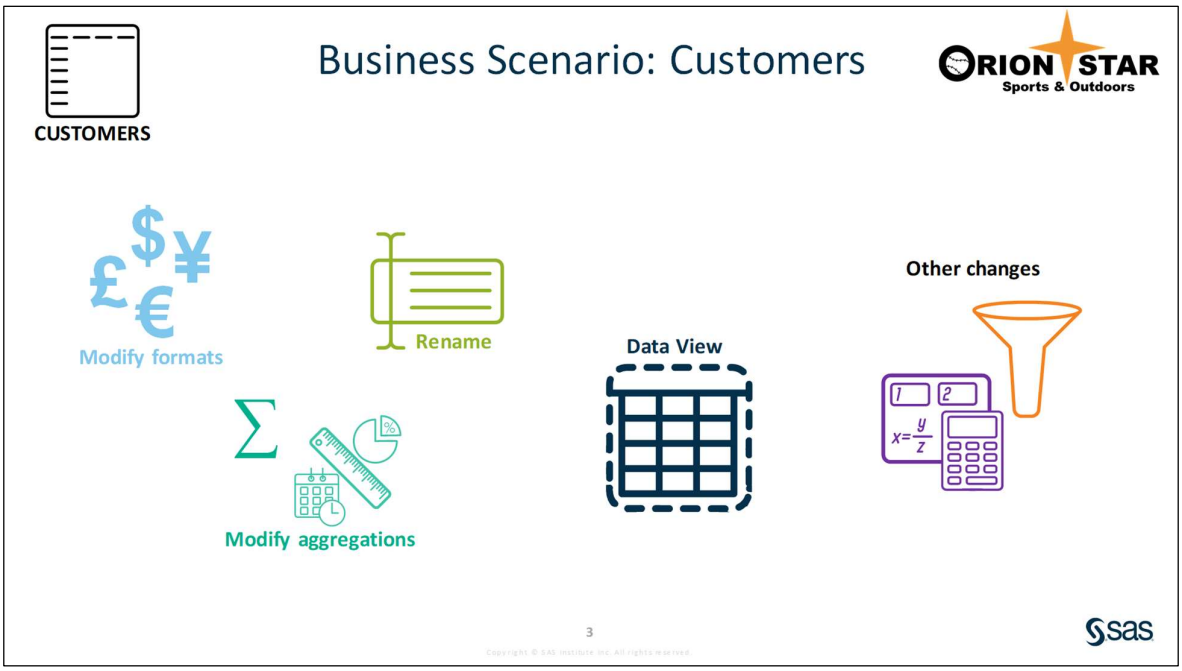
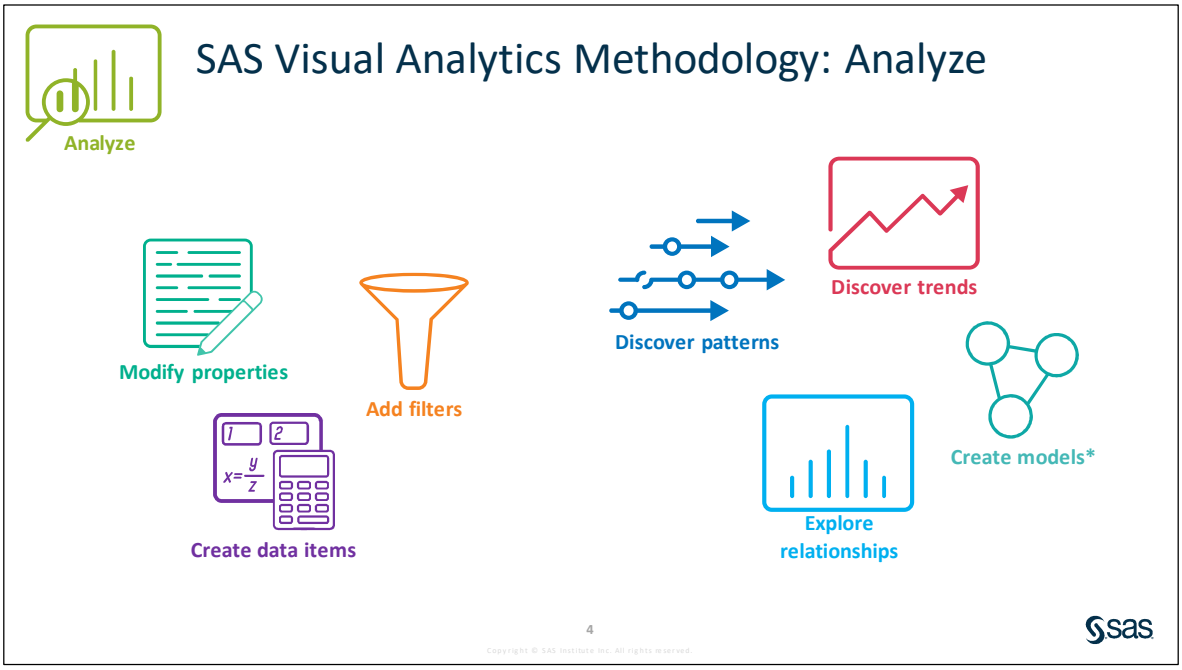
Exercise 4:(A), (B), and (C) Analyzing Data Using SAS® Visual Analytics

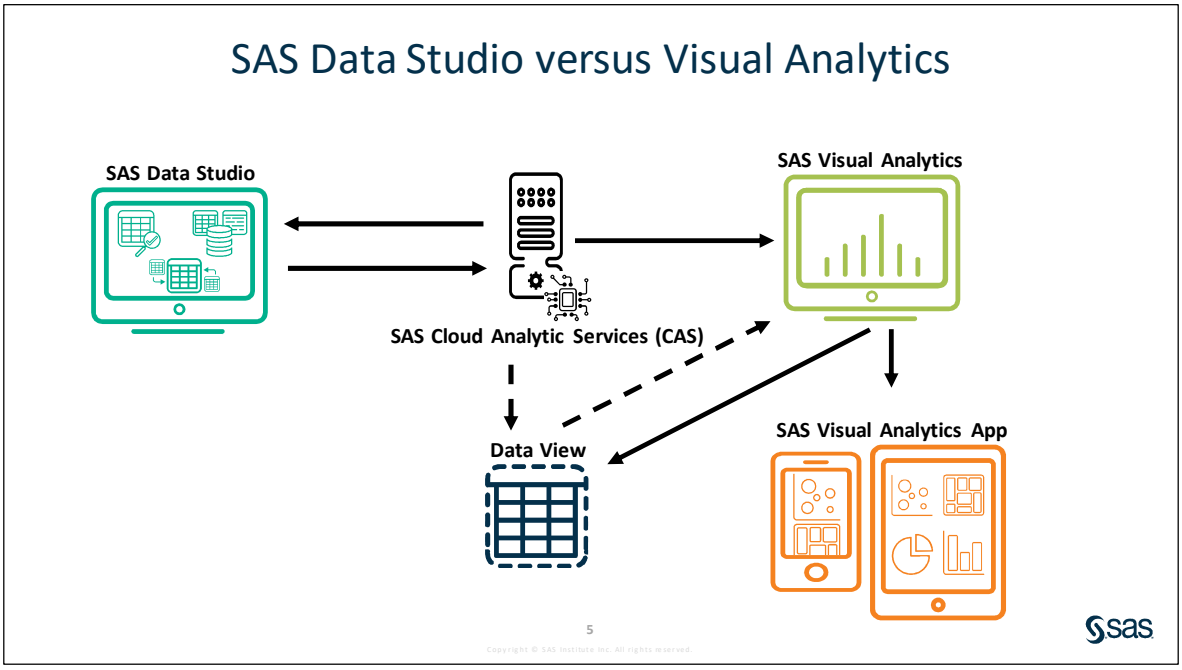
To Login to SAS: https://vle.sas.com/vfl

Working with Data Items





* Creating, testing, and comparing models can be accomplished with SAS Visual Statistics and SAS Visual Data Mining and Machine Learning.



SAS Visual Data Studio uses a CAS table as input and creates a CAS table as output.

SAS Visual Analytics uses a CAS table as input and creates a report that can be viewed in Visual Analytics or the SAS Visual Analytics app. Any changes to data made in Visual Analytics apply to the report only and do not affect the CAS table.

Beginning with Visual Analytics 8.3, report data views can be created to save and apply settings for a data source. A data view acts as a template for any settings that are modified, including data property changes, data source filters, hierarchies, geography data items, calculated items, and more. A data view does not update the CAS table. If the view is updated, your reports are not automatically updated with the new settings.

Data views are saved separately from your reports. If you create a data view in one report, you can apply it to other reports that use the same data source.

Data views can be shared by an application administrator so that other users can apply them to the data source.

A data source can have a default view as set by an application administrator. You can also set the default view for yourself. A default data view is automatically applied anytime that you add the data source to a report.

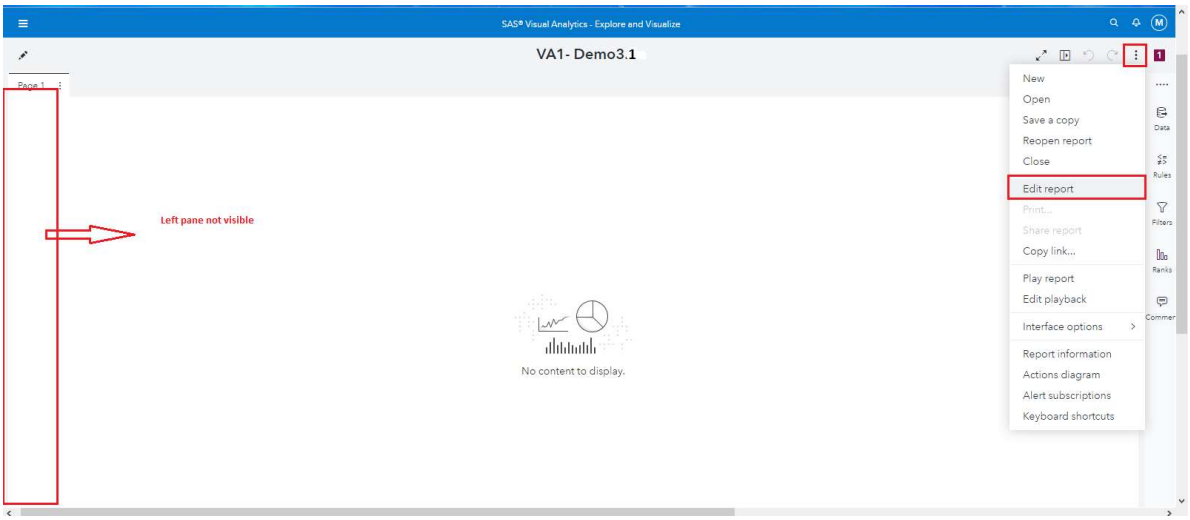
For more information about data views, see “Working with Data Views in Reports” in the *SAS Visual Analytics: Working with Report Data* documentation.

