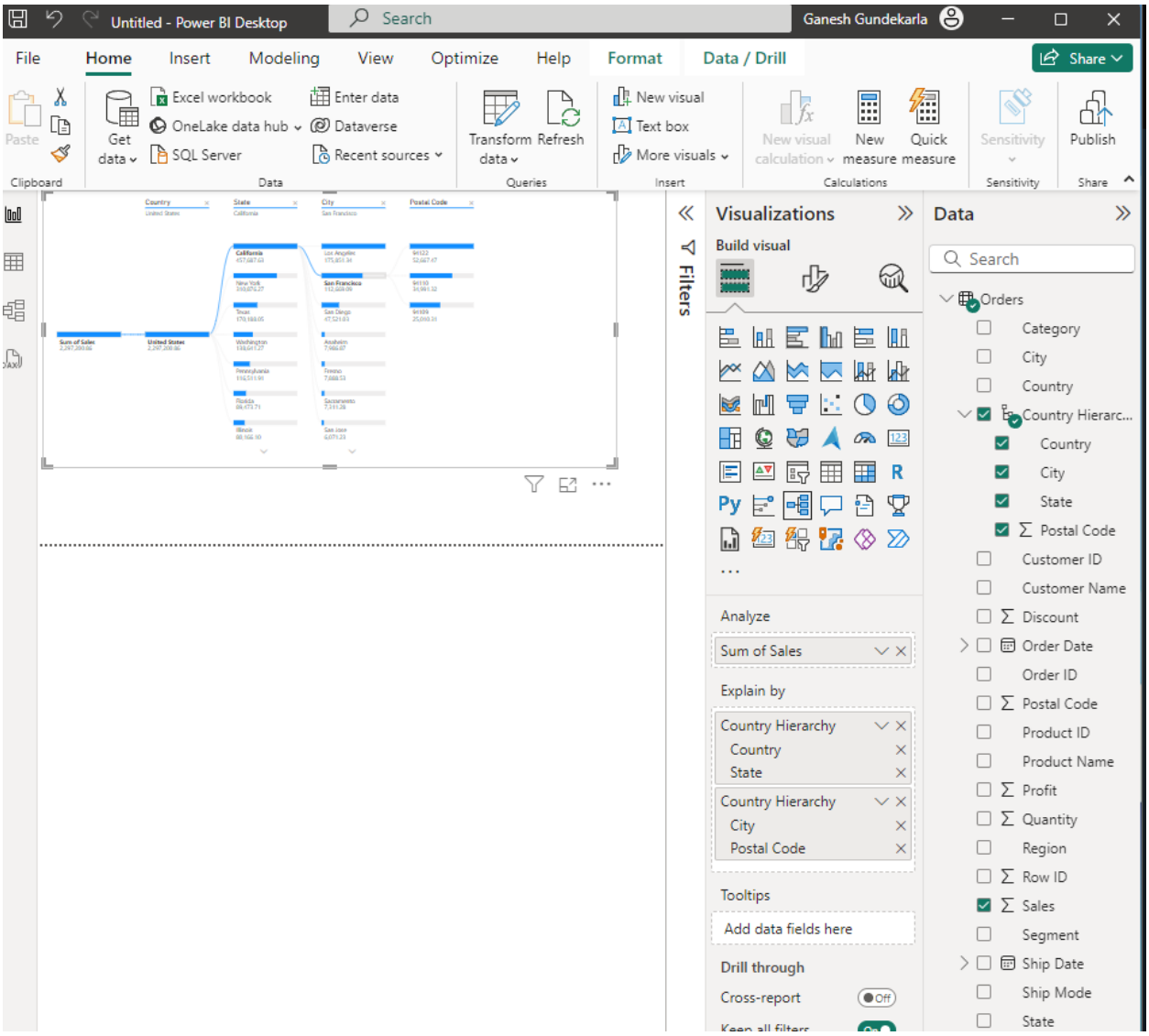
Step 2 : adding to hierarchy



Step 3 : visualizations on the new created country hierarchy .

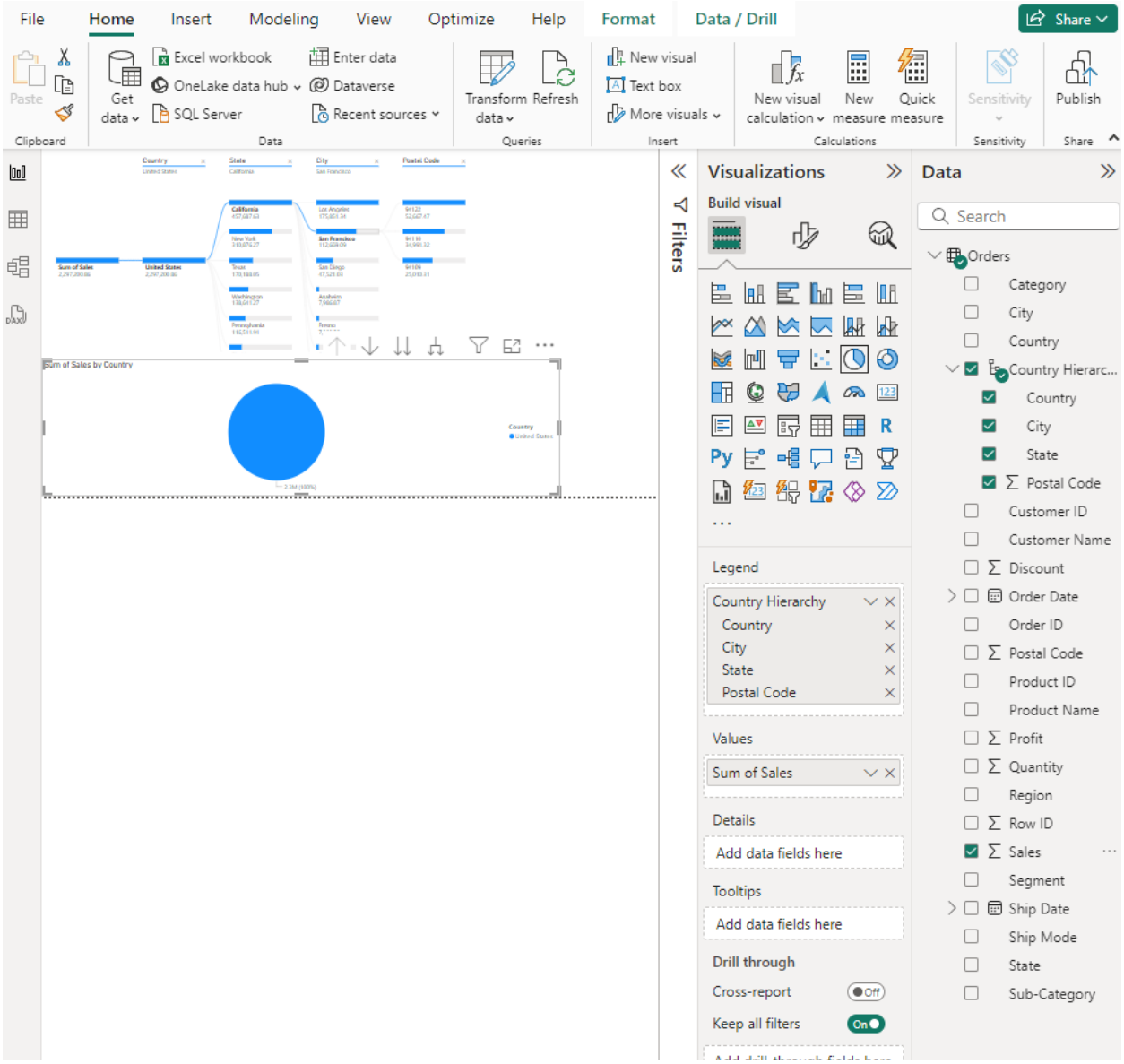


Step 4 : drilling down the decomposition visual into a deeper country based and state based and city based and postal code basis. It shows us a breakdown of sales in different levels.



