I

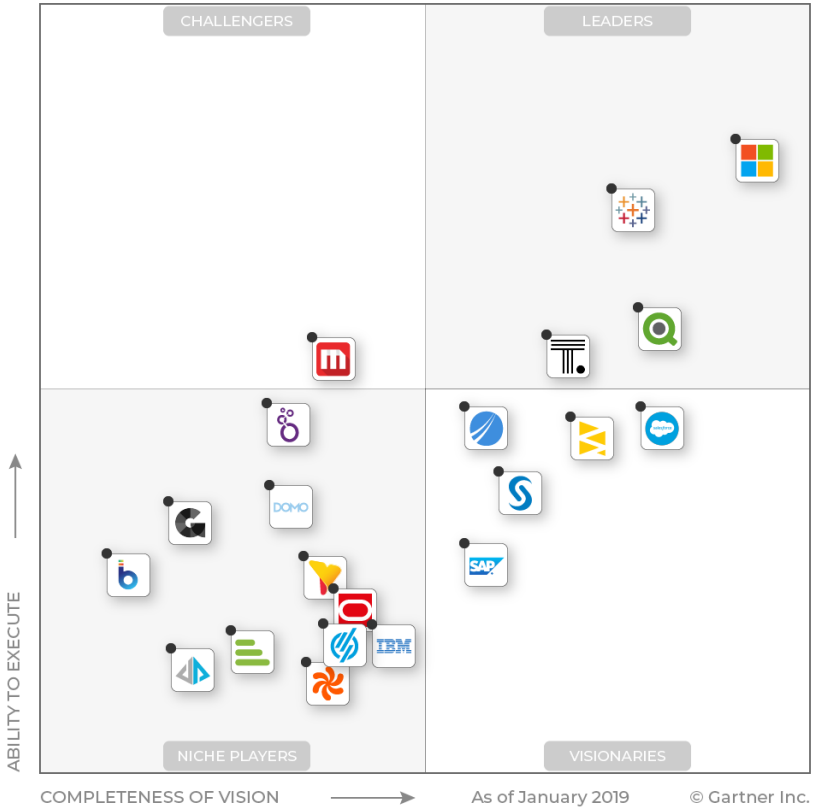
Introduction to Tableau

Data Science Academy

Tableau overview

Tableau is a Business Intelligence software for data discovery and data visualization.

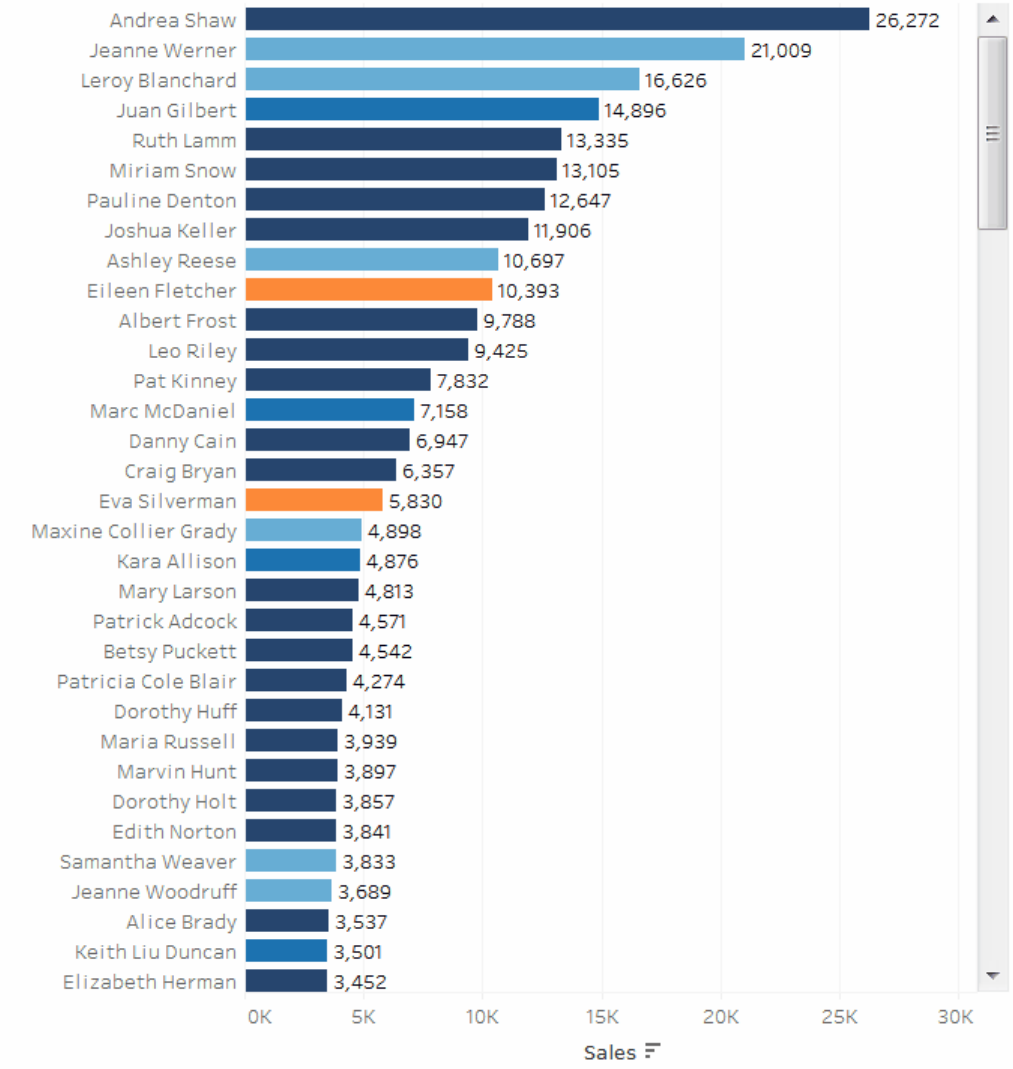
Figure 1. Magic Quadrant for Analytics and Business Intelligence Platforms



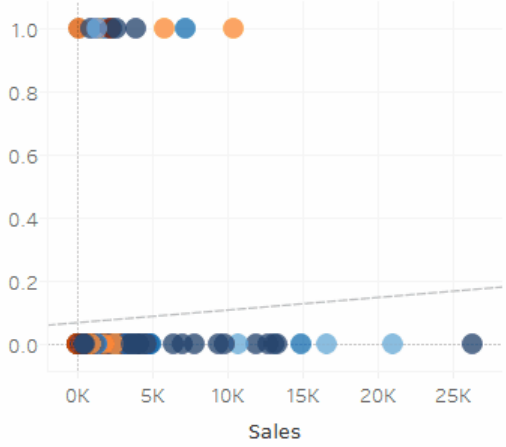
Source: Gartner (February 2019)

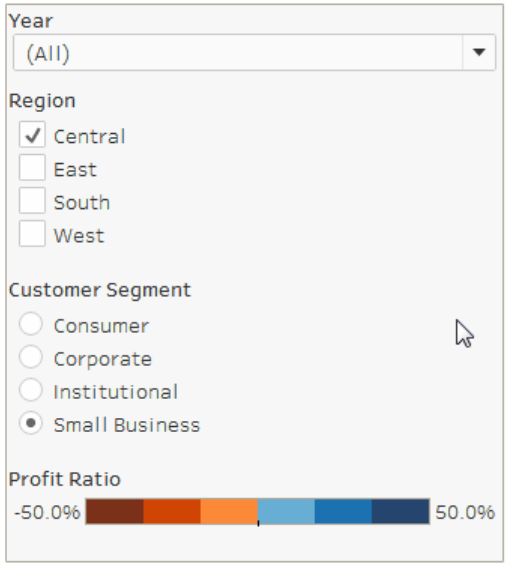
Bütün hüquqlar qorunur.

Customer Ranking

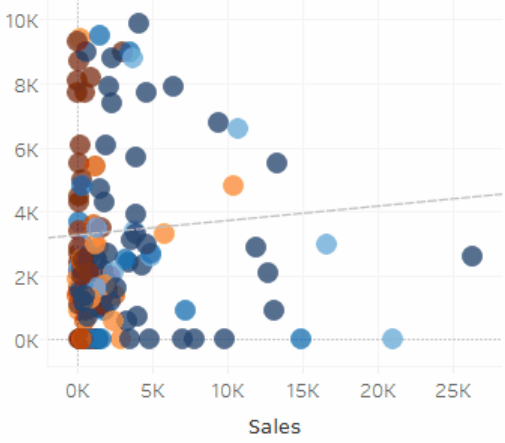


1st Determinant: Has Money Market Account

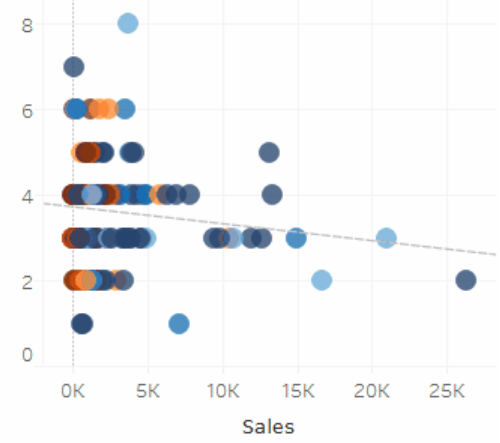




2nd Determinant: Household Income



3rd Determinant: Household Size



Bütün hüquqlar qorunur.

Tableau features

Easy to use for all skill levels

Direct connection

Rapid results to useful information

Easy publishing and sharing

Beautiful and interactive dashboards

Ideal for complex visualization

Bütün hüquqlar qorunur.

Tableau products

Tableau Public

- Public sharing of dashboards and visualizations

Tableau Desktop

- Main end user analytical tool
- Used for creating dashboards

Tableau Online

- Analytics platform fully hosted in the cloud
- Allows you publish and share dashboards

Tableau Reader

- Allows any user to open and interact with your visualizations and dashboards

Tableau Prep

- Designed to make preparing your data easy and intuitive
- Used to combine, shape, clean your data for analysis

Tableau Server

- Allows you to share analysis
- Used to publish interactive analysis and dashboards

Bütün hüquqlar qorunur.

Installation of Tableau

Installation of Tableau

Tableau Desktop

https://www.tableau.com/

- More types of files can be connected.
- Nobody can see your reports without permission
- Unlimited rows of data can be stored ,processed and shared.

Tableau Public

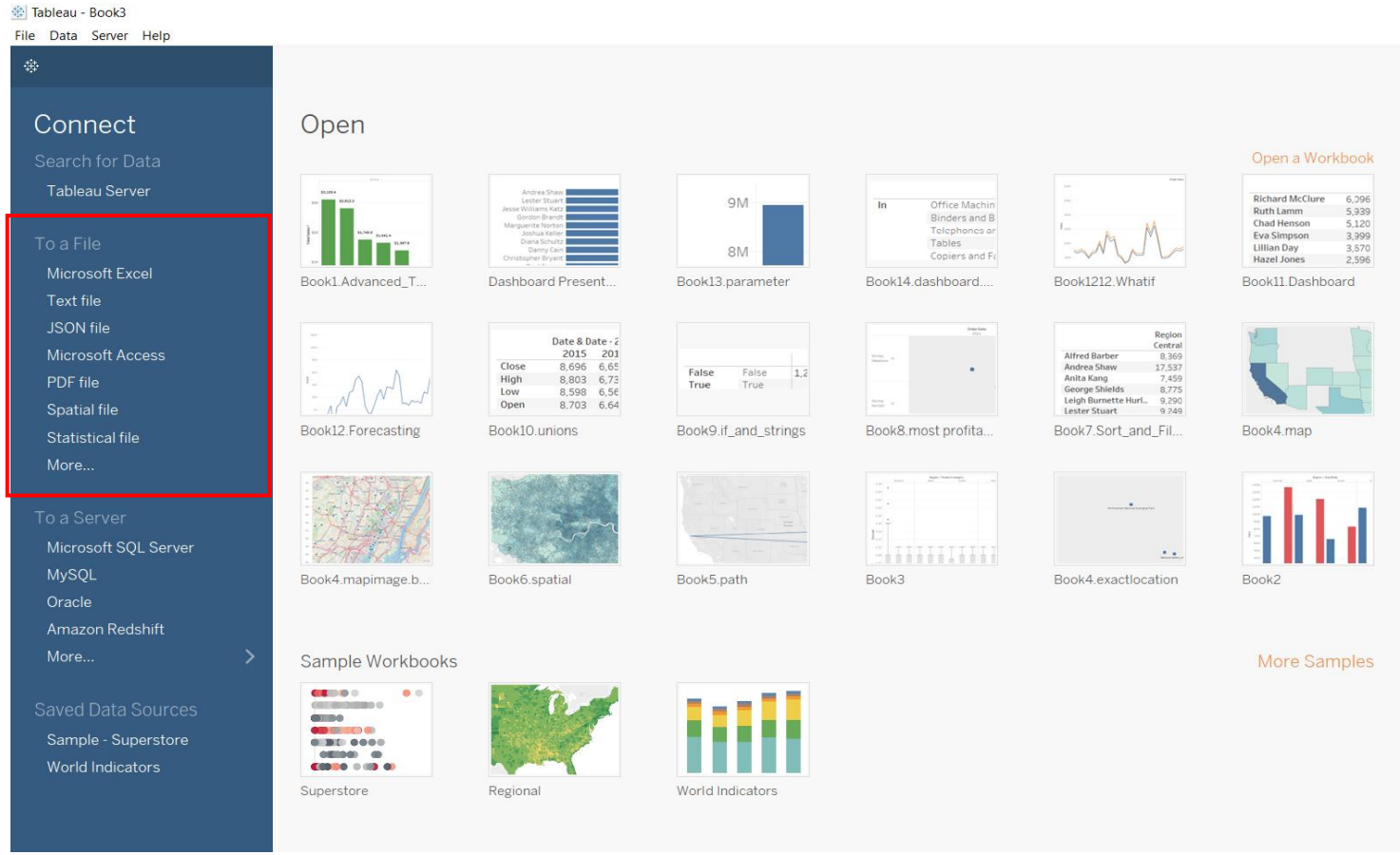
https://public.tableau.com

- Few numbers of files are connected.
- All the reports are public
- 1 million rows of data can be stored, processed and shared.

Bütün hüquqlar qorunur.

Importing data

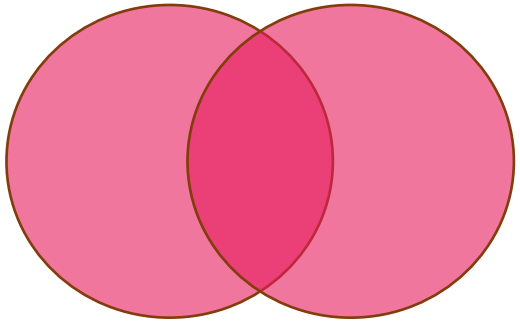
Choose file type from highlighted area



Bütün hüquqlar qorunur.

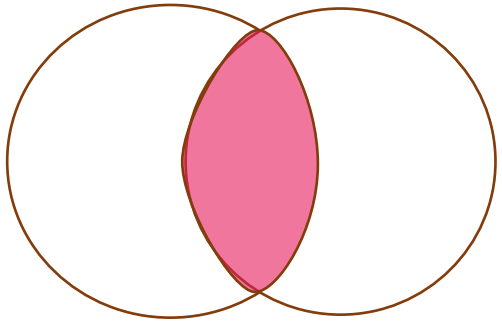
Merging tables

Types of joins



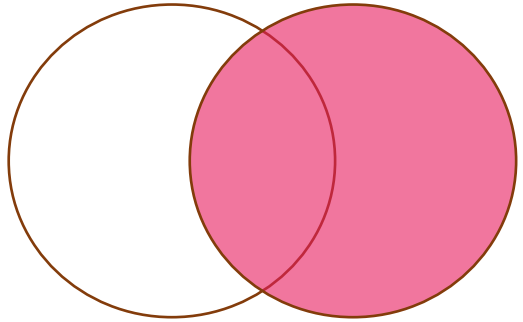
Full outer join

Combines left outer join and right outer join. Returns all rows from both the tables.



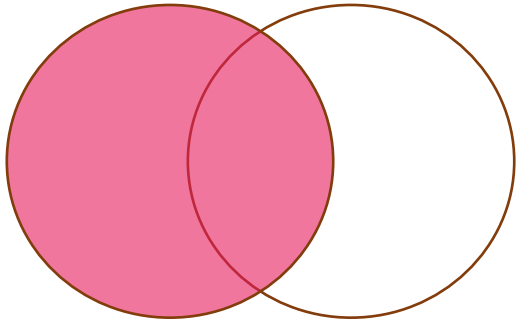
İnner join

Returns only those rows that exists in both the tables.



Right join

Returns all rows from right table and from left table returns only matched records.



Left join

Returns all rows from left table and from right table returns only matched records.

Bütün hüquqlar qorunur.

Merging tables

Two tables are given:

Countries

Country ID	Country Name
1	Azerbaijan
2	France
3	Turkey
4	Hungary
11	Iceland
14	USA

Sales

Country ID	Sales
1	800
2	700
3	600
6	400
11	200
12	450

Bütün hüquqlar qorunur.