Working with Data Items

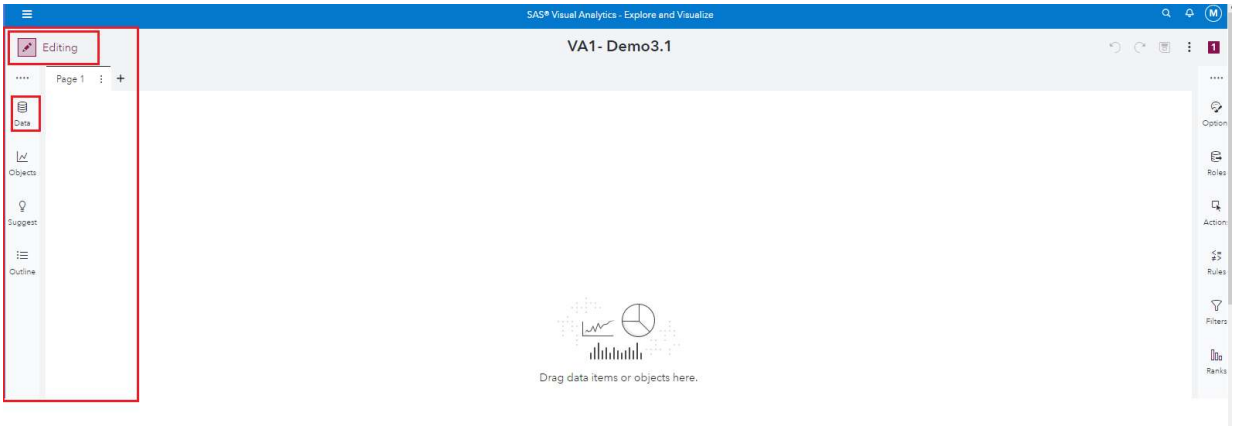
This demonstration illustrates how to modify data item properties (name, format, aggregation) in Visual Analytics.

1. From the browser window, sign into SAS Viya.
2. In the upper left corner, click ☰ (**Show list of applications**) and select **Explore and Visualize**.

   SAS Visual Analytics appears.
3. Click **All Reports**.
   a. Navigate to the **Courses/YVA185/Basics/Demos (Marketing)** folder.
   b. Double-click the **VA1- Demo3.1** report to open it.
4. Sometimes you will not see the **left pane** as below, to make it **visible** follow below steps:
5. Click on ⋮ in upper right corner, select **Edit report**. As indicated below

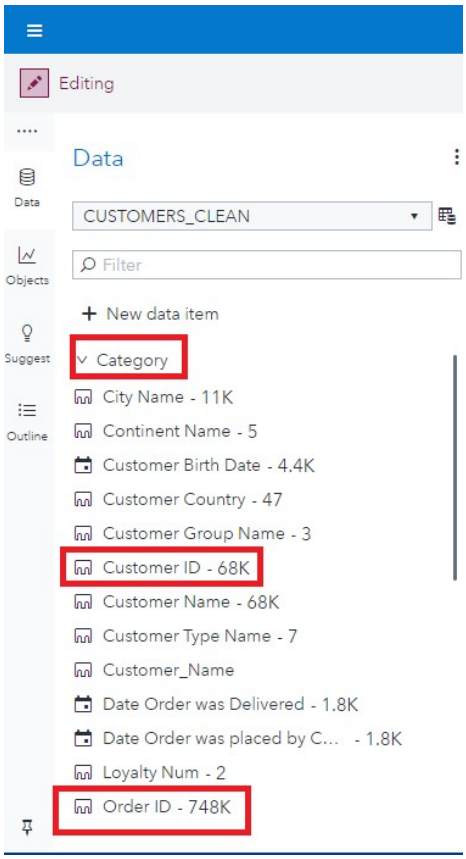


Now, you can see the left pane visible as below:



6. In the left pane, click **Data**.

   The Data pane contains a list of data items from the **CUSTOMERS_CLEAN** table.

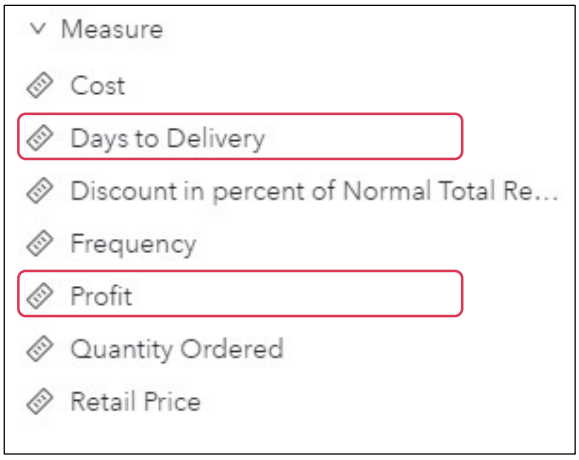


7. Verify that **Customer ID** and **Order ID** appear in the Category group (see the above image), because the data type was changed to character in SAS Data Studio.

   Note: Character and datetime data items appear as categories in Visual Analytics.

8. Verify that the new column created in SAS Data Studio (**Loyalty Num**) appears in the Category group.

9. Verify that the new columns created in SAS Data Studio (**Days to Delivery** and **Profit**) appear in the **Measure** group (After the Category Group items).



Note: Numeric (double) data items appear as measures in Visual Analytics.

Note: **Cost** and **Retail Price** were renamed in SAS Data Studio to **Unit Cost** and **Total Revenue**, respectively. Those new names are not reflected because Visual Analytics displays labels, not data source names.

10. Modify properties for a data item, **Date Order was Delivered**.

    a. In the Category group, right-click **Date Order was Delivered**.

b. Select **Format** ⇨ **MMMYYYY (MONYY7)**.

c. Next to **Date Order was Delivered**, click (**Edit properties**).

d. In the **Name** field, enter **Delivery Date** and press the Enter key.

11. Modify properties for a data item, **Discount in percent of Normal Total Retail Price (under Measure Group)**.

a. In the Measure group, next to **Discount in percent of Normal Total Retail Price**, click (**Edit properties**).

b. For the **Aggregation** field, select **Average**.

c. In the **Name** field, enter **Discount** and press Enter.

12. Modify the aggregation for a data item, **Days to Delivery**.

a. In the Measure group, next to **Days to Delivery**, click (**Edit properties**).

b. For the **Aggregation** field, select **Average**.

c. In the **Name** field, enter **Average Days to Delivery** and press Enter.

13. Rename data items.

a. In the Category group, next to **Date Order was placed by Customer**, click (**Edit properties**).

b. In the **Name** field, enter **Order Date** and press Enter.

c. In the Measure group, next to **Cost**, click (**Edit properties**).

d. In the **Name** field, enter **Unit Cost** and press Enter.

e. In the Measure group, next to **Quantity Ordered**, click (**Edit properties**).

f. In the **Name** field, enter **Quantity** and press Enter.

g. In the Measure group, next to **Retail Price**, click (**Edit properties**).

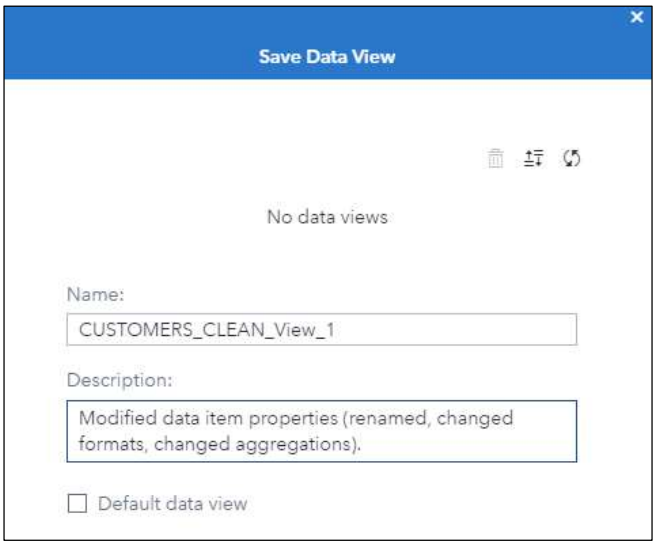
h. In the **Name** field, enter **Total Revenue** and press Enter.

14. Create a data view.

a. At the top of the Data pane, next to the table name (CUSTOMERS_CLEAN), click (**Actions**) and select **Save data view**.

b. For the **Name** field, verify that **CUSTOMER_CLEAN_View_1** is specified.

c. In the **Description** field, enter **Modified data item properties (renamed, changed formats, changed aggregations).**.



d. Click **Save**.

15. Save the report.

End of Demonstration

Exercise 3A: Provide answers to questions asked. Support each answer with a relevant screenshot (s).

1. **Working with Data Items**

   a. Open the browser and sign in to SAS Viya. SAS Drive is displayed by default.

   b. Open the **VA1- Practice3.1** report from the **Courses/YVA185/Basics/Practices (HR)** folder.

   1) In the upper left corner, click ☰ (**Show list of applications**) and select **Explore and Visualize**. SAS Visual Analytics appears.

   2) Click **All Reports**.

      a) In the Open window, navigate to the **Courses/YVA185/Basics/Practices (HR)** folder.

      b) Double-click the **VA1- Practice3.1** report to open it.

   c. View the items in the Data pane.

   1) In the left pane, click **Data**.

   2) Answer the questions.

      I) What is the classification of **Employee ID (Category/Measure?)**? **Manager at 1. Level (Category/Measure?)**?

      Answer 1:

      SS1:

   2) What does the **Frequency** data item represent?

      Answer 2:

      SS2:

      a. Change the classification for **Manager at 1. level** to **Category**.

      i. In the Measure group, next to **Manager at 1. level**, click ⌄⌄ (**Edit properties**).

      ii. For the **Classification** field, select **Category**.

      Manager at 1. level should now appear in the Category group.

      b. Change the format for **Annual Salary** to **Dollar13.2**.

      i. In the Measure group, next to **Annual Salary**, click ⌄⌄ (**Edit properties**).

      ii. For the **Format** field, click ✎ (**Edit**).

1. In the Format window, for the **Width** field, verify that **13** is specified.
2. For the **Decimals** field, enter **2**.
3. Click **OK**.

c. Rename data items.

i. In the Category group, next to **Employee ID**, click  (**Edit properties**).

ii. In the **Name** field, enter **ID** and press Enter.

iii. In the Category group, next to **Employee Name**, click  (**Edit properties**).

iv. In the **Name** field, enter **Name** and press Enter.

v. In the Category group, next to **Manager at 1. level**, click  (**Edit properties**).

vi. In the **Name** field, enter **Manager ID** and press Enter.

vii. In the Measure group, next to **Frequency**, click  (**Edit properties**).

viii. In the **Name** field, enter **Number of Employees** and press Enter.

ix. Click  (**Actions**) and select **Refresh EMPLOYEES_CLEAN** at the top of the Data pane to collapse the data item properties.

d. Save the report.

