

Oracle Analytics



Modern Data Visualization with Oracle Analytics



Section 4

Advanced Analytics Made
Easy with Oracle Analytics



Learning Topics in Section 4

Introduction to Advanced Analytics

Create a Reference for your data with One-Click

Generate Forecast and Trendline with One-Click

Generate Outliers and Clusters

Use Explain Functionality to Review Outliers

Use Expression Builder for Advanced Calculations

Build Story Telling to Explain Sales Performance

Demos and Lab Overview

Quiz



Advanced Analytics

Discover Deeper Patterns

- Advanced statistical techniques now available to the business user
- Easily identify trends in data
- Compare your trends by overlaying it with statistical reference
- Forecast and plan your business with confidence
- Discover groups and clusters of data from huge data-sets
- Discover anomalies or outliers where data is not aligned
- Create your own calculated column that reference statistical scripts

Advanced Analytics in Data Visualization Desktop (DVD)

Pre-requisite

- Before you can use analytic functions
 - Install DVML and related packages ready to be used by Data Visualization Desktop
- For example, on Windows use the Install DVML Start menu option, or on Mac double-click the application Oracle Data Visualization Desktop Install DVML in Finder under Applications or in Launch-pad
- Before you can use analytic functions in Data Visualization, you must create a project or visualization to which you can apply one or more analytic functions. It is on a visualization that you apply the OOTB analytic Functions

Project Overview

Sales Forecasting



Section 4: Advanced Analytics Made Easy with Oracle Analytics

Project Overview: Profitability Review & Sales Forecasting

Beyond Past – Foresee the Future

- You are required to analyze trends in revenue and forecast based on the basis of available data
- You are required to create a plan to improve profitability without having any adverse impact to the topline revenue
- You have data for last 5 years, which you can leverage to create your business plan

Assess performance
Compare against baseline



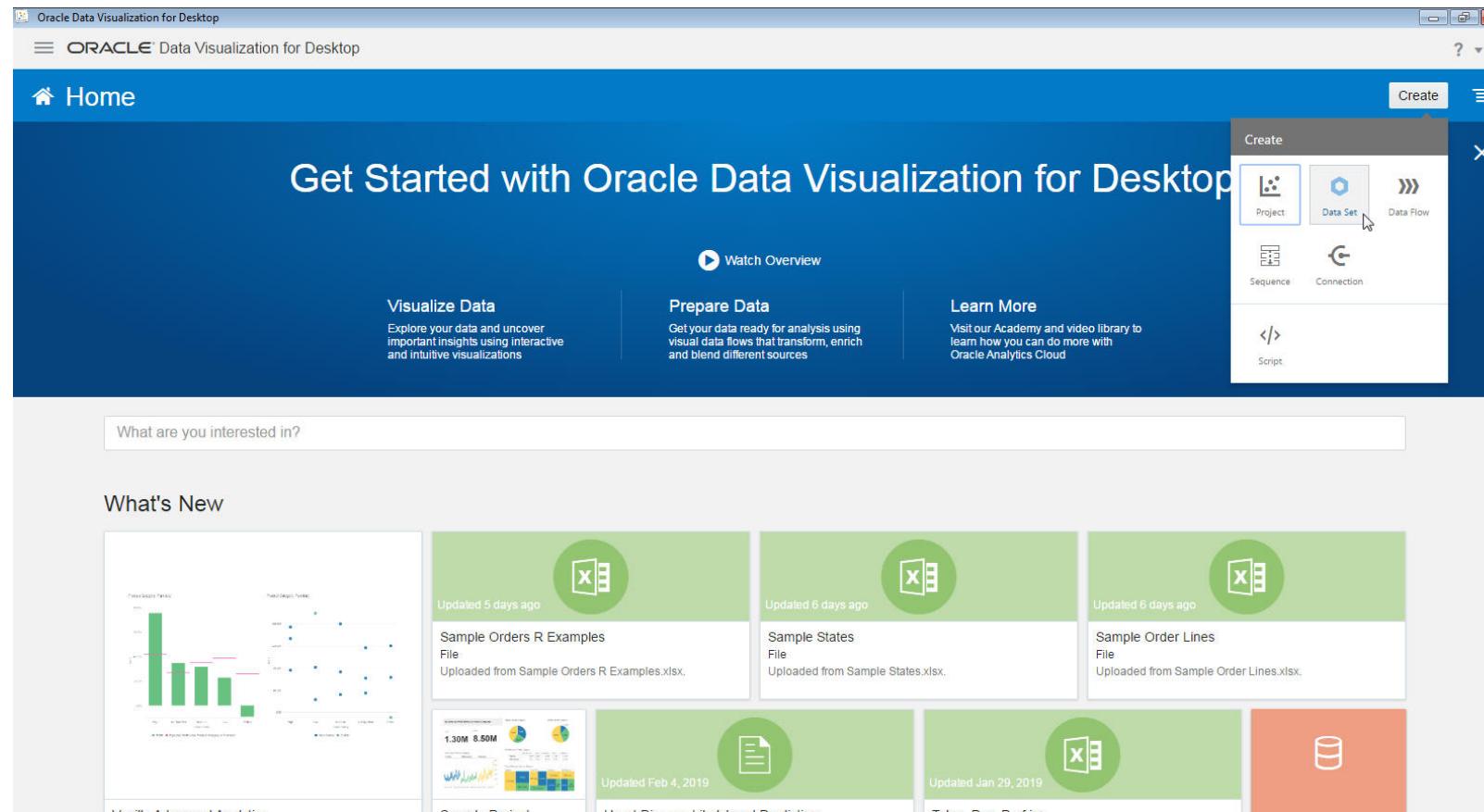
Section 4: Advanced Analytics Made Easy with Oracle Analytics