Step 5 :

Selecting a pie chart :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Sum of Sales by Country
Filters
Visualizations
Build visual
Legend
Country Hierarchy
Country
City
State
Postal Code
Values
Sum of Sales
Details
Add data fields here
Tooltips
Add data fields here
Drill through
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Keep all filters
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Customer Name
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Product Name
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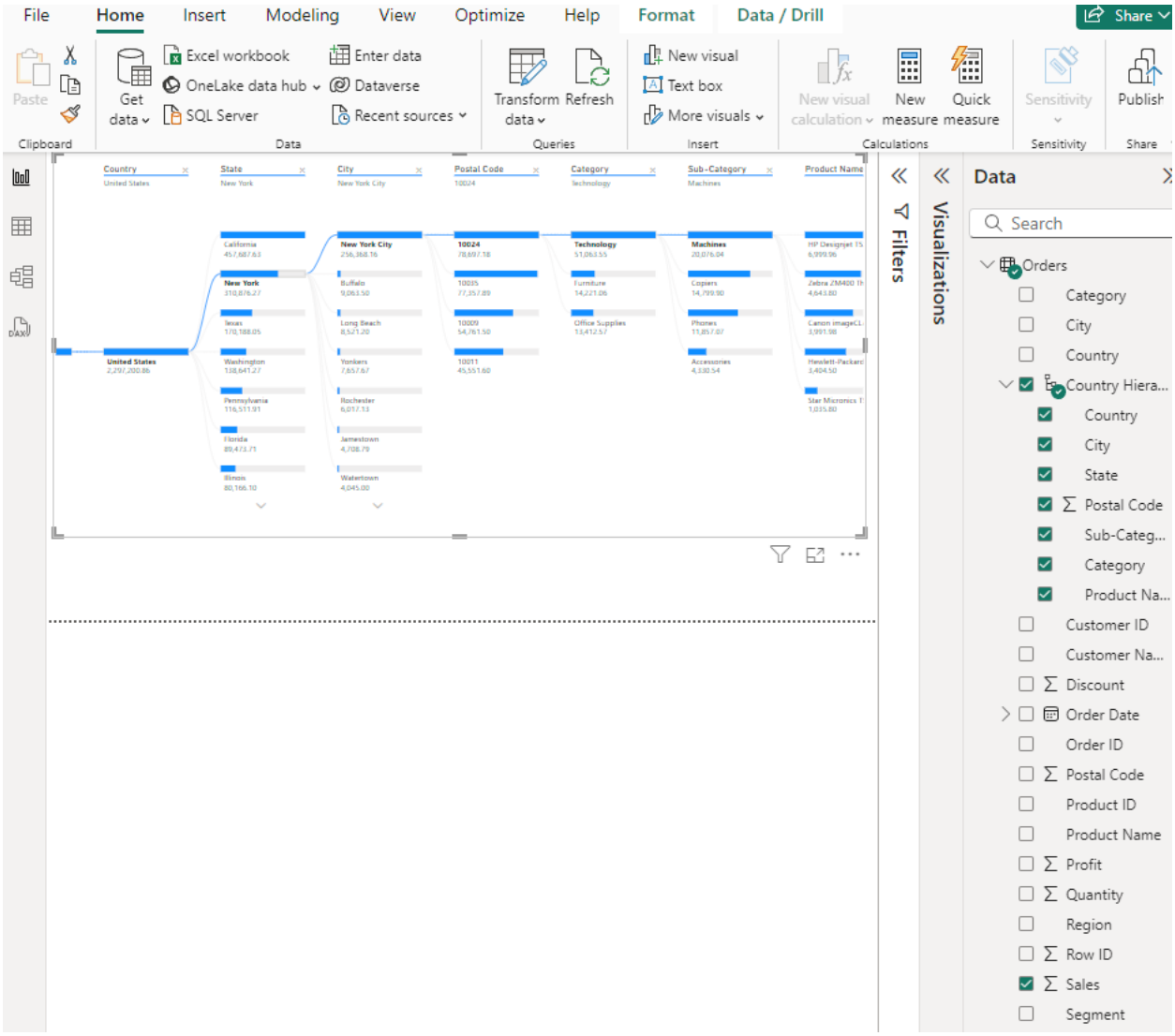
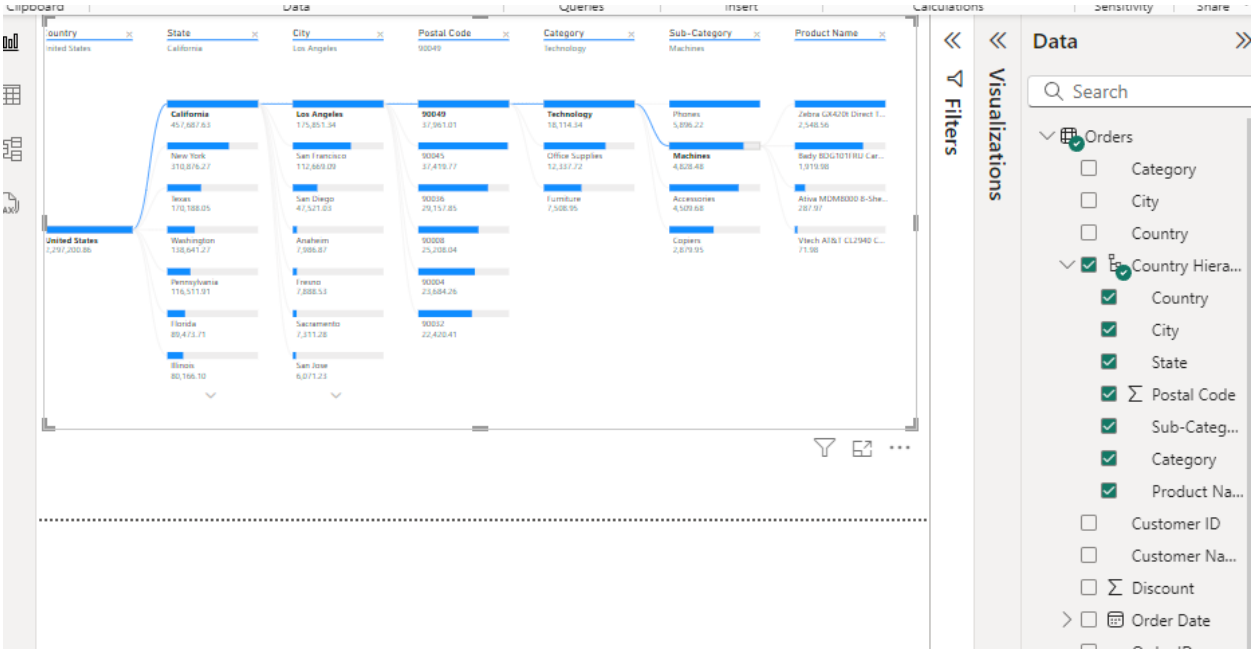
Ship Date
Ship Mode
State
Sub-Category

Question 1 :

1. 

So , here by this visualization we can see how the data of sales can be streamlined into deeper all the way down into cities and categories which can provide us with some useful insights. Machines like the hp and the canon printers in my case are found to be contributing more . Sales are varied across regions where postal code 10204 found to be contributing significantly .

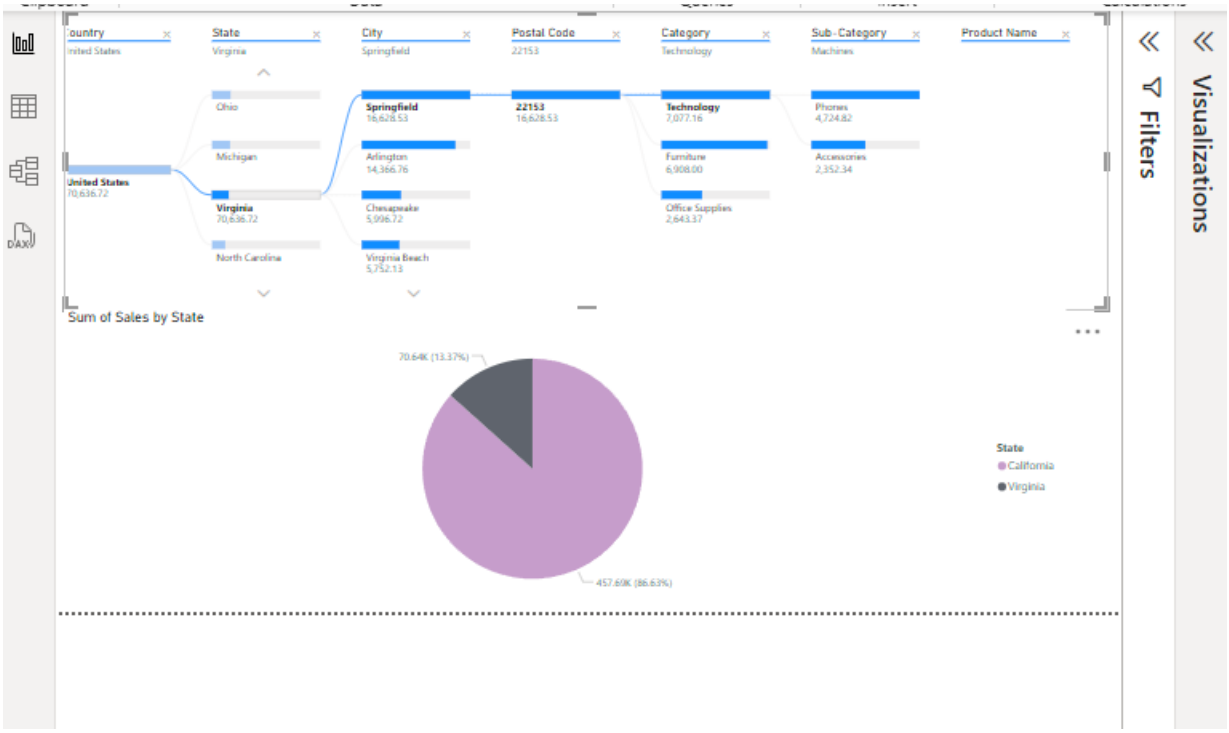
Question 2 :