3.1 Exploring Data with Charts and Graphs

Objectives

- Discuss when to use descriptive graphs (histogram, box plot, bar chart) in Visual Analytics.
- Maximize graphs objects to view details.
- Modify roles and options for graph objects.

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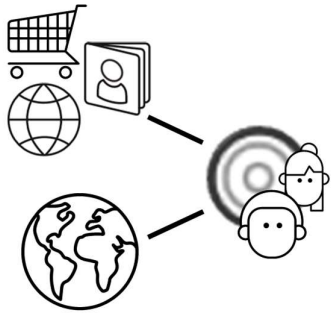
Business Scenario: Customers

For the Marketing team, you have been asked to analyze profits. As a first step, you would like to understand the range of profits generated by Orion Star, as well as total profits for different order types and from different continents.

You will then use this analysis to determine the focus group for the next marketing campaign.



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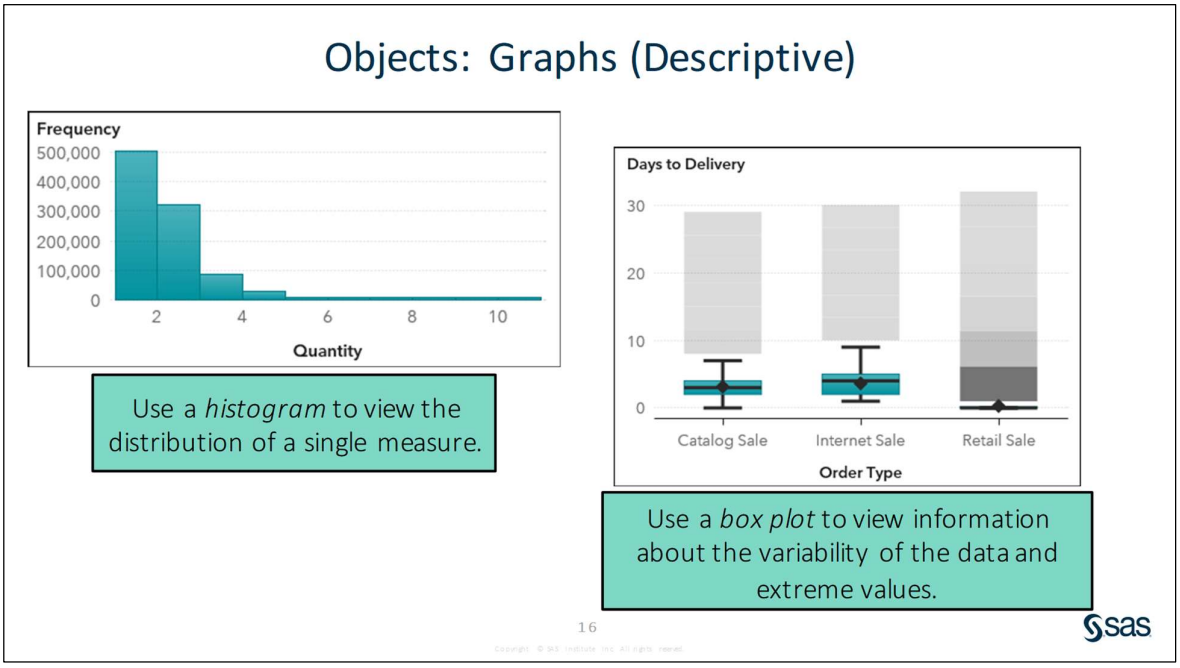
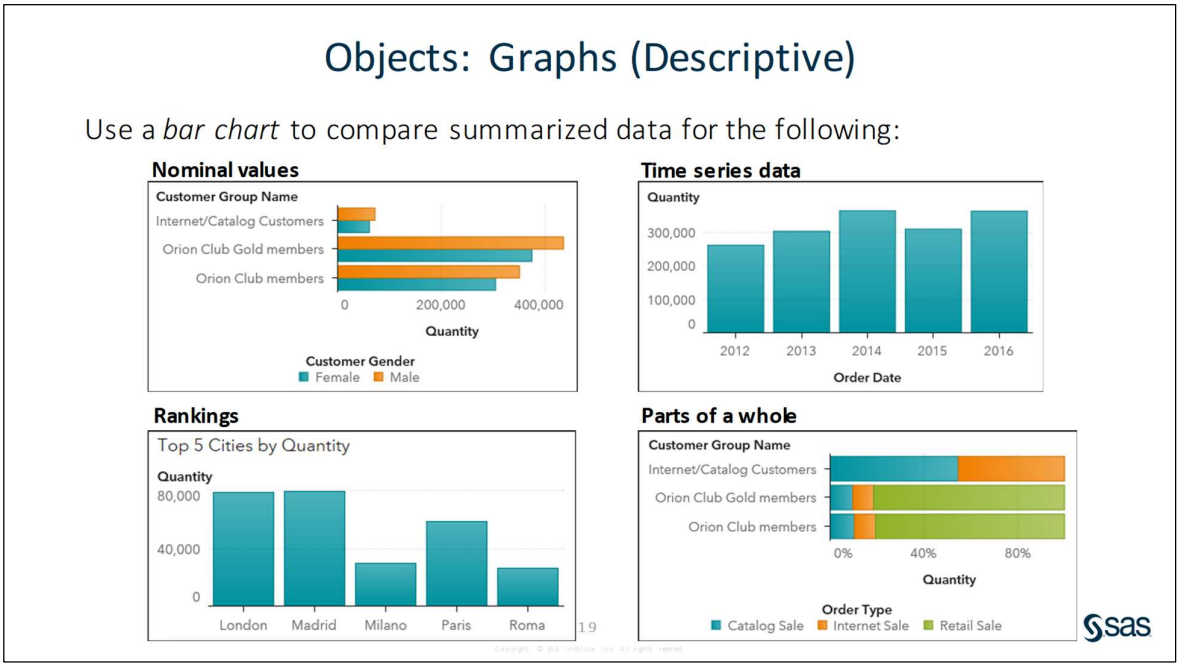


Histogram	The histogram contains a series of bars that represent the number of observations (or percentage of all observations) for a measure that fit in a specified value range (or bin). The shape of the distribution can be affected by the number of bins specified for the histogram. **Note:** If you use the default number of bins, then the minimum and maximum values on the histogram might not match your actual data values. However, if you specify the number of histogram bins, then the minimum and maximum values on the histogram match your actual data values exactly.
Box plot	The size and location of the box indicate the range of values between the 25th and 75th percentile (or the interquartile range). The diamond marker inside the box indicates the mean value, and the line inside the box indicates the median value. You can modify options to display outliers in the plot. Outliers are data points whose distance from the interquartile range are more than 1.5 times the size of the interquartile range. The whiskers (lines protruding from the box) can indicate either minimum and maximum values of the plot or the range of values outside of the interquartile range but close enough not to be considered outliers. If there are a large number of outliers, the range of outlier values is represented by a bar colored to represent the number of values inside the outlier range (as seen above).



Bar chart

A bar chart displays data aggregated by the distinct values of a category. By default, the bars are sorted by descending order of the value of the first measure. For ranked bars, the data is sorted based on the values of the rank. Stacked bar charts enable you to compare totals for each category, as well as totals for all categories. However, comparing segments is difficult, and when there are many segments in the chart, it is difficult to read. To see relative differences (parts of a whole) in a bar chart, select **Normalize groups to 100%** for the **Group scale** option.

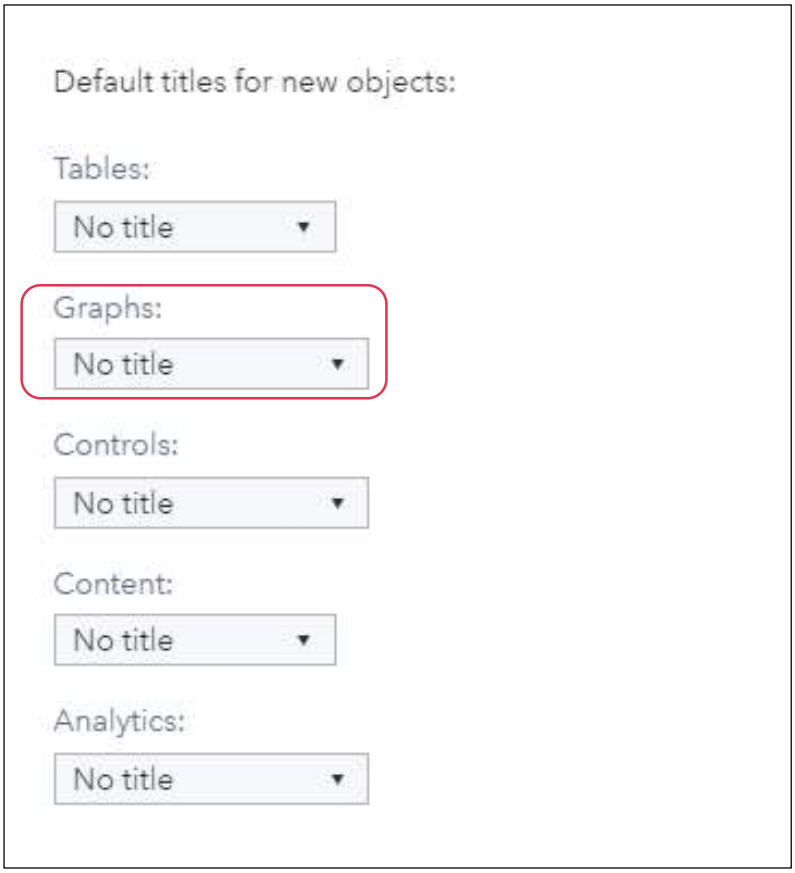
Note: Nominal values are categories whose data has no particular order.

Exploring Data: Part 1

This demonstration illustrates how to use the automatic chart to explore data and modify roles and options for charts and graphs in Visual Analytics.

1. From the browser window, sign in to SAS Viya.
2. In the upper left corner, click ≡ (**Show list of applications**) and select **Explore and Visualize**.