Merging tables

Types of joins

Country Full join Sales

Country ID	Country Name	Sales
1	Azerbaijan	800
2	France	700
3	Turkey	600
4	Hungary	Null
11	Iceland	200
14	USA	Null
6	Null	400
12	Null	450

Country Inner join Sales

Country ID	Country Name	Sales
1	Azerbaijan	800
2	France	700
3	Turkey	600
11	Iceland	200

Country Right join Sales

Country ID	Sales	Country Name
1	800	Azerbaijan
2	700	France
3	600	Turkey
6	400	Null
11	200	Iceland
12	450	Null

Country Left join Sales

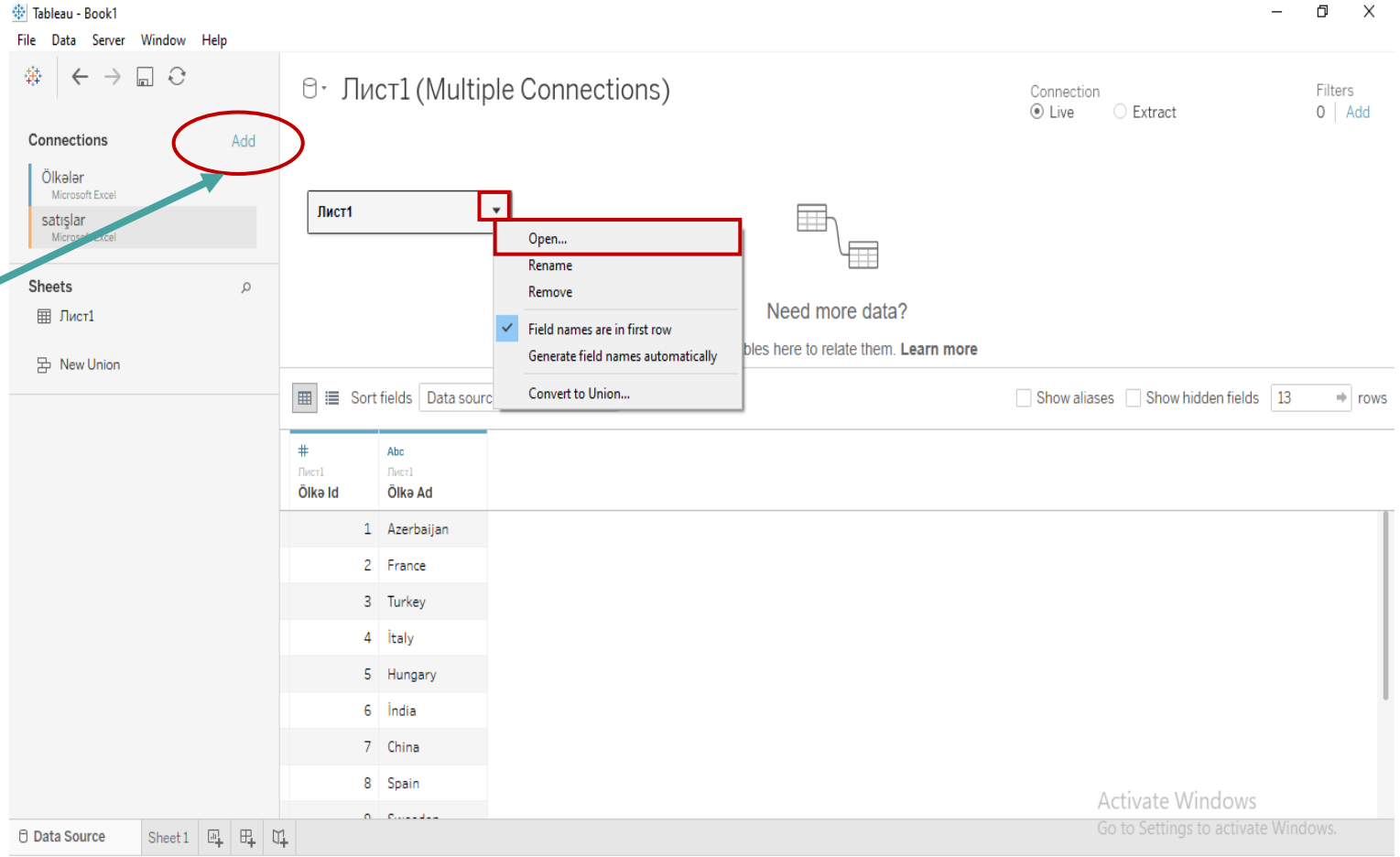
Country ID	Country Name	Sales
1	Azerbaijan	800
2	France	700
3	Turkey	600
4	Hungary	Null
11	Iceland	200
14	USA	Null

Bütün hüquqlar qorunur.

Adding data

For adding new connection to a given data source:

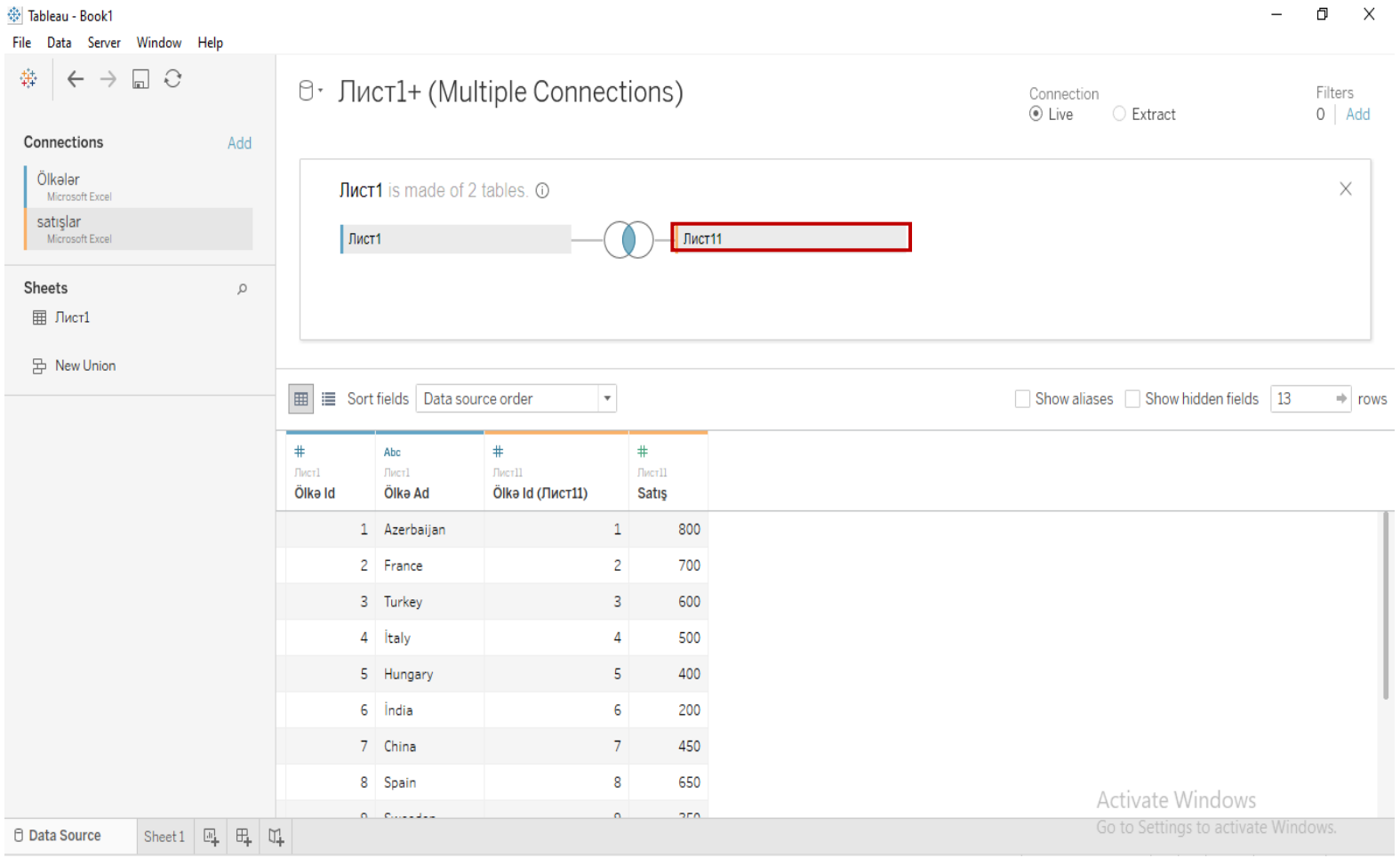
1. Connect a “Microsoft Excel” file
2. Select the dataset named “Ölkələr”
3. Click on the “Add” in the highlighted area
4. Select “Microsoft Excel” and open the file named “Satışlar”
5. Click on a arrow sign near “List 1”
6. Select open



Bütün hüquqlar qorunur.

Adding data

- Drag **“List1”** into the highlighted area
- Click **OK**

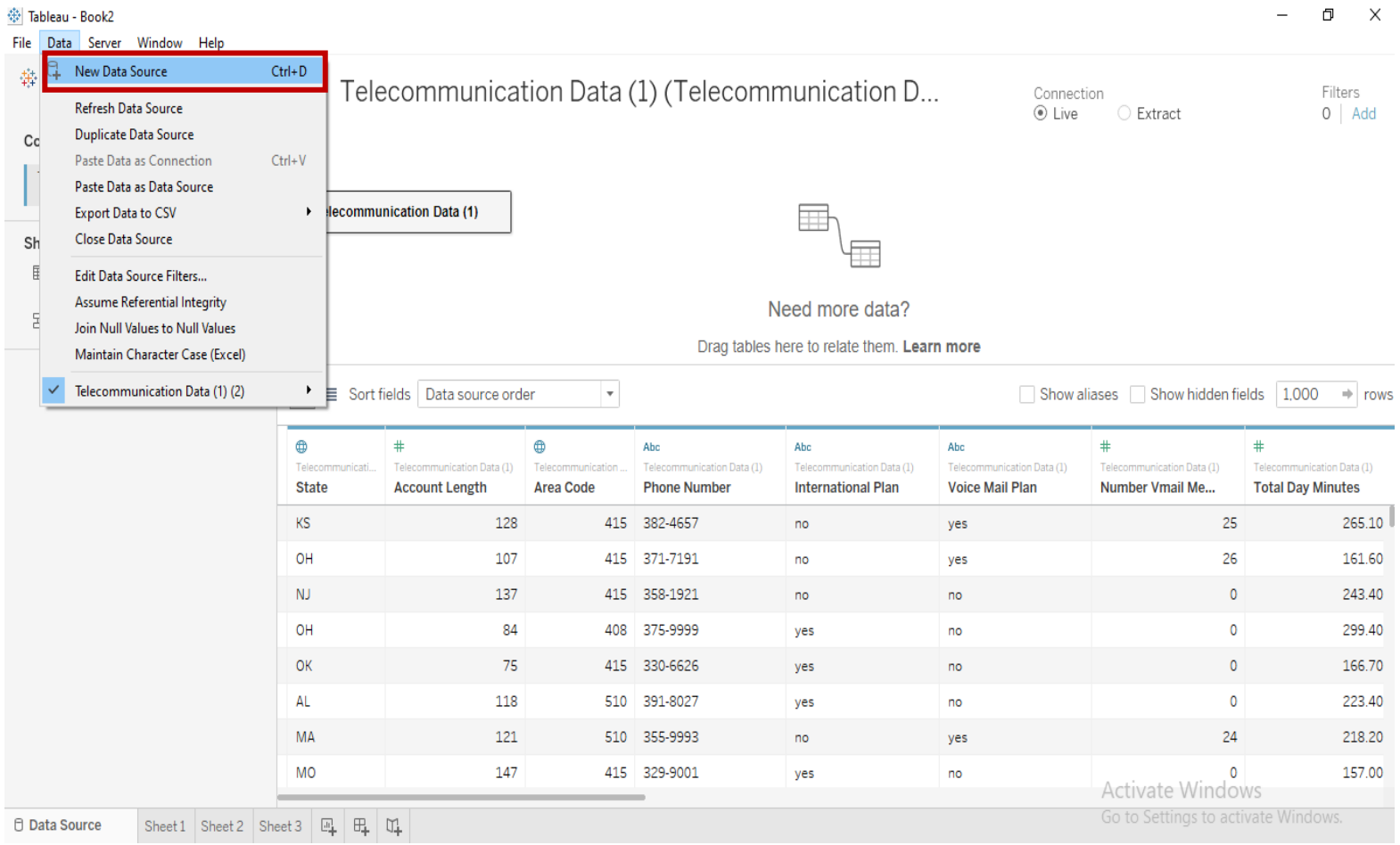


Bütün hüquqlar qorunur.

New Data Source

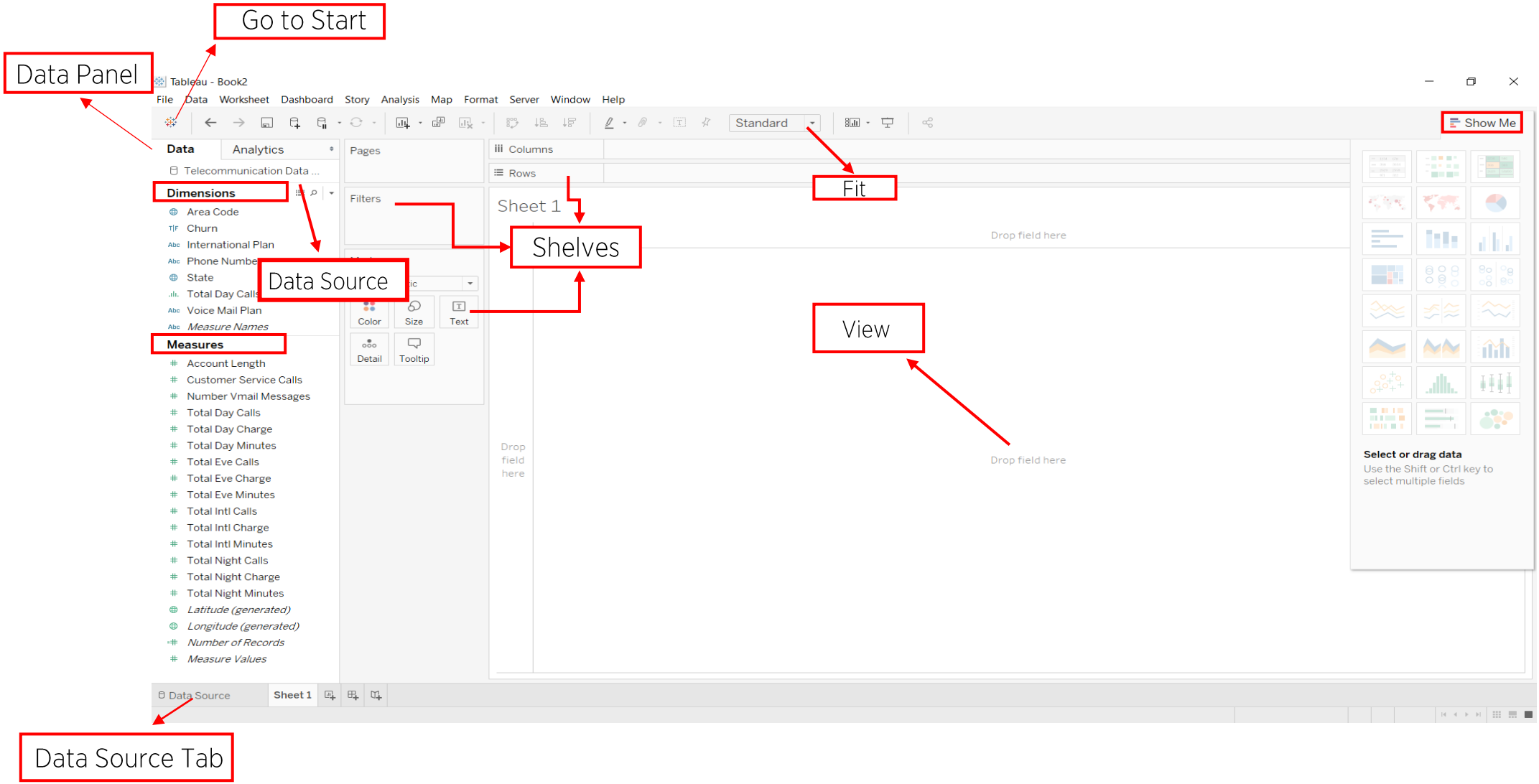
For creating a new data source:

1. Click on the **“Data”** tab in the highlighted area
2. Select **“New Data Source”**
3. Connect **“Microsoft Excel”** file
4. Select the dataset named **“Telecommunication data”**



Bütün hüquqlar qorunur.

User Interface



Bütün hüquqlar qorunur.

Types of data

Data

Dimensions

- Categorical data
- Independent

Measures

- Numerical data
- Dependent

Types of Data

- Text (String) values
- Numerical values
- Date values
- Boolean values
- Date & time values
- Geographic values

Bütün hüquqlar qorunur.

II

Graphs and Charts

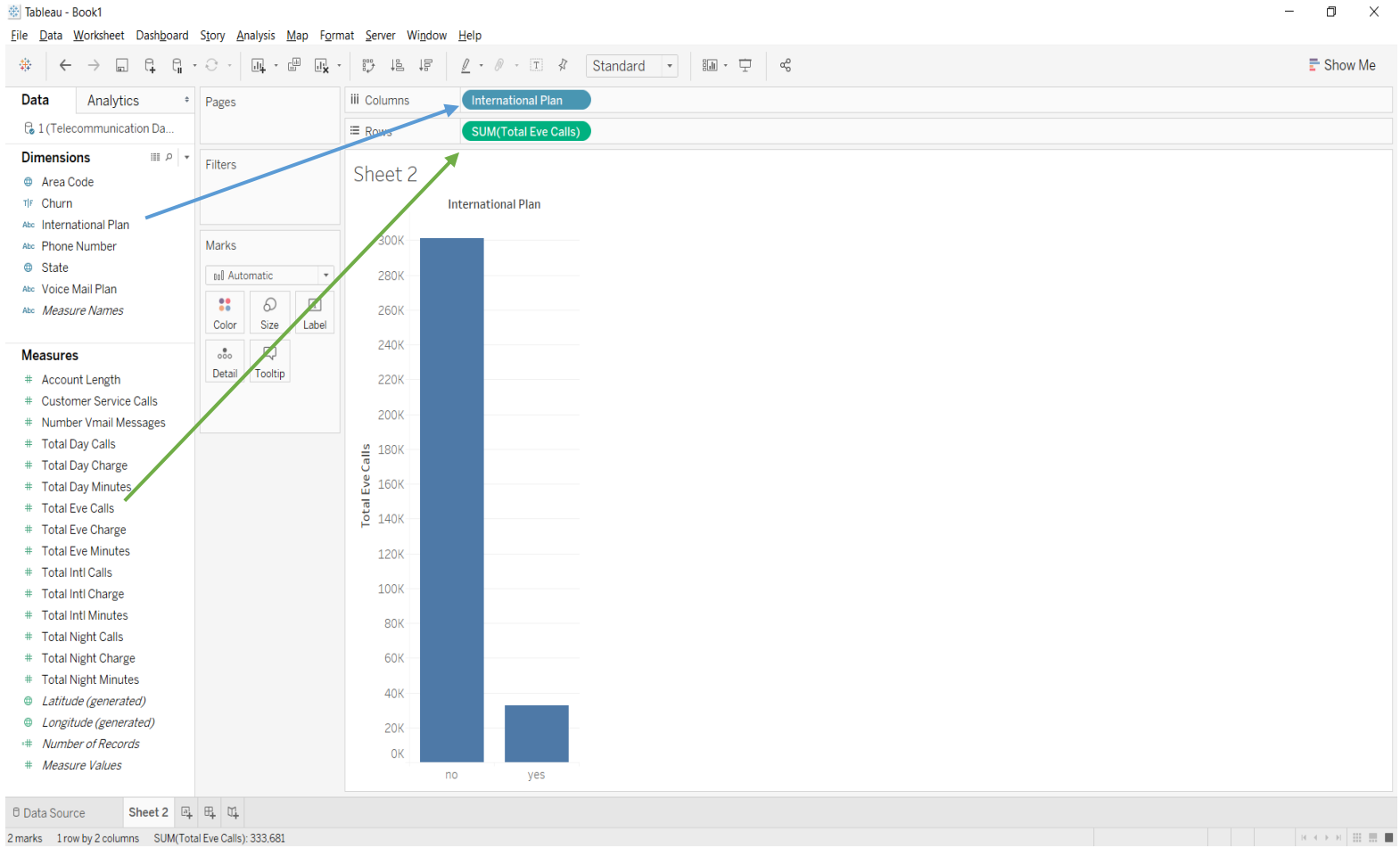
Data Science Academy

Bars

For creating bar chart:

1. **Drag international** Plan to Columns and **Total Eve Calls** into the Rows

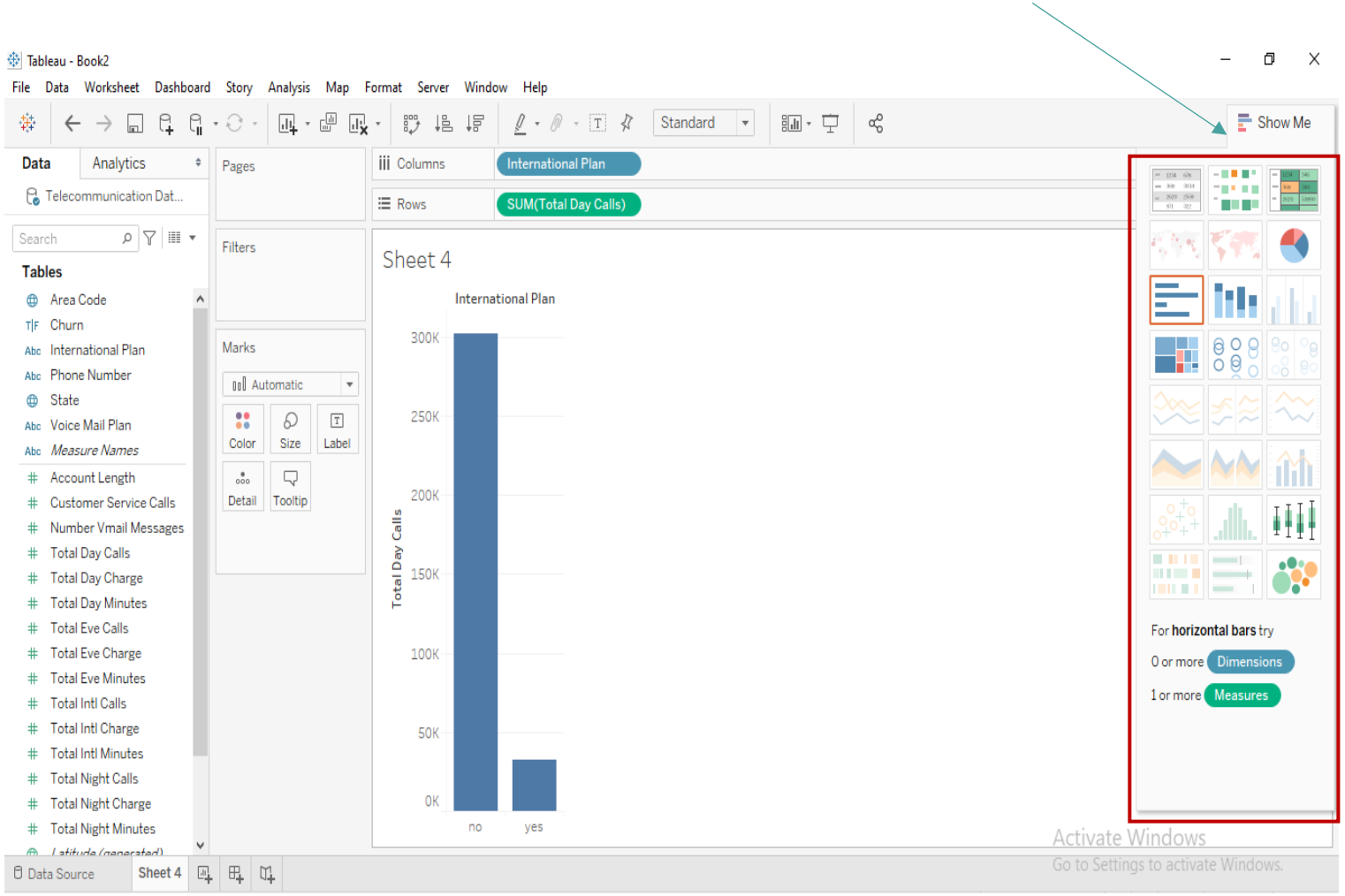
Tableau will automatically create Bar chart for you



Bütün hüquqlar qorunur.

Bars

- In Tableau, user can insert different type of Charts and Graphs from Show Me menu after adding Dimensions and Measures to Columns and Rows accordingly.
- Each graph has own requirements.
- Check requirements in highlighted area

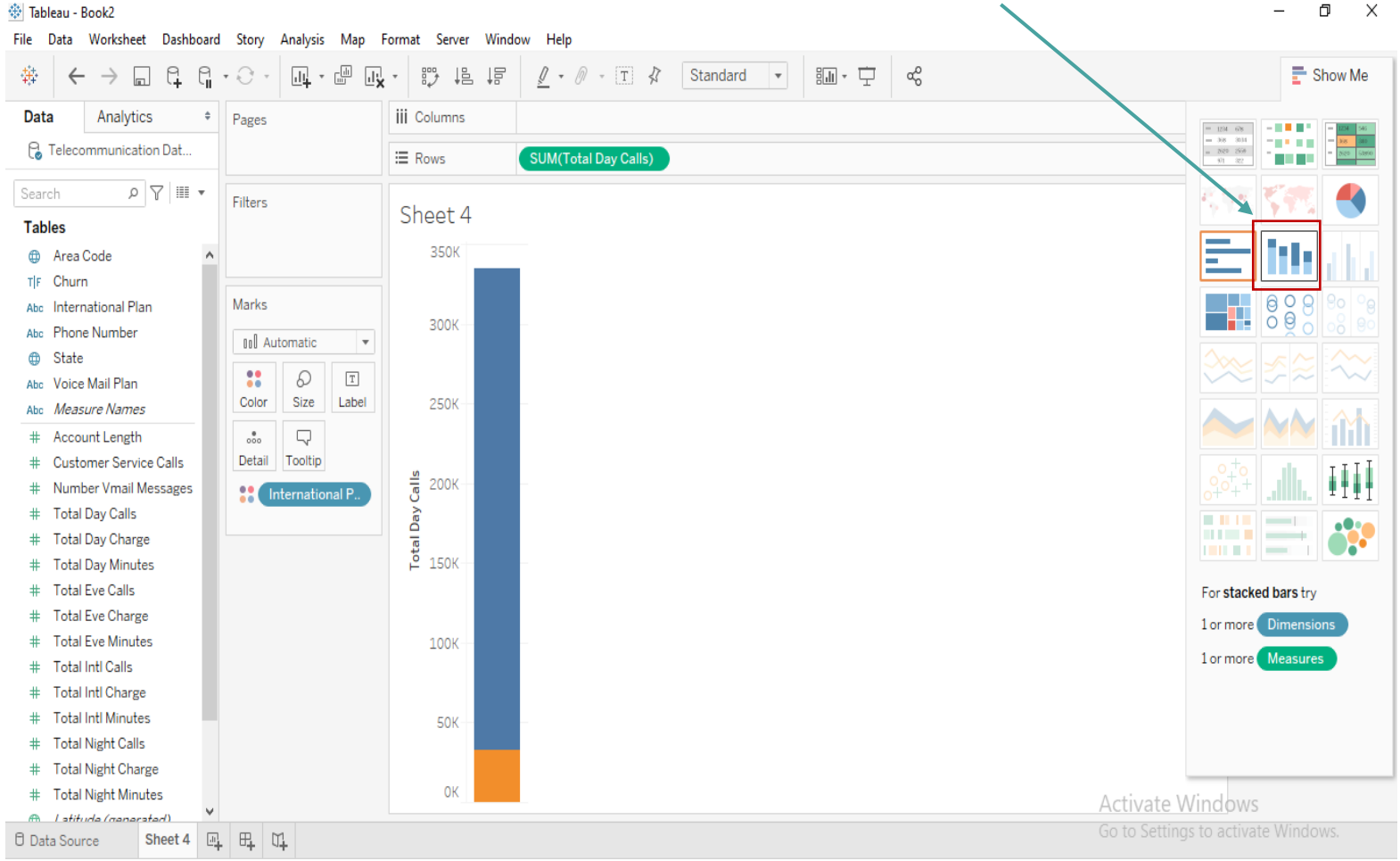


Bütün hüquqlar qorunur.

Bars

For changing the chart type:

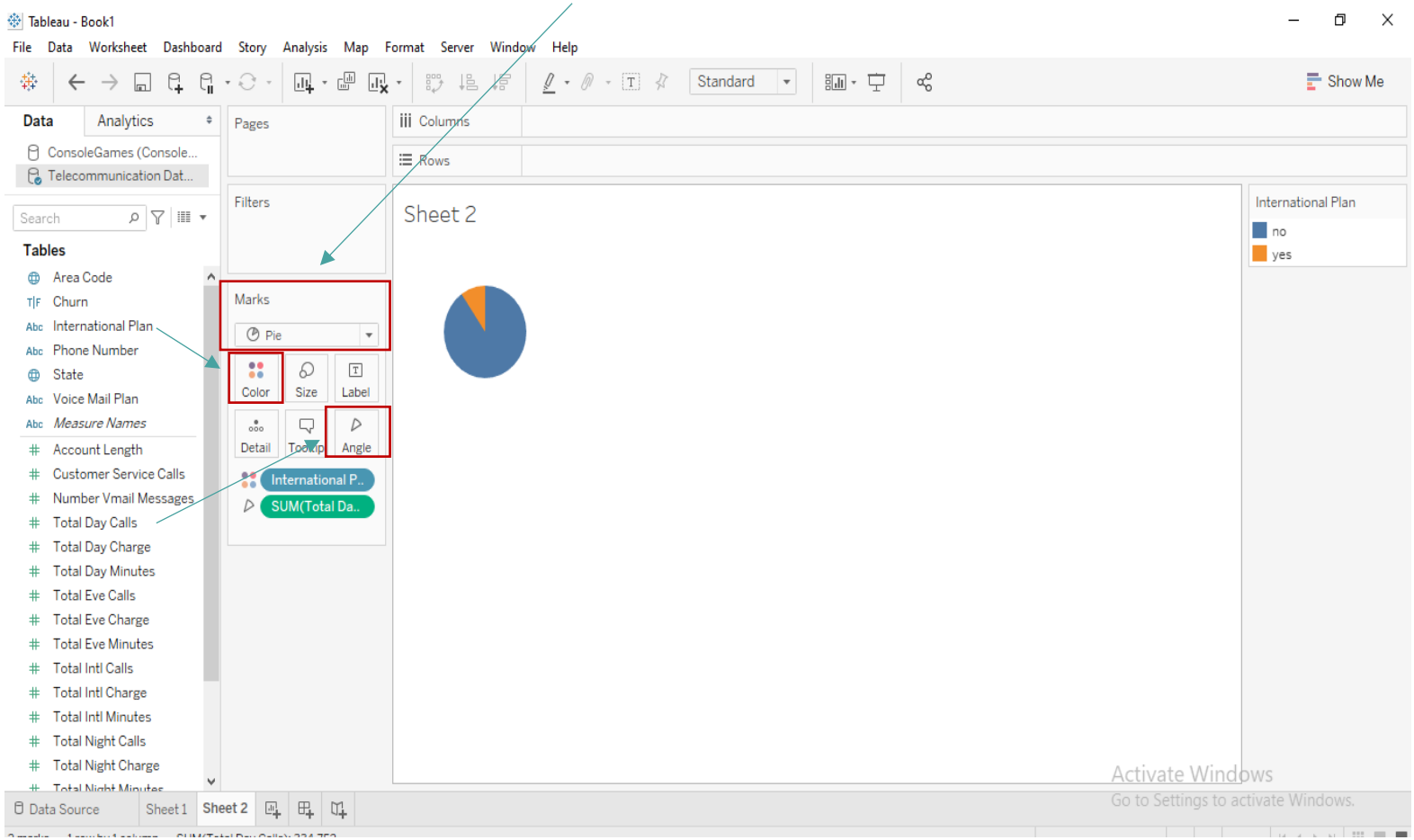
1. Choose “Stacked” bars from the **“Show Me”** area



Bütün hüquqlar qorunur.

Visualization of Pie Chart

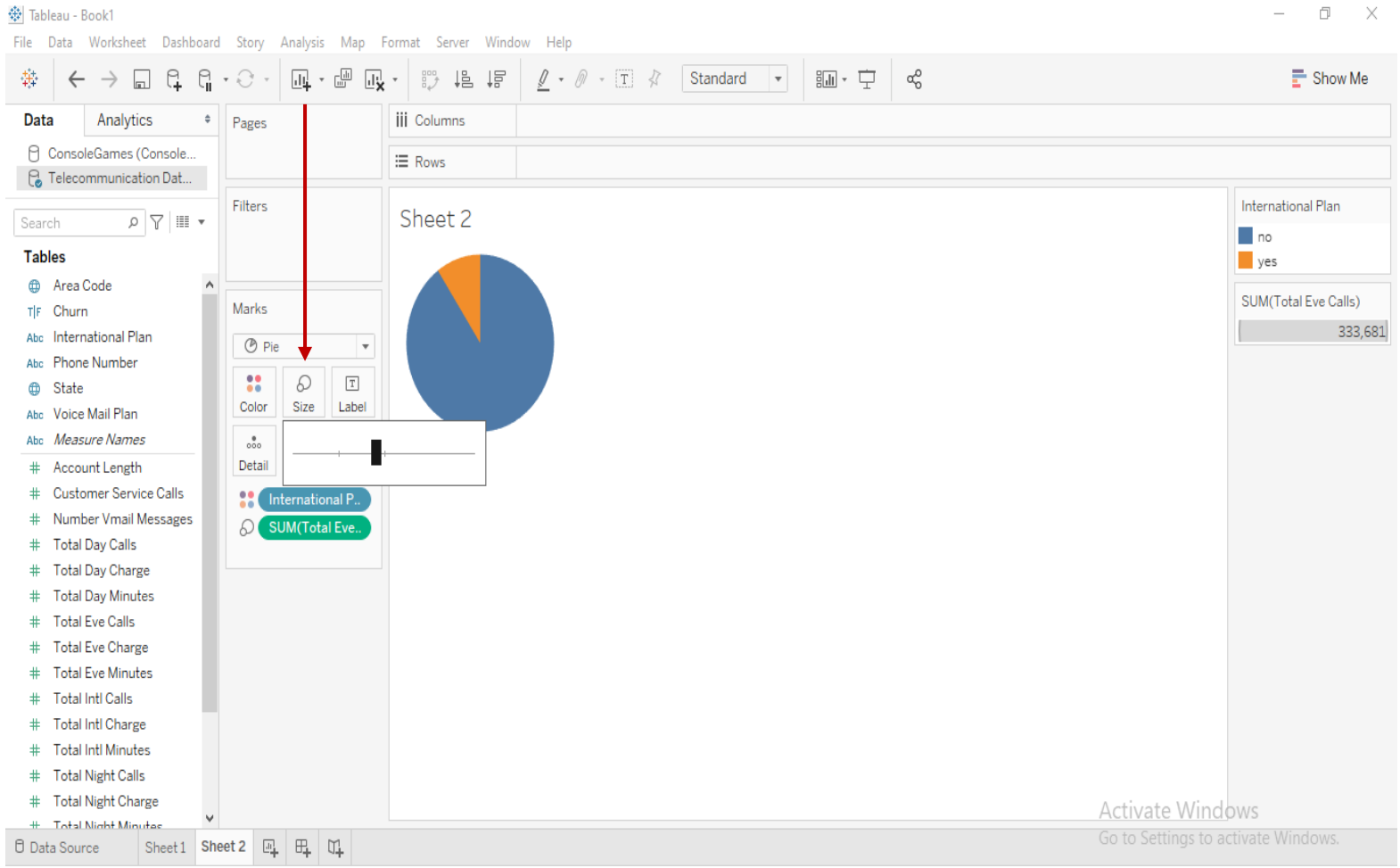
1. Select “Pie Chart” from the “Marks” section
2. Drag “International plan” into the “Color”
3. Drag “Total day calls” into the “Angle”



Bütün hüquqlar qorunur.

Size of Pie Chart

- For changing the size of the pie chart click to the size from the **Marks** area

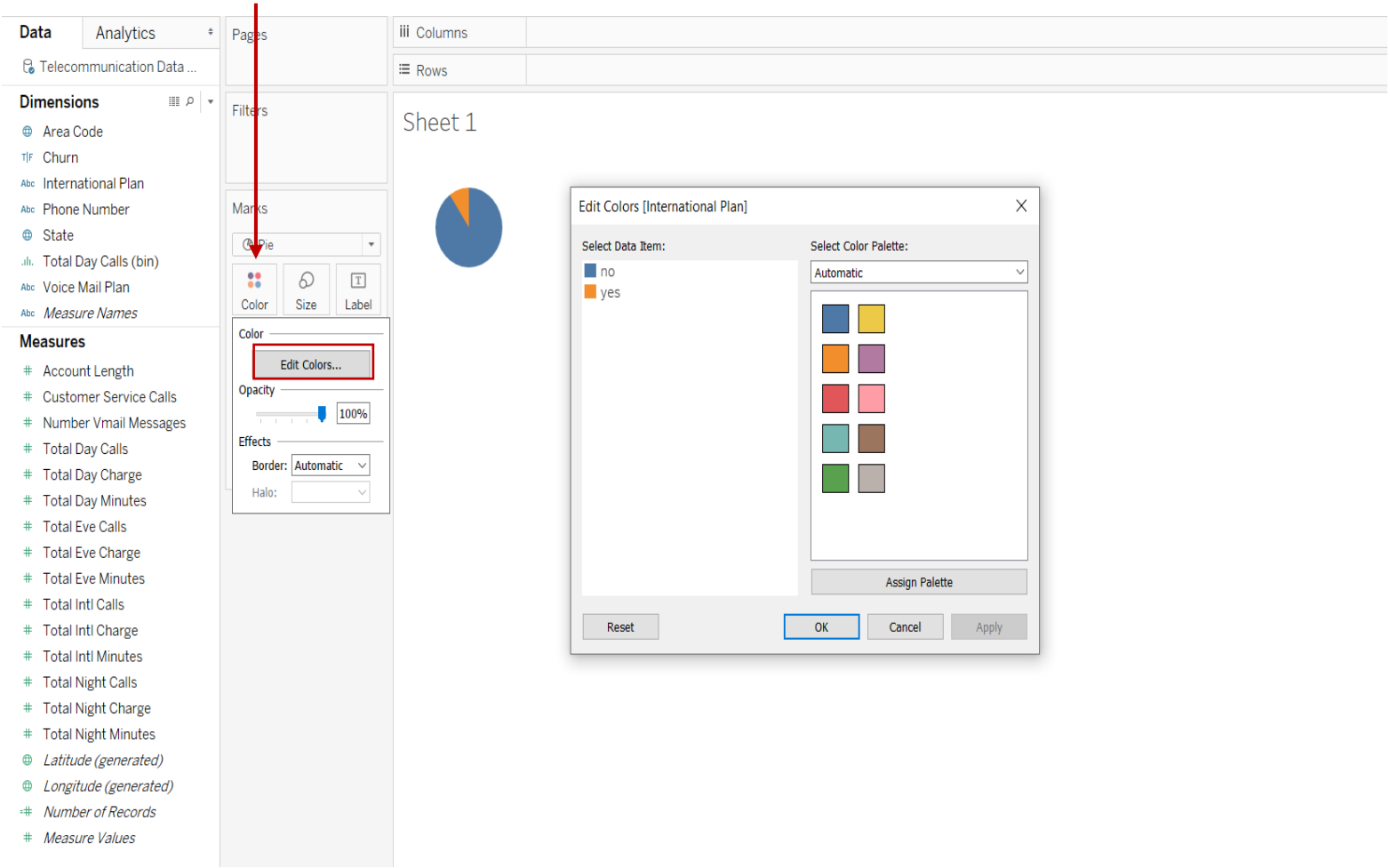


Bütün hüquqlar qorunur.