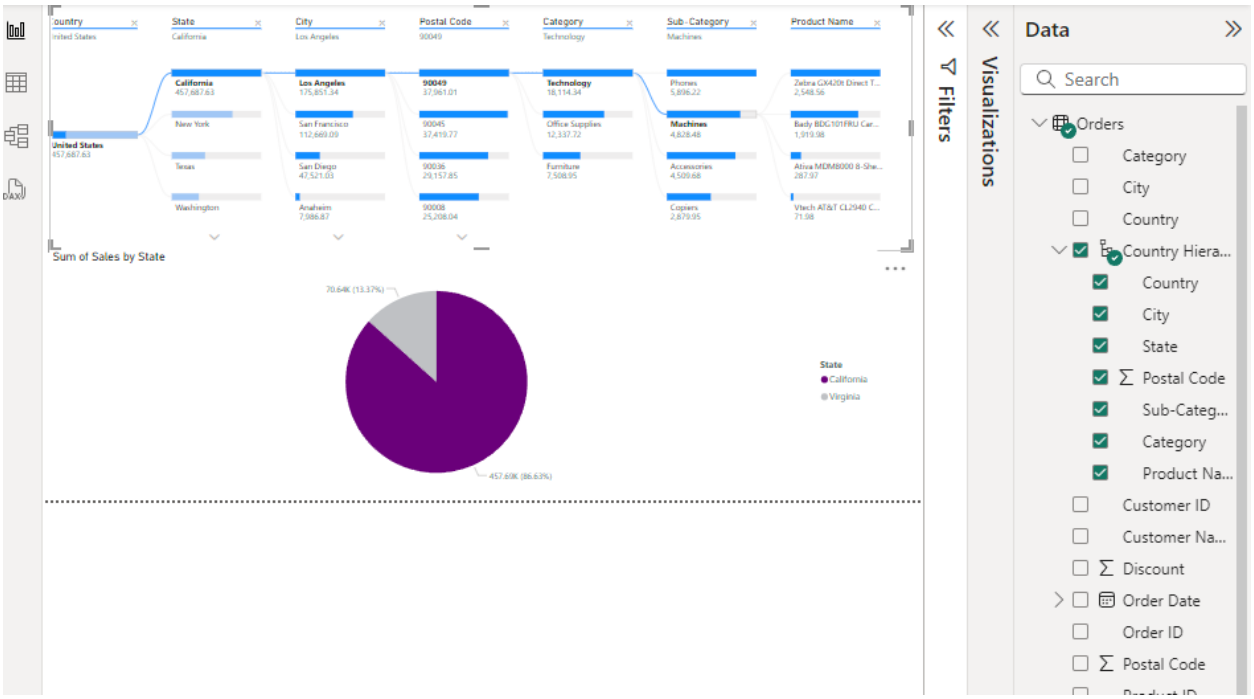


Top contributing products to sales :

a. Here , los angeles is the major place where sales happen more .
b. Technology sector continue to dominiate in California overall sales particularly in the machines sub category.
c. Top performing products according to sales include :
   Zebra printer , barcode scanner , mobile stands and corded phones .

Question 3 :

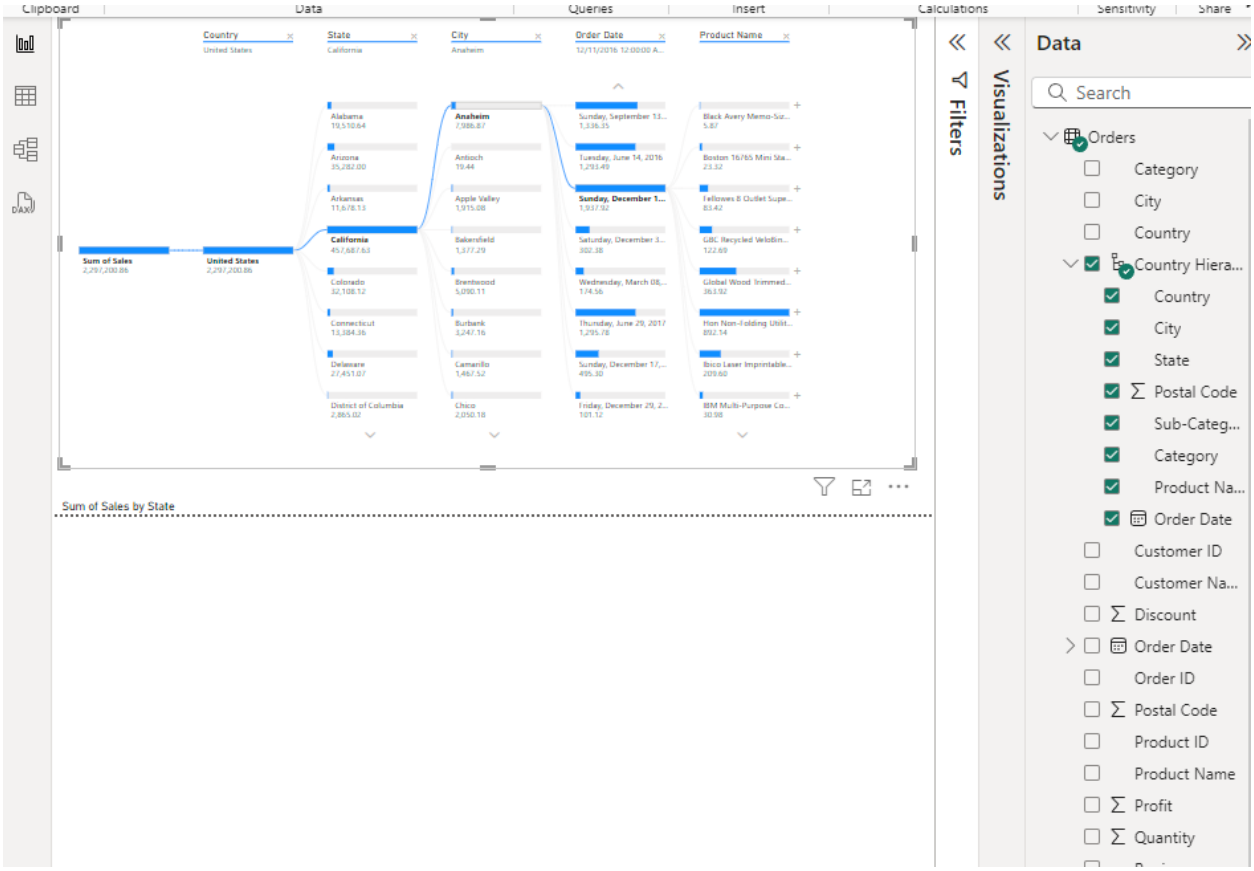




Here I did a comparison between California and virgina .when it comes to a sales pattern we could see California has the highest amount of sales when compared with virgina. In California , the cell phones and machines , accessories tend to dominate a lot .with it contributing much to the overall . when it comes to virginia it only contributed 13 percent of

the overall sales , in the virginia state, the technology tend to dominate a lot with sub categories including the phones and accessories but not as high as the California sales.

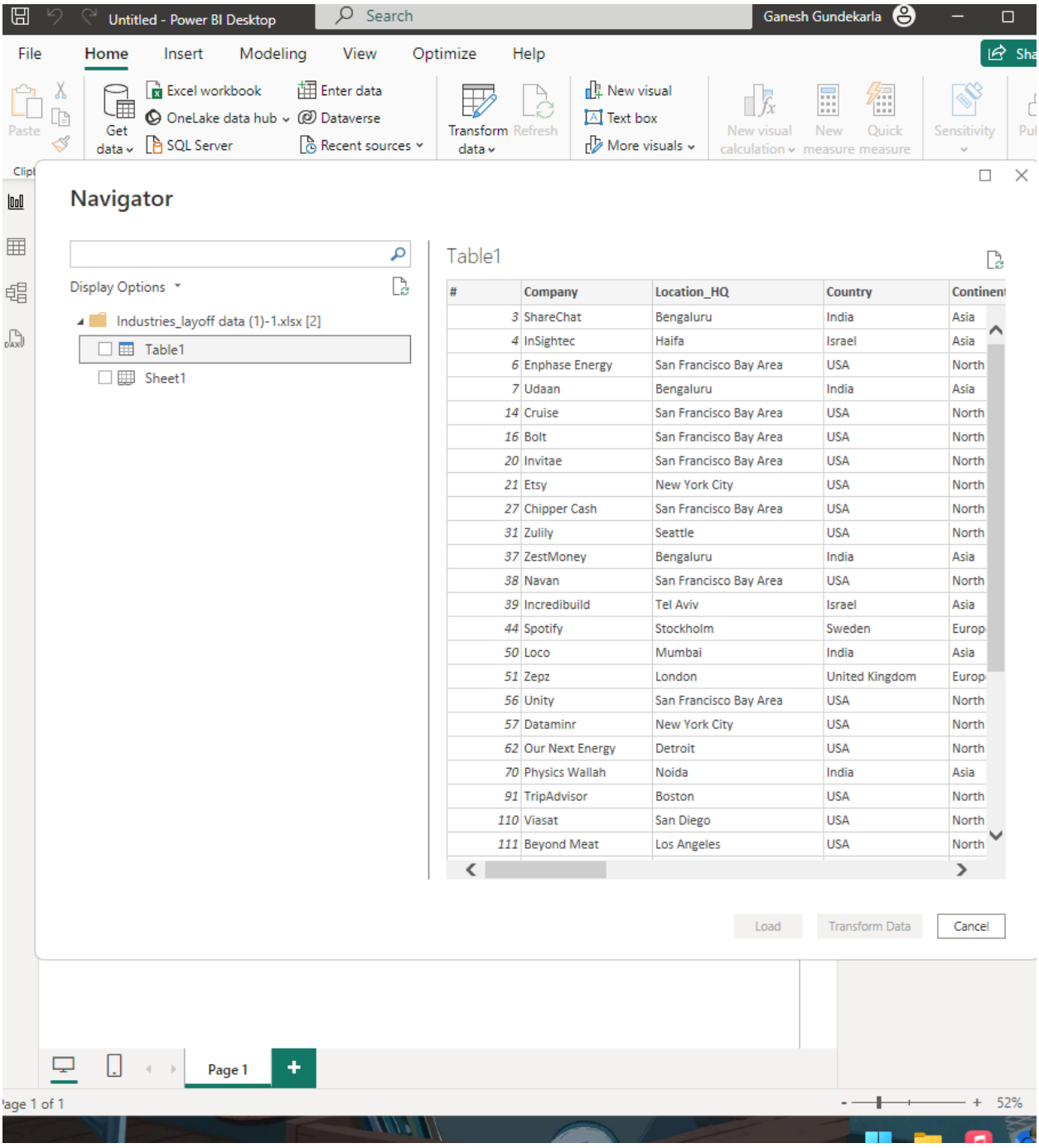
Question 4 :