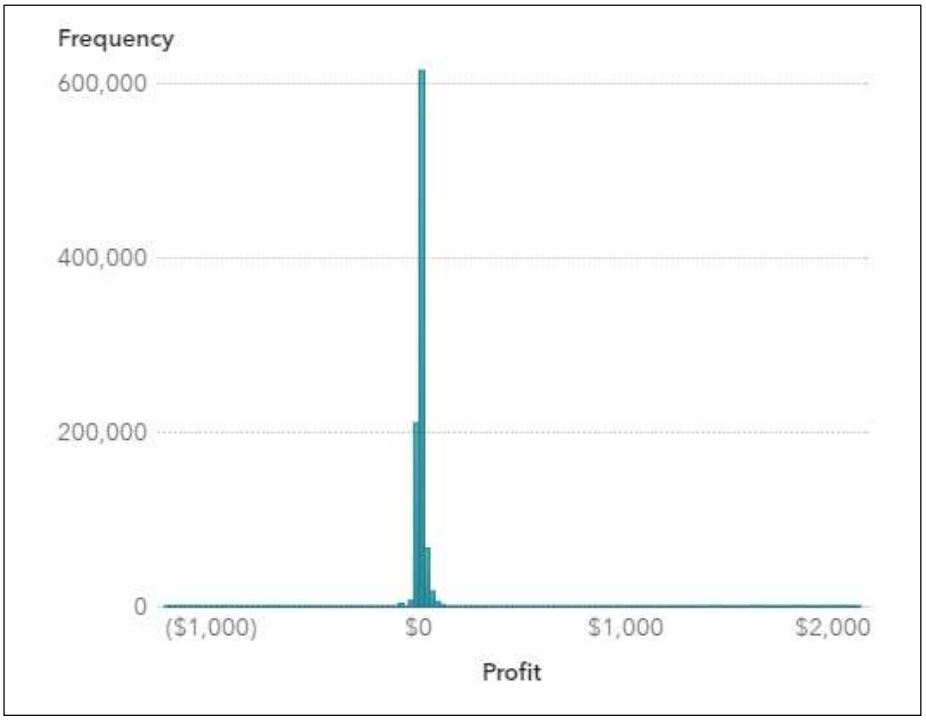
   SAS Visual Analytics appears.
3. Click **All Reports**.
   a. Navigate to the **Courses/YVA185/Basics/Demos (Marketing)** folder.
   b. Double-click the **VA1- Demo3.2a** report to open it.
4. Turn off automatic graph titles.
   a. In the upper right corner, select ***<user name>*** ⇨ **Settings**.
   b. On the left side of the window, select **General** under **SAS Visual Analytics (not under Global)**.
   c. Scroll down to **Default titles for new objects (on the right side of the Window)**.
   d. For **Graphs**, change **Automatic title** to **No title**.



   e. Click **Close**.
5. Create an automatic chart.
   a. In the left pane, click **Data**.

b. Drag **Profit** (under Measure Group) from the Data pane to the canvas.

The automatic chart functionality determines the best way to display the selected data.



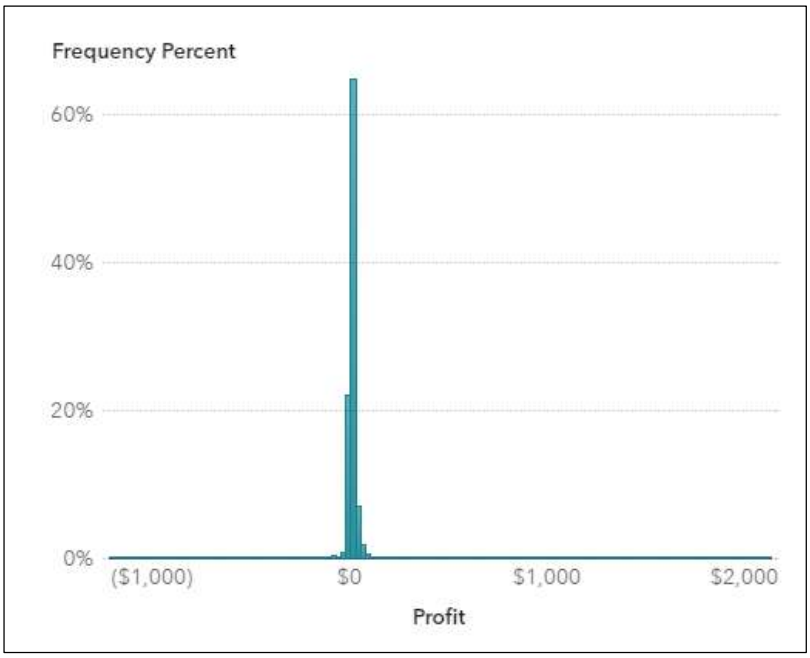
A histogram is used to display the distribution of profits.

c. In the right pane, click **Roles**.

A histogram accepts two roles, Measure and Frequency.

d. For the **Frequency** role, select **Frequency** ⇨ **Frequency Percent**.

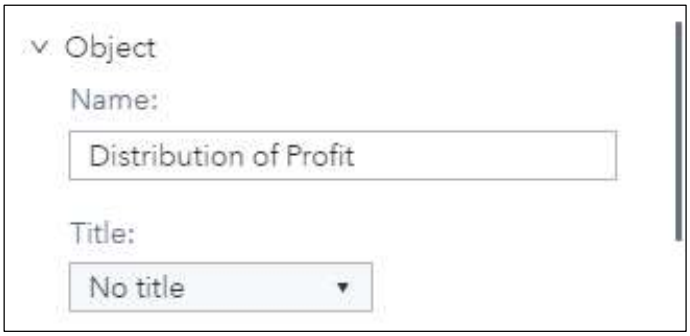
The histogram is updated to use frequency percent for the Y axis.



e. In the right pane, click **Options**.

1) Expand the **Object** group.

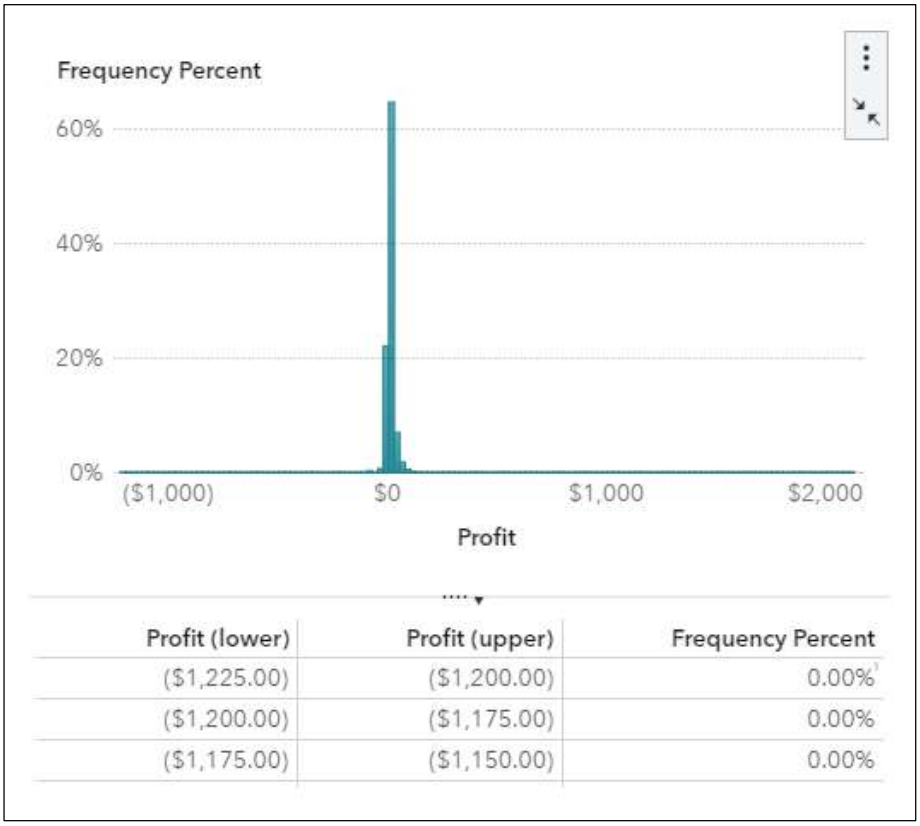
2) In the **Name** field, enter **Distribution of Profit**.



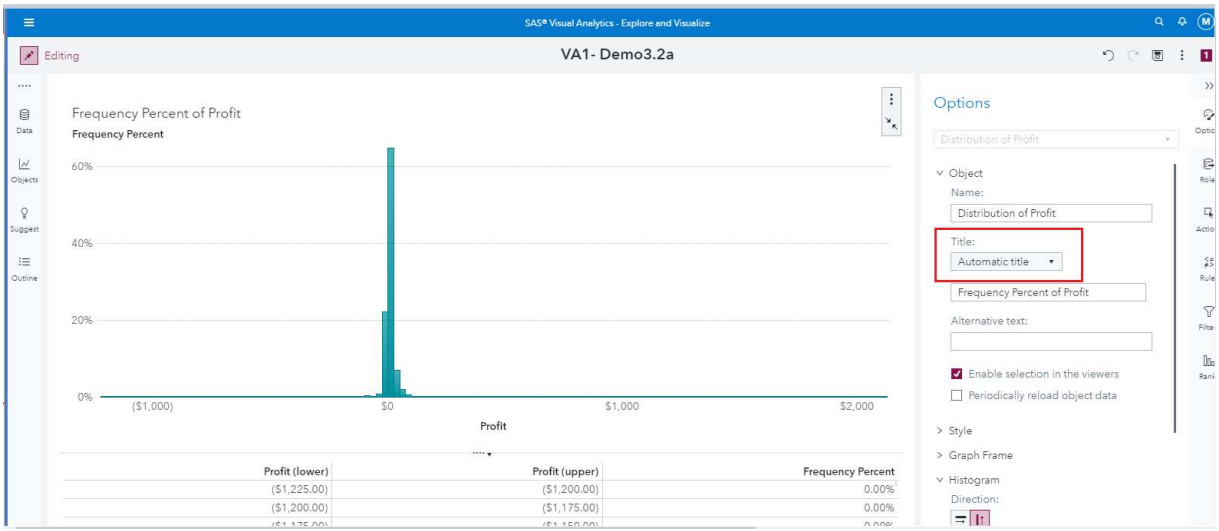
Note: The **Automatic title** setting was turned off for Graph objects in an earlier demo. You can turn it on for this graph by selecting **Automatic title**, or you can create a custom title by selecting **Custom title**.

f. In the upper right corner of the histogram, click (**Maximize**) to view additional details.

A table of data values is displayed at the bottom of the chart.



Profit (lower)	Profit (upper)	Frequency Percent
($1,225.00)	($1,200.00)	0.00%
($1,200.00)	($1,175.00)	0.00%
($1,175.00)	($1,150.00)	0.00%



g. Click the highest bar in the graph.

h. Scroll through the table to find the highlighted row.

Profit (lower)	Profit (upper)	Frequency Percent
($50.00)	($25.00)	0.88%
($25.00)	$0.00	22.23%
$0.00	$25.00	64.65%
$25.00	$50.00	7.16%

A majority of the products ordered are low-profit items, in the $0 to $25 range. Also notice that more than 20% of items result in a loss. Why is this problem occurring? Are these products ordered from a similar product area, geographical area, or order type? Could the costs be too high in these areas? What can we do to reduce costs?

i. In the upper right corner, click  (**Restore**).

6. Create a crosstab.

a. In the left pane, click **Objects**.