Color of the Pie Chart

For changing the color of the pie chart:

1. Click **Color** section from the **Marks** area
2. Choose **Edit Colors**

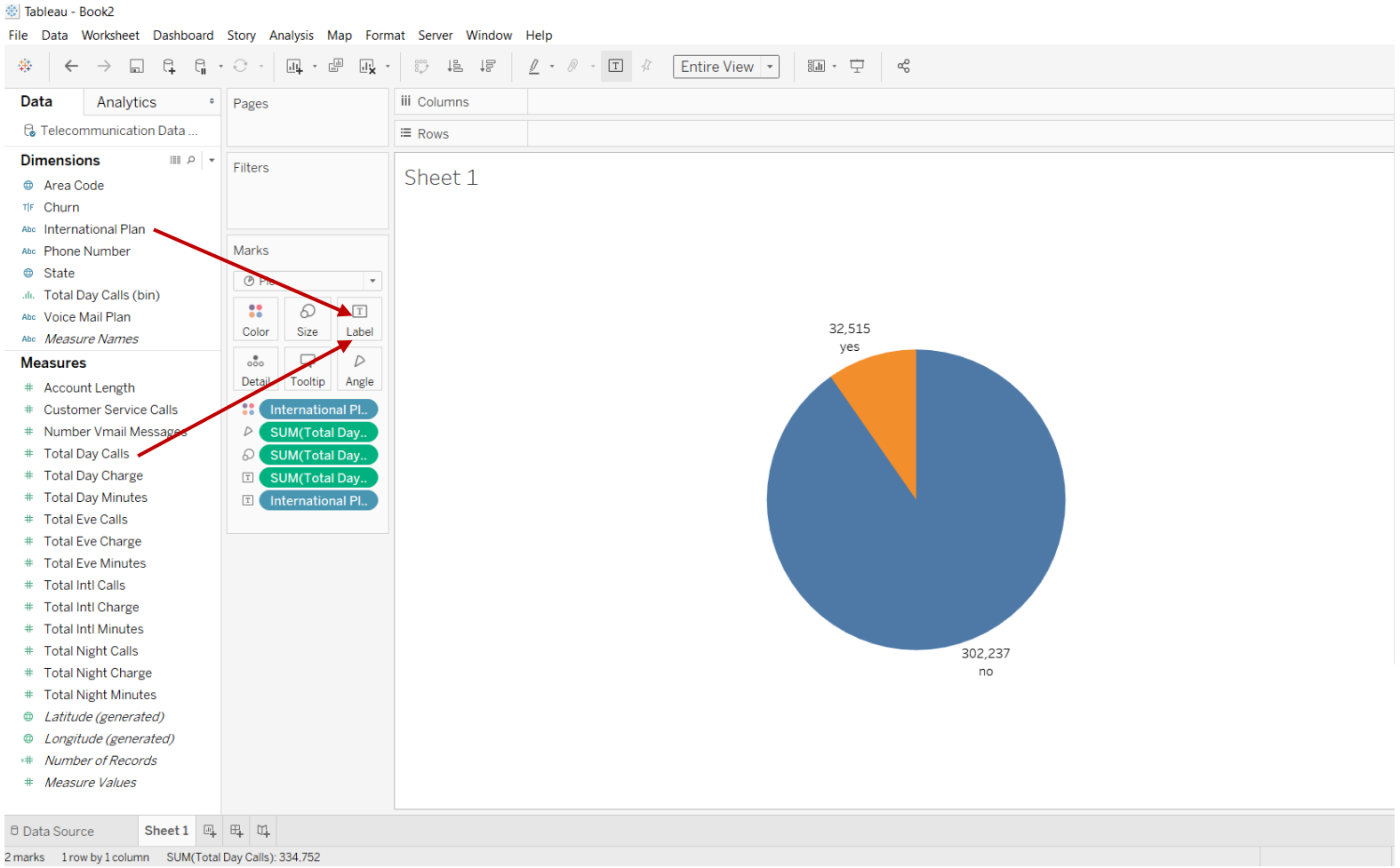


Bütün hüquqlar qorunur.

Label Feature

For adding labels to the pie chart:

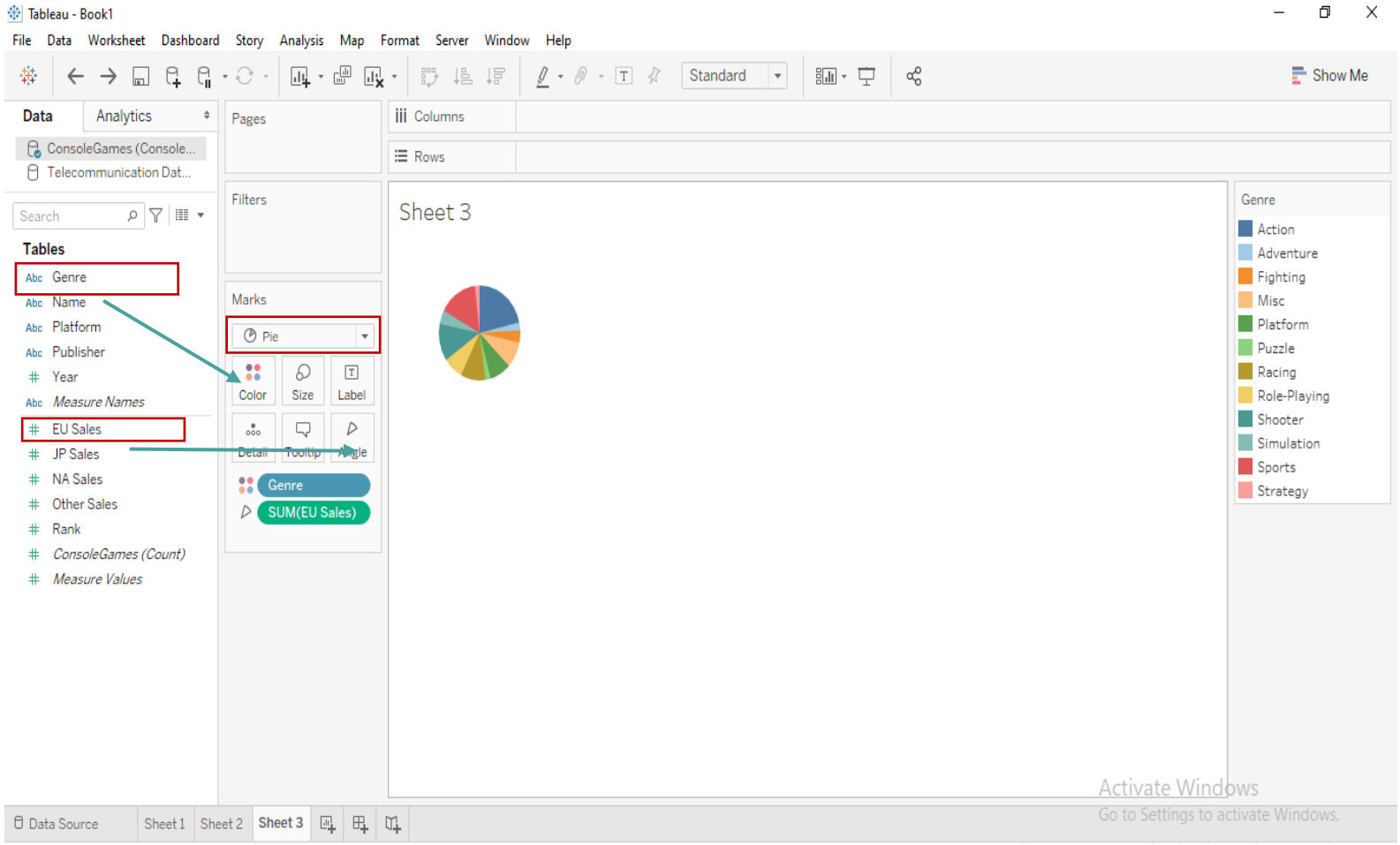
1. Drag “**Total Day Calls**” into the **Label**
2. Drag “**International Plan**” into the **Label**



Bütün hüquqlar qorunur.

Visualization of donut chart

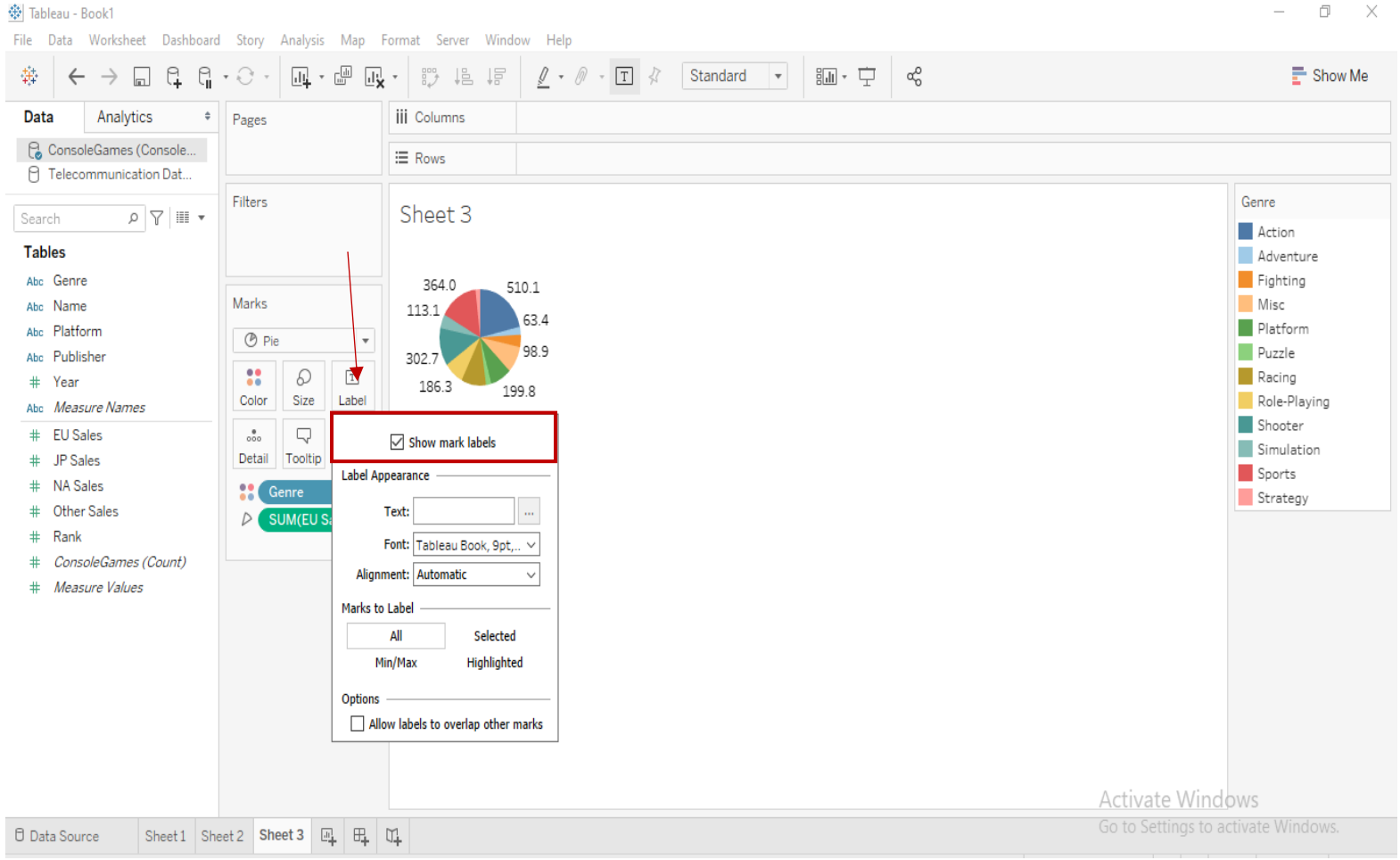
1. Open the dataset named ”Console games”
2. Select Pie from the **“Marks”** section
3. Add “**Genre**” to Color and “**EU Sales**” to the Angle



Bütün hüquqlar qorunur.

Visualization of donut chart

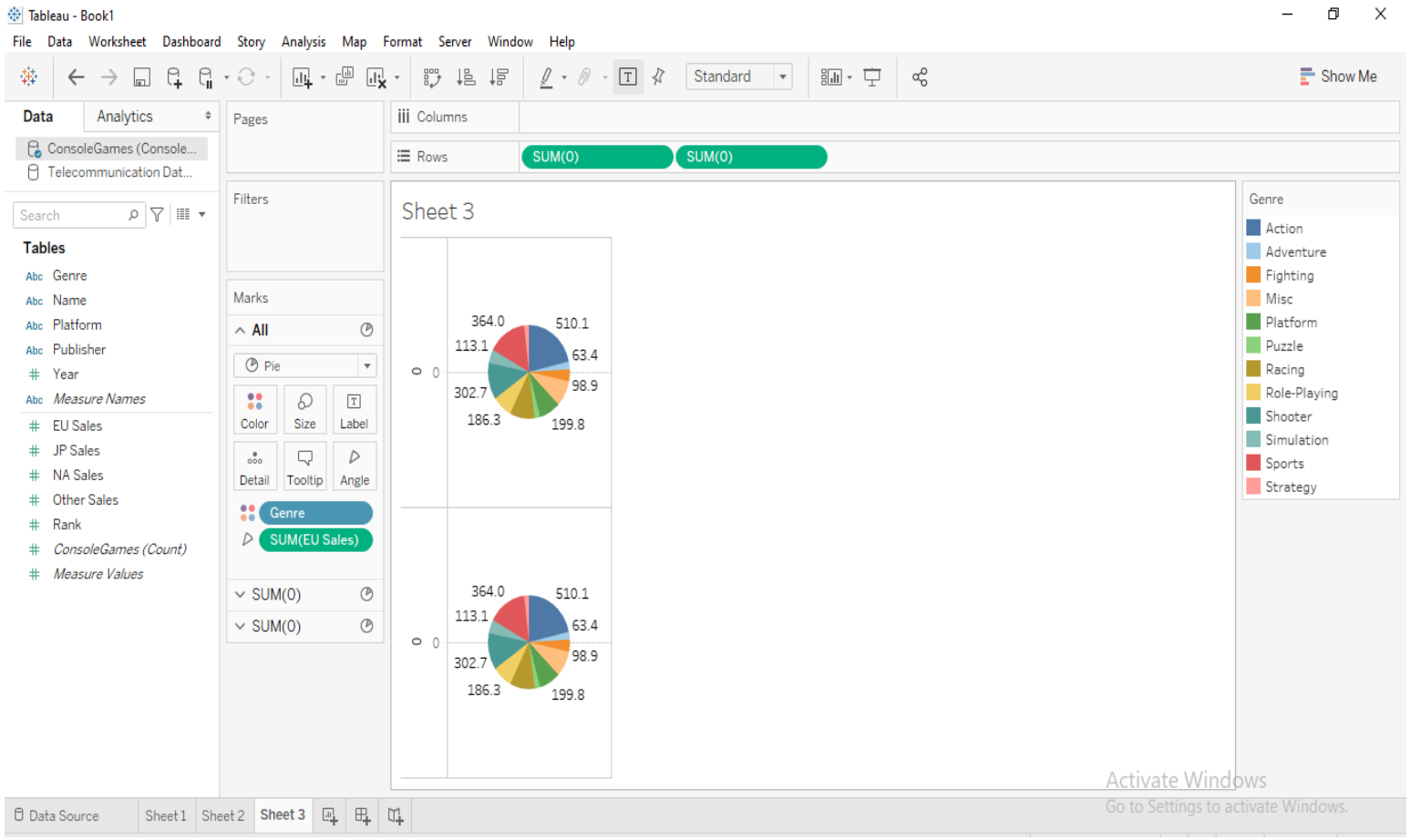
1. Click on Label
2. Select ‘Show mark labels”



Bütün hüquqlar qorunur.