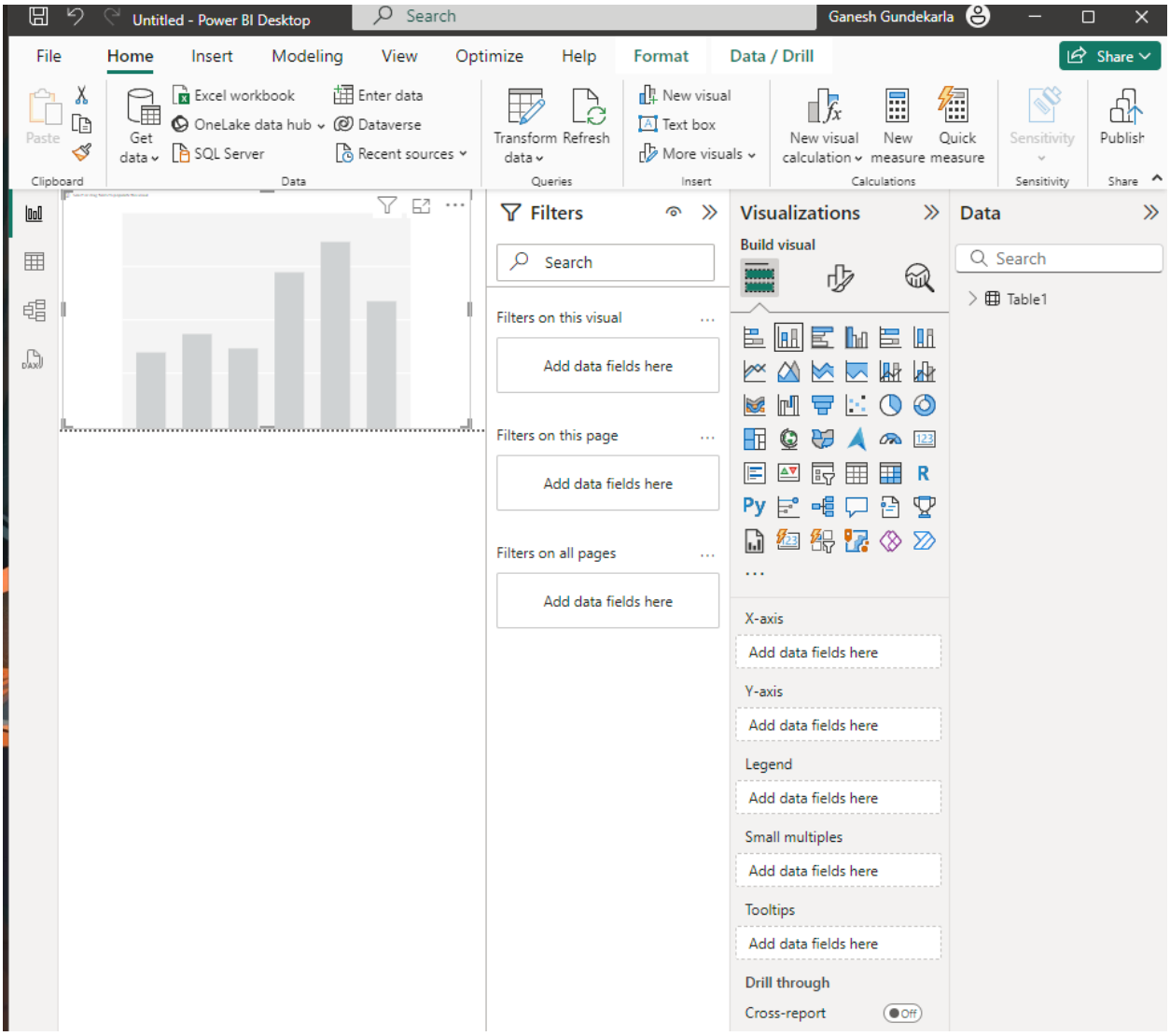
Here , as I can observe that most of the orders of the sales grew in the weekend of the dates where , the order dates are mostly in the weekends contributing much of the sales.

Tutorial 3 :

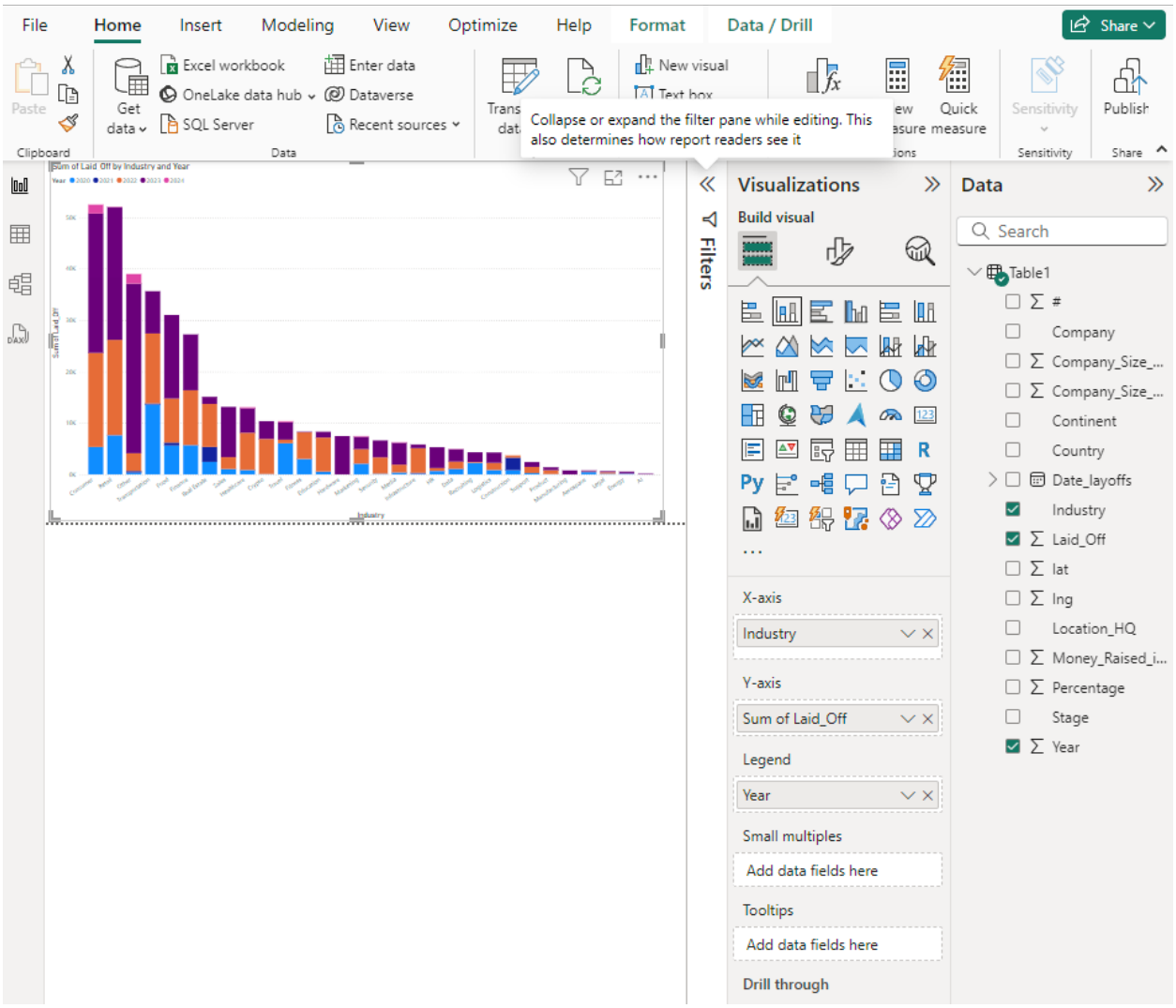
Step 1 : importing the industries layoff data .