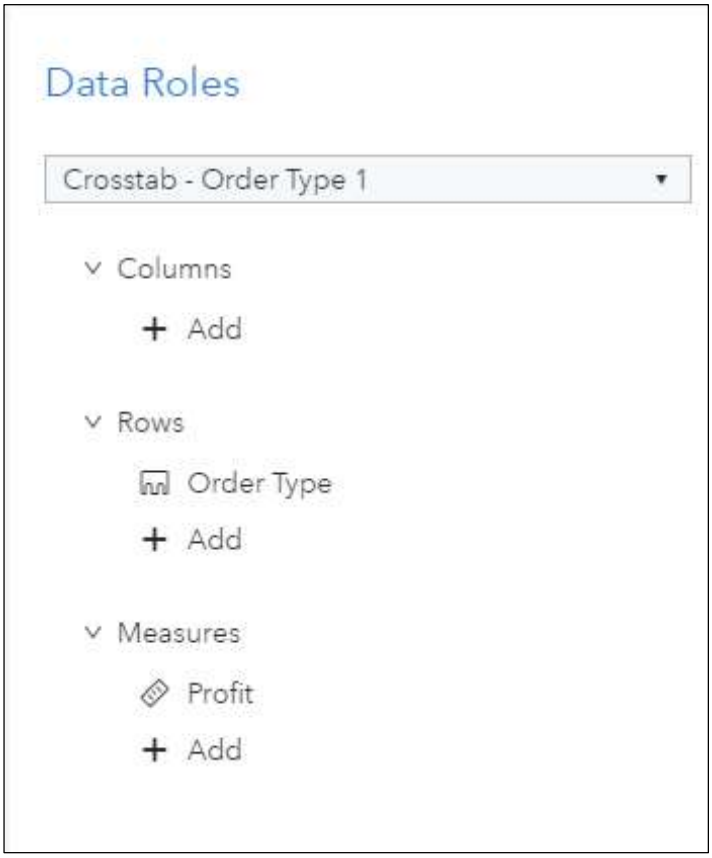
b. Drag the **Crosstab** object, from the Tables group to the bottom of the canvas. It will resemble like below after dragging Crosstab object.

c. In the right pane, click **Roles**.

d. For the **Rows** role, select **Add** ⇨ **Order Type** and click **OK**.

e. For the **Measures** role, select **Frequency** ⇨ **Profit**.

The Roles pane should resemble the following:



Note: The Measures role is required for the crosstab object.

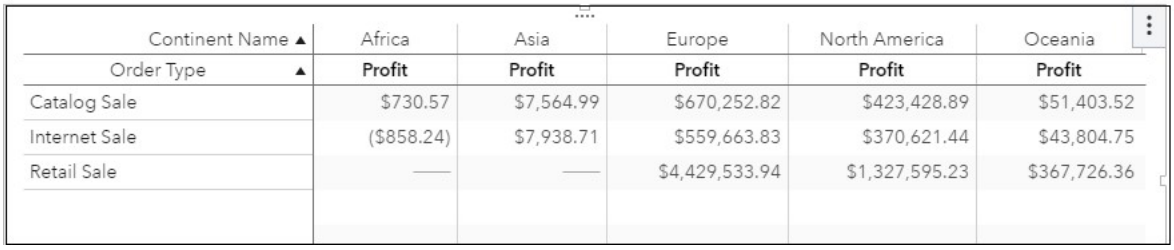
The crosstab (under the Histogram) should resemble the following:

Order Type ▲	Profit
Catalog Sale	$1,153,380.79
Internet Sale	$981,170.49
Retail Sale	$6,124,855.54

Profits are much lower in the internet and catalog channels. A company-wide policy mandates that we need to try to improve profits for orders through these channels.

f. On the Roles tab, for the **Columns** role, select **Add** ⇨ **Continent Name** and click **OK**.

The updated crosstab should resemble the following:



Continent Name ▲	Africa	Asia	Europe	North America	Oceania
Order Type ▲	Profit	Profit	Profit	Profit	Profit
Catalog Sale	$730.57	$7,564.99	$670,252.82	$423,428.89	$51,403.52
Internet Sale	($858.24)	$7,938.71	$559,663.83	$370,621.44	$43,804.75
Retail Sale	——	——	$4,429,533.94	$1,327,595.23	$367,726.36

g. In the right pane, click **Options and scroll down**.

h. Expand the **Totals and Subtotals** group.

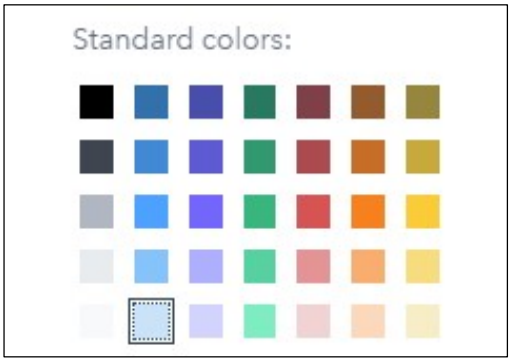
i. Select the **Totals** check box.

By default, totals are added to rows and columns.

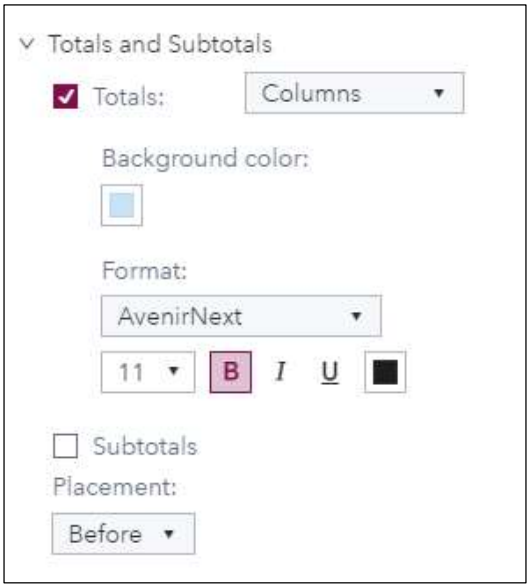
j. Next to the **Totals** field, select **Columns**.

k. For the **Background color** field, click (**Select a color**).

l. Select **Pale blue**.



m. For the **Format** field, verify that B (**Bold**) is selected.



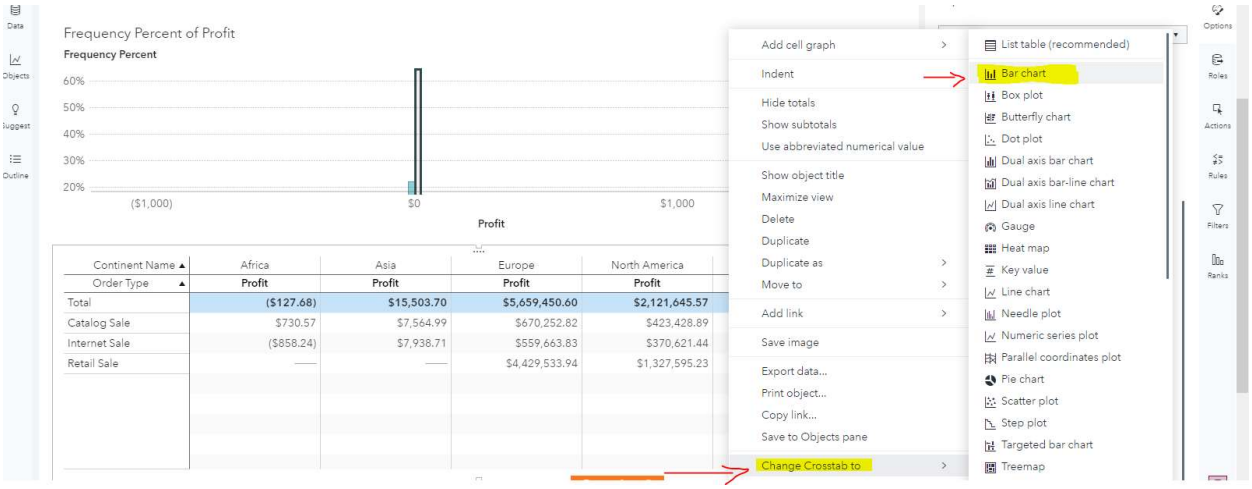
The updated crosstab should resemble the following:

Continent Name ▲	Africa	Asia	Europe	North America	Oceania
Order Type ▲	Profit	Profit	Profit	Profit	Profit
Total	($127.68)	$15,503.70	$5,659,450.60	$2,121,645.57	$462,934.64
Catalog Sale	$730.57	$7,564.99	$670,252.82	$423,428.89	$51,403.52
Internet Sale	($858.24)	$7,938.71	$559,663.83	$370,621.44	$43,804.75
Retail Sale	——	——	$4,429,533.94	$1,327,595.23	$367,726.36

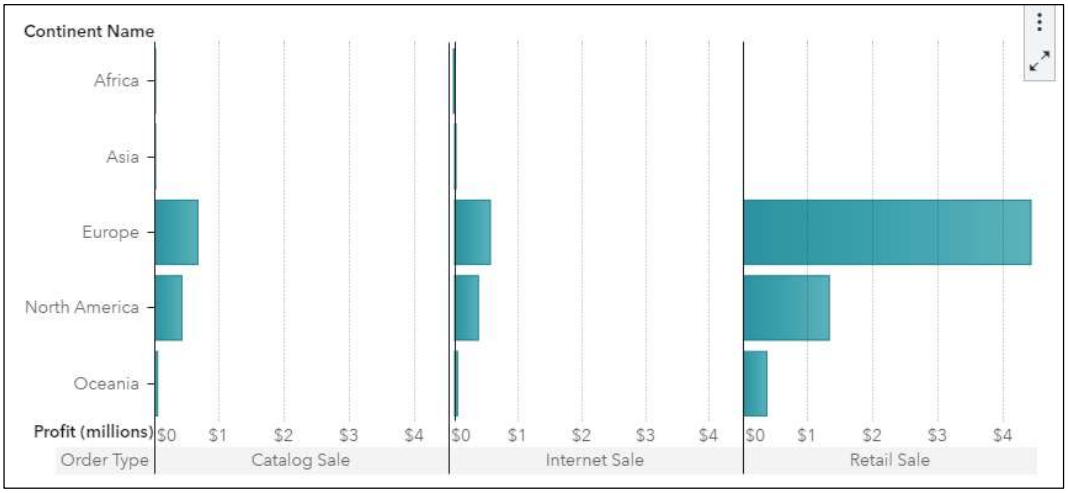
Profits are much lower in North America than in Europe. Because our corporate office is located in North America, we would expect higher profits. Also notice the loss in Africa for internet sales. Why is this loss occurring? Is this due to start-up operations (for example, building distribution facilities in Africa)? Are the losses consistent over time or has this changed over time?

