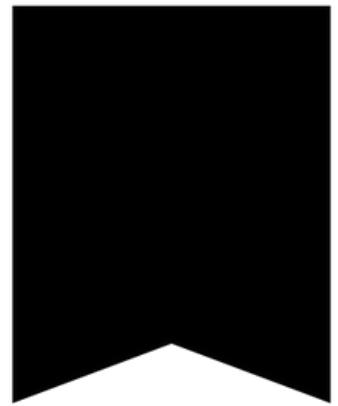


Tableau Program



Python application. (Data Visualization)
SOFTWARE DEVELOPMENT
PRACTICE II : 010123132

นายพสิษฐ์ ศรีอินทรสุทธิ์ 6301012620065
นายนรเศรษฐ์ กุวงศ์ลัย 6301012610051

GOAL



Cloning Tableau
clone in a month.

UML

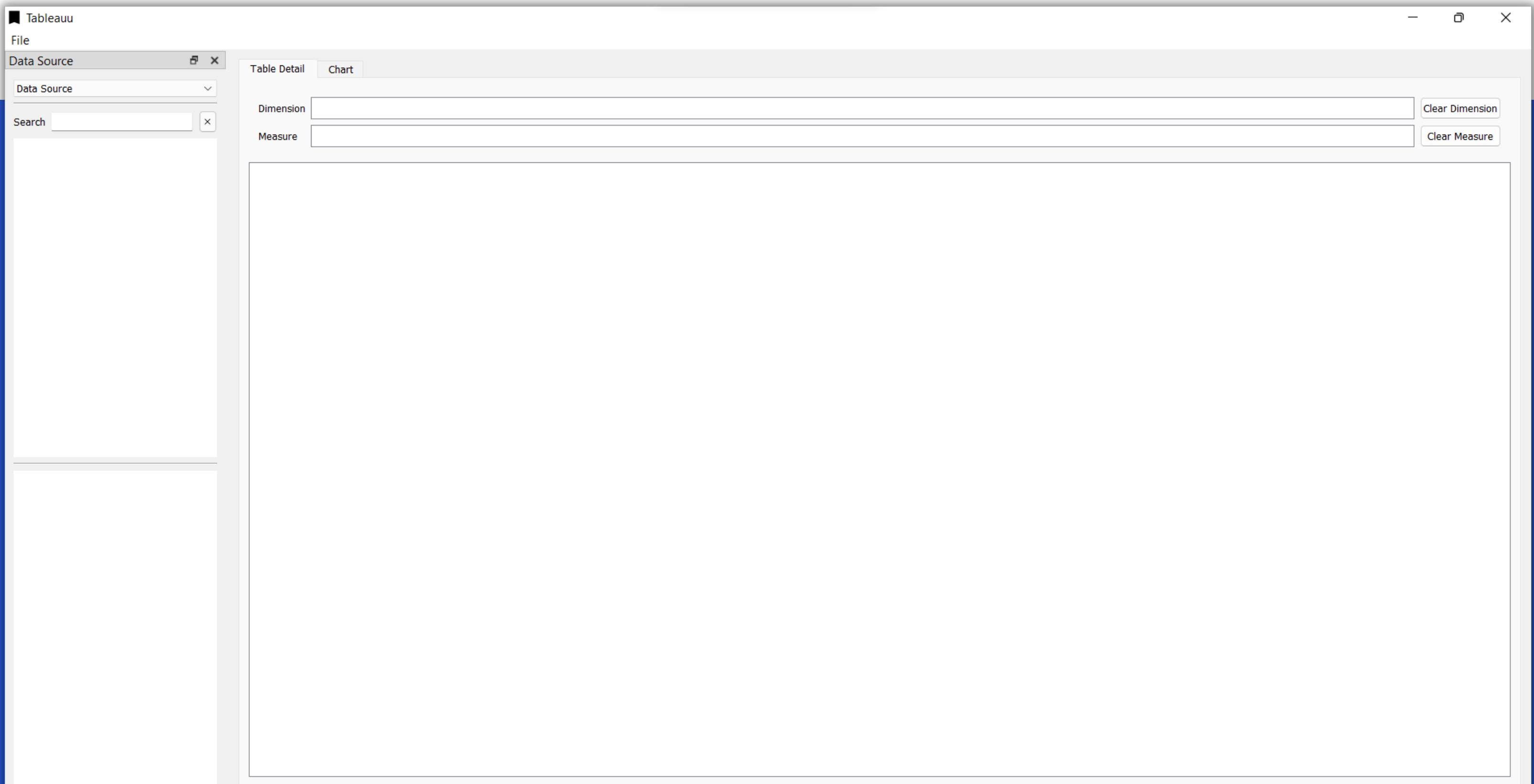


+ class diagram

Show class in program.

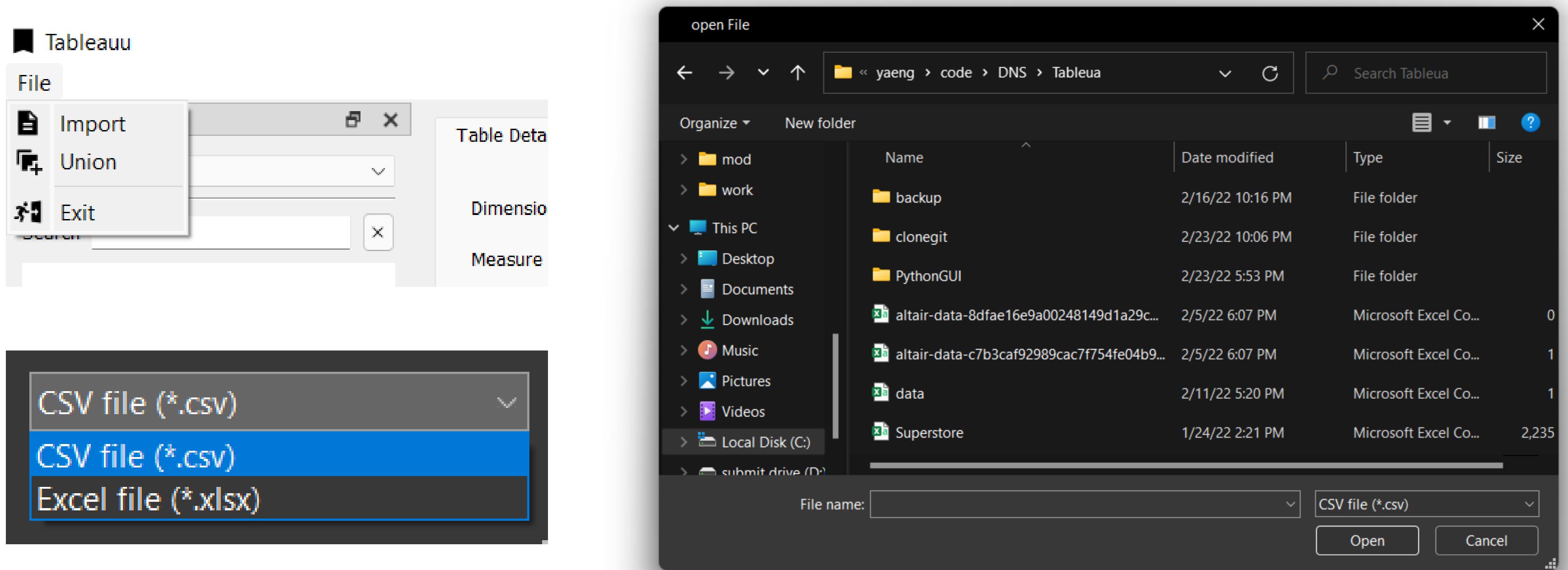
PROGRAM

when run program.



TUTORIAL

Import file.csv or file.xlsx



TUTORIAL

Import file.csv or file.xlsx

The screenshot shows the Tableau Data Source interface. On the left, the 'Name' column lists several files: 'bike_buyers', 'CO2Emission_LifeExp', 'data1', 'data2', 'StudentsPerformance', and 'Superstore'. The file 'CO2Emission_LifeExp' is currently selected, indicated by a grey background. In the center, the 'Table Detail' tab is active, displaying a preview of the data in a table format. The table has 20 rows and 7 columns, with the first row being the header. The columns are: Country, Code, CO2Emissions, YearlyChange, Percapita, Population, and LifeExpectancy. The data includes various countries like Afghanistan, Albania, Algeria, Angola, Anguilla, Antigua and ... (with ellipsis), Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, and Benin, along with their respective codes, emissions values, and other metrics.

	Country	Code	CO2Emissions	YearlyChange	Percapita	Population	LifeExpectancy
1	Afghanistan	AFG	9900004	7.13	0.28	35383032	63.763
2	Albania	ALB	5208319	4.45	1.8	2886438	78.194
3	Algeria	DZA	156220560	0.17	3.85	40551392	76.298
4	Angola	AGO	30566933	3.13	1.06	28842489	59.925
5	Anguilla	AIA	30262	1.52	2.1	14429	81.441
6	Antigua and ...	ATG	438763	1.51	4.64	94527	76.617
7	Argentina	ARG	200708270	0.16	4.61	43508460	76.221
8	Armenia	ARM	4597845	3.06	1.57	2936143	74.64
9	Aruba	ABW	286871	1.51	2.74	104872	75.868
10	Australia	AUS	414988700	-0.98	17.1	24262712	82.959
11	Austria	AUT	73764112	1.54	8.43	8747301	81.258
12	Azerbaijan	AZE	33614235	-0.41	3.45	9736043	72.493
13	Bahamas	BHS	4404247	1.51	11.65	377930	73.329
14	Bahrain	BHR	24458384	2.5	17.15	1425792	76.899
15	Bangladesh	BGD	74476230	4.5	0.47	157977153	71.785
16	Barbados	BRB	1541447	1.88	5.39	285796	78.888
17	Belarus	BLR	62655669	4.9	6.63	9445643	74.031
18	Belgium	BEL	94722813	1.53	8.34	11354420	81.139
19	Belize	BLZ	1114105	1.51	3.02	368400	74.219
20	Benin	BEN	6563709	4.13	0.6	10872063	60.885

TUTORIAL

Import file.csv or file.xlsx

The screenshot shows the Tableau Data Source interface. On the left, a sidebar displays a JSON configuration for a data source, listing dimensions and measures. In the center, a preview pane shows a sample of data from a CSV file named "C:/yaeng/code/DN...sion_LifeExp.csv". The data includes columns such as Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country/Region, City, State, and Postal Code.

```

{
  "c8ee77da107405e2d0d1b97fc6e": {
    "dimension": [
      "Row ID",
      "Order ID",
      "Order Date_year",
      "Ship Date_year",
      "Ship Mode",
      "Customer ID",
      "Customer Name",
      "Segment",
      "Country/Region",
      "State",
      "Postal Code",
      "Region",
      "Product ID",
      "Category",
      "City",
      "Product Name",
      "Sub-Category"
    ],
    "measure": [
      "Sales",
      "Quantity",
      "Discount",
      "Profit"
    ]
  },
  "a5aacf06958d13ab192a02f721fe9ec9": {
    "dimension": [
      "Row ID",
      "Order ID",
      "Order Date_year",
      "Ship Date_year",
      "Ship Mode",
      "Customer ID",
      "Customer Name",
      "Segment",
      "Country/Region"
    ]
  }
}
  
```

	Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country/Region	City	State	Postal Code
1	1	CA-2019-152156	8/11/2019	11/11/2019	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky	42420
2	2	CA-2019-152156	8/11/2019	11/11/2019	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky	42420
3	3	CA-2019-138688	12/6/2019	16/6/2019	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	California	90036
4	4	US-2018-108966	11/10/2018	18/10/2018	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311
5	5	US-2018-108966	11/10/2018	18/10/2018	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311
6	6	CA-2017-115812	9/6/2017	14/6/2017	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032
7	7	CA-2017-115812	9/6/2017	14/6/2017	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032
8	8	CA-2017-115812	9/6/2017	14/6/2017	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032
9	9	CA-2017-115812	9/6/2017	14/6/2017	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032
10	10	CA-2017-115812	9/6/2017	14/6/2017	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032
11	11	CA-2017-115812	9/6/2017	14/6/2017	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032
12	12	CA-2017-115812	9/6/2017	14/6/2017	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032
13	13	CA-2020-114412	15/4/2020	20/4/2020	Standard Class	AA-10480	Andrew Allen	Consumer	United States	Concord	North Carolina	28027
14	14	CA-2019-161389	5/12/2019	10/12/2019	Standard Class	IM-15070	Irene Maddox	Consumer	United States	Seattle	Washington	98103
15	15	US-2018-118983	22/11/2018	26/11/2018	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106
16	16	US-2018-118983	22/11/2018	26/11/2018	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106
17	17	CA-2017-105893	11/11/2017	18/11/2017	Standard Class	PK-19075	Pete Kriz	Consumer	United States	Madison	Wisconsin	53711
18	18	CA-2017-167164	13/5/2017	15/5/2017	Second Class	AG-10270	Alejandro Grove	Consumer	United States	West Jordan	Utah	84084
19	19	CA-2017-143336	27/8/2017	1/9/2017	Second Class	ZD-21925	Zuschuss ...	Consumer	United States	San Francisco	California	94109
20	20	CA-2017-143336	27/8/2017	1/9/2017	Second Class	ZD-21925	Zuschuss ...	Consumer	United States	San Francisco	California	94109

TUTORIAL

drag & drop DIMENSION or MEASURE

The screenshot shows the Tableau interface with two main panes. On the left, the 'Data Source' pane displays a list of dimensions and measures: Country, CO2Emissions, YearlyChange, Percapita, Population, and LifeExpectancy. The 'Percapita' measure is selected. On the right, the 'Table Detail' pane shows a table with columns: Country, LifeExpectancy, and Percapita. The first three rows of data are displayed.