Step 2 : choosing the stacked column chart option .

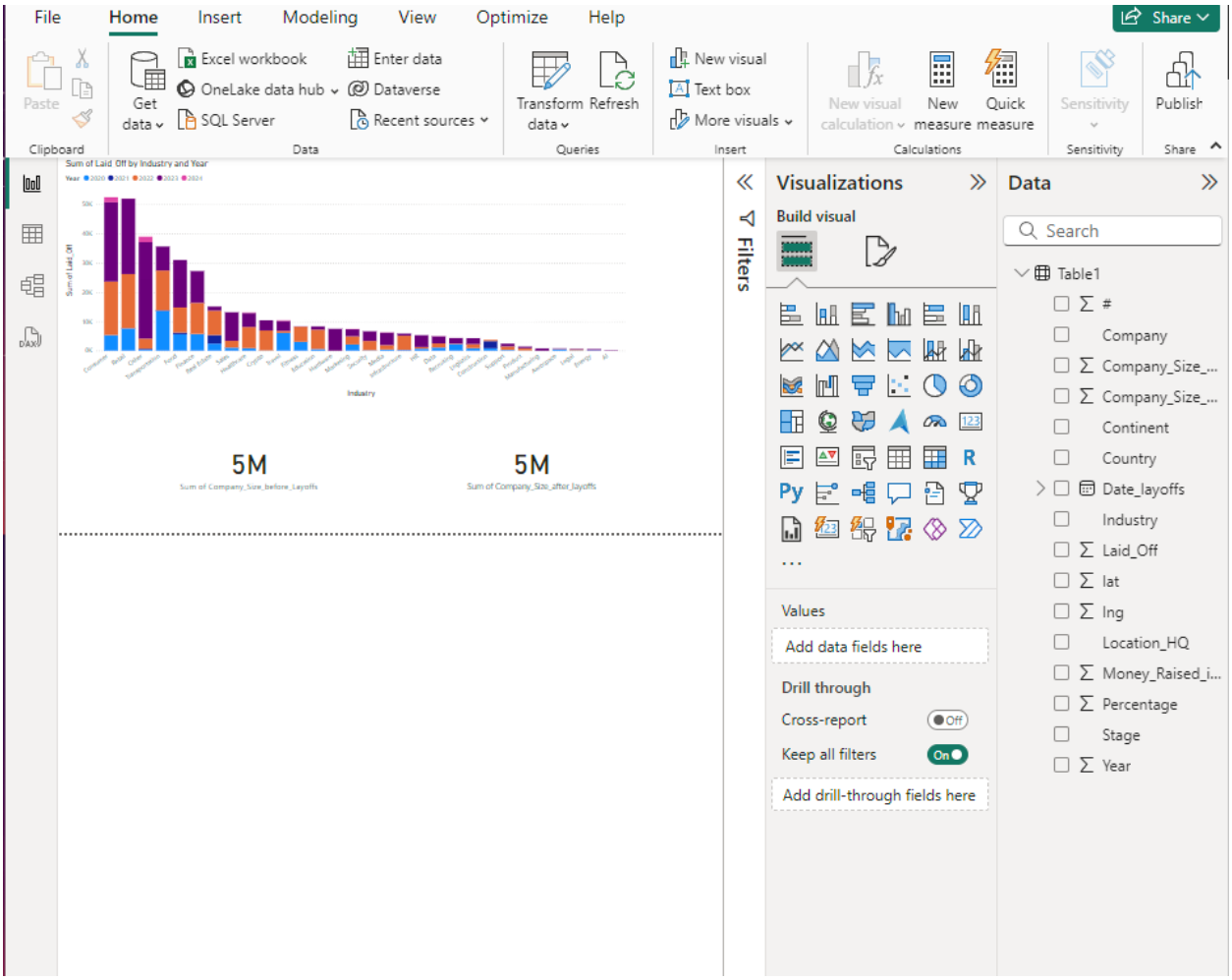


Step 3 : assigning the values to the chart.



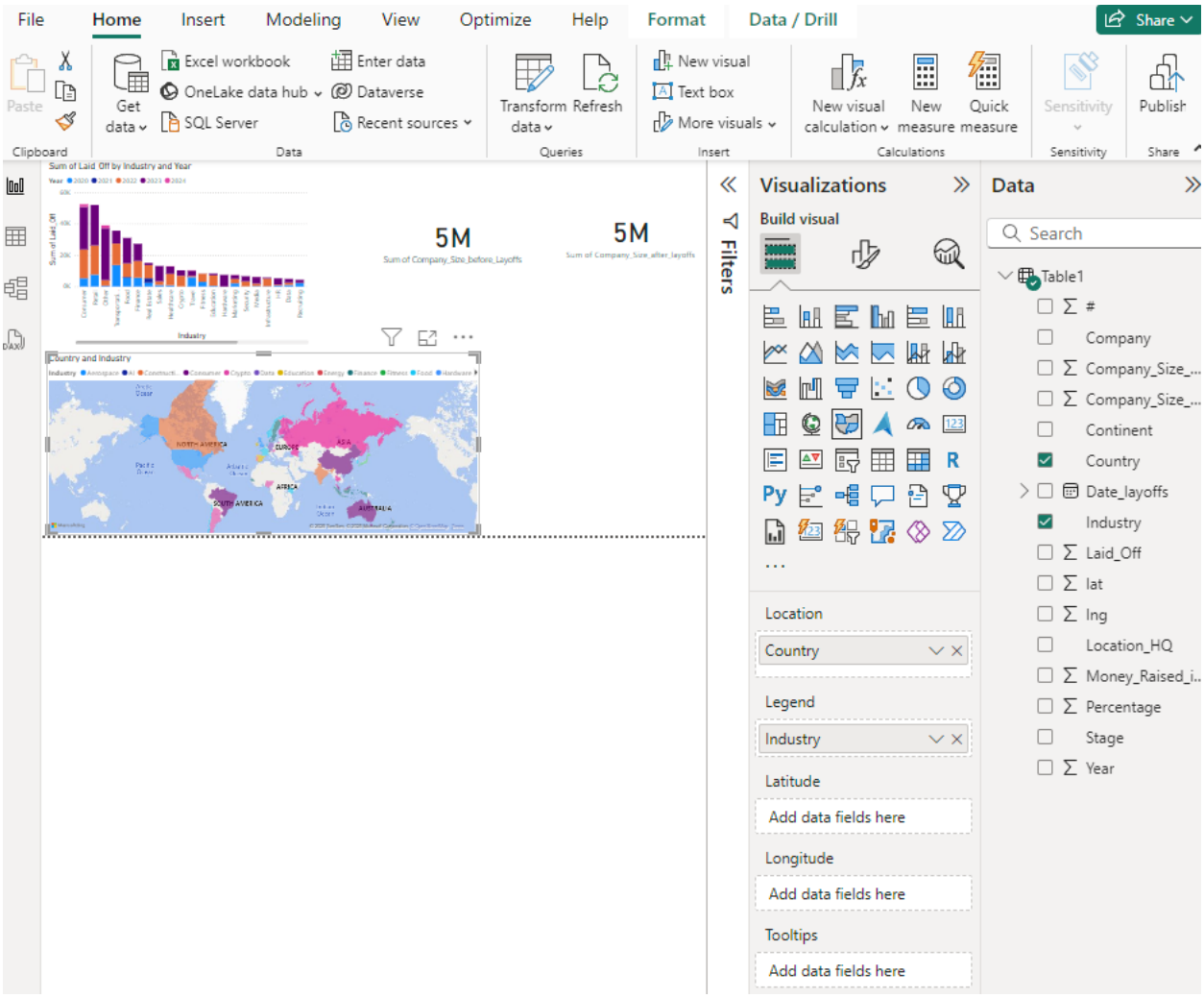
Step 4 :

Adding cards to display the company sizes before and after the layouts.