Visualization of donut chart

1. Double click on the “Rows”
2. Add “0” and click enter
3. Do it twice

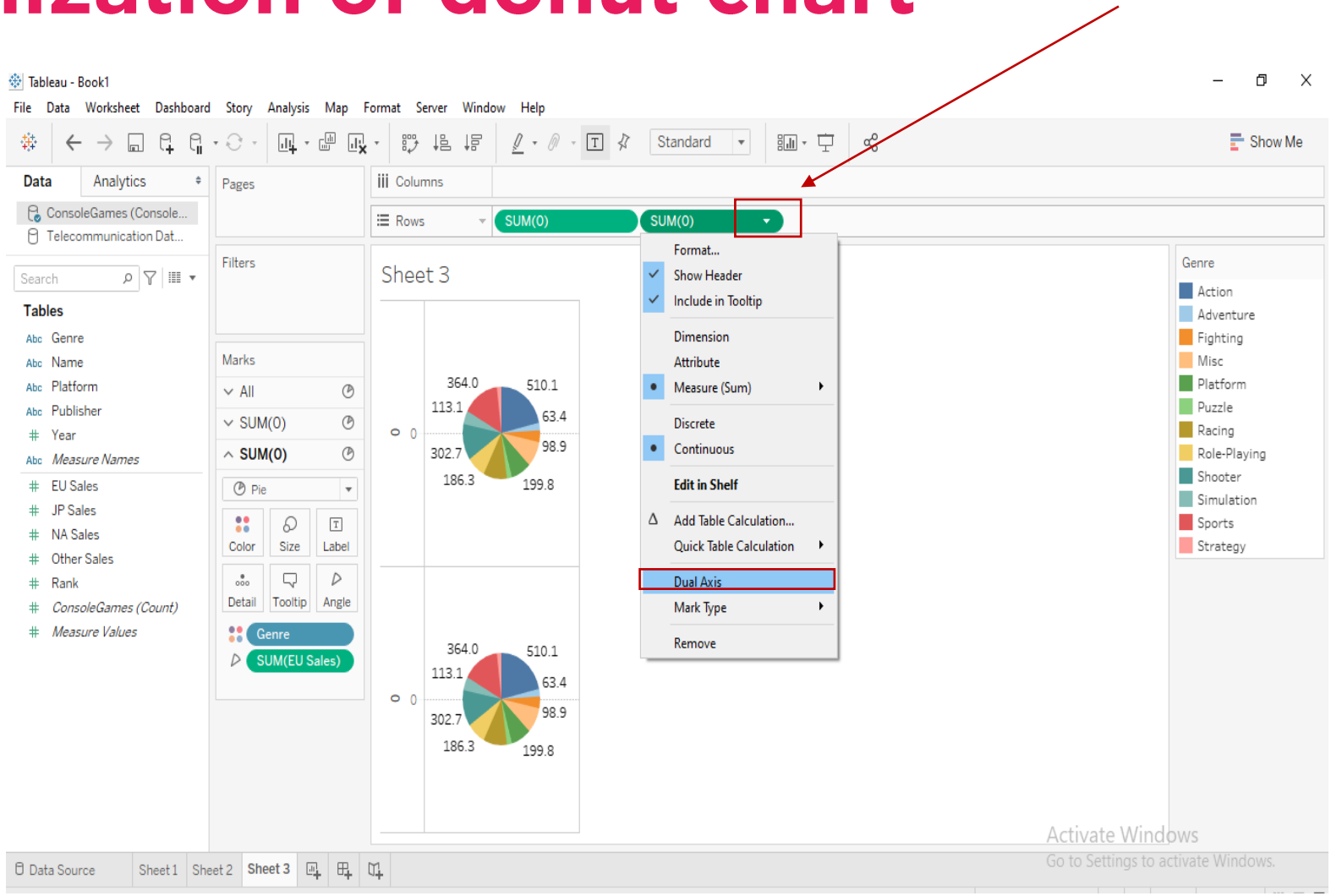


Bütün hüquqlar qorunur.

Visualization of donut chart

1. Click on the arrow sign in the highlighted area

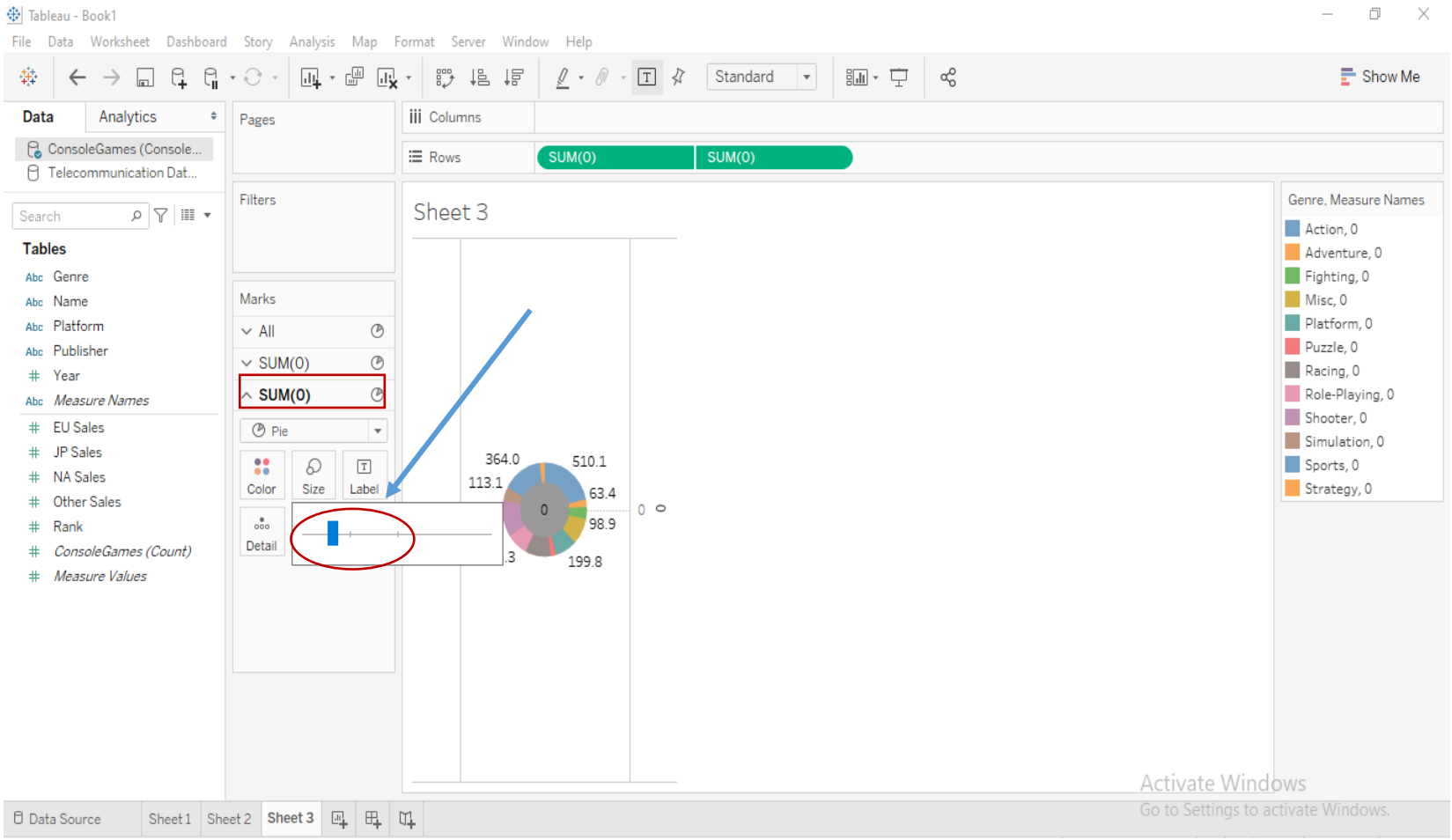
2. Select “**dual axis**”



Bütün hüquqlar qorunur.

Visualization of donut chart

1. Click on the “sum(0)” tab in the highlighted area
2. Remove “Genre”, “EU Sales” and “Measure Names”
3. Decrease the “Size”

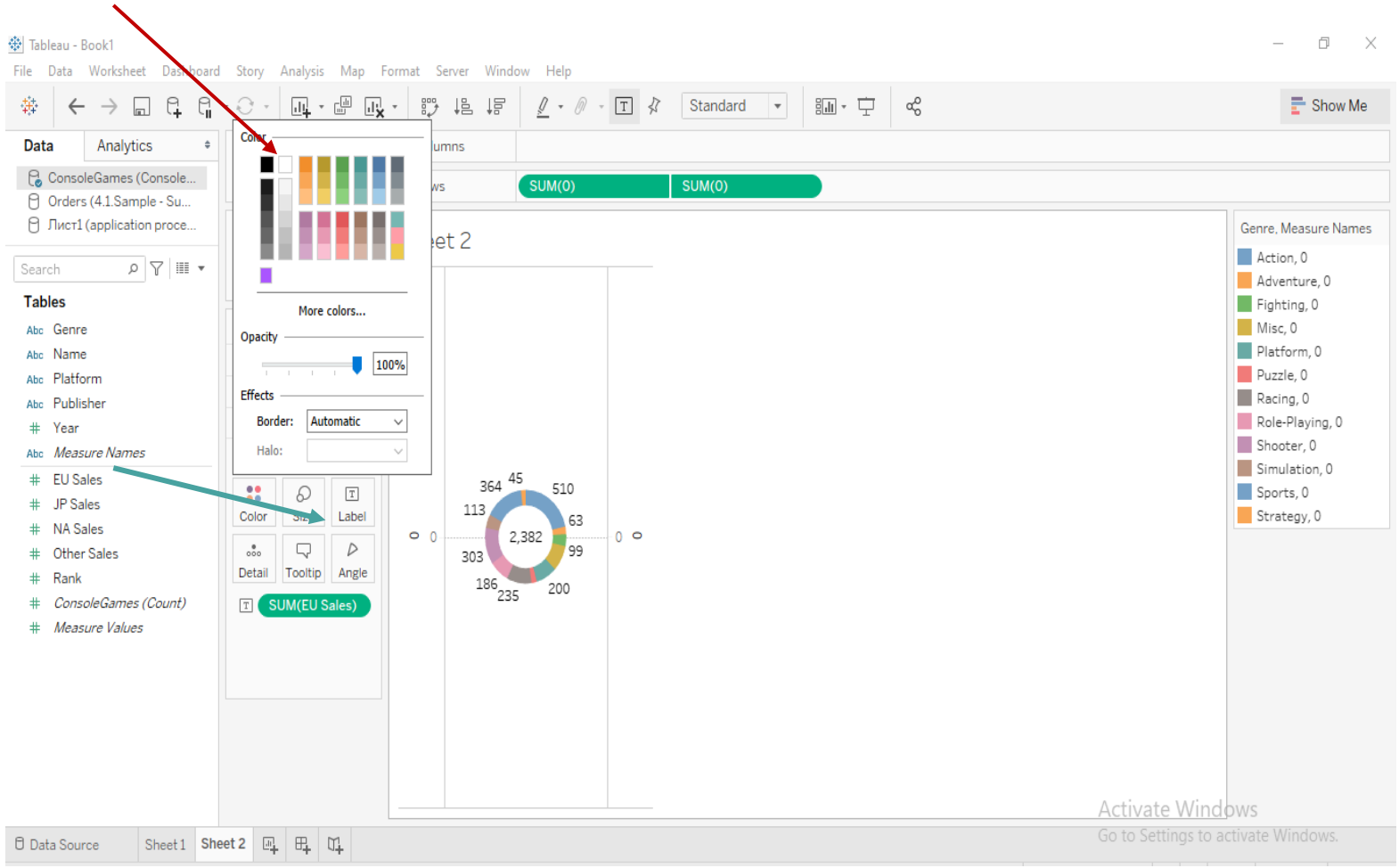


Bütün hüquqlar qorunur.

Visualization of donut chart

1. Make color white
2. Drag “EU **Sales”** to the label

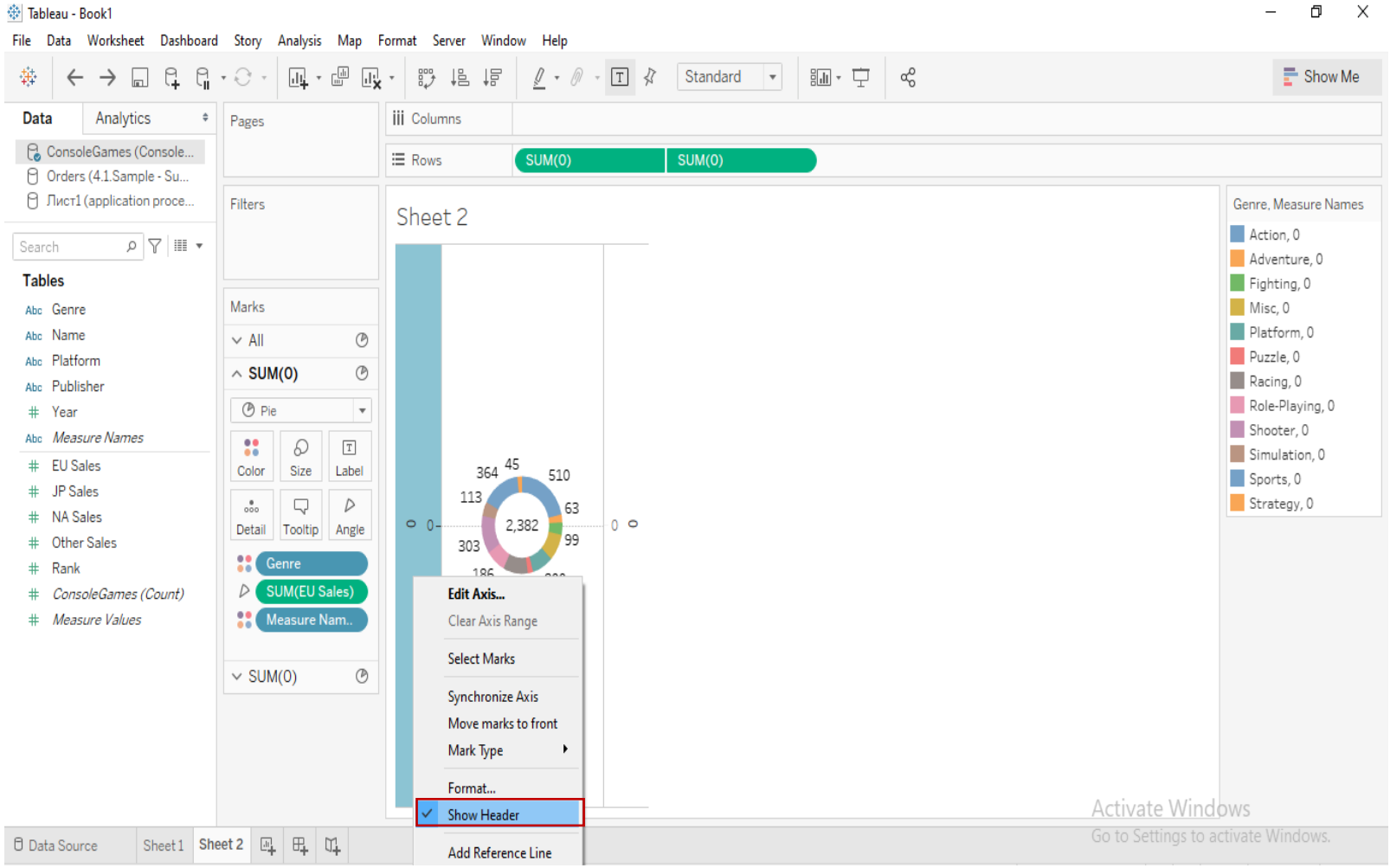
Total Sales will be displayed in the center



Bütün hüquqlar qorunur.

Visualization of donut chart

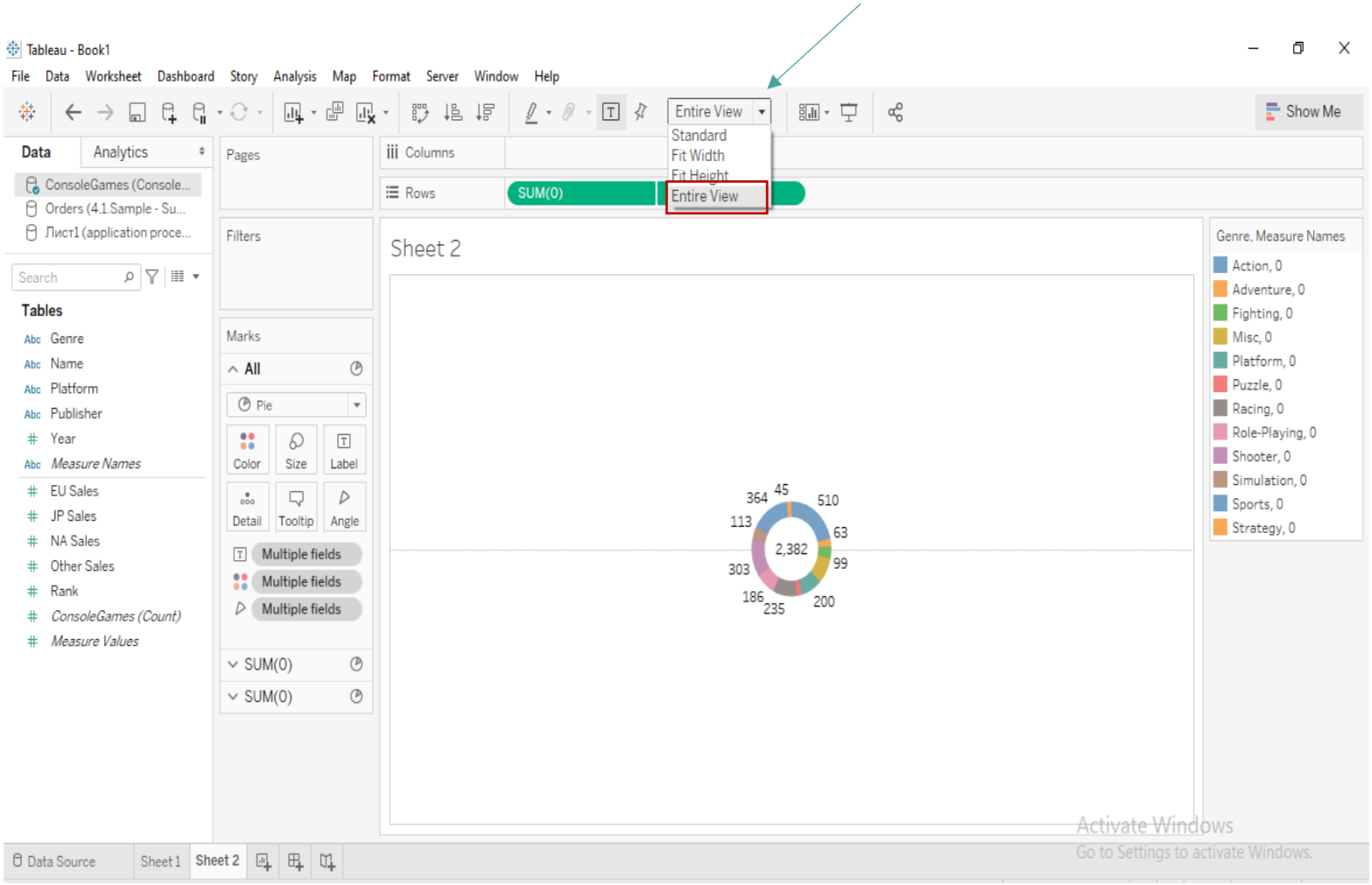
1. Right click on Y axis
2. Unselect **“Show Header”**



Bütün hüquqlar qorunur.

Visualization of donut chart

- Select “Entire View” from the highlighted area



Bütün hüquqlar qorunur.