7. Change the crosstab to a bar chart.

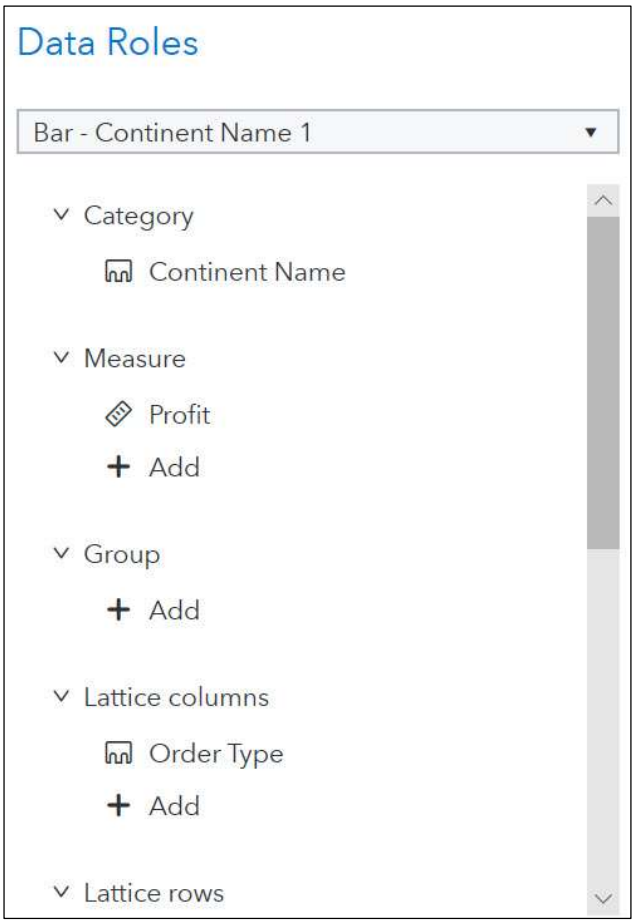
   a. Right-click the crosstab and select **Change Crosstab to ⇨ Bar chart (see the below image)**.



The bar chart should resemble the following:



b. In the right pane, click **Roles**.

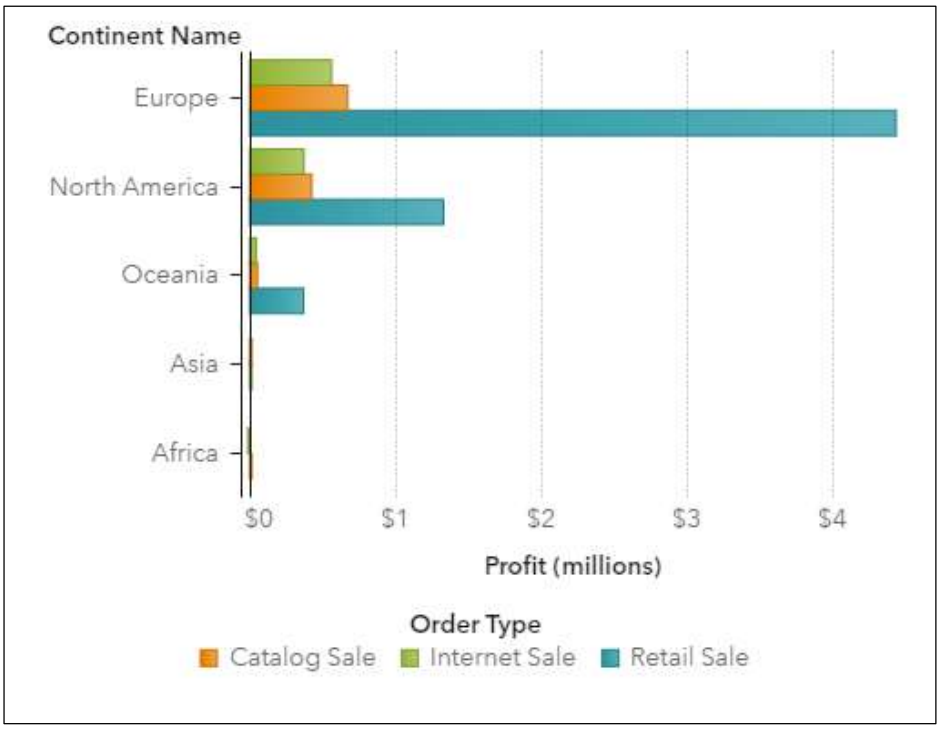


The bar chart has many more roles available.

- Category data items can be added to the Group role to show additional bars for each category, or to the Lattice columns and Lattice rows roles to add additional bar charts for each distinct category.
- Category and Measure data items can be added to the data tip values role to show additional information when a bar is selected.
- Datetime data items can be added to the Animation role to animate the bar chart.
- Category or date data items can be added to the Hidden role for mapping data sources, adding color-mapped display rules, or adding external links.

c. Drag **Order Type**, from the **Lattice columns** role, to the **Group** role.

The bar chart should resemble the following:



d. In the right pane, click **Options**.

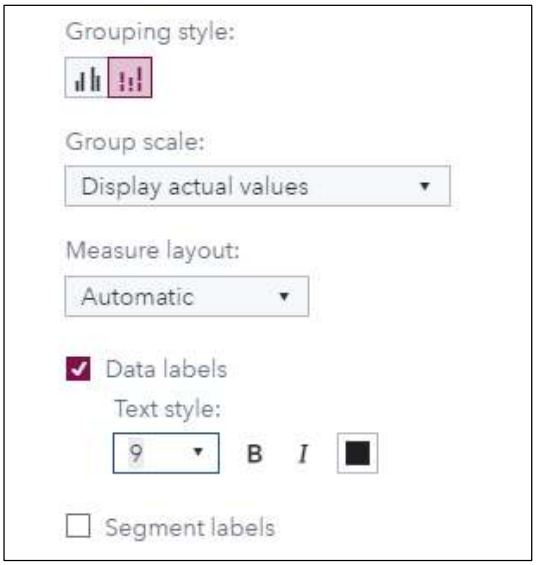
e. In the Object group, for the **Name** field, enter **Profit by Continent and Order Type**.

f. In the Bar group (scroll down the Options), for the **Grouping style** field, click (**Stacked**).

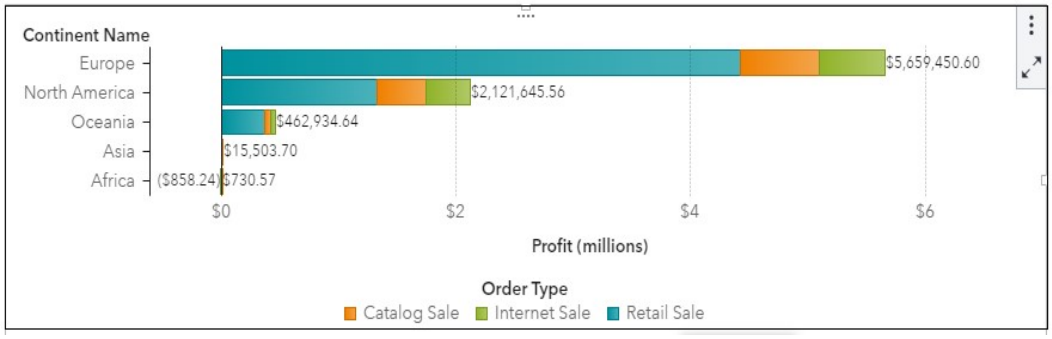
g. Select **Data labels**.

h. For the **Text style** field, select **9**.

The Bar group should resemble the following:

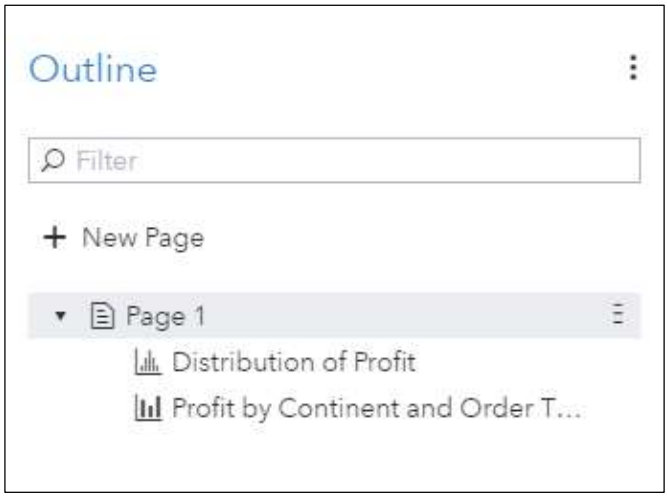


The updated bar chart should resemble the following:



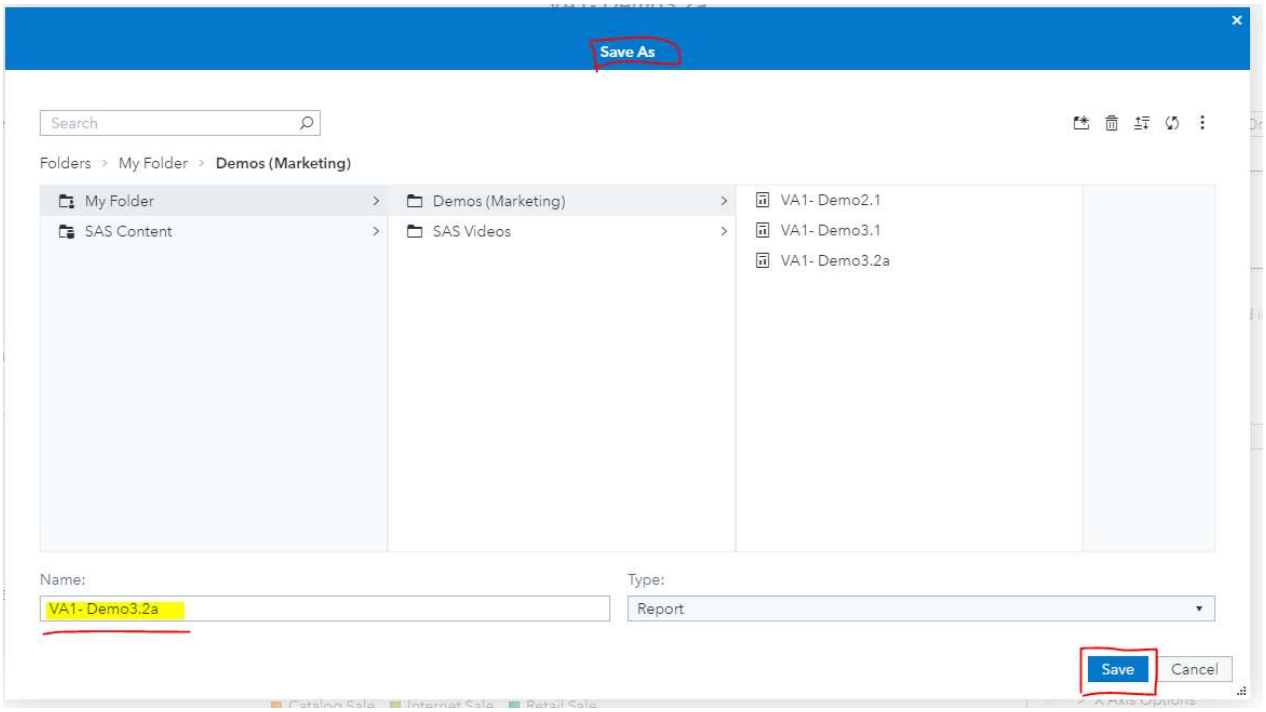
Profits in North America are less than half of total profits in Europe. We need to understand why this discrepancy exists and try to improve profits in non-European countries.

8. In the left pane, click **Outline**.



The Outline pane displays a list of all pages and objects in the report.