Table Detail View (Left):

	Country	LifeExpectancy	Percapita
1	Afghanistan	63.763	0.28
2	Albania	78.194	1.8
3	Algeria	76.298	3.85
4	Angola	59.925	1.06
5	Anguilla	81.441	2.1
6	Antigua and ...	76.617	4.64
7	Argentina	76.221	4.61
8	Armenia	74.64	1.57
9	Aruba	75.868	2.74
10	Australia	82.959	17.1
11	Austria	81.258	8.43
12	Azerbaijan	72.493	3.45
13	Bahamas	73.329	11.65
14	Bahrain	76.899	17.15
15	Bangladesh	71.785	0.47
16	Barbados	78.888	5.39
17	Belarus	74.031	6.63
18	Belgium	81.139	8.34
19	Belize	74.219	3.02
20	Benin	60.885	0.6

Table Detail View (Right):

	Country	LifeExpectancy	Percapita
1	Afghanistan	63.763	0.28
2	Albania	78.194	1.8
3	Algeria	76.298	3.85

Filter Country Dialog:

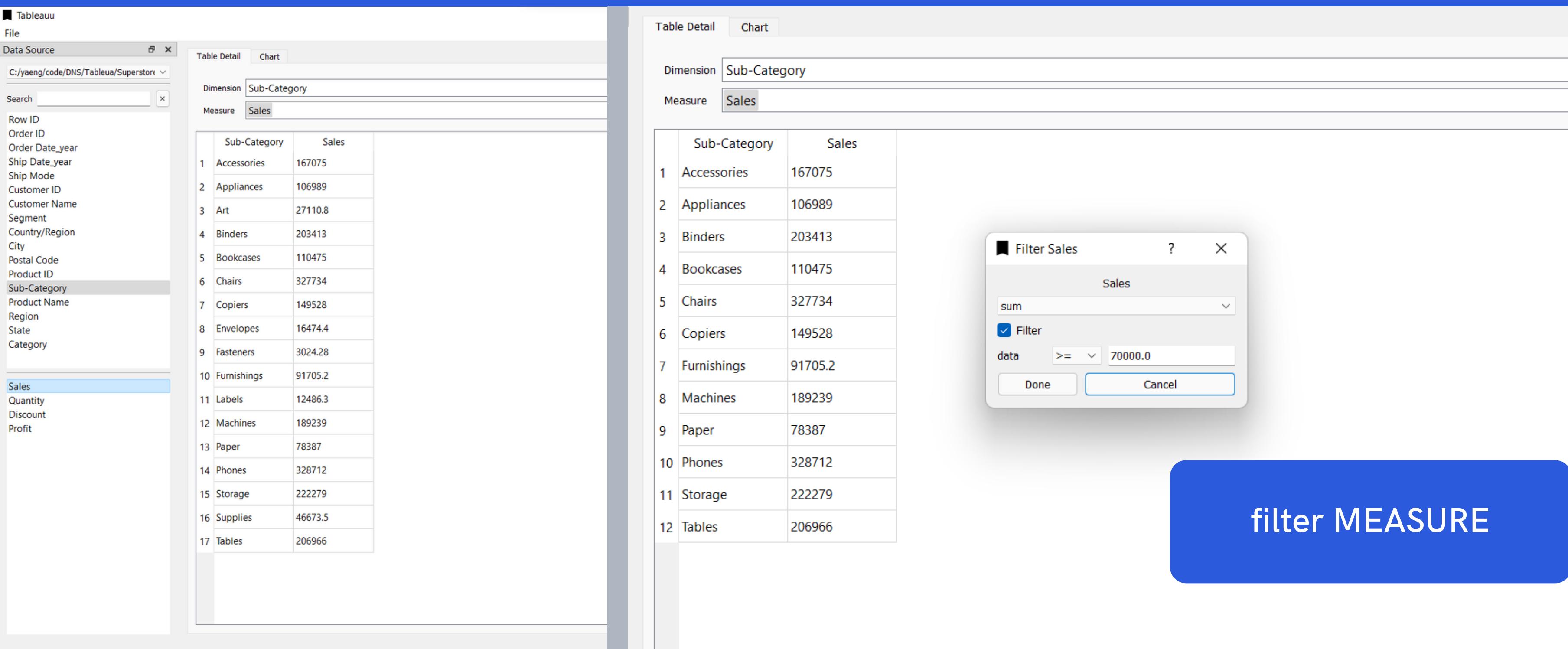
A modal dialog titled 'Filter Country' is open, showing a list of countries with checkboxes. The following countries are checked: Afghanistan, Albania, and Algeria. Buttons for 'All Select' and 'All Clear' are at the top, and 'Done' and 'Cancel' are at the bottom.

Callout Text:

filter DIMENSION

TUTORIAL

drag & drop DIMENSION or MEASURE



The screenshot shows the Tableau Data Source interface. On the left, the Data Source pane lists various dimensions and measures. Dimensions include Row ID, Order ID, Order Date_year, Ship Date_year, Ship Mode, Customer ID, Customer Name, Segment, Country/Region, City, Postal Code, Product ID, Sub-Category, Product Name, Region, State, Category, Sales, Quantity, Discount, and Profit. The 'Sales' dimension is currently selected, highlighted with a blue border. The right side of the interface shows two tables: 'Table Detail' and 'Chart'. In the 'Table Detail' view, the 'Dimension' is set to 'Sub-Category' and the 'Measure' is set to 'Sales'. The table displays 17 rows of sales data by sub-category. In the 'Chart' view, the 'Dimension' is also set to 'Sub-Category' and the 'Measure' is set to 'Sales'. A filter dialog box titled 'Filter Sales' is open, showing a dropdown menu for 'sum', a checked 'Filter' checkbox, and a condition 'data >= 70000.0'. The 'Done' button is visible at the bottom left of the dialog.

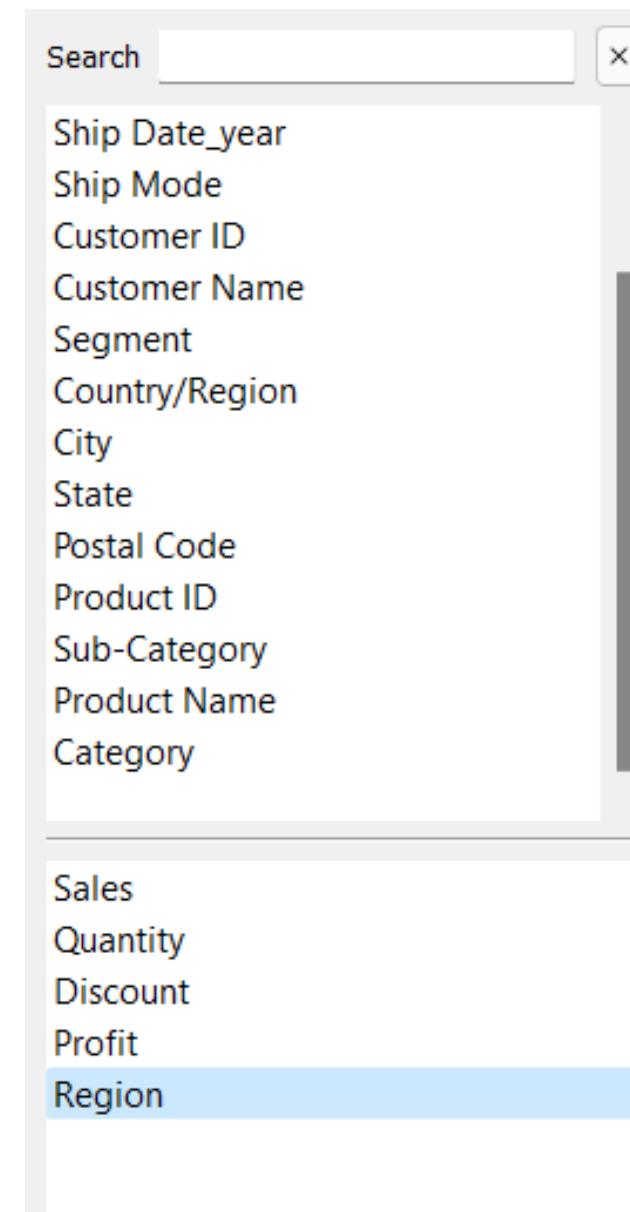
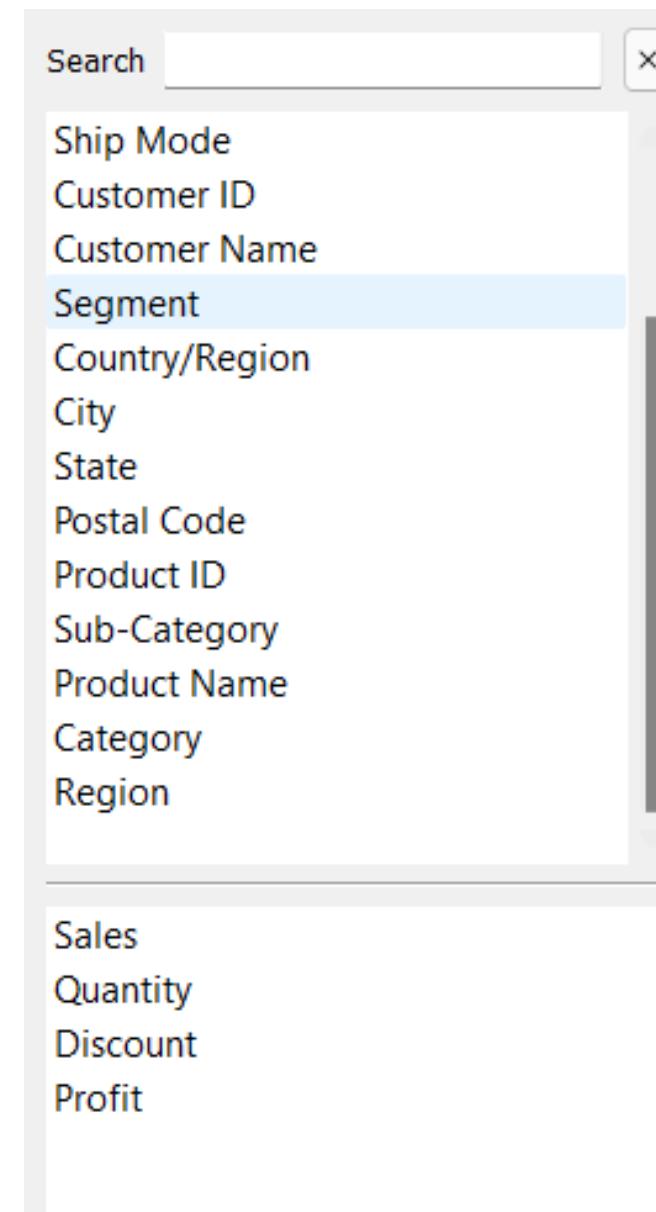
	Sub-Category	Sales
1	Accessories	167075
2	Appliances	106989
3	Art	27110.8
4	Binders	203413
5	Bookcases	110475
6	Chairs	327734
7	Copiers	149528
8	Envelopes	16474.4
9	Fasteners	3024.28
10	Furnishings	91705.2
11	Labels	12486.3
12	Machines	189239
13	Paper	78387
14	Phones	328712
15	Storage	222279
16	Supplies	46673.5
17	Tables	206966

	Sub-Category	Sales
1	Accessories	167075
2	Appliances	106989
3	Binders	203413
4	Bookcases	110475
5	Chairs	327734
6	Copiers	149528
7	Furnishings	91705.2
8	Machines	189239
9	Paper	78387
10	Phones	328712
11	Storage	222279
12	Tables	206966