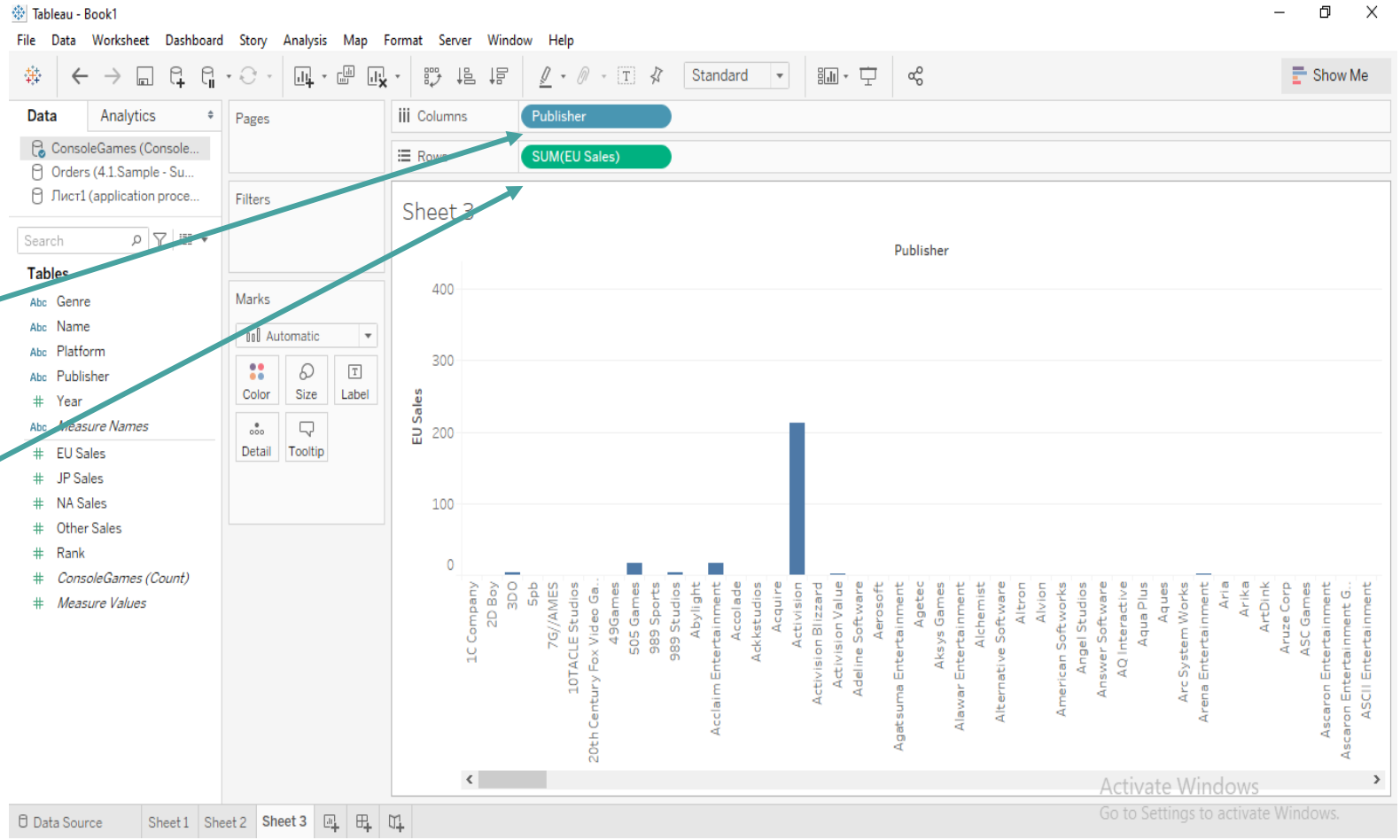
III

Treemap, Filtering and Sorting

Data Science Academy

Visualization of Treemap

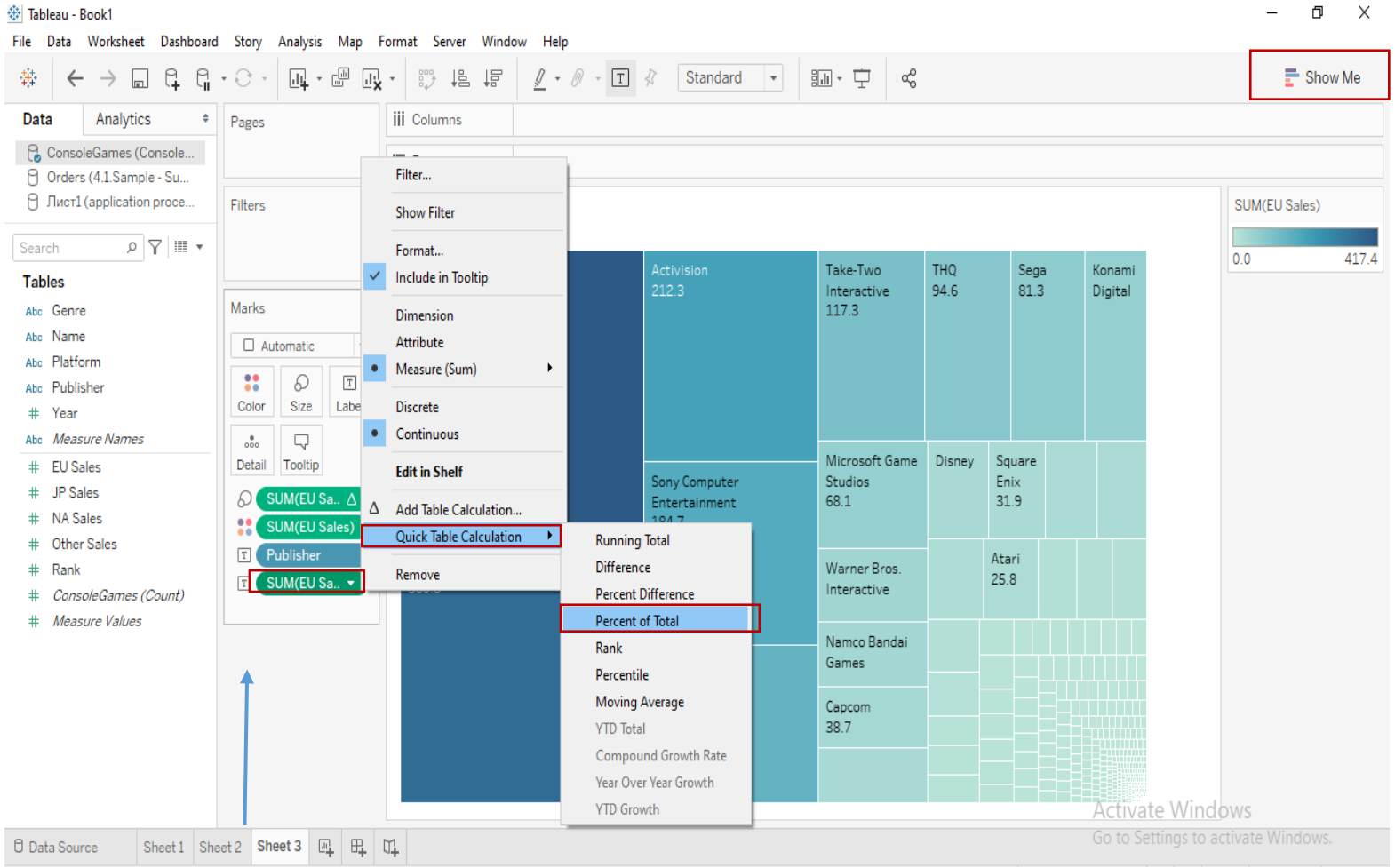
1. Open new window with **‘ConsoleGames’** dataset
2. Add **‘Publisher’** to columns
3. Add “**EU Sales**” to rows



Bütün hüquqlar qorunur.

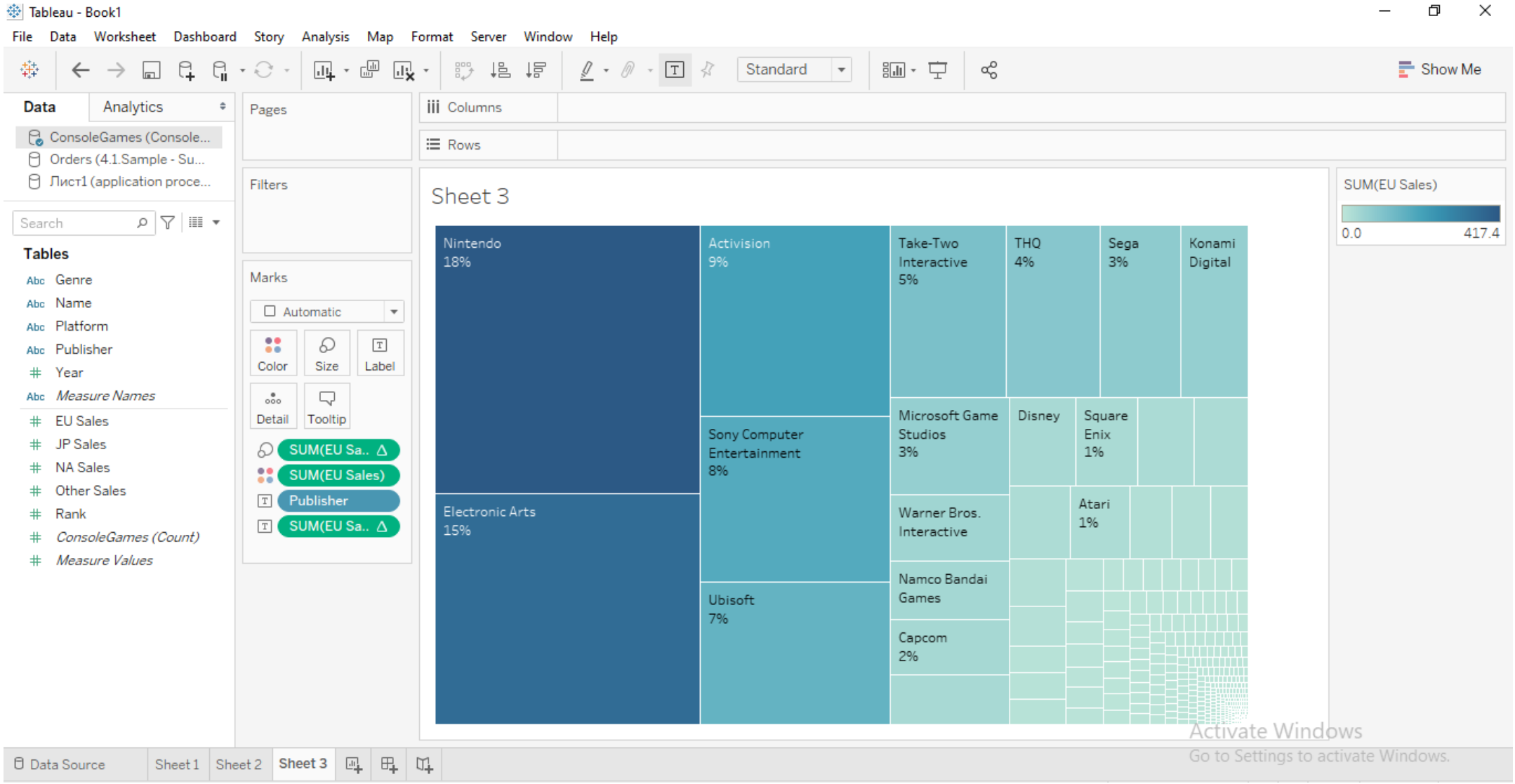
Visualization of Treemap

- Choose **“Treemaps”** from the Show me area
- Drag **“EU Sales”** into the Label
- Right click on the **“EU Sales”** from the highlighted area
- Click on the **“Quick Table Calculation”**
- Select **“Percent of Total”**



Bütün hüquqlar qorunur.

Visualization of Treemap

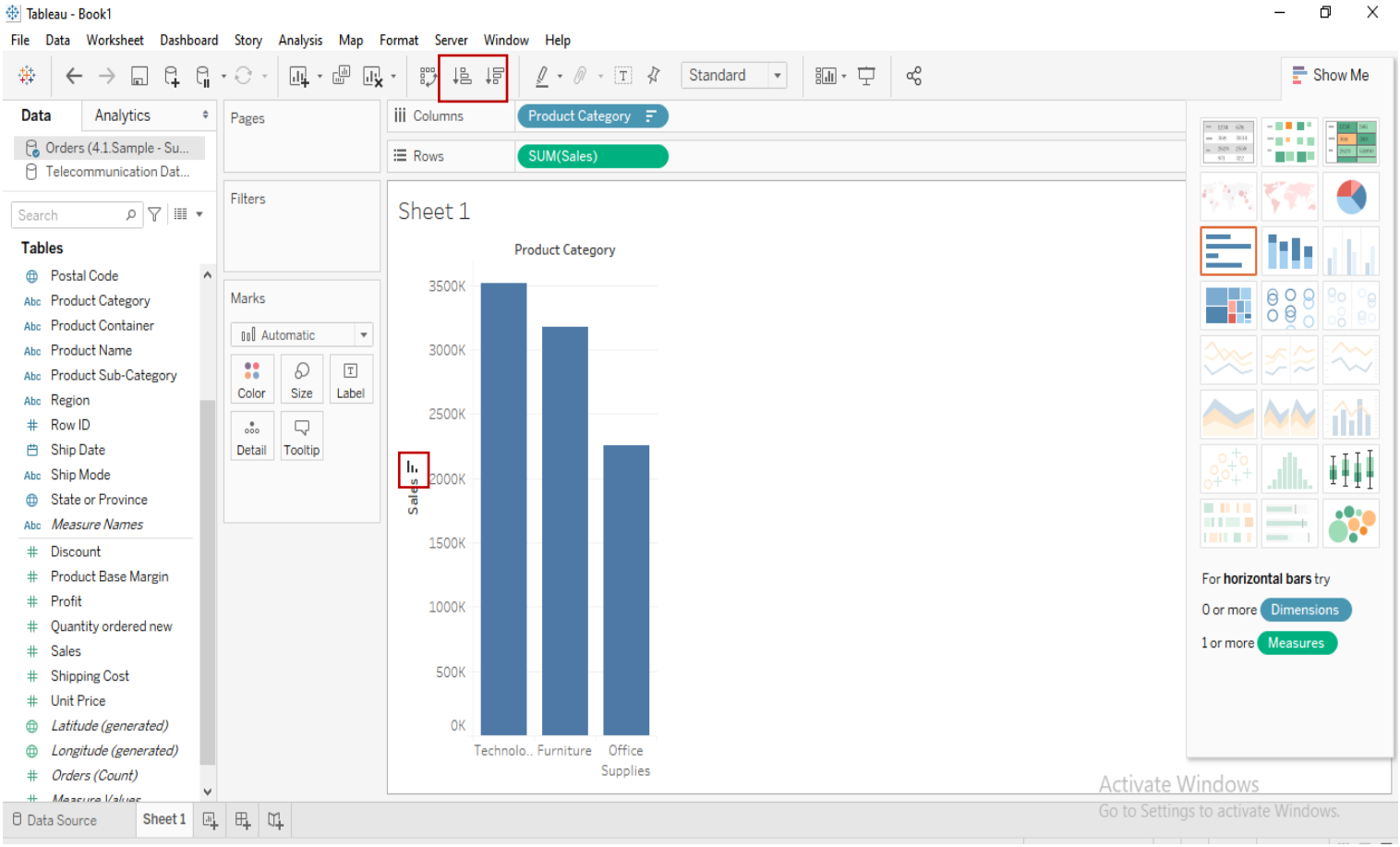


Bütün hüquqlar qorunur.

Sorting

1. Add **“Product Category”** to columns
2. Add **“Sales”** to the rows
3. Click on the sort sign near “**Sales**” or below the **“Server”** tab
4. Click again for **“Descending”** order

Product Category sorted by Sales in descending order.

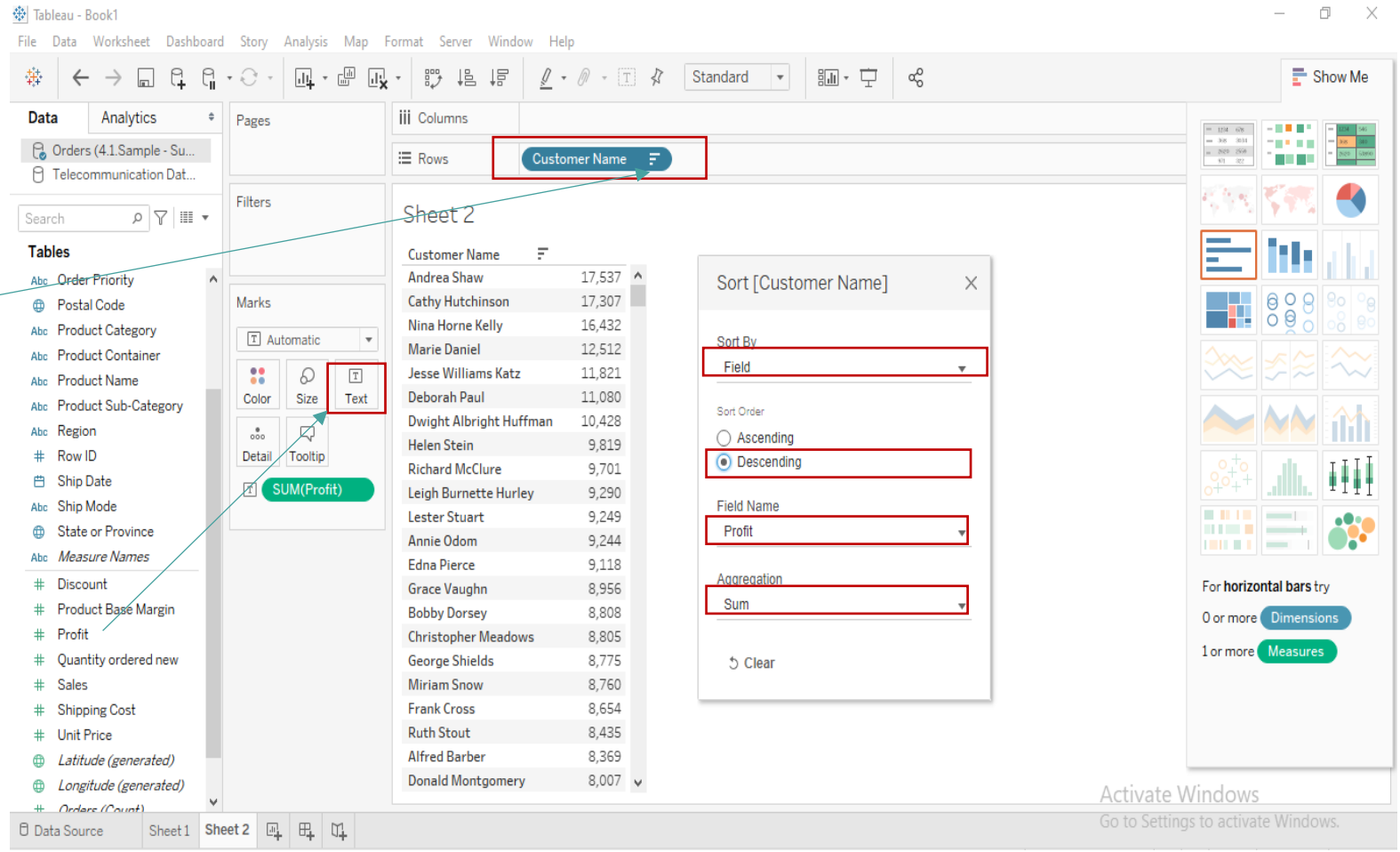


Bütün hüquqlar qorunur.