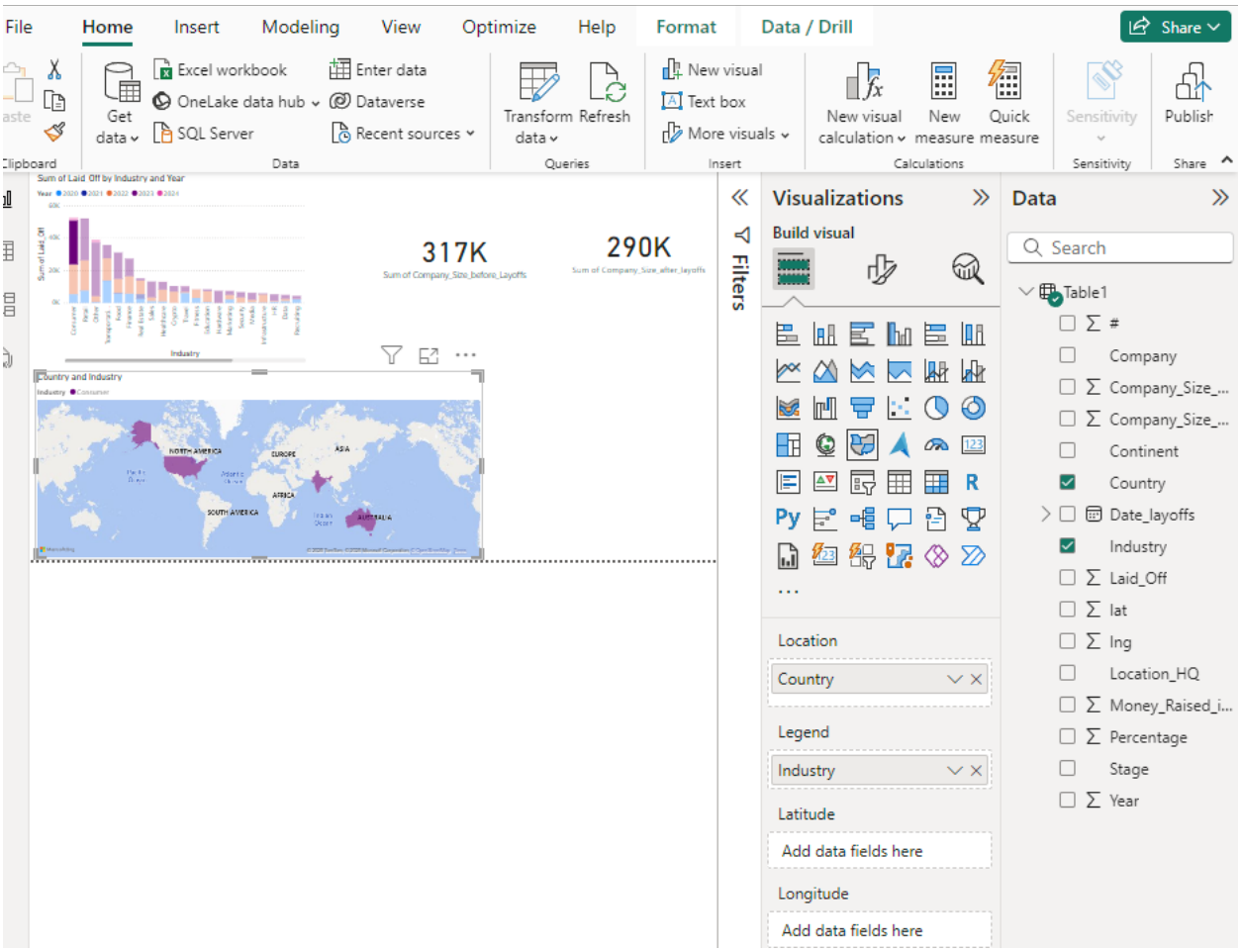


Step 5 :

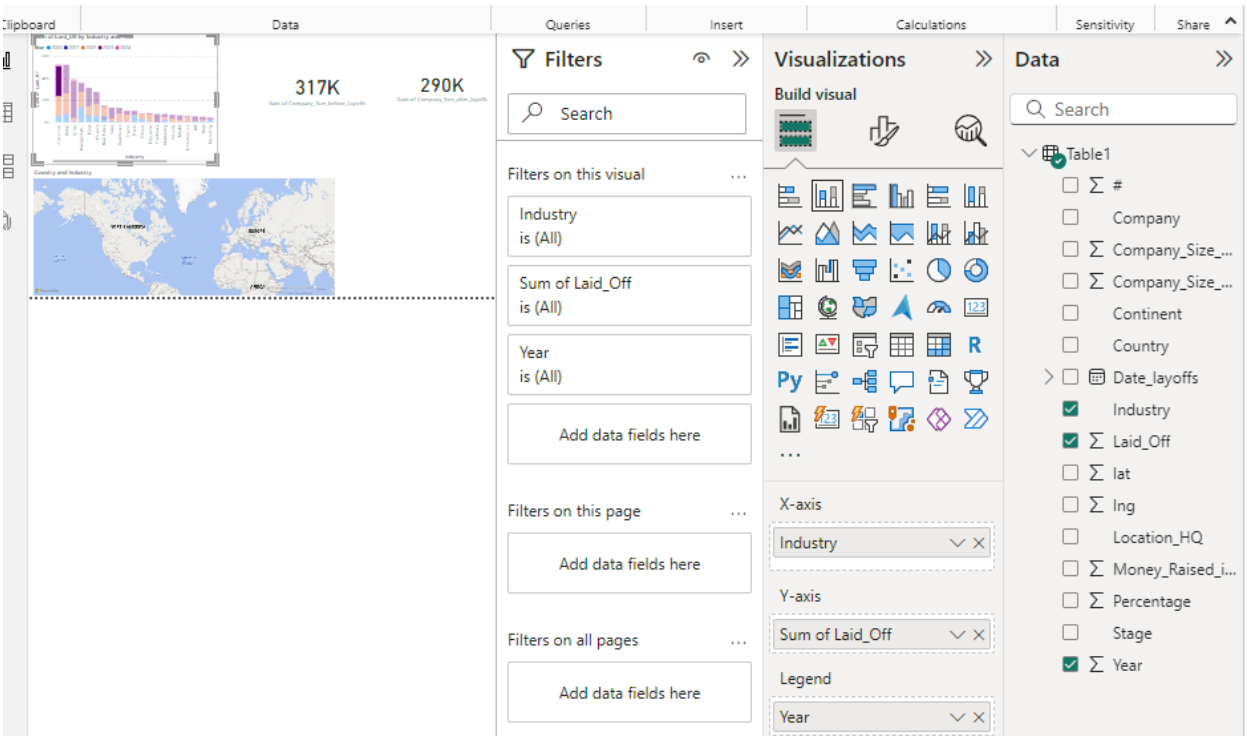
Adding a map visualization



Step 6 : selecting a specific industry and extracting it’s details.

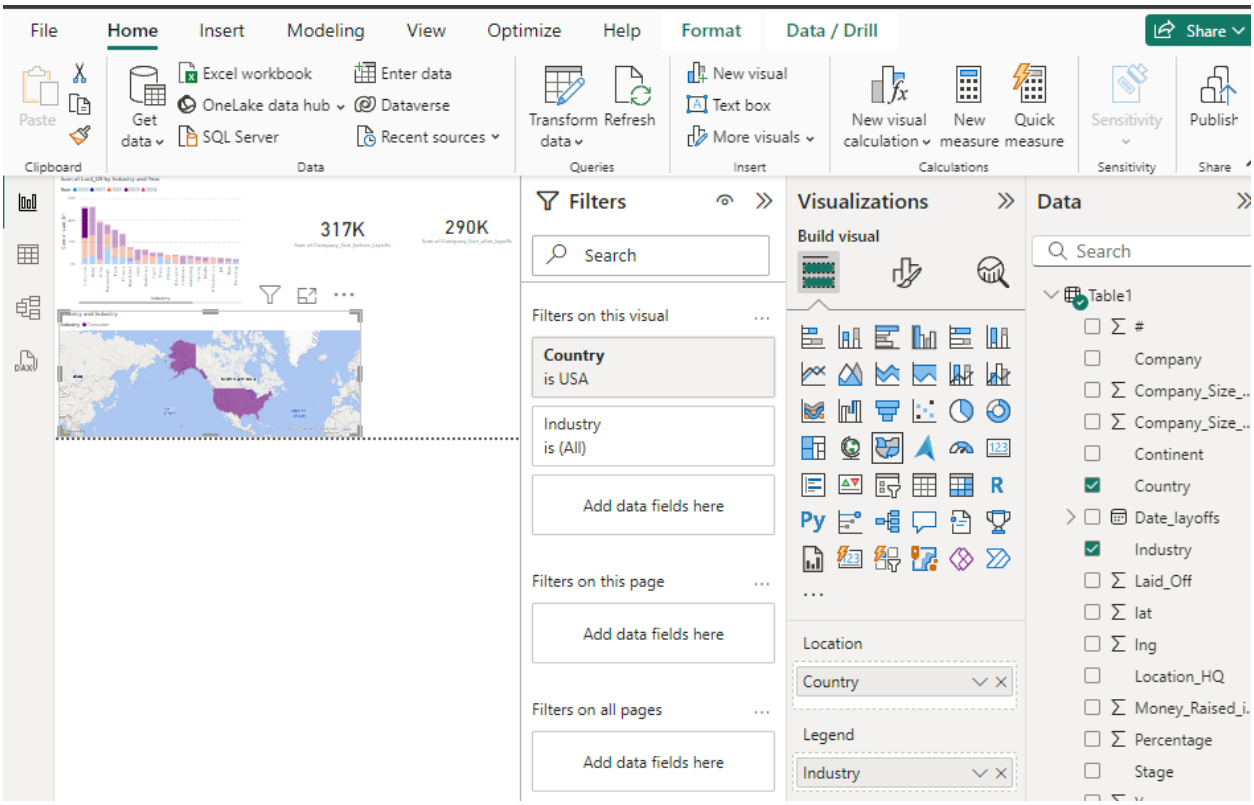


Step 7 : applying filters in countries and type of industries.