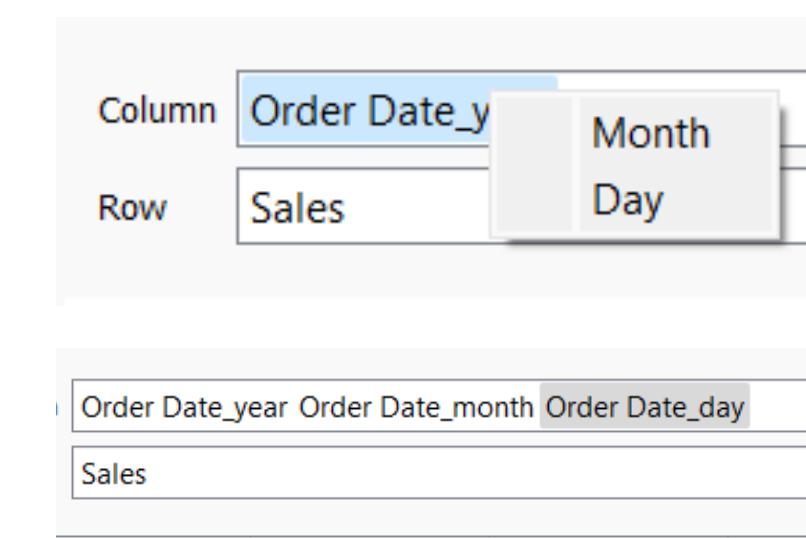
filter MEASURE

TUTORIAL

drag & drop DIMENSION or MEASURE



- ស្លាប DIMENSION MEASURE
- DIMESION DATE TIME



	Order Date_year	Order Date_month	Order Date_day	Sales
1	2017	1	3	16.448
2	2017	1	4	288.06
3	2017	1	5	19.536
4	2017	1	6	4407.1
5	2017	1	7	87.158
6	2017	1	9	40.544
7	2017	1	10	54.83
8	2017	1	11	9.94
9	2017	1	13	3553.8
10	2017	1	14	61.96
11	2017	1	15	149.95
12	2017	1	16	299.964
13	2017	1	18	64.864
14	2017	1	19	378.594
15	2017	1	20	2673.87
16	2017	1	21	25.248
17	2017	1	23	46.02
18	2017	1	26	1097.25
19	2017	1	27	426.67
20	2017	1	28	3.928

TUTORIAL

Union file

Tableau Data Source

C:/yaeng/code/DNS/data_test/app data

Dimension: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country/Region, City, State, Postal Code, Region, Product ID, Sub-Category, Product Name, Category.

Measure: Sales, Quantity, Discount, Profit.

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country/Region	City	State	Postal Code	
9965	9976	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
9966	9977	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
9967	9978	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
9968	9979	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
9969	9980	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
9970	9981	US-2018-151435	6/9/2018	9/9/2018	Second Class	SW-20455	Shaun Weien	Consumer	United States	Lafayette	Louisiana	70506
9971	9982	CA-2020-163566	3/8/2020	6/8/2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Fairfield	Ohio	45014
9972	9983	US-2019-157728	22/9/2019	28/9/2019	Standard Class	RC-19960	Ryan Crowe	Consumer	United States	Grand Rapids	Michigan	49505
9973	9984	US-2019-157728	22/9/2019	28/9/2019	Standard Class	RC-19960	Ryan Crowe	Consumer	United States	Grand Rapids	Michigan	49505
9974	9985	CA-2018-100251	17/5/2018	23/5/2018	Standard Class	DV-13465	Dianna Vittorini	Consumer	United States	Long Beach	New York	11561
9975	9986	CA-2018-100251	17/5/2018	23/5/2018	Standard Class	DV-13465	Dianna Vittorini	Consumer	United States	Long Beach	New York	11561
9976	9987	CA-2019-125794	29/9/2019	3/10/2019	Standard Class	ML-17410	Maris LaWare	Consumer	United States	Los Angeles	California	90008
9977	9988	CA-2020-163629	17/11/2020	21/11/2020	Standard Class	RA-19885	Ruben Ausman	Corporate	United States	Athens	Georgia	30605
9978	9989	CA-2020-163629	17/11/2020	21/11/2020	Standard Class	RA-19885	Ruben Ausman	Corporate	United States	Athens	Georgia	30605
9979	9990	CA-2017-110422	21/1/2017	23/1/2017	Second Class	TB-21400	Tom ...	Consumer	United States	Miami	Florida	33180
9980	9991	CA-2020-121258	26/2/2020	3/3/2020	Standard Class	DB-13060	Dave Brooks	Consumer	United States	Costa Mesa	California	92627
9981	9992	CA-2020-121258	26/2/2020	3/3/2020	Standard Class	DB-13060	Dave Brooks	Consumer	United States	Costa Mesa	California	92627
9982	9993	CA-2020-121258	26/2/2020	3/3/2020	Standard Class	DB-13060	Dave Brooks	Consumer	United States	Costa Mesa	California	92627
9983	9994	CA-2020-119914	4/5/2020	9/5/2020	Second Class	CC-12220	Chris Cortes	Consumer	United States	Westminster	California	92683

File Import Union Exit

File open File

File name: CSV file (*.csv)

Open Cancel

File list:

- mod
- work
- backup
- This PC
- clonegit
- Desktop
- Documents
- Downloads
- Music
- PythonGUI
- altair-data-8d... 0
- altair-data-c7b... 1
- data
- Videos
- Superstore
- Local Disk (C:) 2,235
- submit drive (D:)

TUTORIAL

Union file

Tableau Data Source C:/yaeng/code/DNS/Tableau/Superstore

Table Detail Chart

Dimension Search Measure

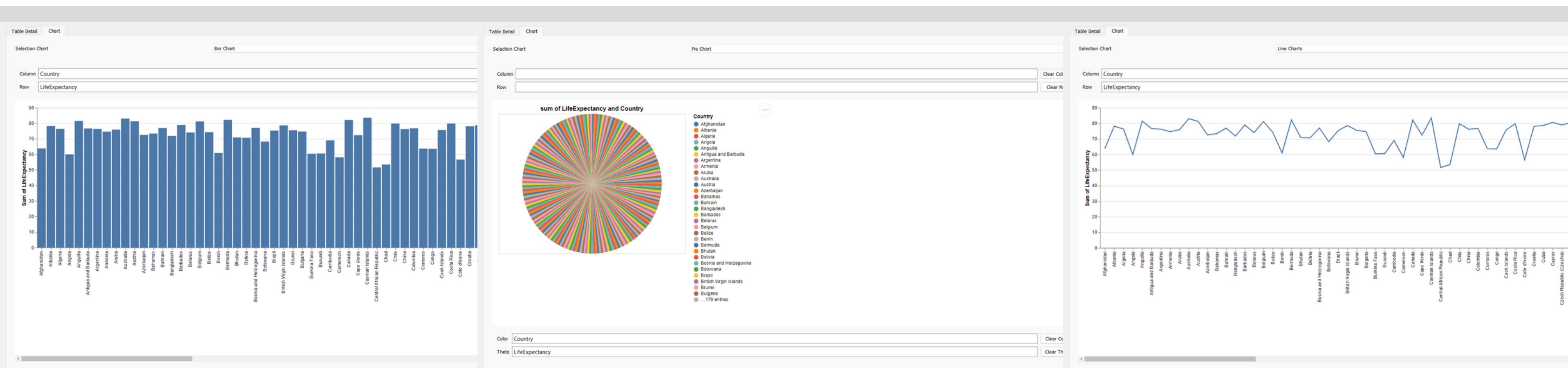
Row ID Order ID Order Date_year Ship Date_year Ship Mode Customer ID Customer Name Segment Country/Region City State Postal Code Region Product ID Sub-Category Product Name Category

Sales Quantity Discount Profit

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country/Region	City	State	Postal Code	
19947	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032	
19948	9976	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
19949	9977	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
19950	9978	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
19951	9979	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
19952	9980	US-2019-103674	6/12/2019	10/12/2019	Standard Class	AP-10720	Anne Pryor	Home Office	United States	Los Angeles	California	90032
19953	9981	US-2018-151435	6/9/2018	9/9/2018	Second Class	SW-20455	Shaun Weien	Consumer	United States	Lafayette	Louisiana	70506
19954	9982	CA-2020-163566	3/8/2020	6/8/2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Fairfield	Ohio	45014
19955	9983	US-2019-157728	22/9/2019	28/9/2019	Standard Class	RC-19960	Ryan Crowe	Consumer	United States	Grand Rapids	Michigan	49505
19956	9984	US-2019-157728	22/9/2019	28/9/2019	Standard Class	RC-19960	Ryan Crowe	Consumer	United States	Grand Rapids	Michigan	49505
19957	9985	CA-2018-100251	17/5/2018	23/5/2018	Standard Class	DV-13465	Dianna Vittorini	Consumer	United States	Long Beach	New York	11561
19958	9986	CA-2018-100251	17/5/2018	23/5/2018	Standard Class	DV-13465	Dianna Vittorini	Consumer	United States	Long Beach	New York	11561
19959	9987	CA-2019-125794	29/9/2019	3/10/2019	Standard Class	ML-17410	Maris LaWare	Consumer	United States	Los Angeles	California	90008
19960	9988	CA-2020-163629	17/11/2020	21/11/2020	Standard Class	RA-19885	Ruben Ausman	Corporate	United States	Athens	Georgia	30605
19961	9989	CA-2020-163629	17/11/2020	21/11/2020	Standard Class	RA-19885	Ruben Ausman	Corporate	United States	Athens	Georgia	30605
19962	9990	CA-2017-110422	21/1/2017	23/1/2017	Second Class	TB-21400	Tom ...	Consumer	United States	Miami	Florida	33180
19963	9991	CA-2020-121258	26/2/2020	3/3/2020	Standard Class	DB-13060	Dave Brooks	Consumer	United States	Costa Mesa	California	92627
19964	9992	CA-2020-121258	26/2/2020	3/3/2020	Standard Class	DB-13060	Dave Brooks	Consumer	United States	Costa Mesa	California	92627
19965	9993	CA-2020-121258	26/2/2020	3/3/2020	Standard Class	DB-13060	Dave Brooks	Consumer	United States	Costa Mesa	California	92627
19966	9994	CA-2020-119914	4/5/2020	9/5/2020	Second Class	CC-12220	Chris Cortes	Consumer	United States	Westminster	California	92683