Sorting

1. Add **“Profit”** to text
2. Double click “**Customer name**”
3. Choose **“Sort”** from the arrow sign near the customer name
4. Sort by “**Field**”
5. Sort order “**Descending**”
6. Choose “**Profit**”

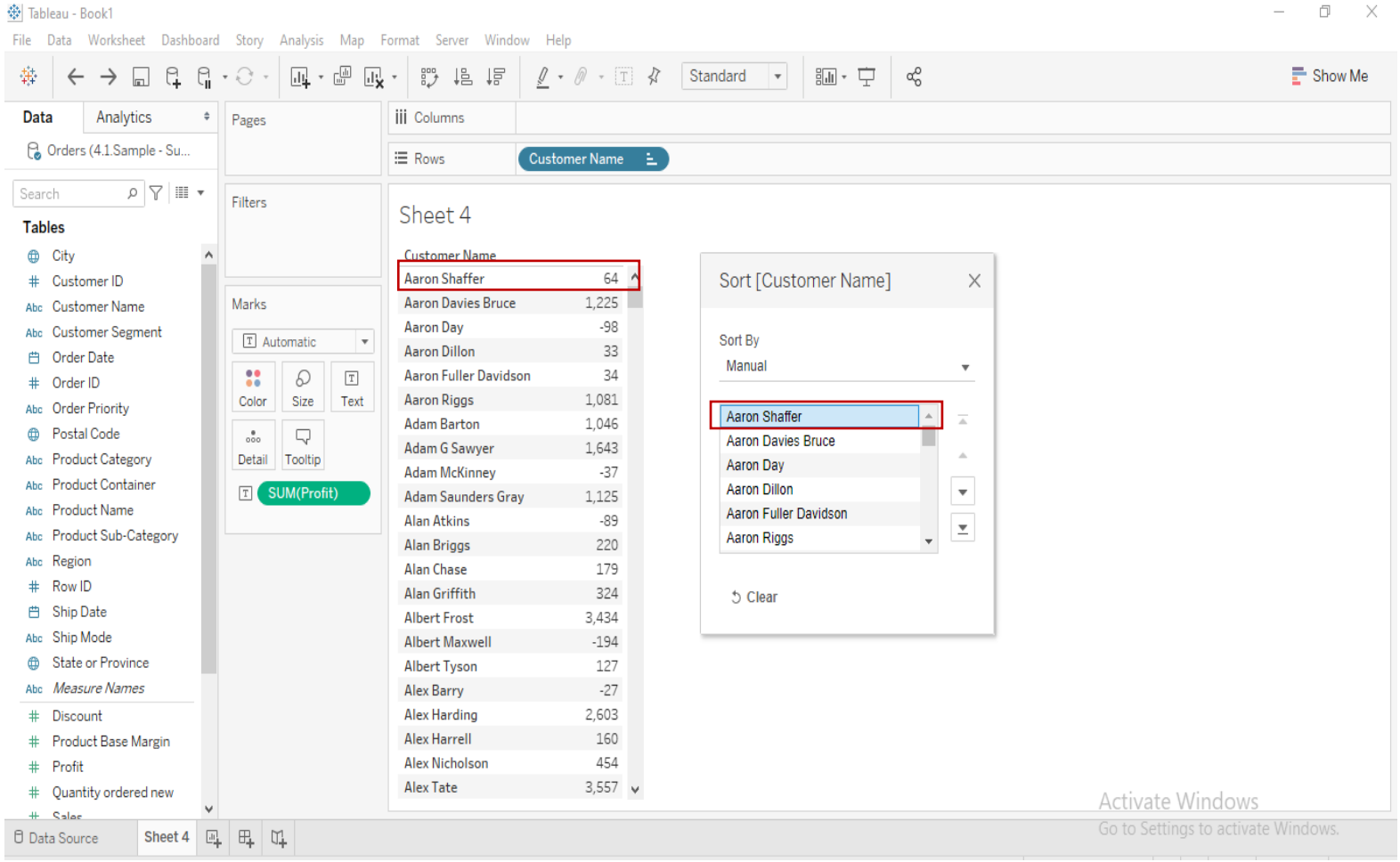
Customer Name sorted by Profit in descending order.



Bütün hüquqlar qorunur.

Sorting

1. Open the Sort page again
2. Sort by “**Manual**”
3. Here you can change the sequence as you want
4. Drag “**Aaron Shaffer**” to the top

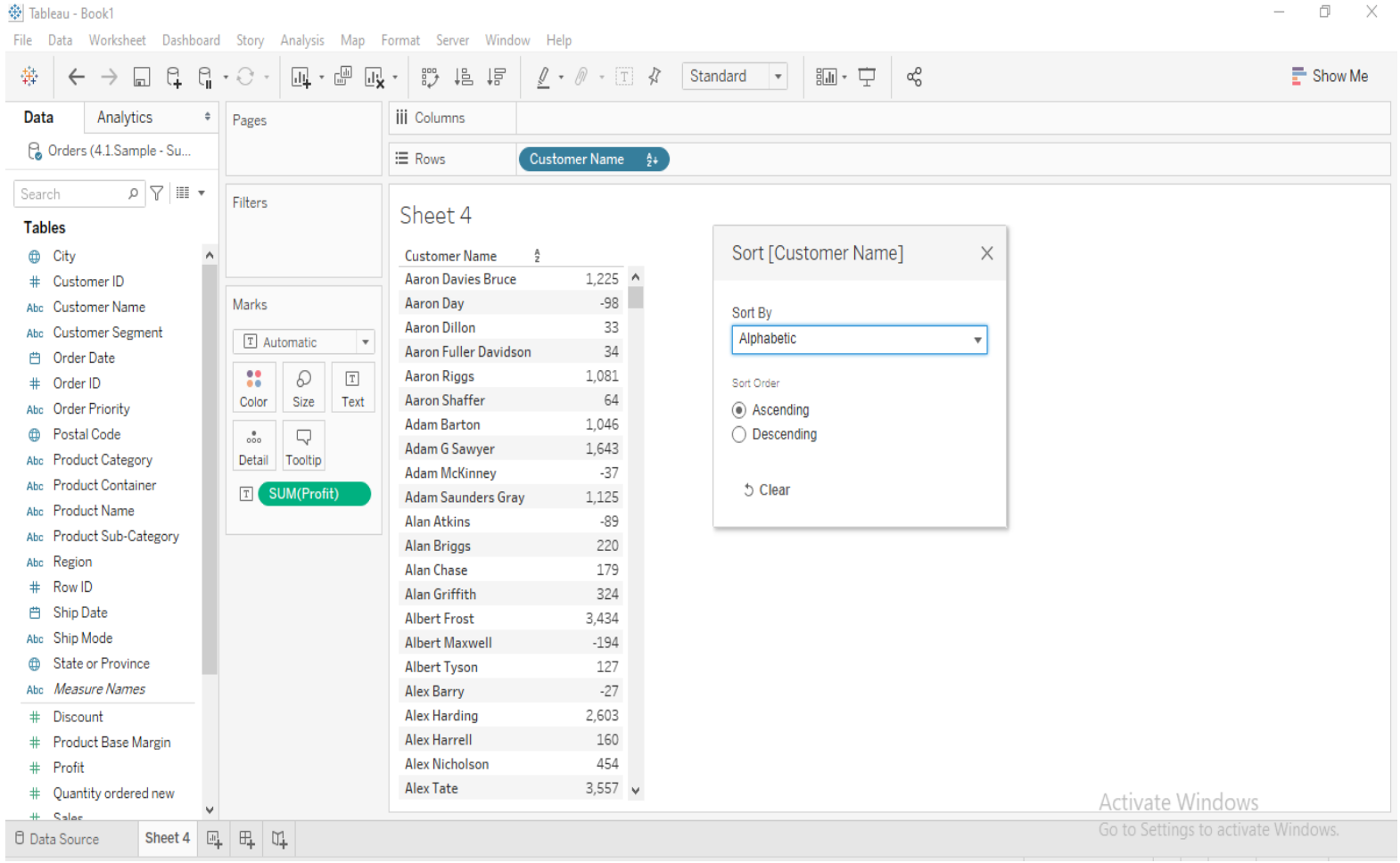


Bütün hüquqlar qorunur.

Sorting

1. Open the Sort page again
2. Sort by **“Alphabetic”**

Data will be sorted alphabetically

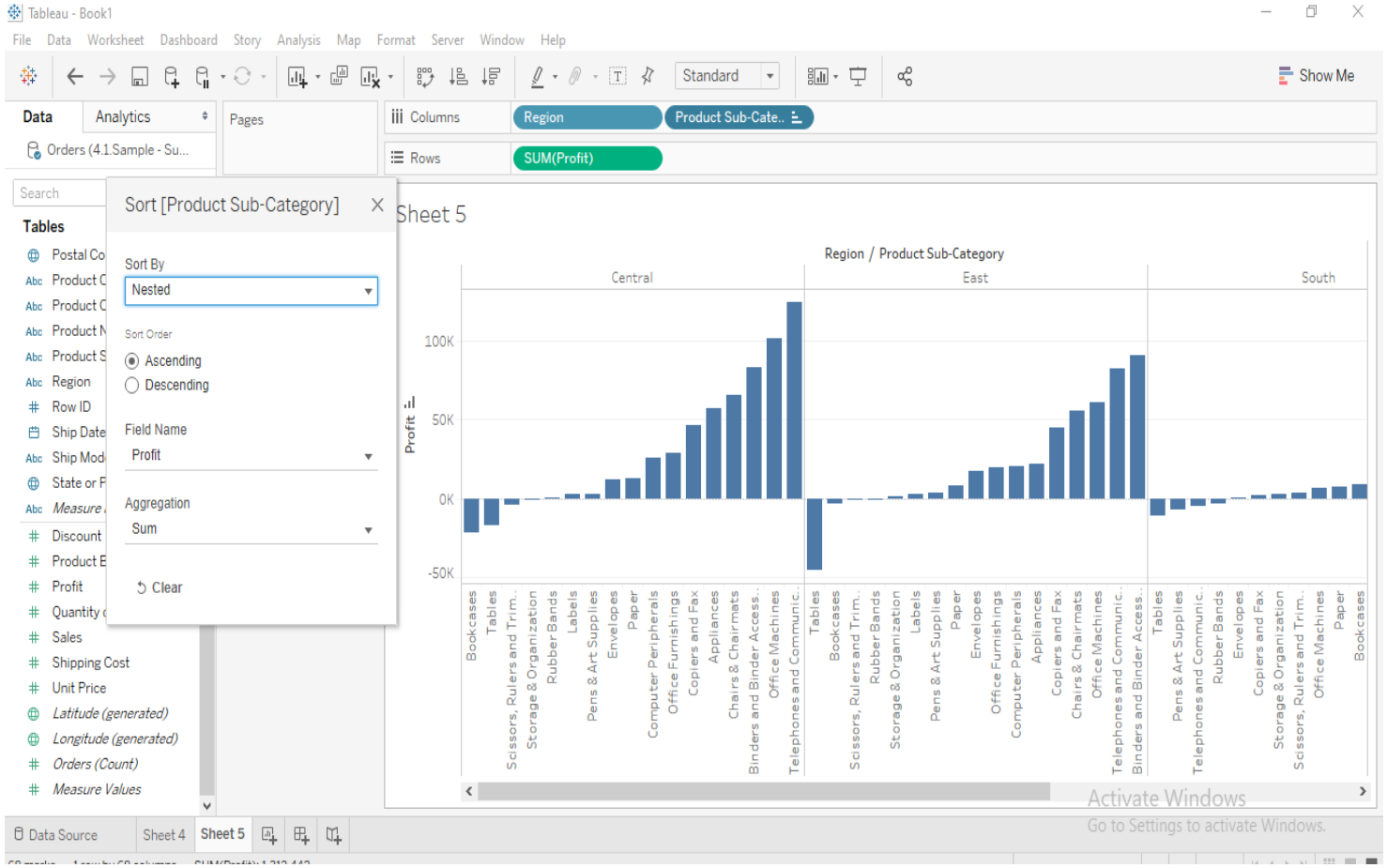


Bütün hüquqlar qorunur.

Sorting

1. Clear the sheet
2. Drag “Region” and “Product Sub-Category” to the column
3. Drag “Profit” to the row
4. Right click the “Product Sub-Category” and select sort
5. Sort by “Nested”

Product Sub-Category will be sorted by the Profit within each Region

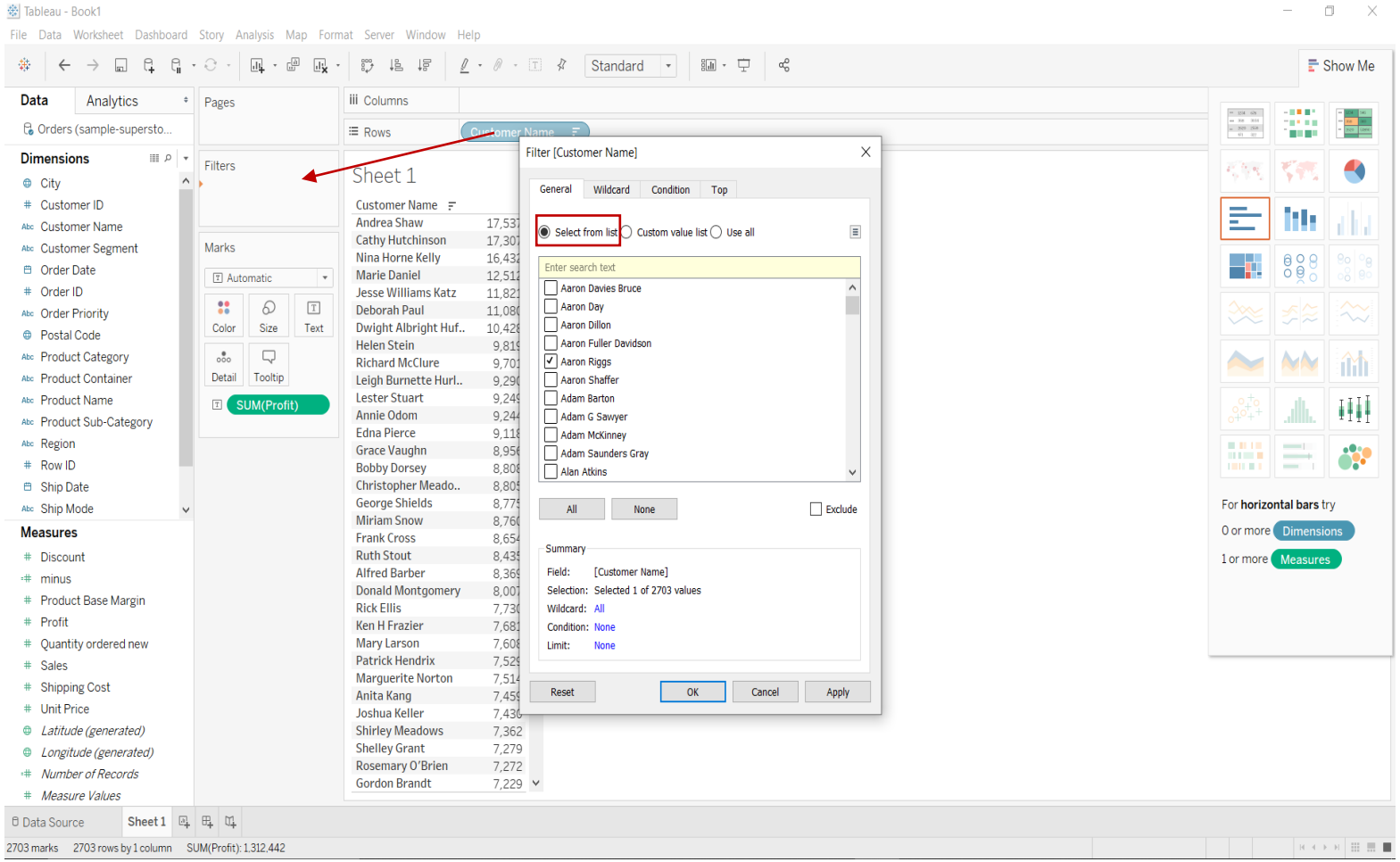


Bütün hüquqlar qorunur.