Questions :

Question 1 :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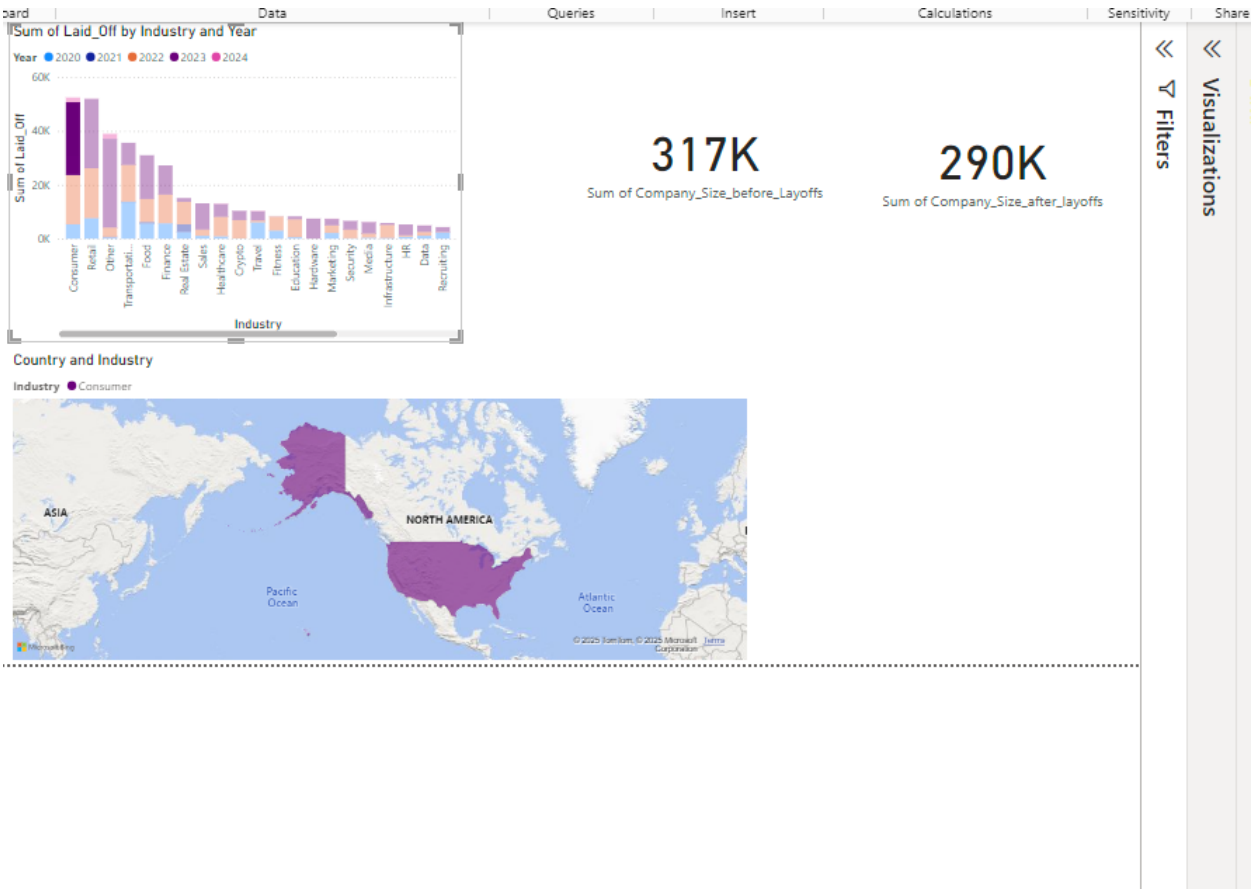
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Sum of Laid_Off by Industry and Year
Year 2020 2021 2022 2023 2024
60K
40K
20K
0K
Sum of Laid_Off
Consumer
Retail
Other
Transportati...
Food
Finance
Real Estate
Sales
Healthcare
Crypto
Travel
Fitness
Education
Hardware
Marketing
Security
Media
Infrastructure
HR
Data
Recruiting
Industry
317K
Sum of Company_Size_before_Layoffs
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Country and Industry
Industry Consumer
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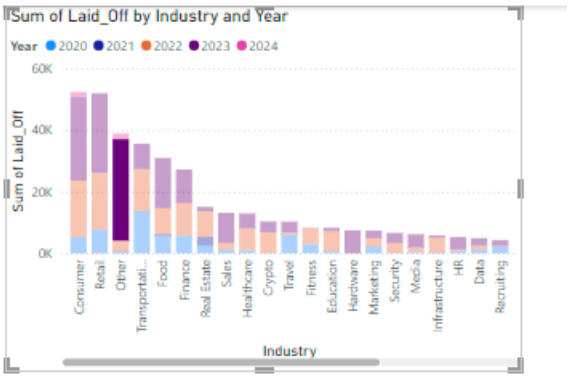
Pacific Ocean
Atlantic Ocean
Filters
Visualizations



Country and Industry

Industry Other

539K

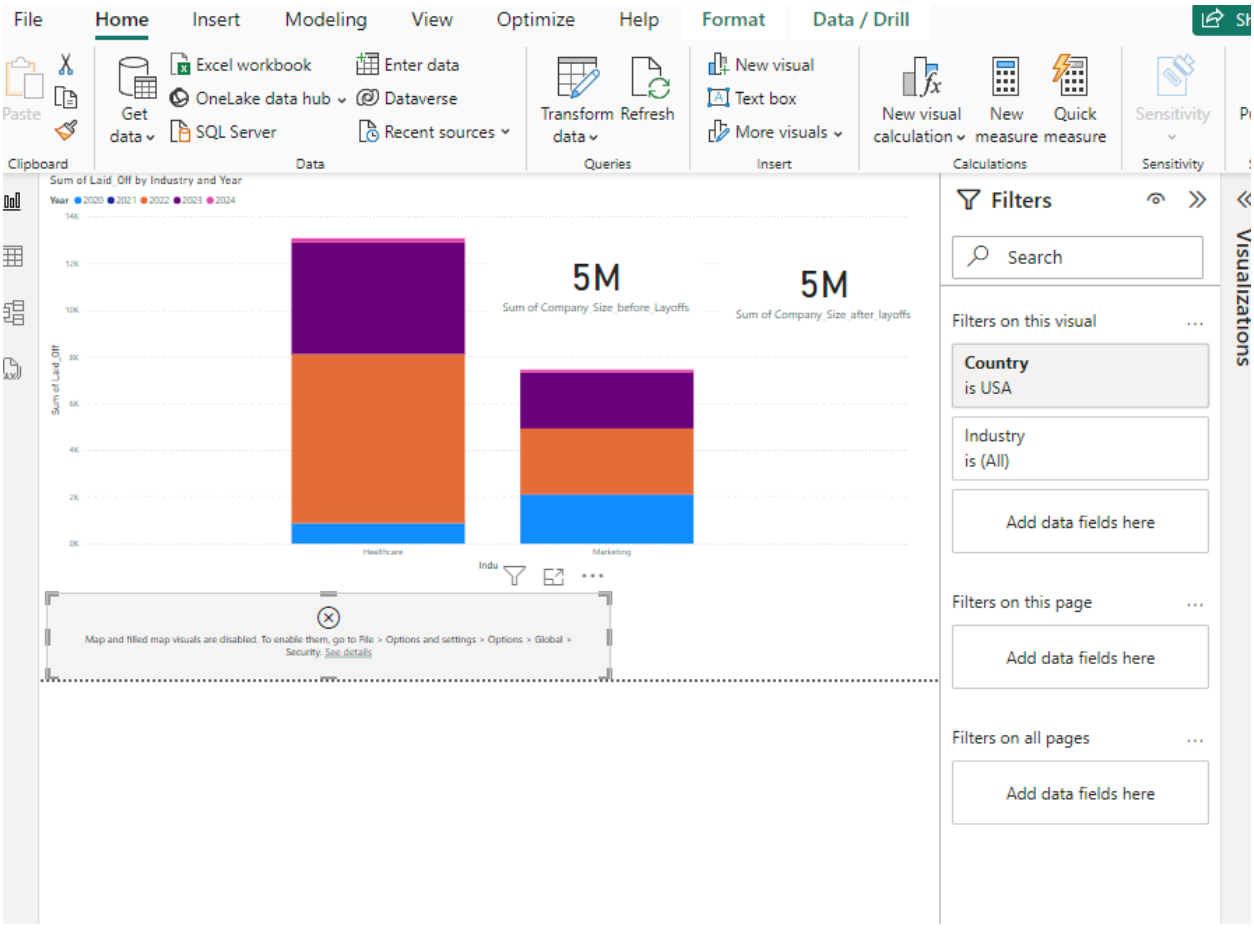
Sum of Company_Size_before_Layoffs

506K

Sum of Company_Size_after_layoffs

Transportation sector has one the largest layoffs industries that has been recorded in 2023 with cosumer and retails being the second and third . 2023 saw a mass layoffs compared to most years and other years it is recorded low.