TUTORIAL

Chart



BarChart

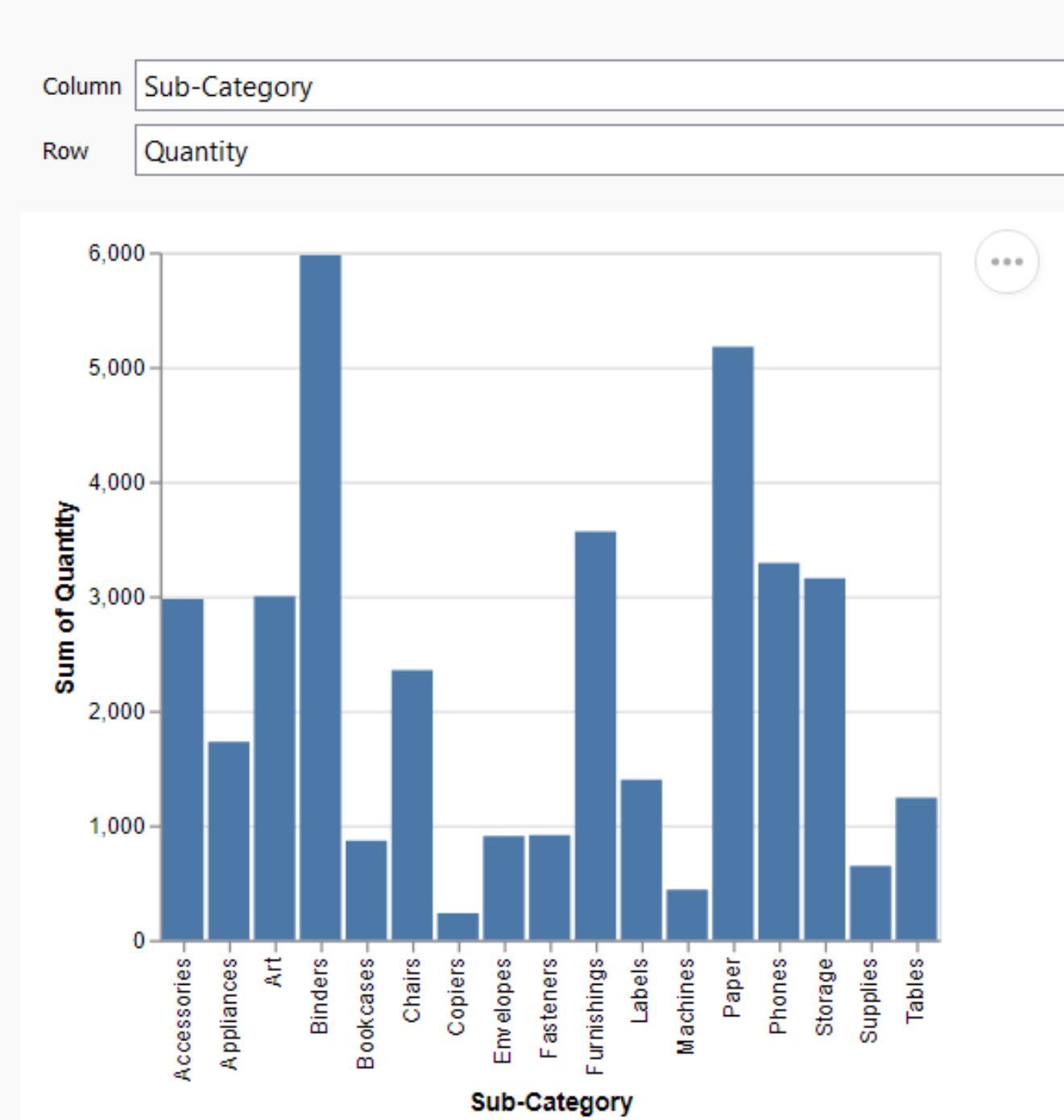
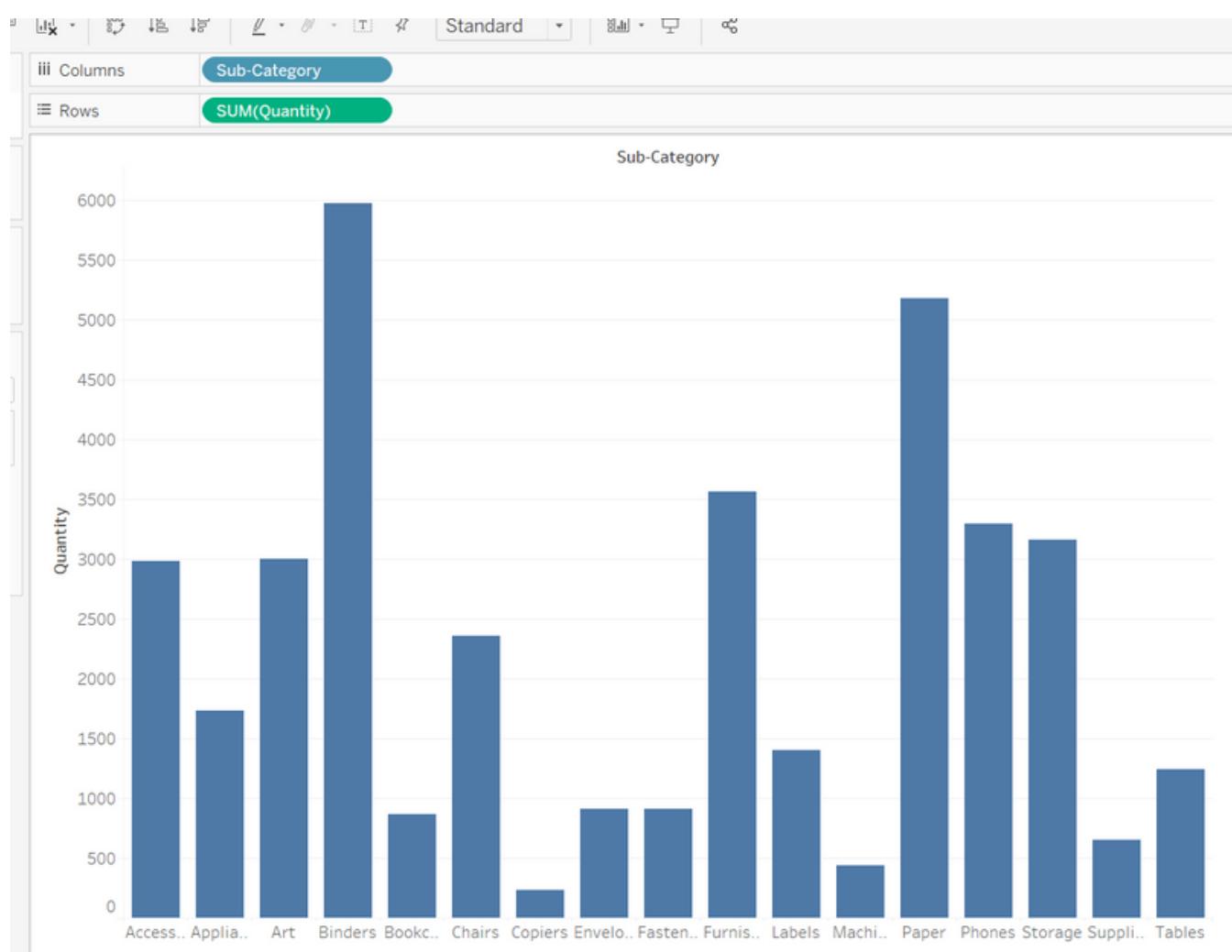
PieChart

LineChart

BarChart

13

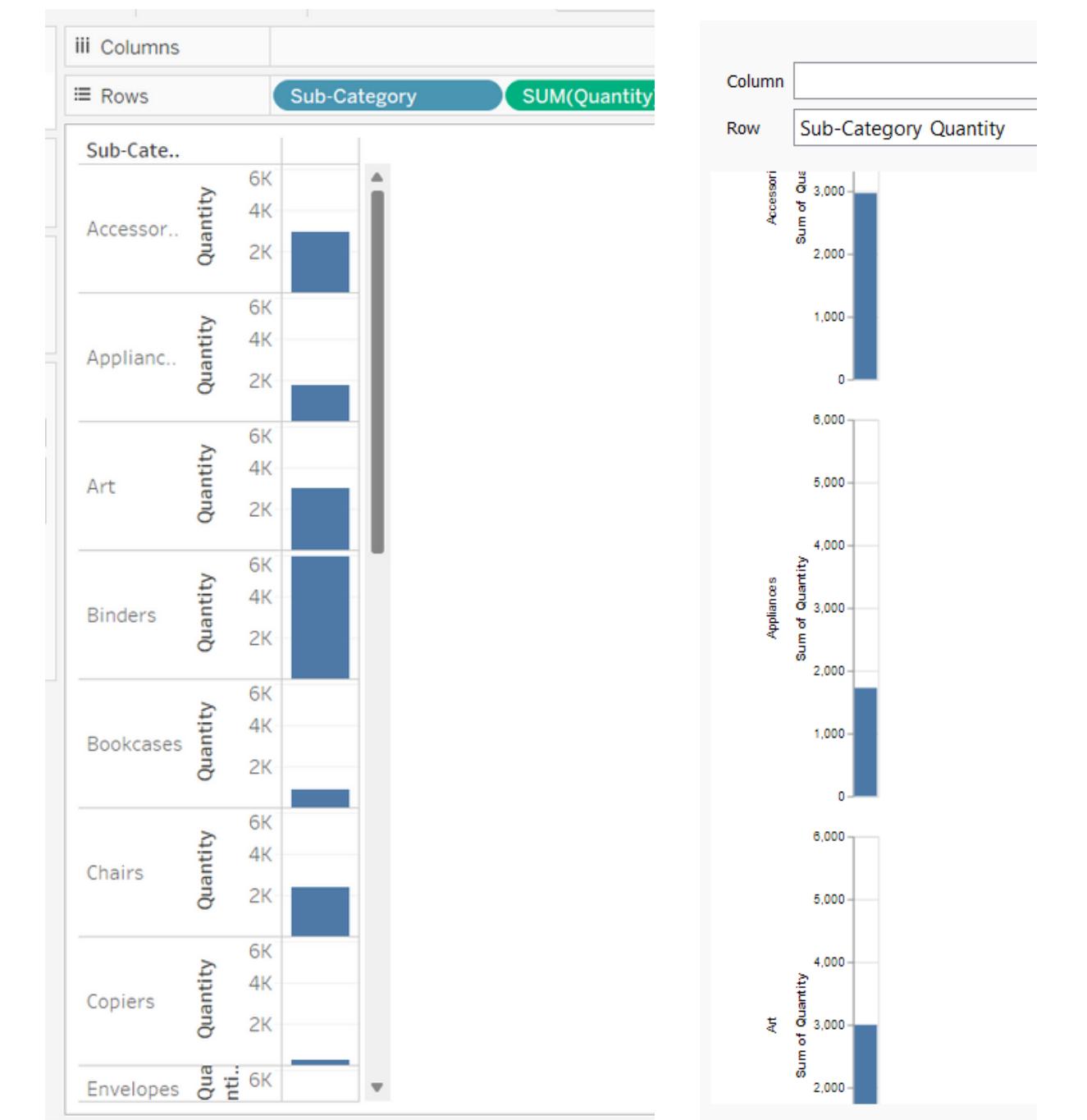
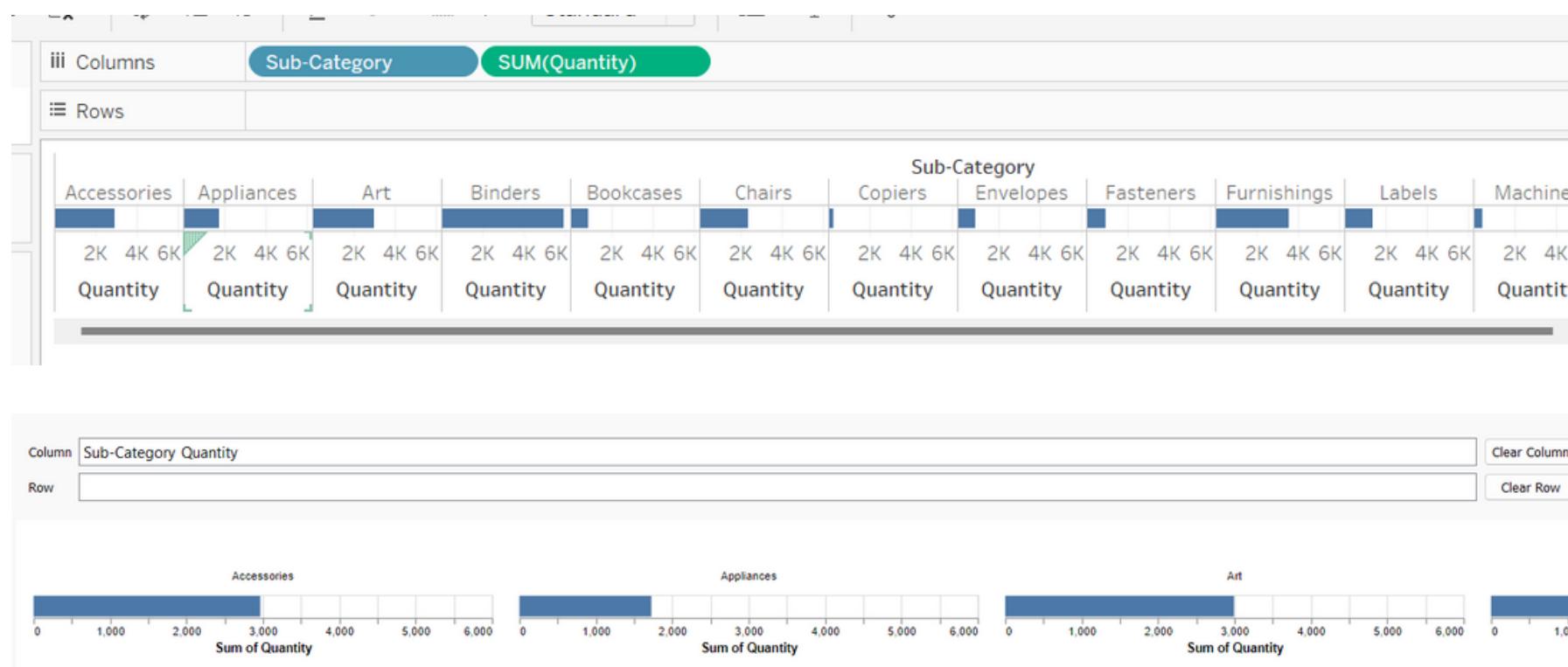
กราฟ ปกติ 1 column 1 row