Filtering

General Filtering:

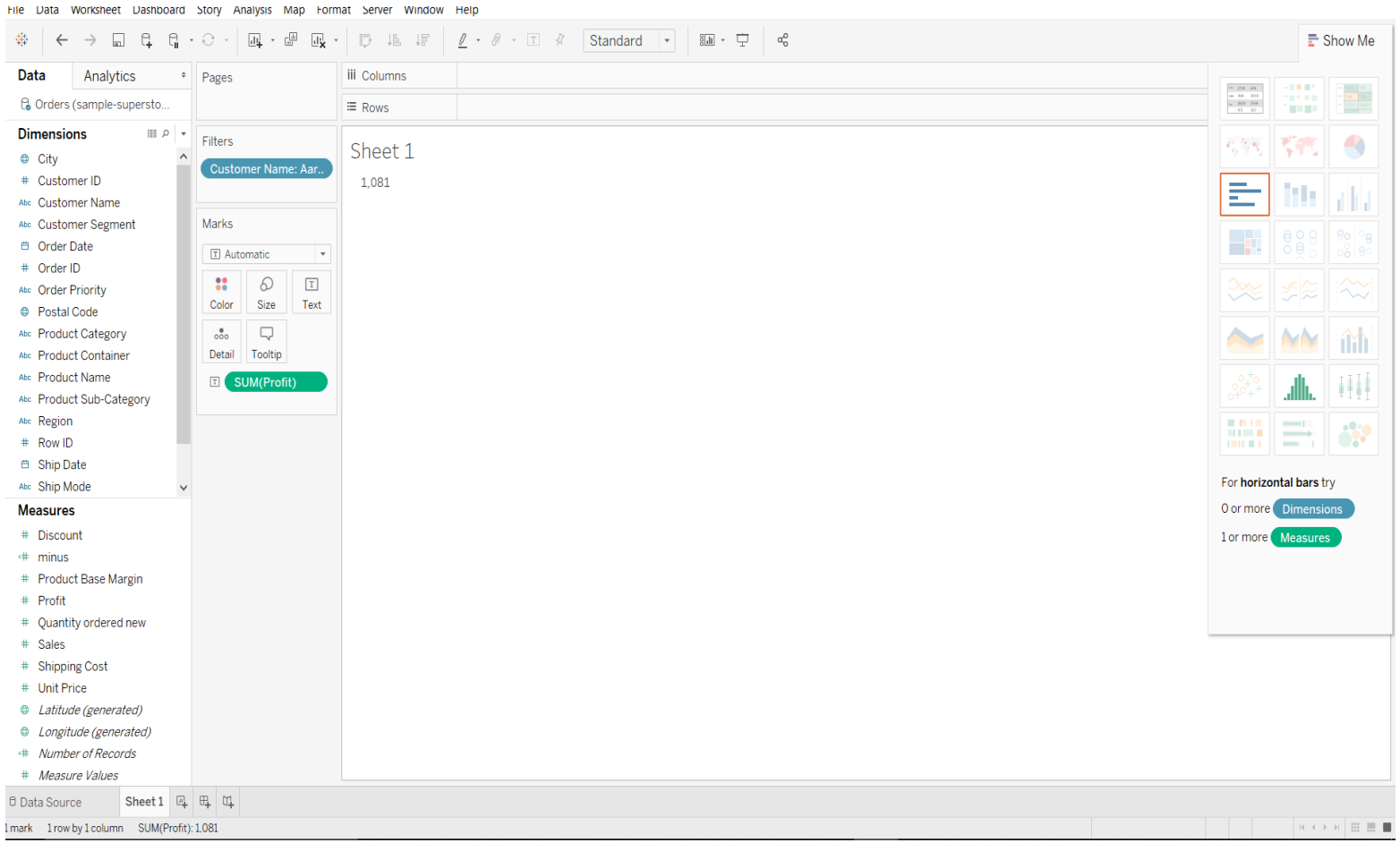
1. For filtering view by **“Customer Name”** drag that variable to the filters
2. Select from list
3. Select the customer names which you want to see in your data



Bütün hüquqlar qorunur.

Filtering

It will display this view after filtering our data



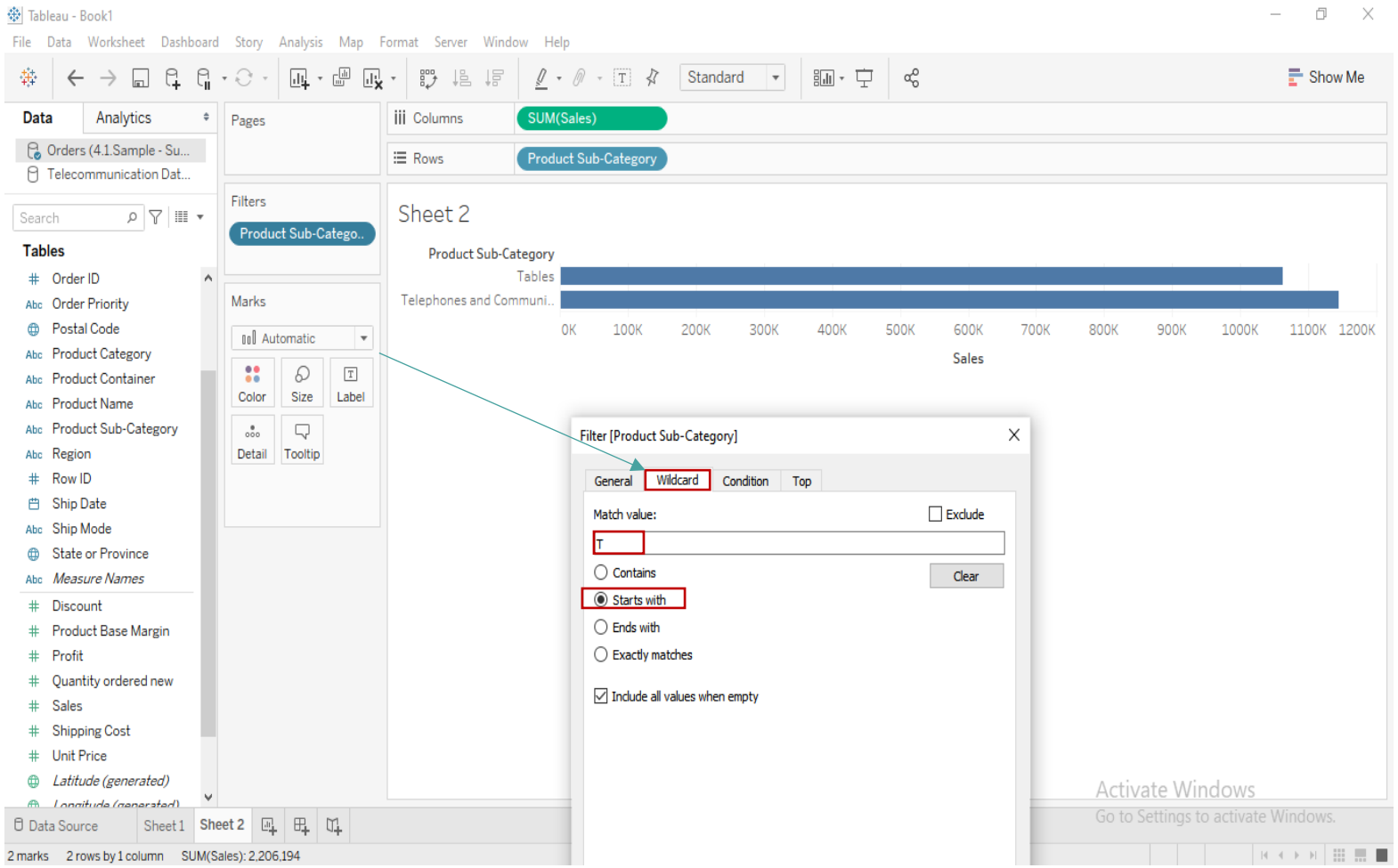
Bütün hüquqlar qorunur.

Filtering

Wildcard Filtering:

1. Click **“Product Sub-Category”** in the filter shelf
2. Choose **“Edit Filter”**
3. Click **“Wildcard”**
4. Enter **“T”**, To the **“Match value”**
5. Click **“Starts with”**
6. Click **“Ok”**

Product subcategories starting with the letter “T” will be displayed.

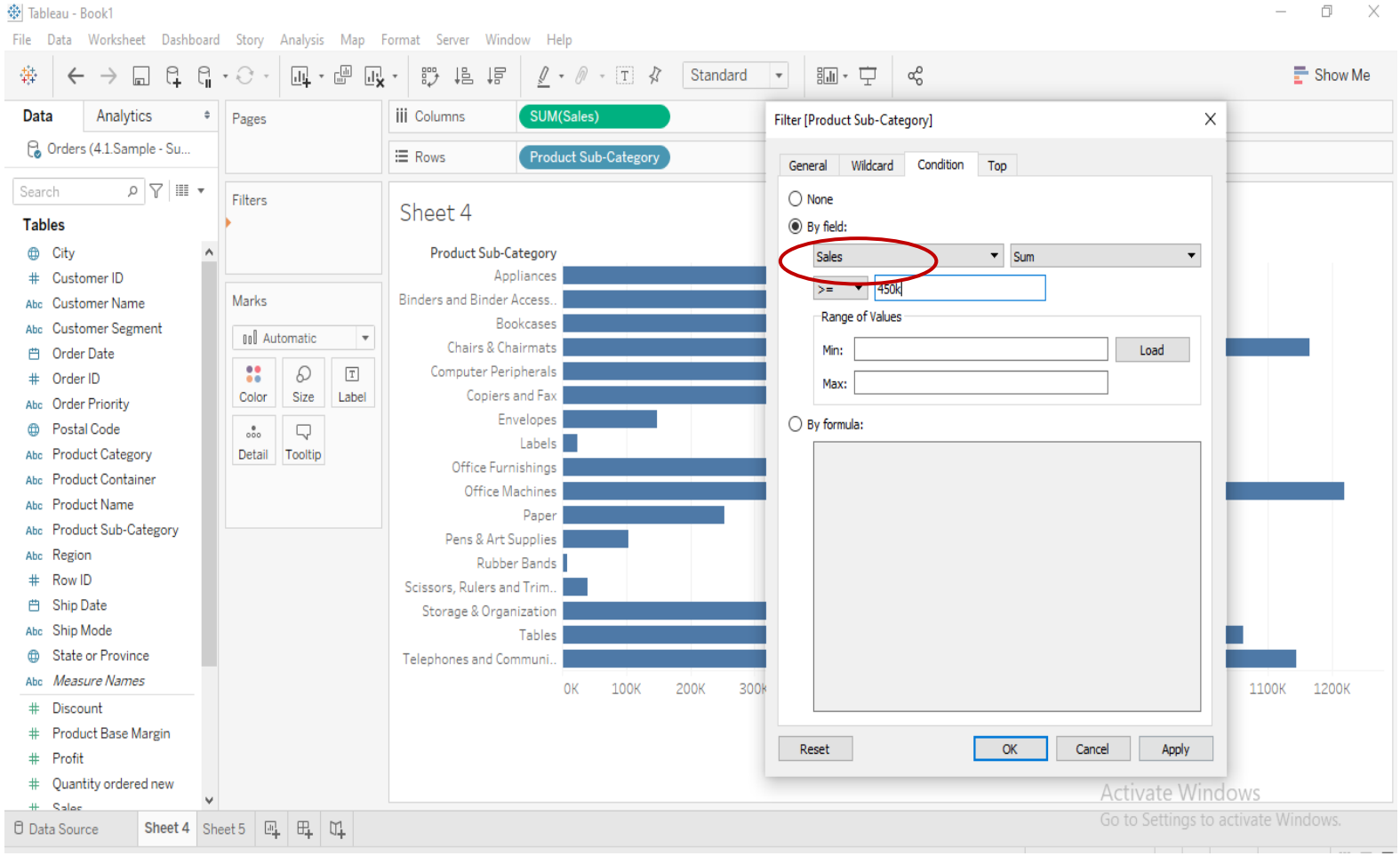


Bütün hüquqlar qorunur.

Filtering

Condition Filtering:

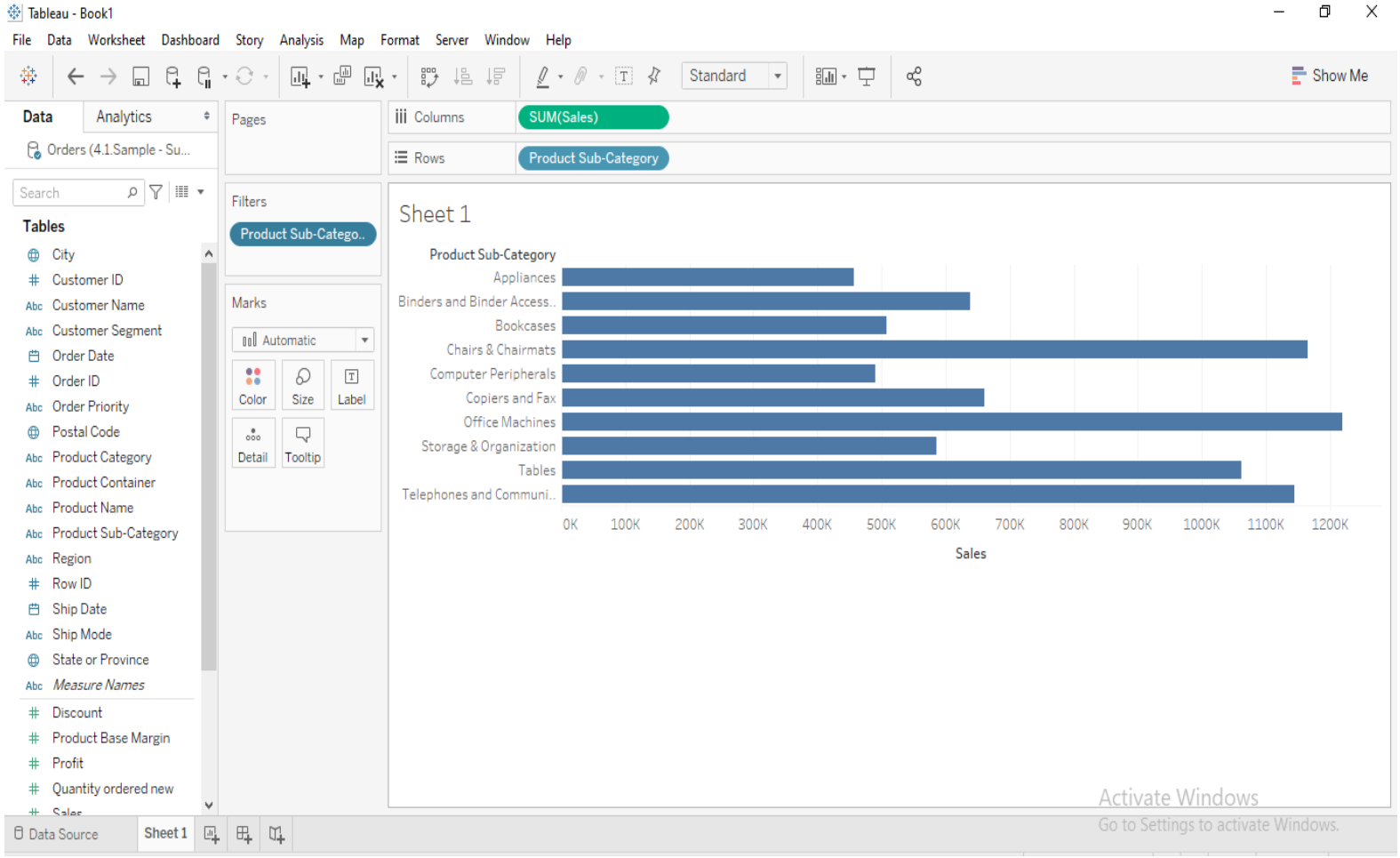
1. Add “Product Sub-Category” to rows
2. Add “Sales” to columns
3. Drag “Product Sub-Category” into the “Filters” shelf
4. Click “Condition”, then “By field”
5. Choose “>=” and enter “450K”
6. Click “OK”



Bütün hüquqlar qorunur.

Filtering

Product Sub-Categories with the Sales higher than 450k will be displayed



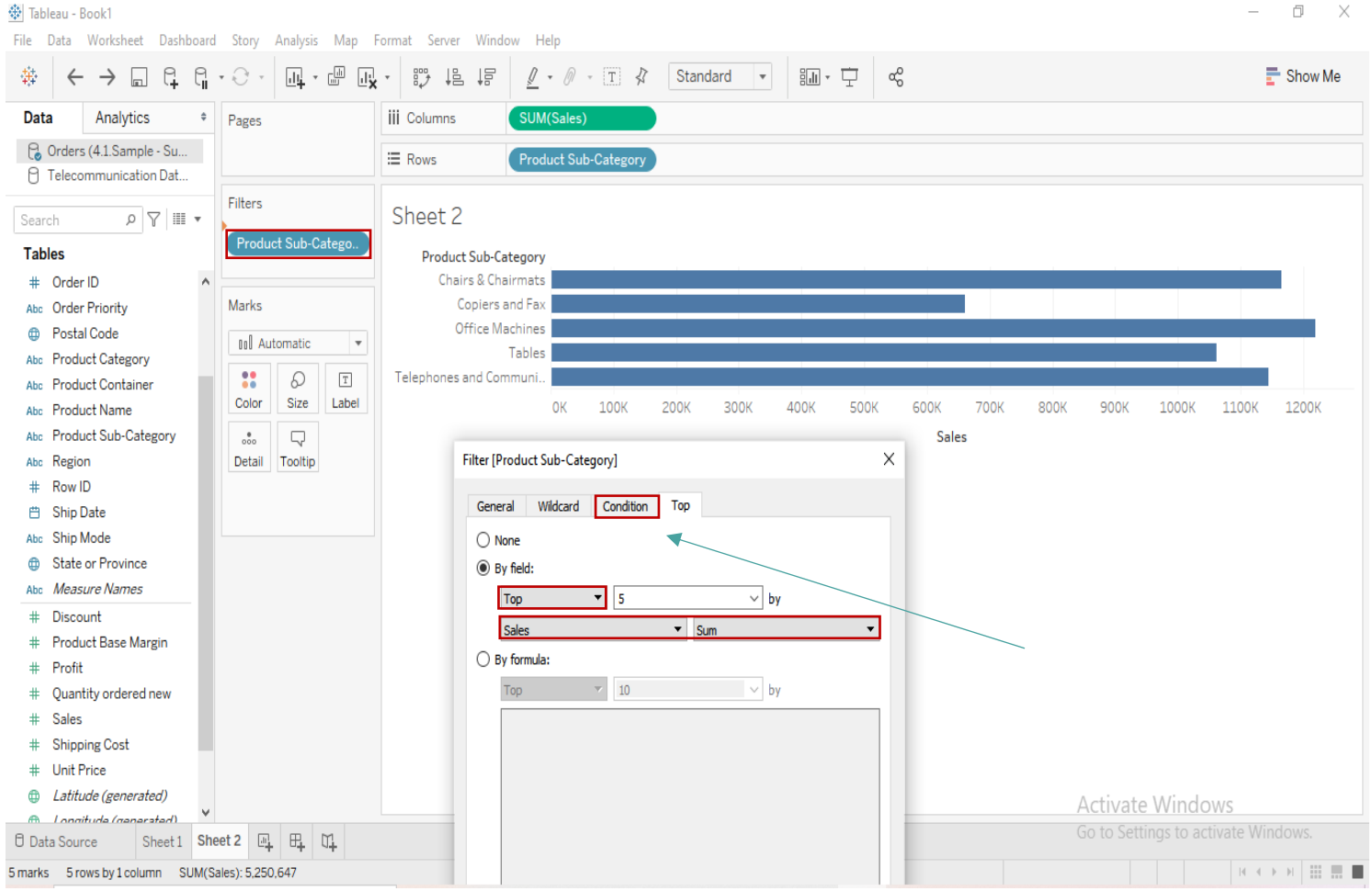
Bütün hüquqlar qorunur.

Filtering

Top Filtering:

1. Click “Product Sub-Category” in the filter shelf
2. Choose “Edit Filter”
3. Click “Top” then “By field”
4. Choose “Condition”, then enter “5”
5. Click “OK”

Product subcategories with top 5 sales will be displayed.



Bütün hüquqlar qorunur.

Thank you!

Data Science Academy