Question 2 :

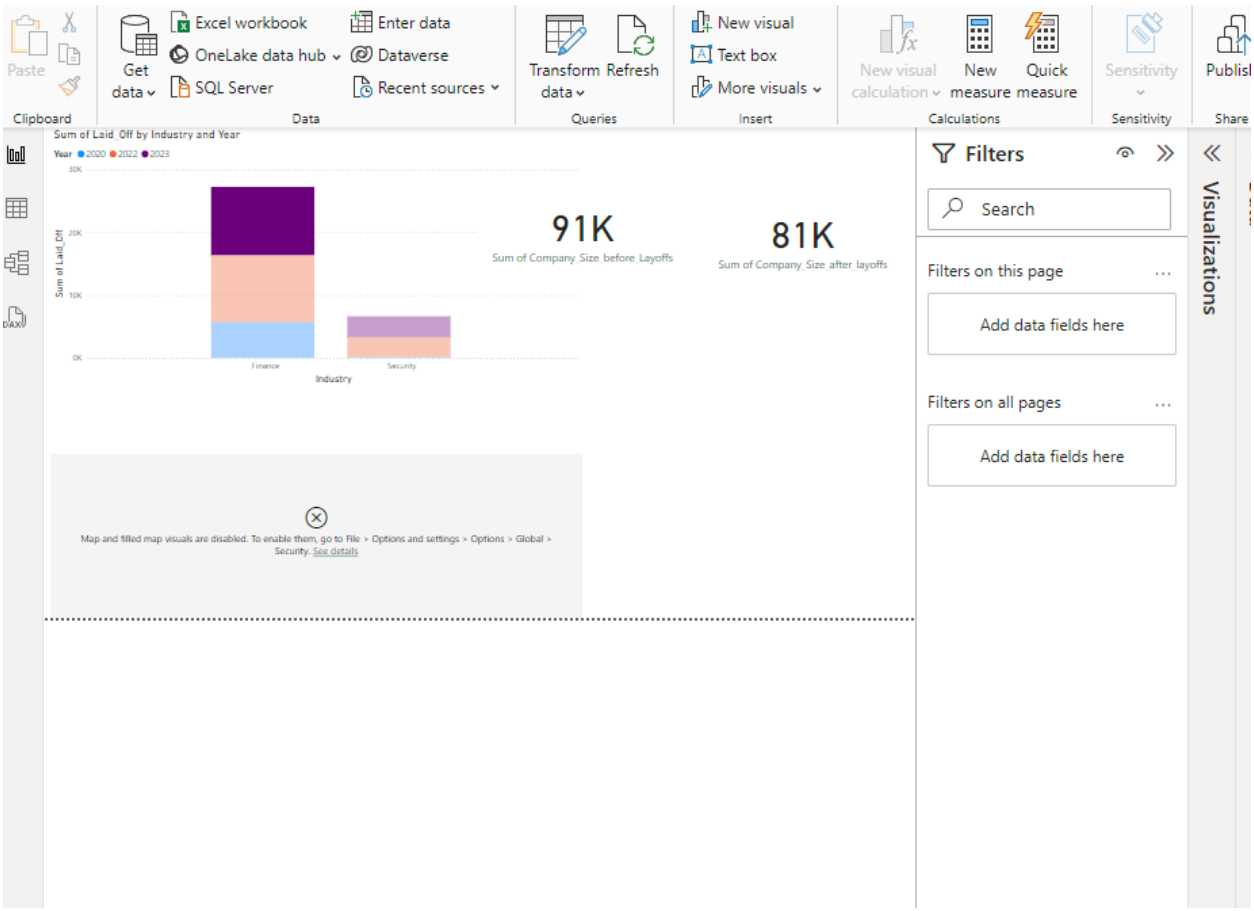


Applied filter to only healthcare and marketing.

In healthcare , 2022 saw a major layoff season as compared to marketing , this also is same to the 2023 year where , the healthcare layoff is huge when compared with 2023 year's of marketing . Health care industry seems to have a large impact on the layoffs.

Question 3 :

Filters for countries too .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Sum of Laid_Off by Industry and Year
Year 2020 2022 2023
Sum of Laid_Off
Industry
Finance
Security
91K
Sum of Company_Size_before_Layoffs
81K
Sum of Company_Size_after_layoffs
Map and filled map visuals are disabled. To enable them, go to File > Options and settings > Options > Global > Security. See details
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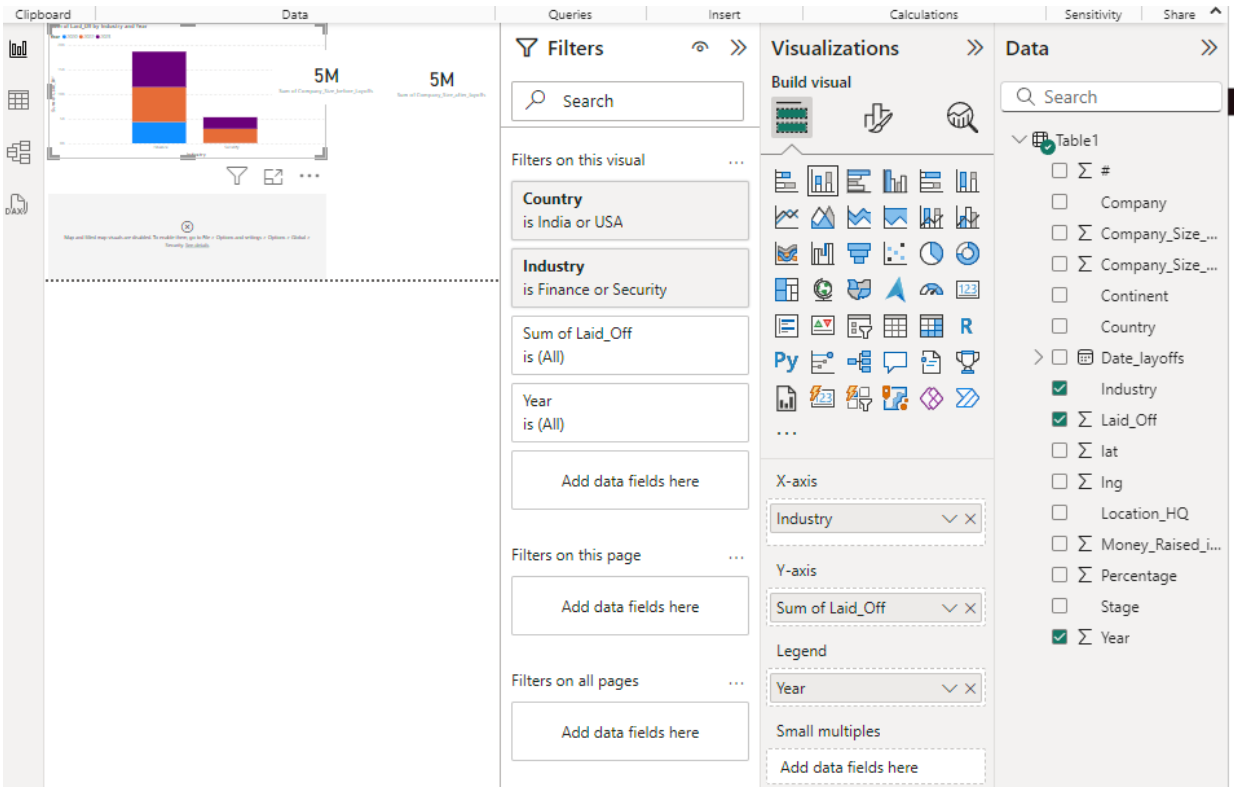
Visualizations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Country
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Industry
is Finance or Security
Sum of Laid_Off
is (All)
Year
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Visualizations
Build visual
X-axis
Industry
Y-axis
Sum of Laid_Off
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Company_Size_...
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Money_Raised_i...
Percentage
Stage
Year

Security : for this the sales drop is 3k

Finance saw higher layoffs of 7k in 2023 .

Yes , there are notable differences in layoffs and in company sizes with a massive 7k decline in finance and 4k difference in two years , every year recorded a notable amount of layoffs in finance and moderate when compared to finance in security .

Question 4 :

This task helped me to anlayze how layoffs have been happening across the word in different kind of sectors , the visualizations helped to understand how the country layoffs have been happening in different sectors with cards that provide me the data on before and after the layoffs which is calculated for yearly basis. Overall this visualization on powerBi gave me useful insights on how to compare countries when multiple sectors is to be considered and how the performance / drop in trends can also be visualized providing us with useful insights.