BarChart

14

ກົດລົງ column ພ Dimension 1 Measure 1
ແລະ ກົດລົງ row ພ Dimension 1 Measure 1

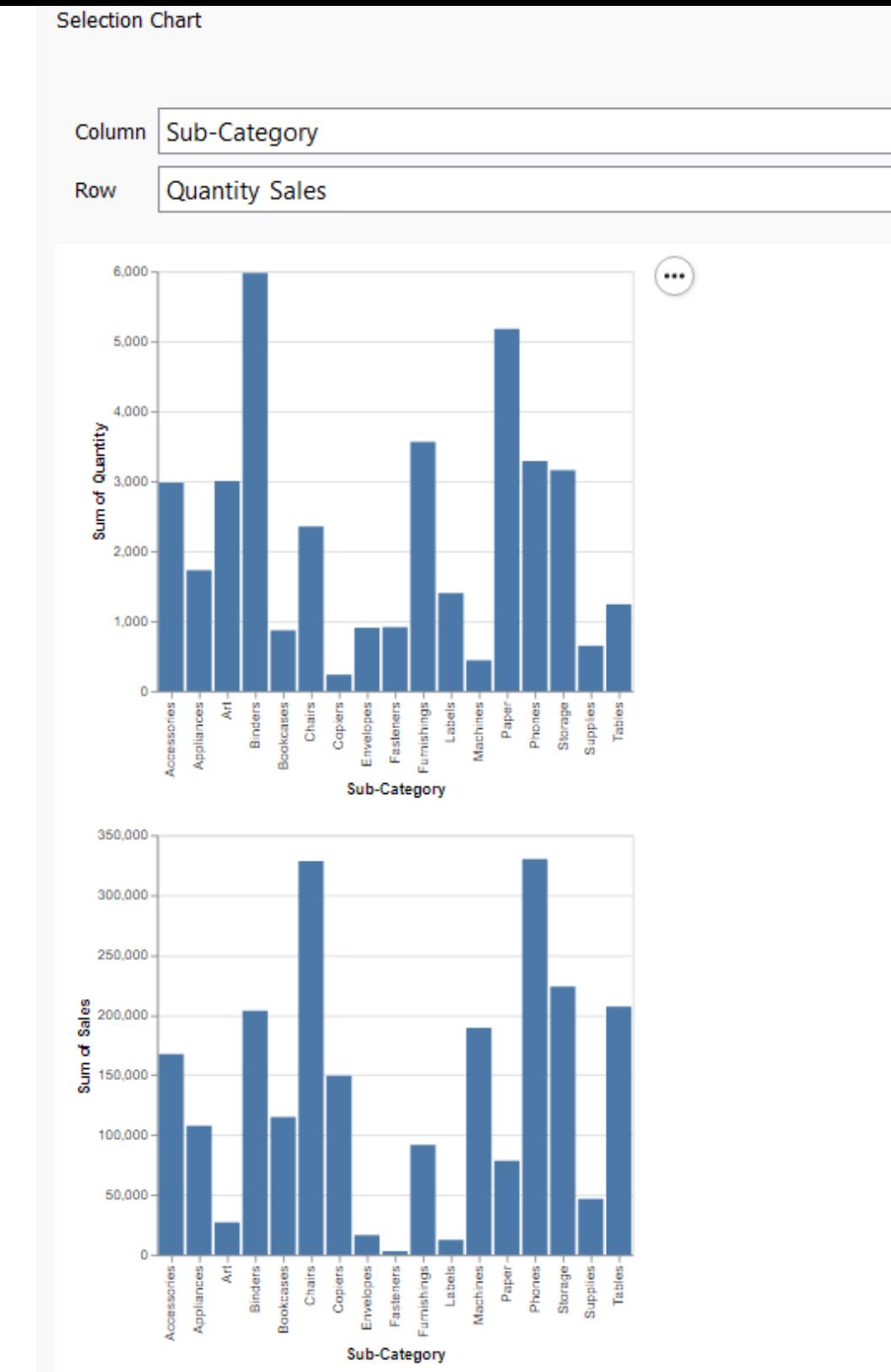


BarChart

15

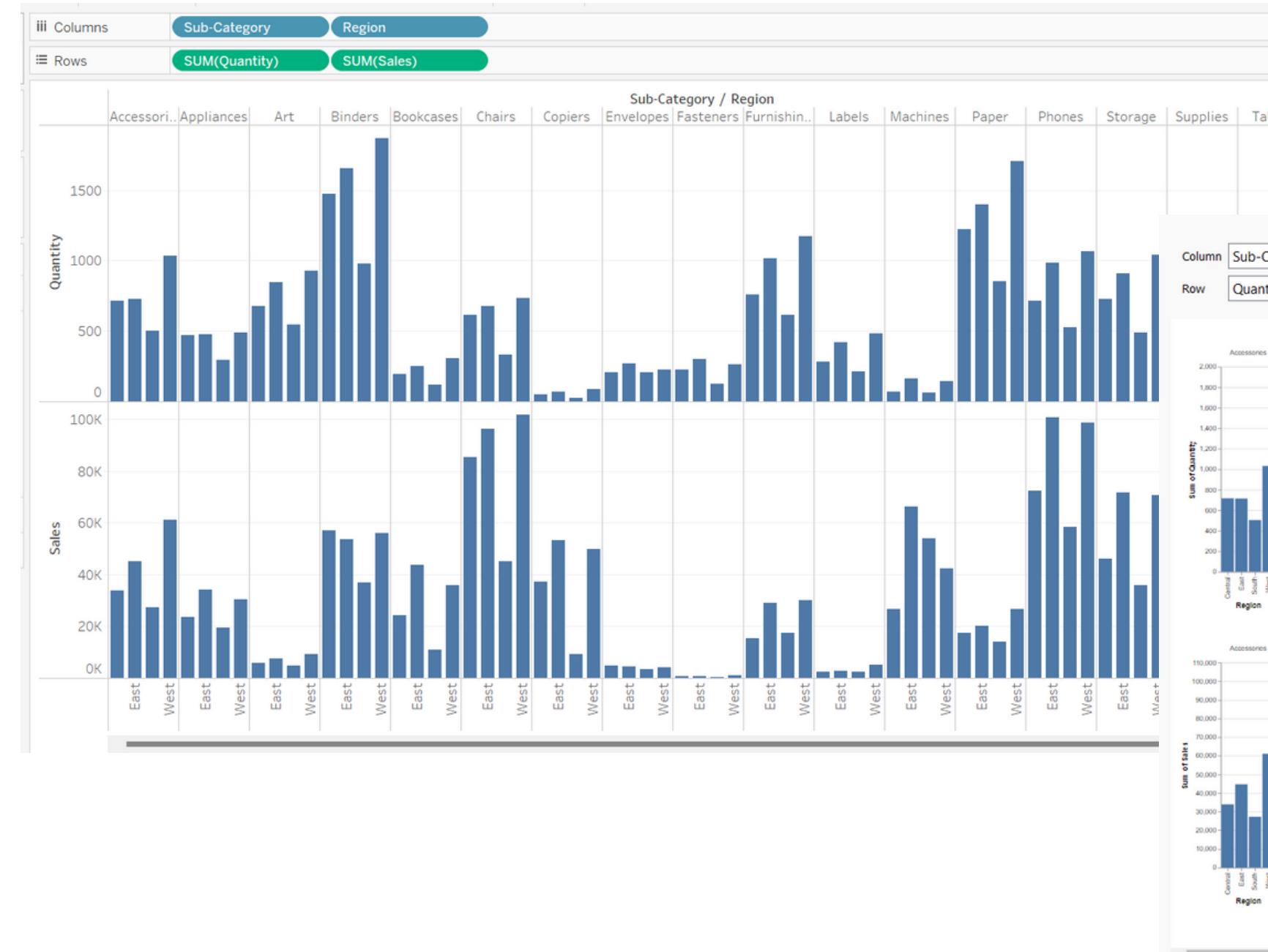
ກຮຽ

- column Dimension 1
- row Measure 2



BarChart

16

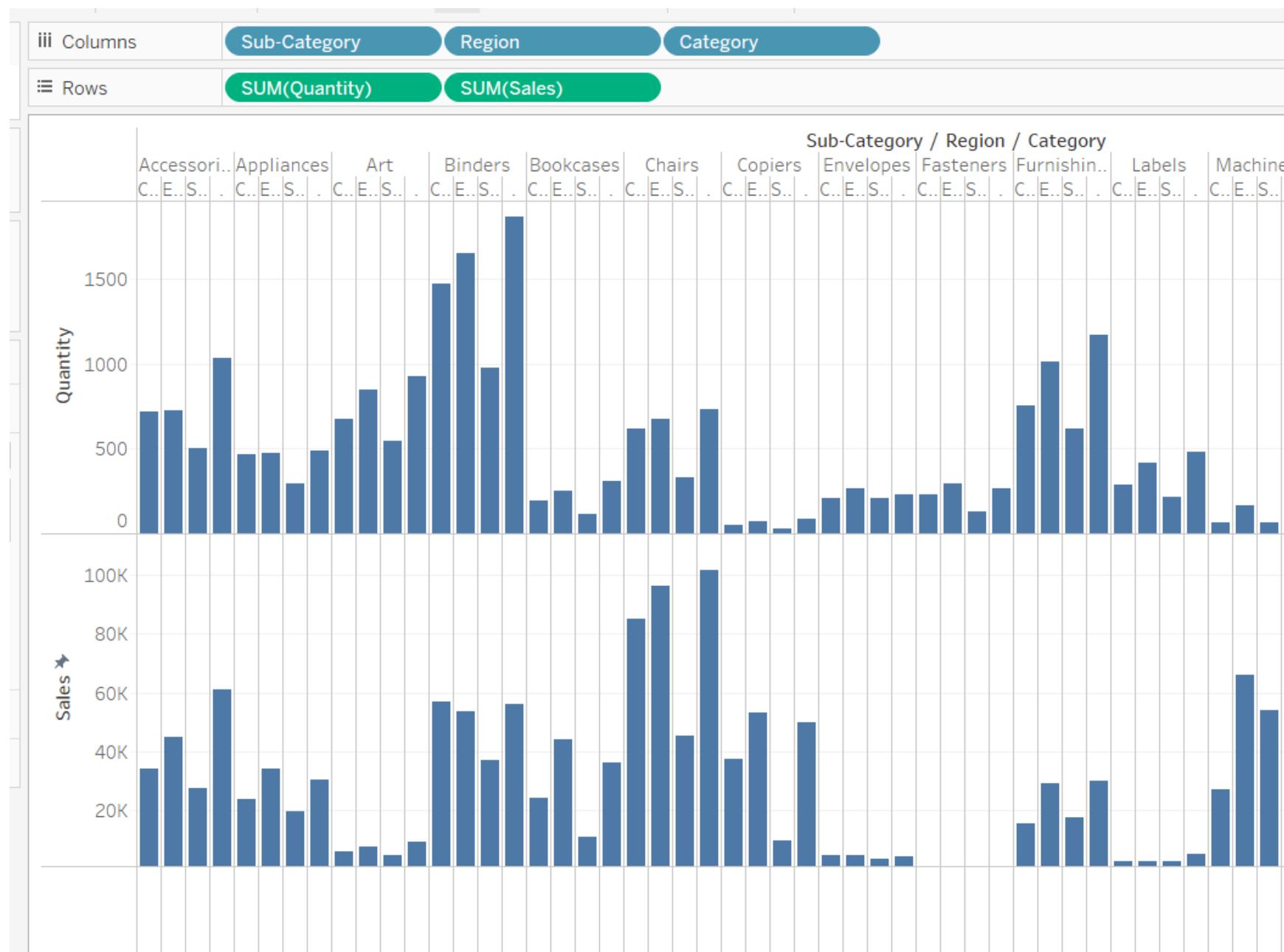


наші

- column Dimension 2
- row Measure 2

BarChart

17



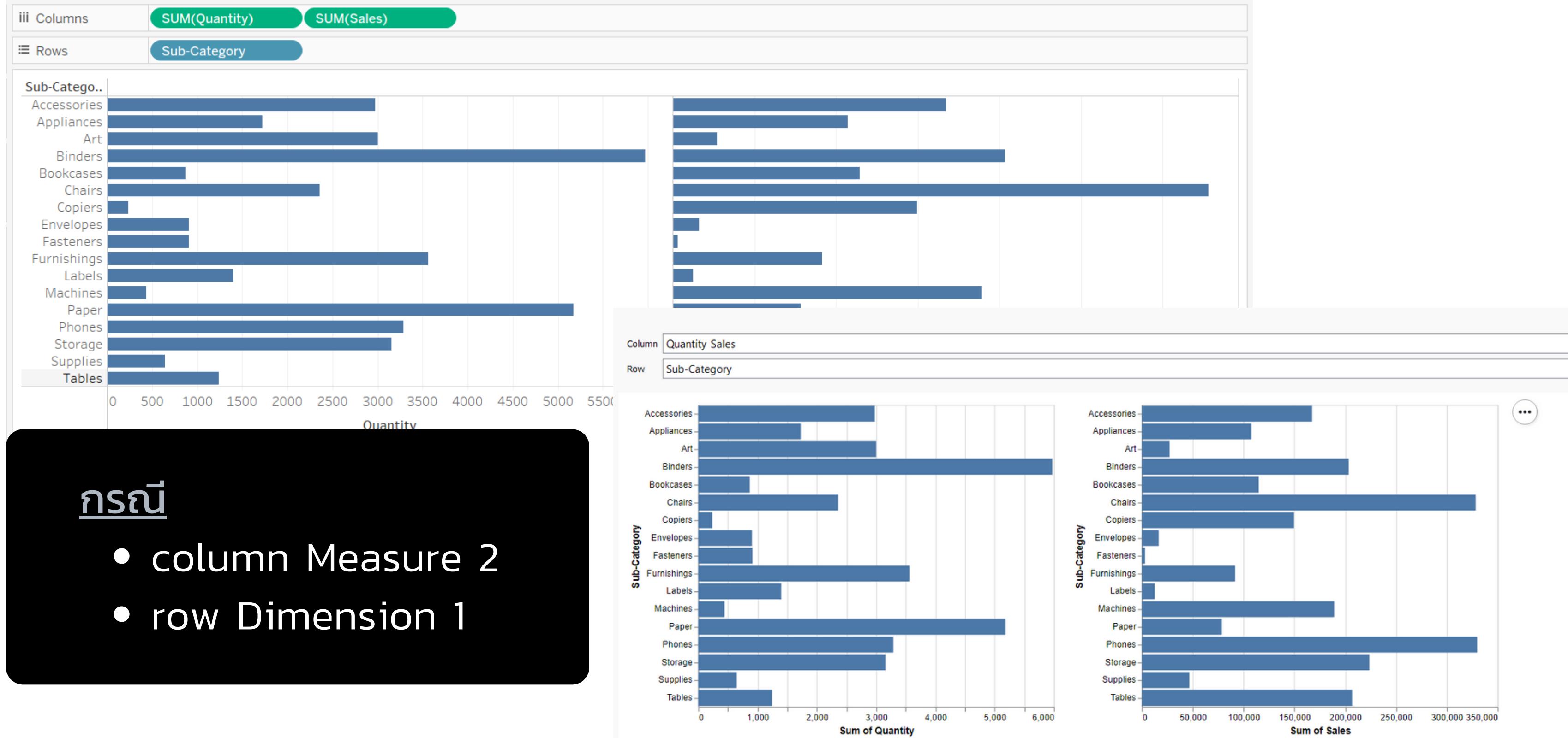
ןראן

- column Dimension 3
- row Measure 2

The figure shows a configuration screen for a bar chart. It includes a 'Table Detail' tab, a 'Selection Chart' dropdown