9. **Save** the report.



End of Demonstration

Exercise 3B: Provide answers to questions asked. Support each answer with a relevant screenshot (s).

3) Exploring Data: Part 1

a. Open the browser and sign in to SAS Viya. SAS Drive is displayed by default.

b. Open the **VA1- Practice3.2a** report from the **Courses/YVA185/Basics/Practices (HR)** folder.

   i. In the upper left corner, click  (**Show list of applications**) and select **Explore and Visualize**. SAS Visual Analytics appears.

   ii. Click **All Reports**.

      1. Navigate to the **Courses/YVA185/Basics/Practices (HR)** folder.
      2. Double-click the **VA1- Practice3.2a** report to open it.

c. Create an automatic chart.

   i. In the left pane, click **Data**.

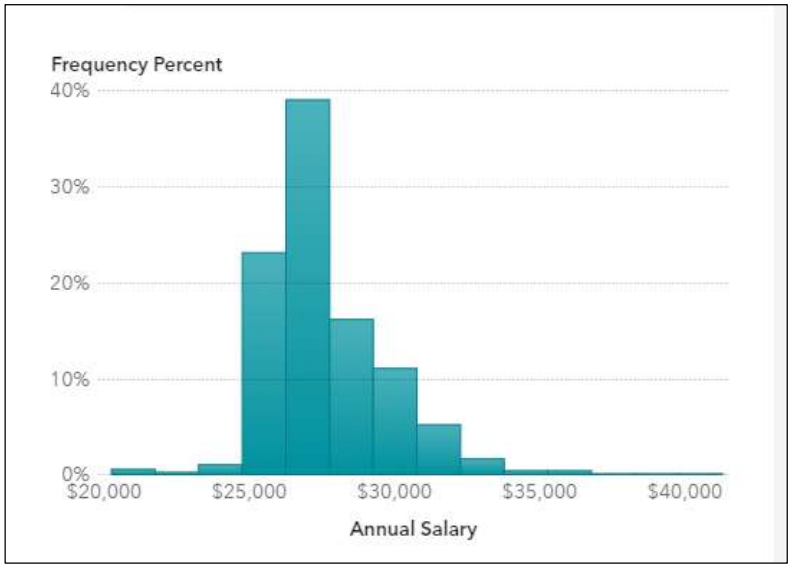
ii. Click the following data items (from measure Group and Aggregate Measure Group) to select them:

Annual Salary

Frequency Percent

iii. Drag the data items to the canvas.

The automatic chart functionality determines the best way to display the selected data.



d. Modify the options for the automatic chart.

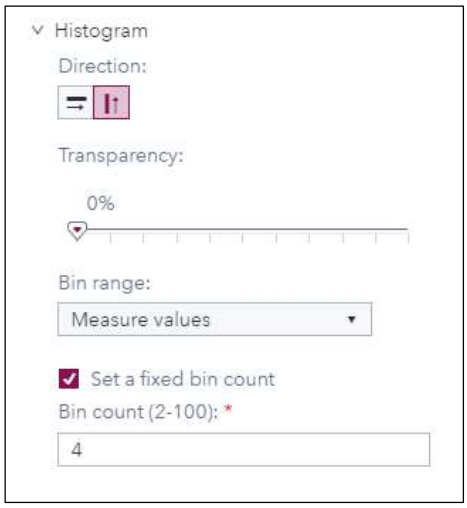
i. In the right pane, click **Options**.

ii. In the Object group, for the **Name** field, enter **Distribution of Salary**.

iii. In the Histogram group, for the **Bin range** field, select **Measure values (**from the Drop Down List).

iv. Select **Set a fixed bin count**.

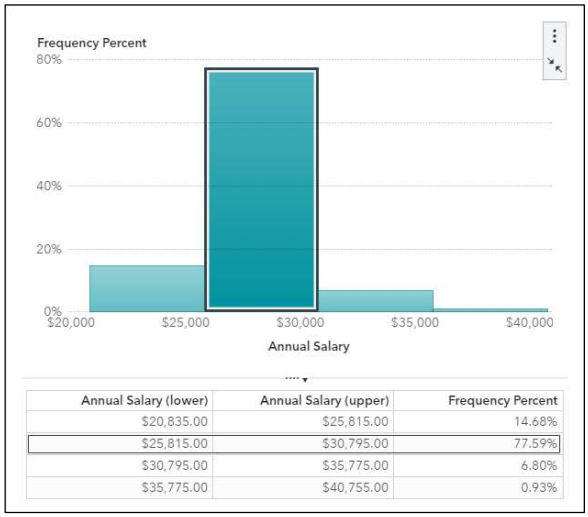
v. In the **Bin count** field, enter **4** and press Enter.



e. Maximize the histogram and answer the question.

i. In the upper right corner of the chart, click (**Maximize**) to view additional details. A detail table is displayed at the bottom of the chart.

ii. Click the highest bar in the graph.



Annual Salary (lower)	Annual Salary (upper)	Frequency Percent
$20,835.00	$25,815.00	14.68%
$25,815.00	$30,795.00	77.59%
$30,795.00	$35,775.00	6.80%
$35,775.00	$40,755.00	0.93%

iii. Answer the question.

i) Into which range do the majority of salaries fall?

Answer 1:

SS1:

iv. In the upper left corner, click (**Restore**).

f. Create a bar chart on the right of the automatic chart.

i. In the left pane, click **Objects**.

ii. Drag the **Bar chart** object, from the Graphs group, to the right side of the canvas.

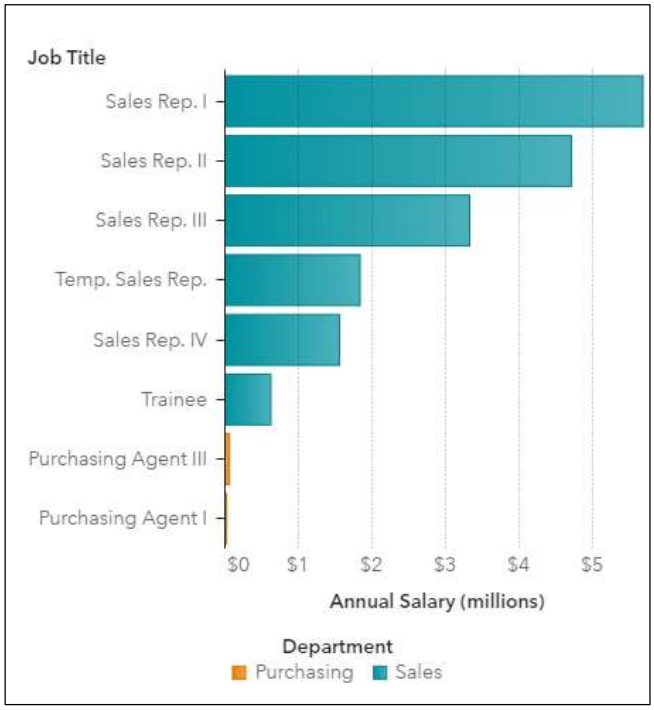
iii. In the right pane, click **Roles**.

iv. For the **Category** role, select **Add** ⇨ **Job Title**.

v. For the **Measure** role, select **Number of Employees** ⇨ **Annual Salary**.

vi. For the **Group** role, select **Add** ⇨ **Department**.

The bar chart should resemble the following:



g. Modify the name of the bar chart.

i. In the right pane, click **Options**.

ii. In the Object group, for the **Name** field, enter **Total Salary by Job and Department**.

h. Answer the questions.

2) In which department are a majority of our salary costs spent (Purchasing/Sales?)? For which job title?

Answer 2:

SS2:

3) What could be some reasons why salary costs are so much higher for this group?

Hint: In the left pane, click Objects and For the Measure role, select Number of Employees

Answer 3:

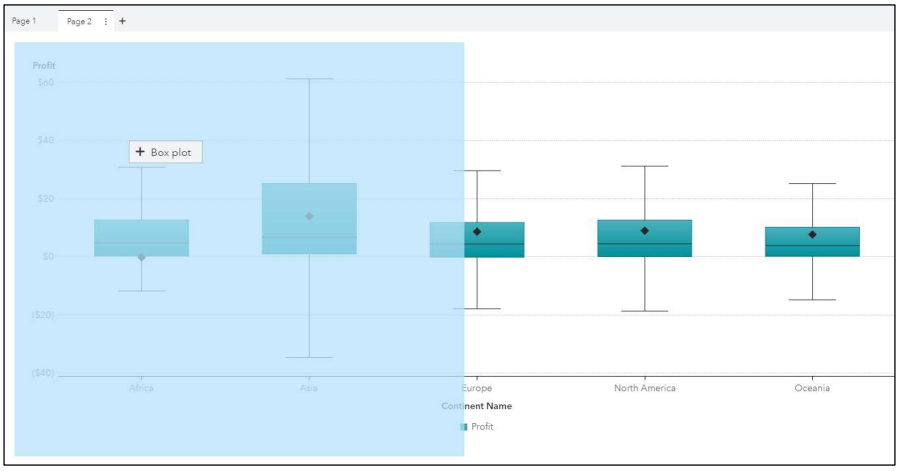
SS3:

Exploring Data: Part 2

This demonstration illustrates how to use box plots to explore data in Visual Analytics.

1. From the browser window, sign in to SAS Viya.
2. In the upper left corner, click (**Show list of applications**) and select **Explore and Visualize**.

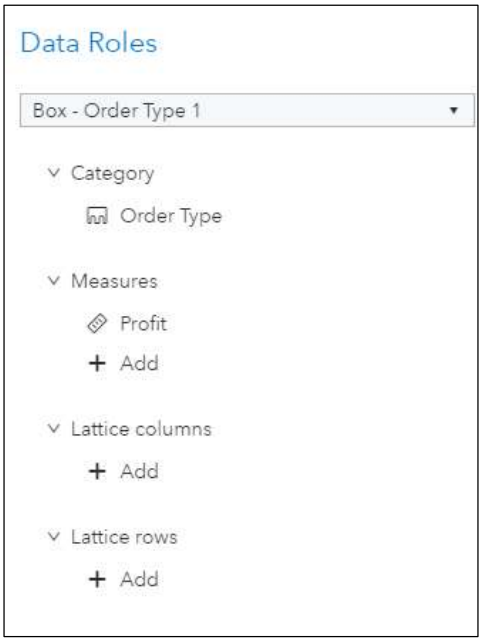
   SAS Visual Analytics appears.
3. Click **All Reports**.
   a. Navigate to the **Courses/YVA185/Basics/Demos (Marketing)** folder.
   b. Double-click the **VA1- Demo3.2b** report to open it.
4. In the upper left corner of the report, click the **Page 2** tab.
5. Create a box plot.
   a. In the left pane, click **Objects**.
   b. Drag the **Box plot** object, from the Graphs group, to the left side of the canvas.