set to 'Bar Chart', and input fields for 'Column' (containing 'Sub-Category Region Category') and 'Row' (containing 'Quantity Sales'). A red error message at the bottom reads: 'JavaScript Error: Undefined data set name: "scale_concat_1_child_main"'. Below the error message, a note says: 'This usually means there's a typo in your chart specification. See the javascript console for the full traceback.'

BarChart

18



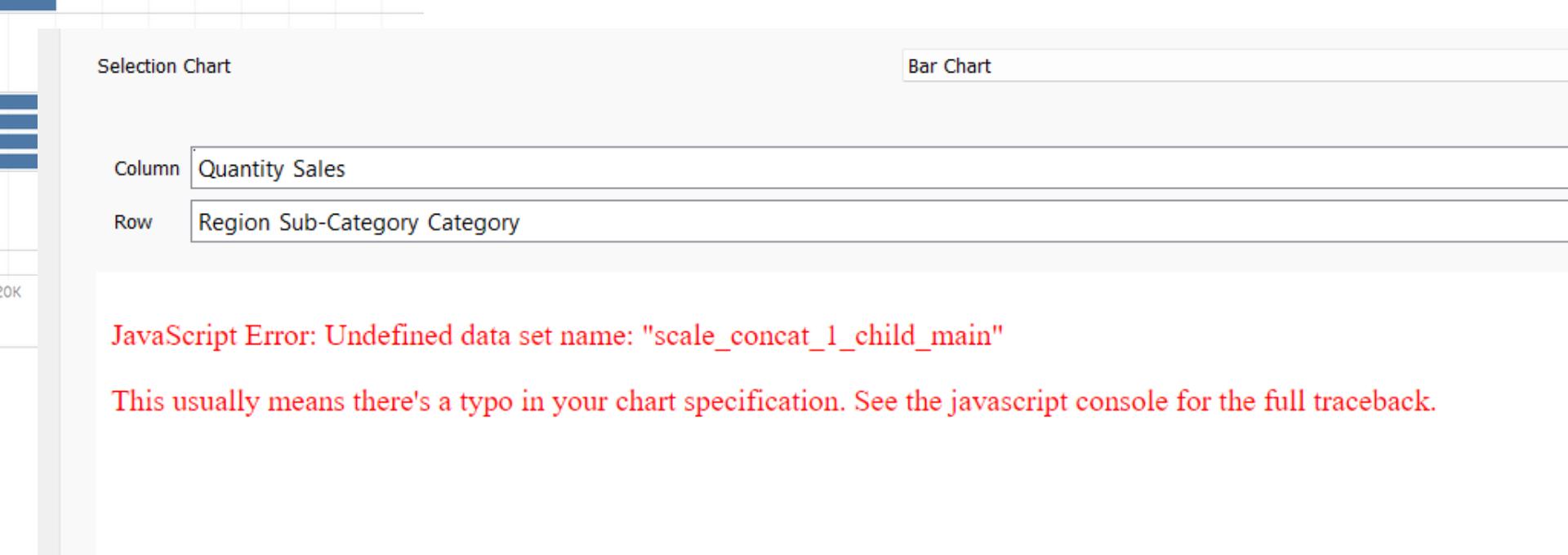
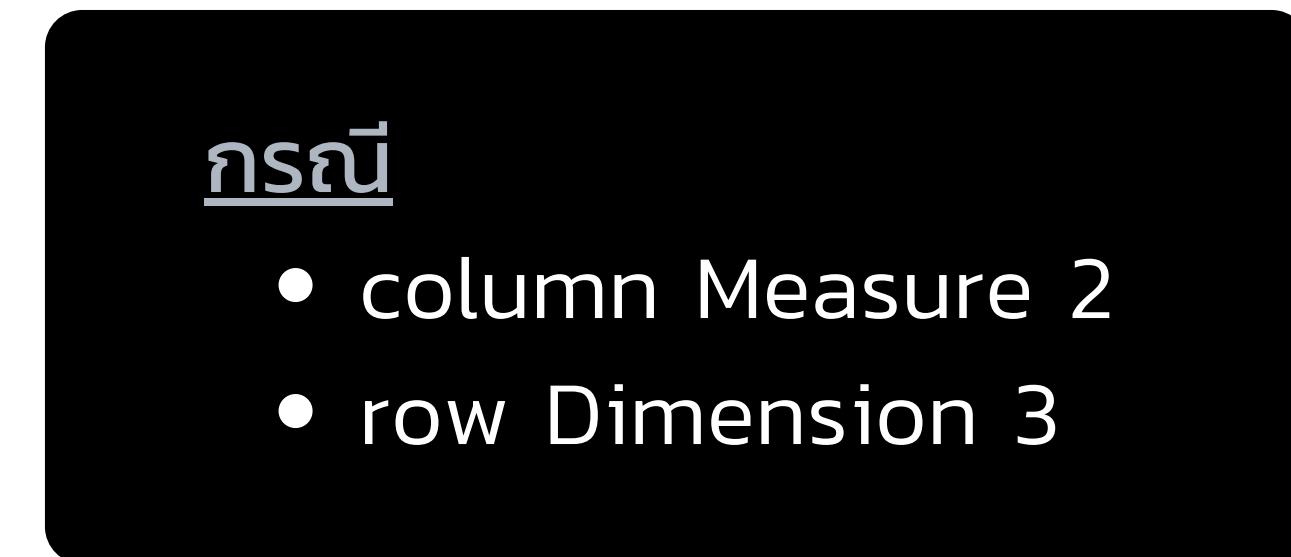
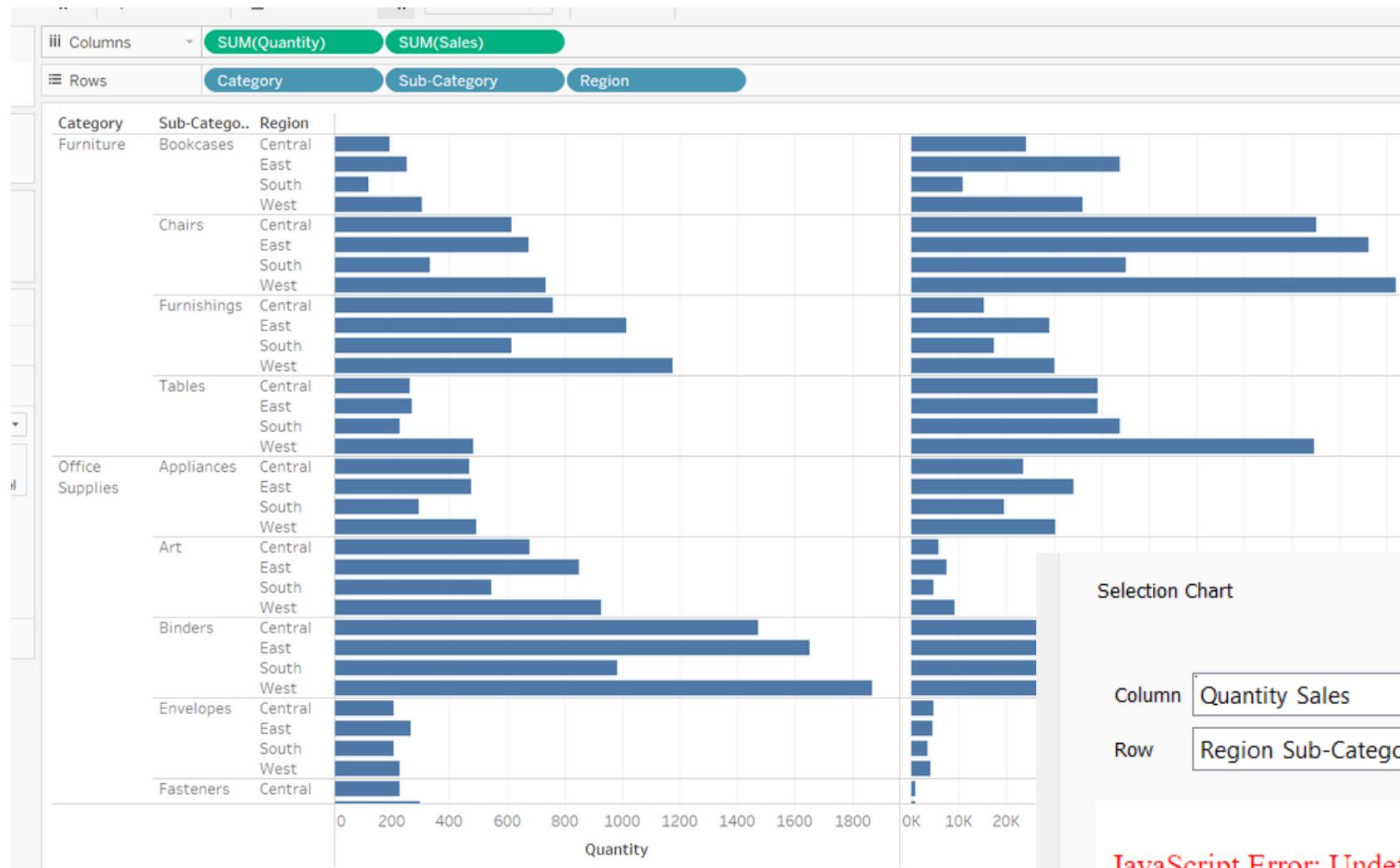
BarChart

19

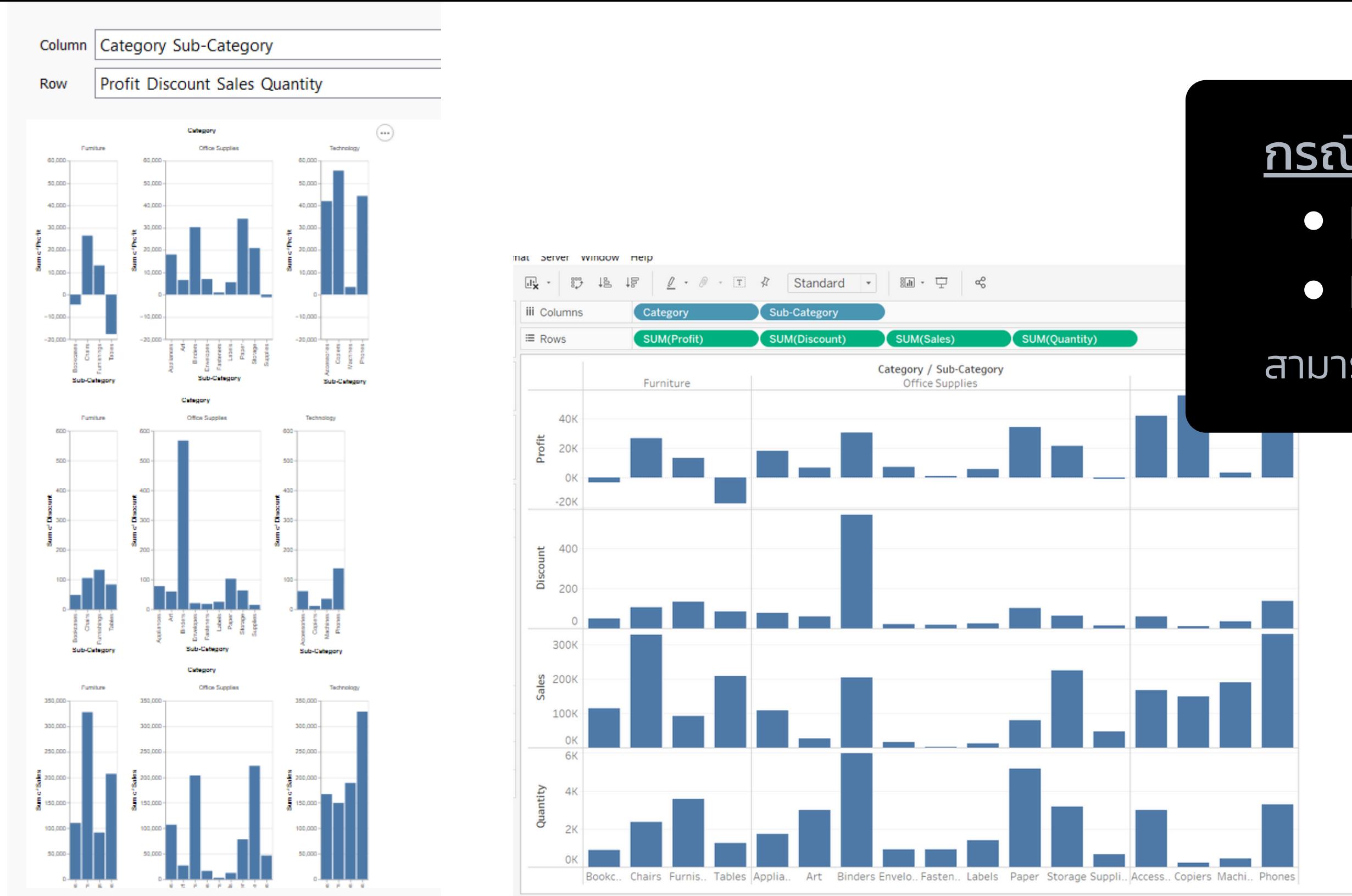


BarChart

20



BarChart



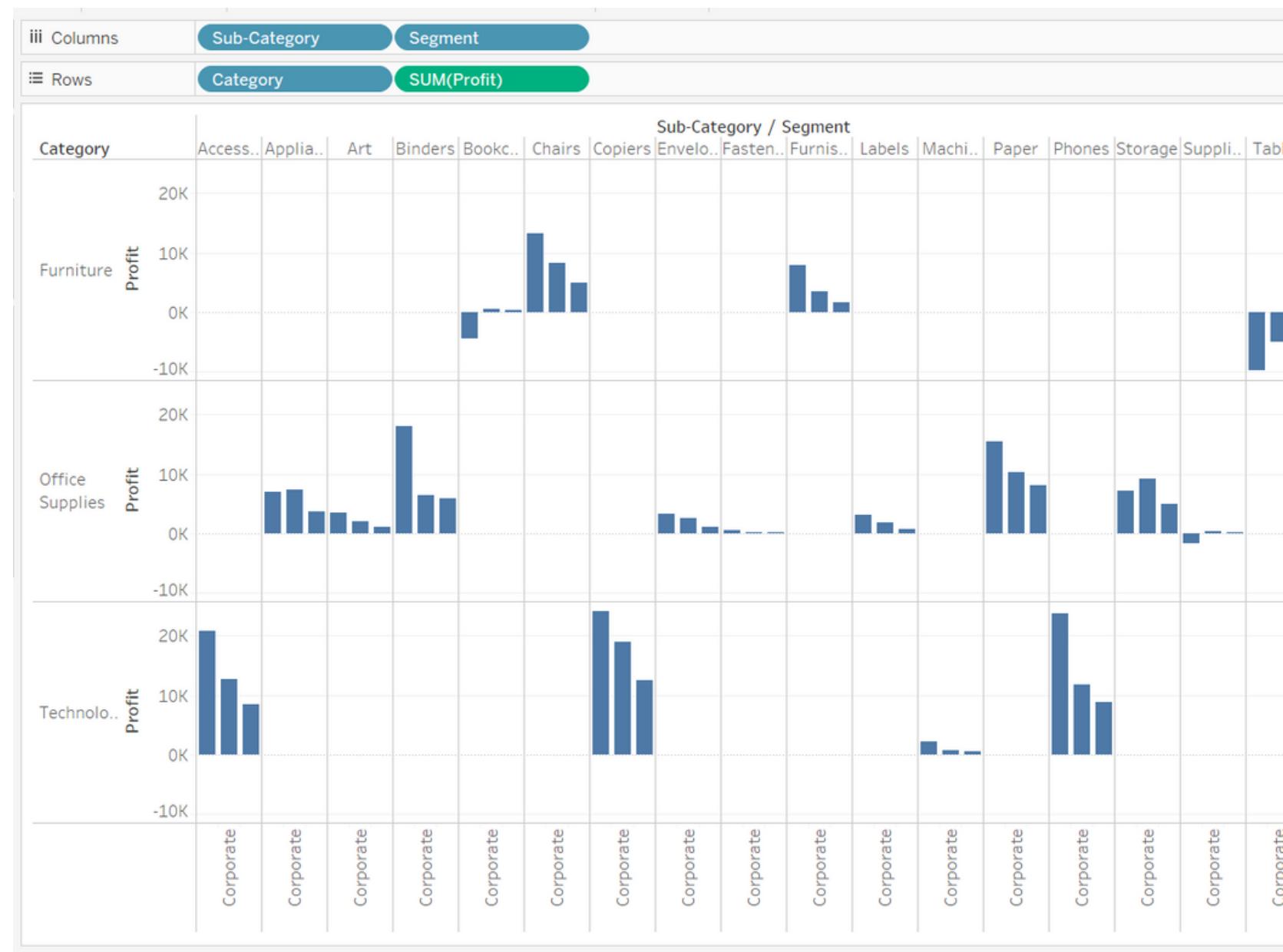
กราฟ

- Dimension 2
- Measure more

สามารถทำได้ทั้ง row & column

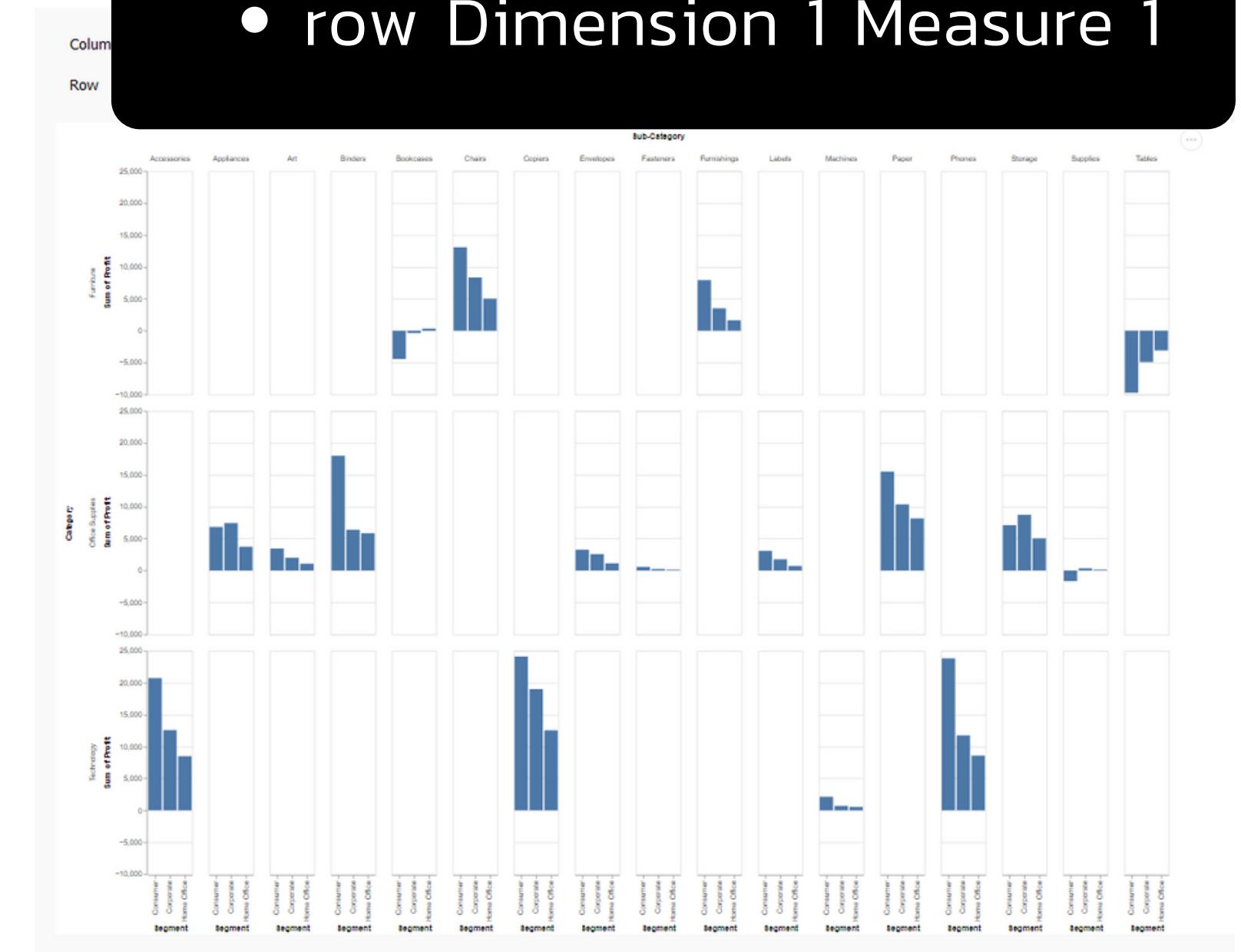
BarChart

22



กรณี

- column Dimension 2
 - row Dimension 1 Measure 1

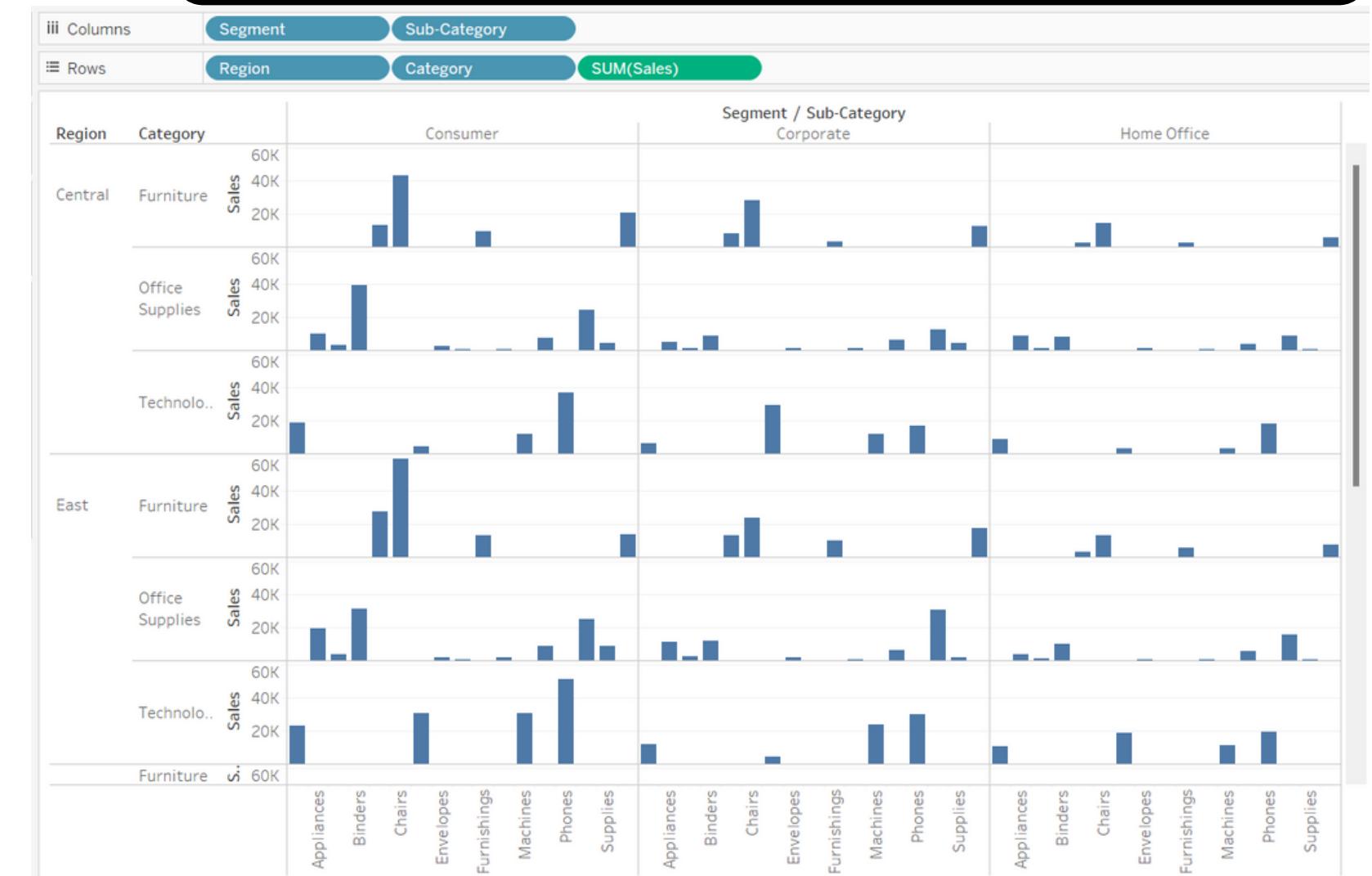


BarChart

23

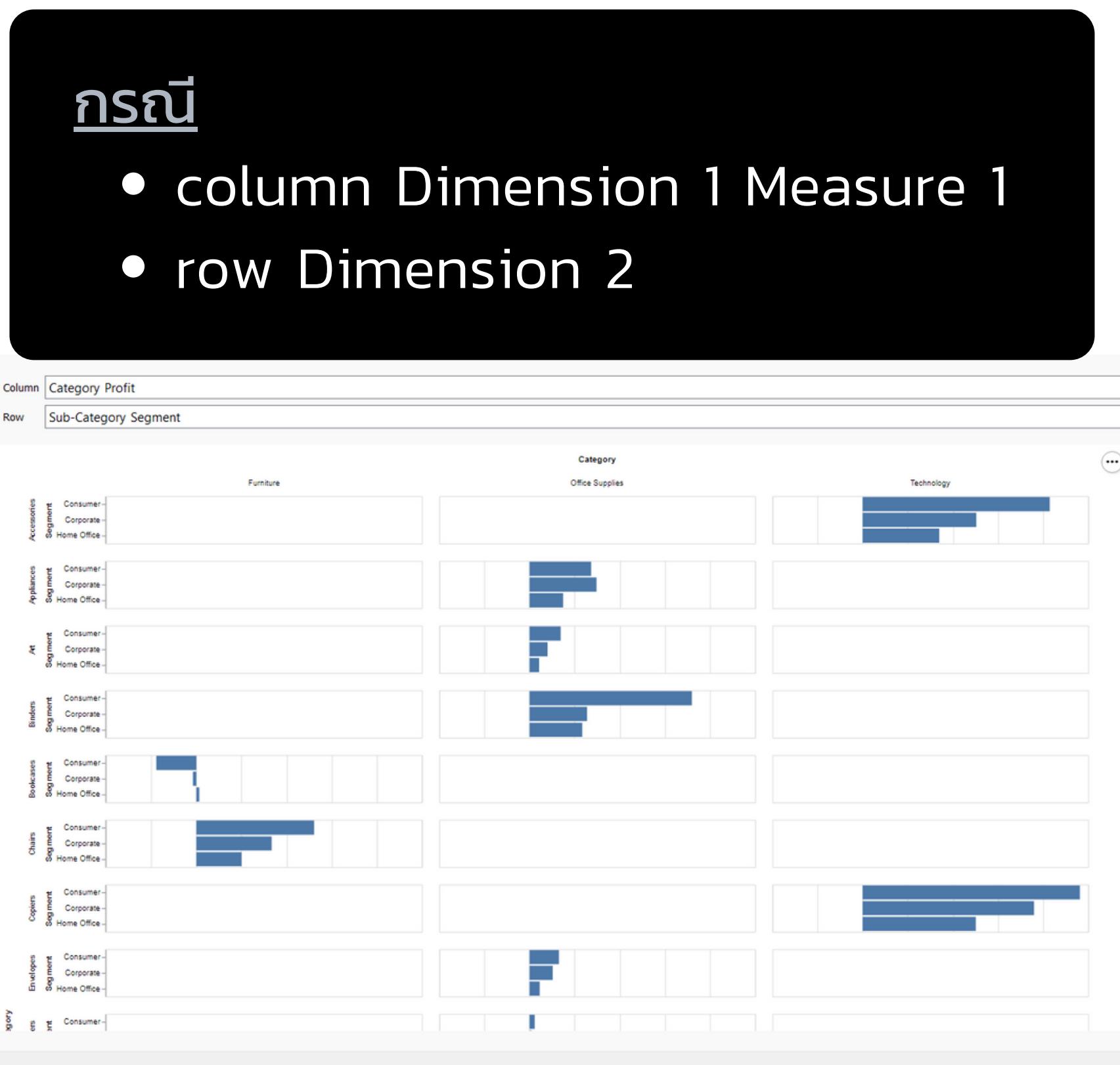


- nsn̄
- column Dimension 2
 - row Dimension 2 Measure 1