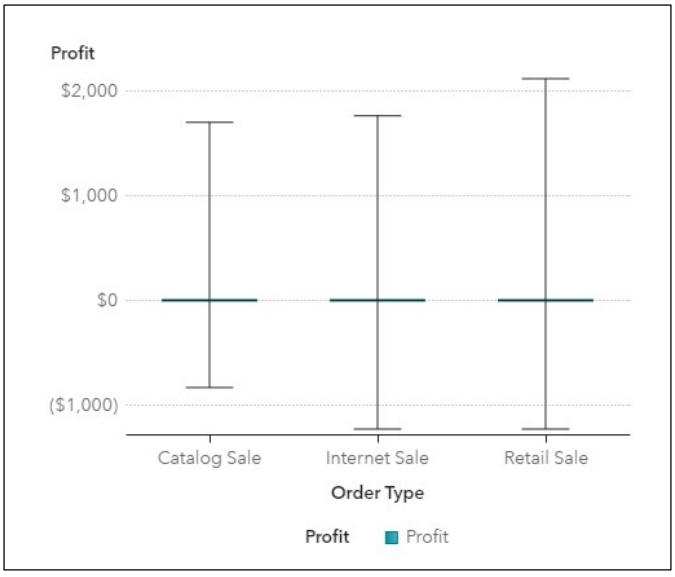
   c. In the right pane, click **Roles**.
   d. For the **Category** role, select **Add** ⇨ **Order Type**.

e. For the **Measures** role, select **Add** ⇨ **Profit** and click **OK**.

The Roles pane should resemble the following:



The box plot should resemble the following:

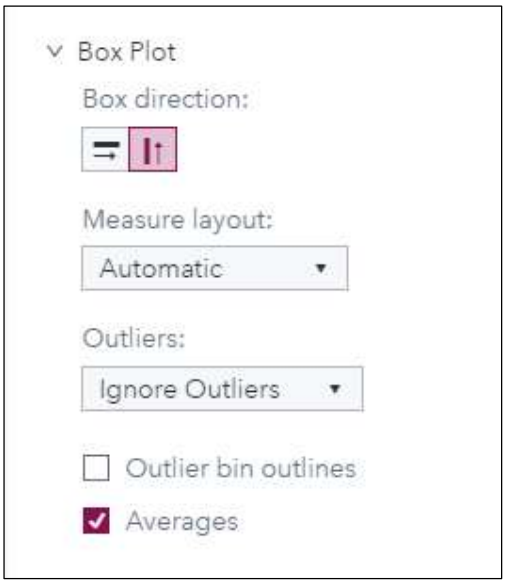


f. In the right pane, click **Options**.

g. In the Object group, for the **Name** field, enter **Profit by Order Type**.

h. In the Box Plot group, for the **Outliers** field, select **Ignore Outliers**.

i. Select the check box for **Averages**.



The box plot should resemble the following:

j. In the upper right corner of the box plot, click (**Maximize**) to view additional details.

The detail table displays descriptive statistics for **Profit** for each order type.

Order Type	Minimum	Lower Whisker	First Quartile	Average	Median	Third Quartile
Catalog Sale	($826.26)	($18.63)	$0.20	$9.07	$4.80	$12.80
Internet Sale	($1,222.48)	($18.63)	$0.20	$9.04	$4.70	$12.80
Retail Sale	($1,222.48)	($17.13)	$0.10	$8.55	$4.25	$11.60

Even though total profits are highest for the retail sales channel, averages across all channels are very similar, but are a bit higher for catalog and internet sales. This reinforces our company-wide policy to try to increase profits in these channels. Total profits might be higher in retail because there are more customers or more orders for that channel.

k. In the upper right corner, click (**Restore**).

l. In the upper right corner of the **Profit by Continent** box plot, click (**Maximize**) to view additional details.

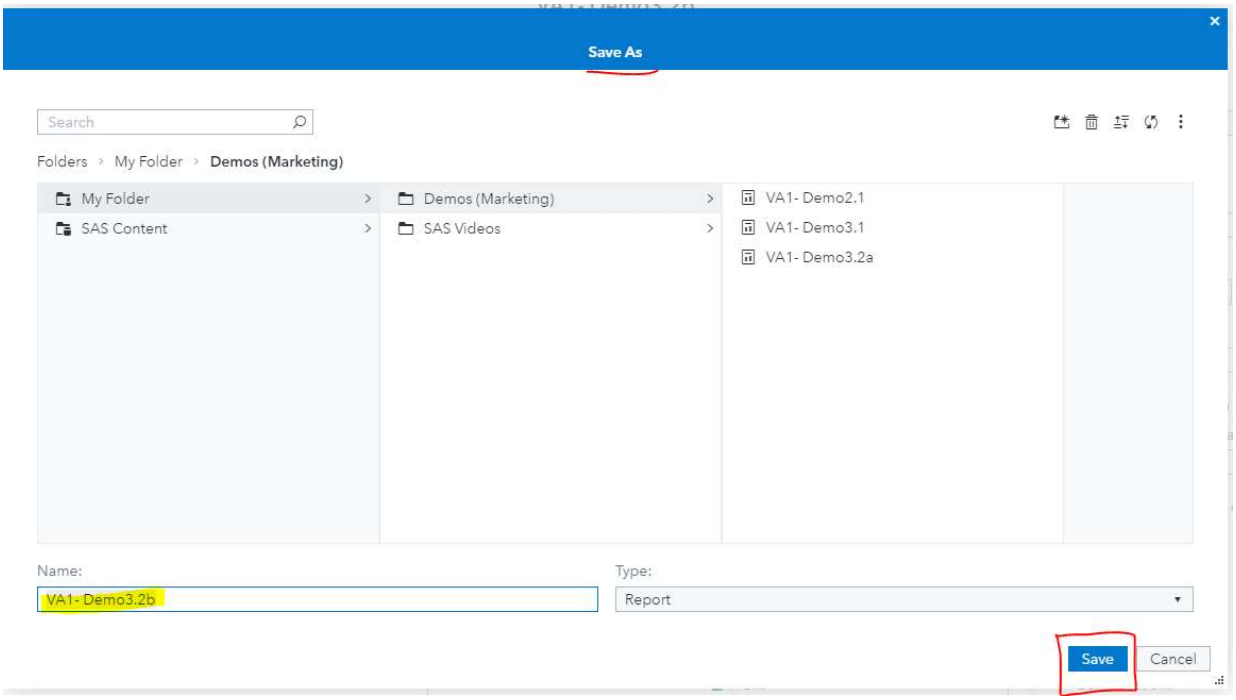
The detail table displays descriptive statistics for **Profit** for each continent.

Continent Name	Minimum	Lower Whisker	First Quartile	Average	Median	Third Quartile	U
Africa	($374.42)	($11.70)	$0.30	($0.17)	$4.80	$12.60	
Asia	($258.84)	($34.62)	$1.00	$13.97	$6.80	$25.20	
Europe	($1,222.48)	($17.82)	($0.10)	$8.66	$4.40	$11.80	
North America	($1,222.48)	($18.63)	$0.10	$9.00	$4.50	$12.60	
Oceania	($646.40)	($14.80)	$0.20	$7.66	$3.90	$10.20	

Even though total profits are highest for Europe, averages are higher in North America and Asia. Because our corporate office is located in North America, we will start by focusing on increasing profits in North America. Total profits might be higher in Europe because there are more customers or more orders for that continent. Also, note the negative average profits in Africa. Why is this occurring? What can we do to increase profits for that continent?

m. In the upper right corner, click (**Restore**).

6. **Save** the report.



End of Demonstration

Exercise 3C: Provide answers to questions asked. Support each answer with a relevant screenshot (s).

a. Open the browser and sign in to SAS Viya. SAS Drive is displayed by default.

b. Open the **VA1- Practice3.2b** report from the **Courses/YVA185/Basics/Practices (HR)** folder.

1) In the upper left corner, click ☰ (**Show list of applications**) and select **Explore and Visualize**. SAS Visual Analytics appears.
2) Click **All Reports**.
   a) Navigate to the **Courses/YVA185/Basics/Practices (HR)** folder.
   b) Double-click the **VA1- Practice3.2b** report to open it.

c. On Page 2, create a box plot.

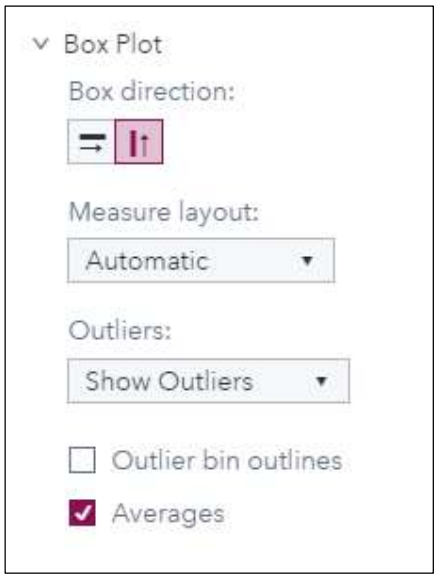
1) In the upper left corner of the report, click the **Page 2** tab.
2) In the left pane, click **Objects**.
3) Drag the **Box plot** object, from the Graphs group, to the canvas.
4) In the right pane, click **Roles**.
5) For the **Category** role, select **Add** ⇨ **Job Title**.
6) For the **Measures** role, select **Add** ⇨ **Annual Salary** and click **OK**.

   The box plot should resemble the following:

d. Modify the options for the box plot.

1) In the right pane, click **Options**.
2) In the Object group, for the **Name** field, enter **Salary Analysis by Job Title**.
3) In the Box Plot group, for the **Outliers** field, select **Show Outliers**.
4) Select **Averages**.

The Options pane should resemble the following:



The box plot should resemble the following:

e. Maximize the box plot and answer the questions.

1) In the upper right corner of the chart, click (**Maximize**) to view additional details.

2) In the detail table, click **Average** twice to sort by that column in descending order.

Job Title	Minimum	Lower Whisker	First Quartile	Average ▼	Median	Third
Purchasing Agent III	$34,270.00	$34,270.00	$34,270.00	$35,070.00	$35,070.00	$3
Sales Rep. IV	$30,150.00	$30,150.00	$30,890.00	$31,880.51	$31,605.00	$3
Purchasing Agent I	$31,760.00	$31,760.00	$31,760.00	$31,760.00	$31,760.00	$3
Sales Rep. III	$25,005.00	$28,040.00	$28,525.00	$29,457.35	$29,500.00	$3
Sales Rep. II	$26,015.00	$26,015.00	$26,600.00	$27,373.58	$27,325.00	$2
Sales Rep. I	$20,835.00	$25,010.00	$25,795.00	$26,417.79	$26,495.00	$2
Temp. Sales Rep.	$21,580.00	$25,020.00	$25,735.00	$26,317.43	$26,407.50	$2
Trainee	$21,615.00	$24,015.00	$24,515.00	$25,260.80	$25,405.00	$2

I) Which job title has the highest average salary? The lowest?

Answer 1:

SS1:

2) Which job title has the largest number of outliers?

Answer 2:

SS2:

3) In the upper right corner, click  (**Restore**).