BarChart

24



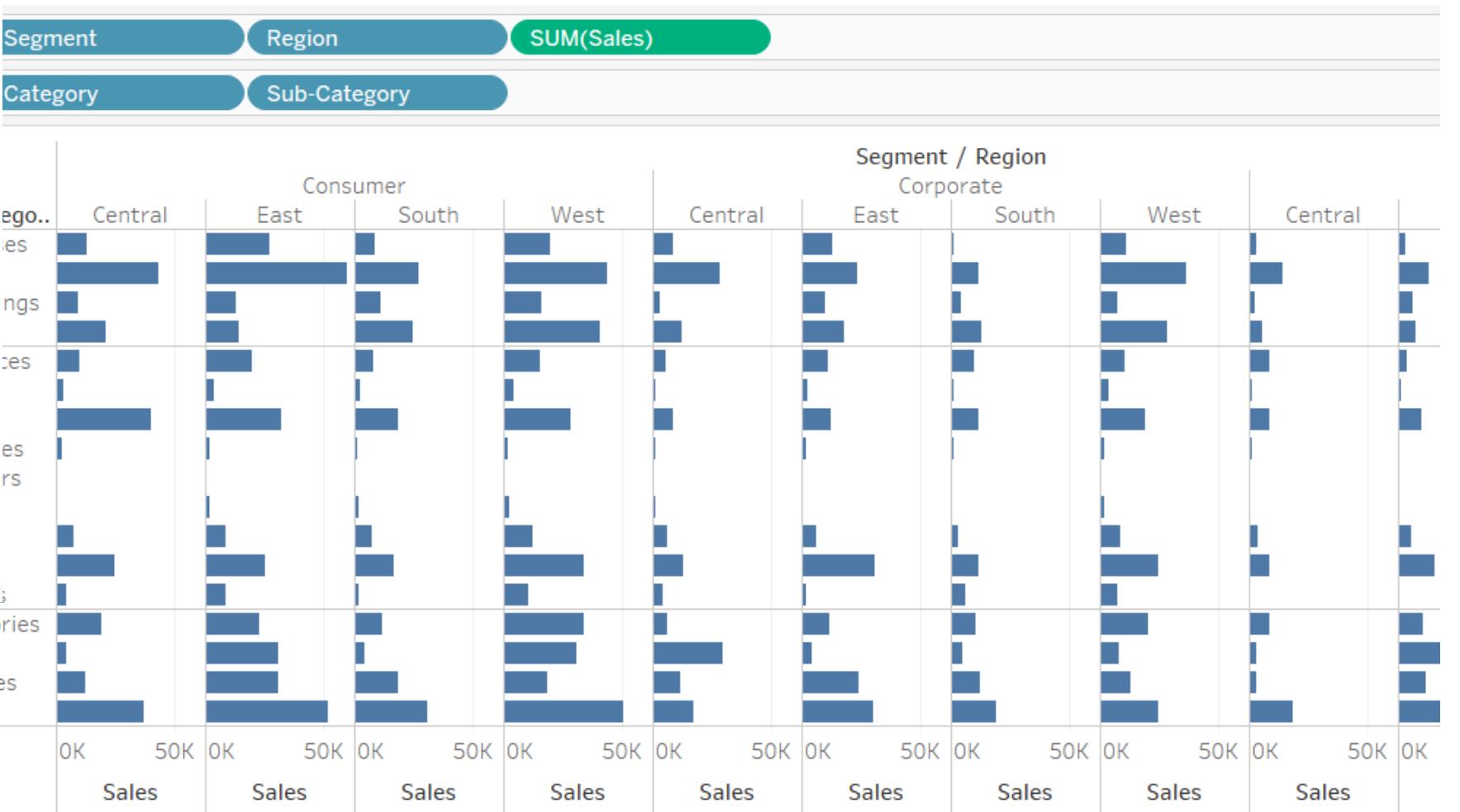
BarChart

25



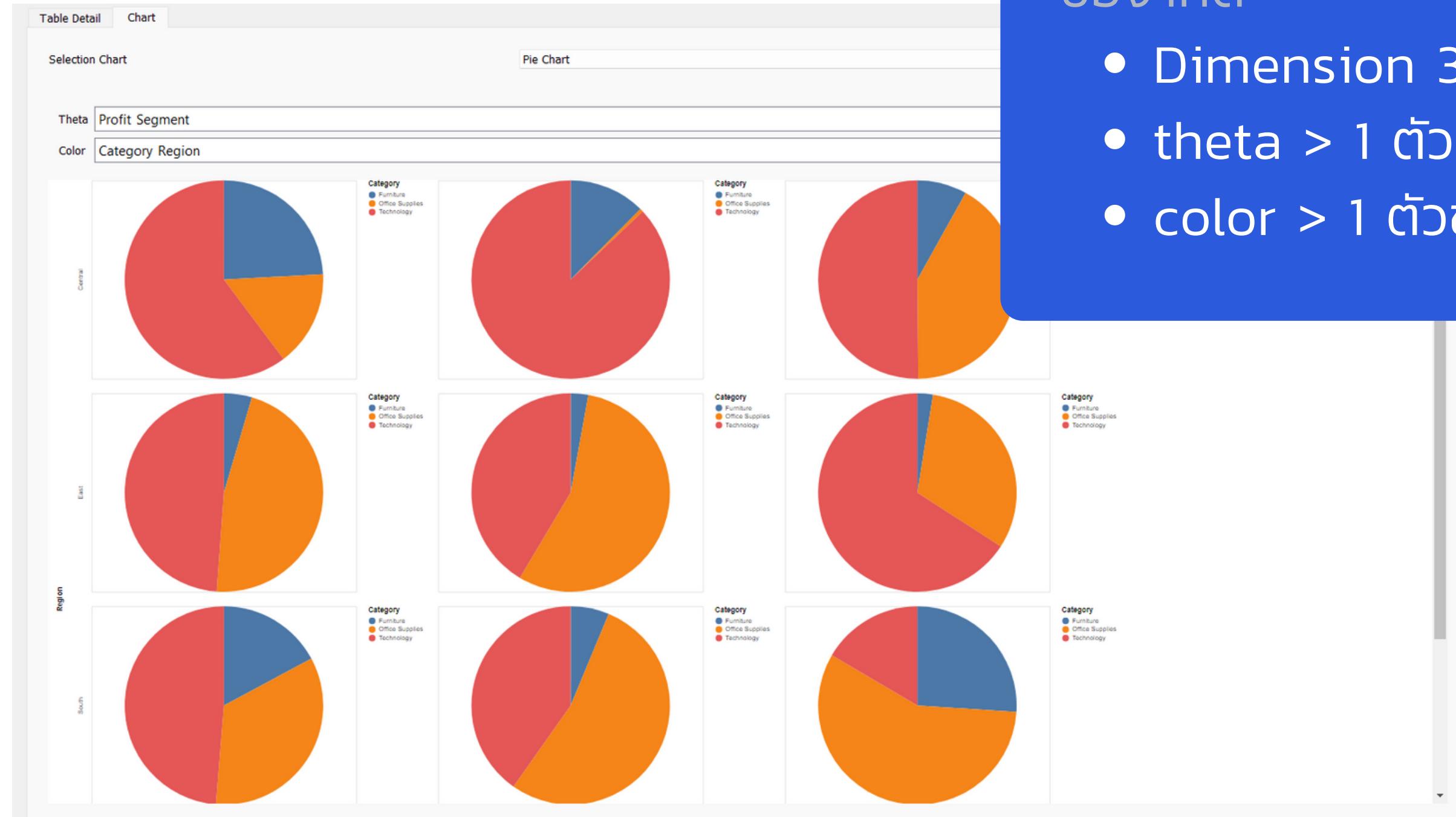
ກຮ້າ

- column Dimension 2 Measure 1
- row Dimension 2



PieChart

26



ข้อจำกัด

- Dimension 3 Measure 1
- theta > 1 ตัวขวาสุดจะเป็น column
- color > 1 ตัวขวาสุดจะเป็น row

LineChart

27

Table Detail Chart

Selection Chart

Line Charts

Column Order Date_year Order Date_month

Row Sales

Clear Column

Clear Row

plot คล้ายกับ BarChart