Create a Reference for your Data with One-Click

How do we compare to our baseline ?

- Reference Line
 - Helps analyst establish an appropriate baseline or reference line
 - It typically splits the data points into two, what is above the reference line and what is below the reference line
 - This feature is invoked by a right-click menu choice
 - It offers functions such as Average, Median, Percentile, etc., for creating your reference line
- Reference Band
 - It helps you focus on a range/band and highlight data points that fall in the band or out of the band
 - This feature is invoked by a right-click menu choice
 - It offers choice of the two functions namely standard deviation or custom

Assignment Screens: Create a Reference for your Data with One-Click

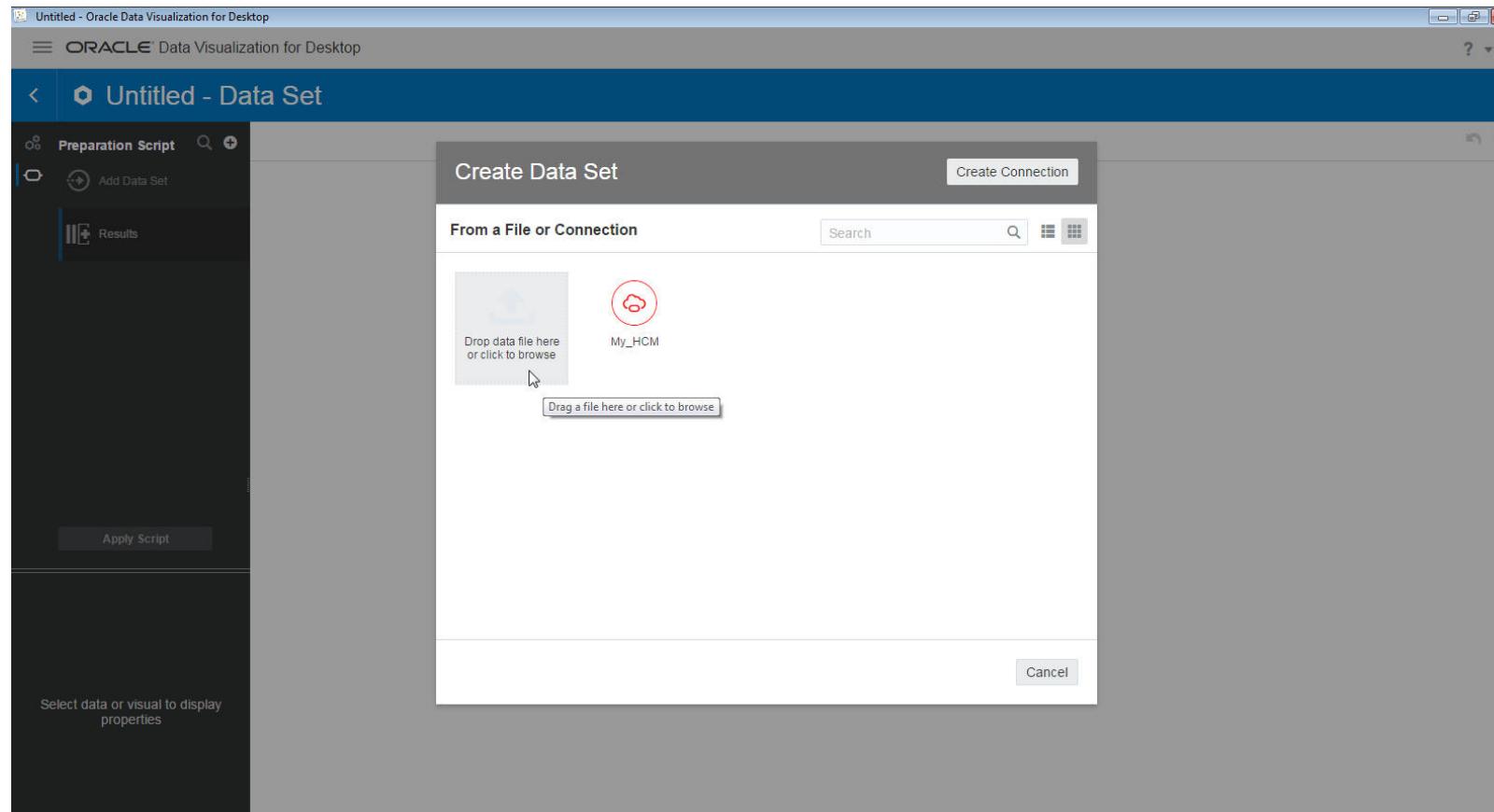


Let's start by getting our data in.

We start our DVD, by double clicking on the DVD icon on your desktop.

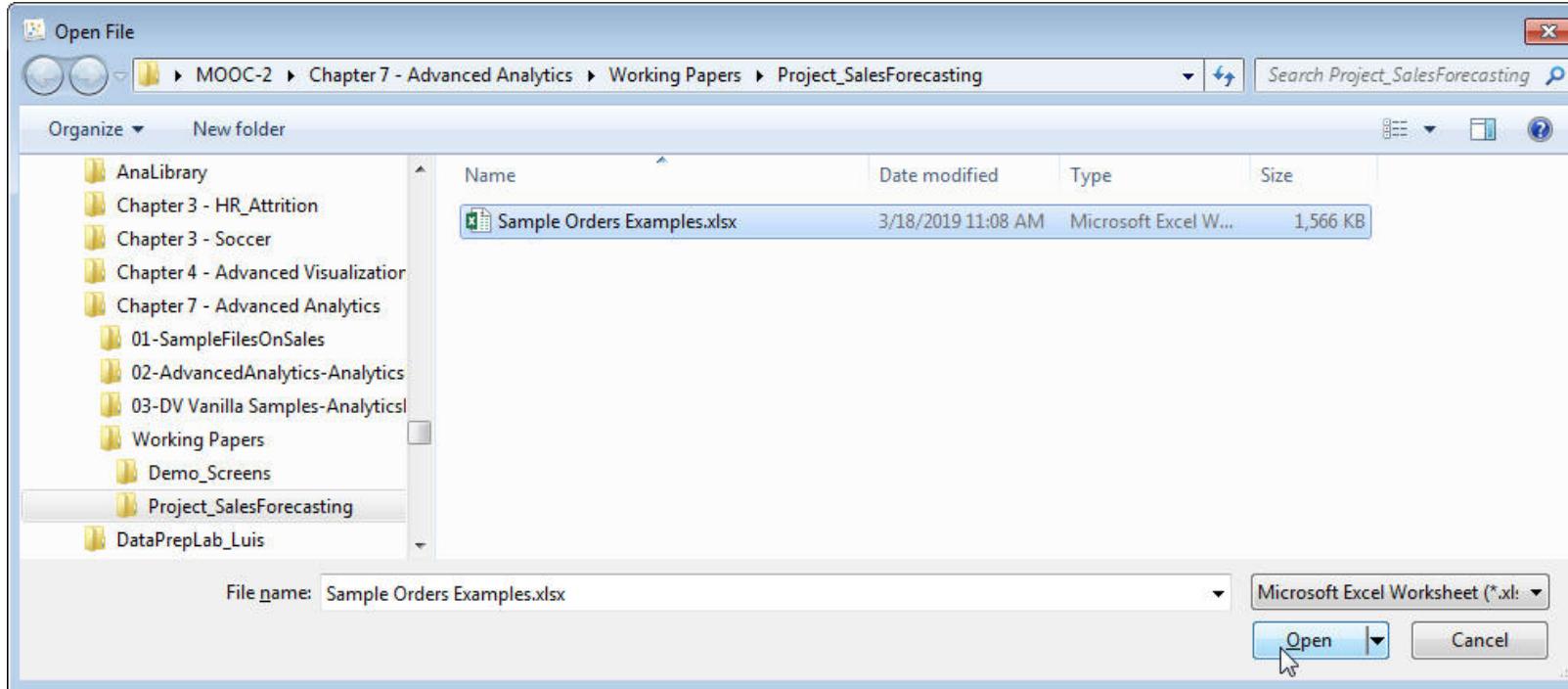
On the top-right, Click “Create” > “Data Set”

Assignment Screens: Create a Reference for your Data with One-Click



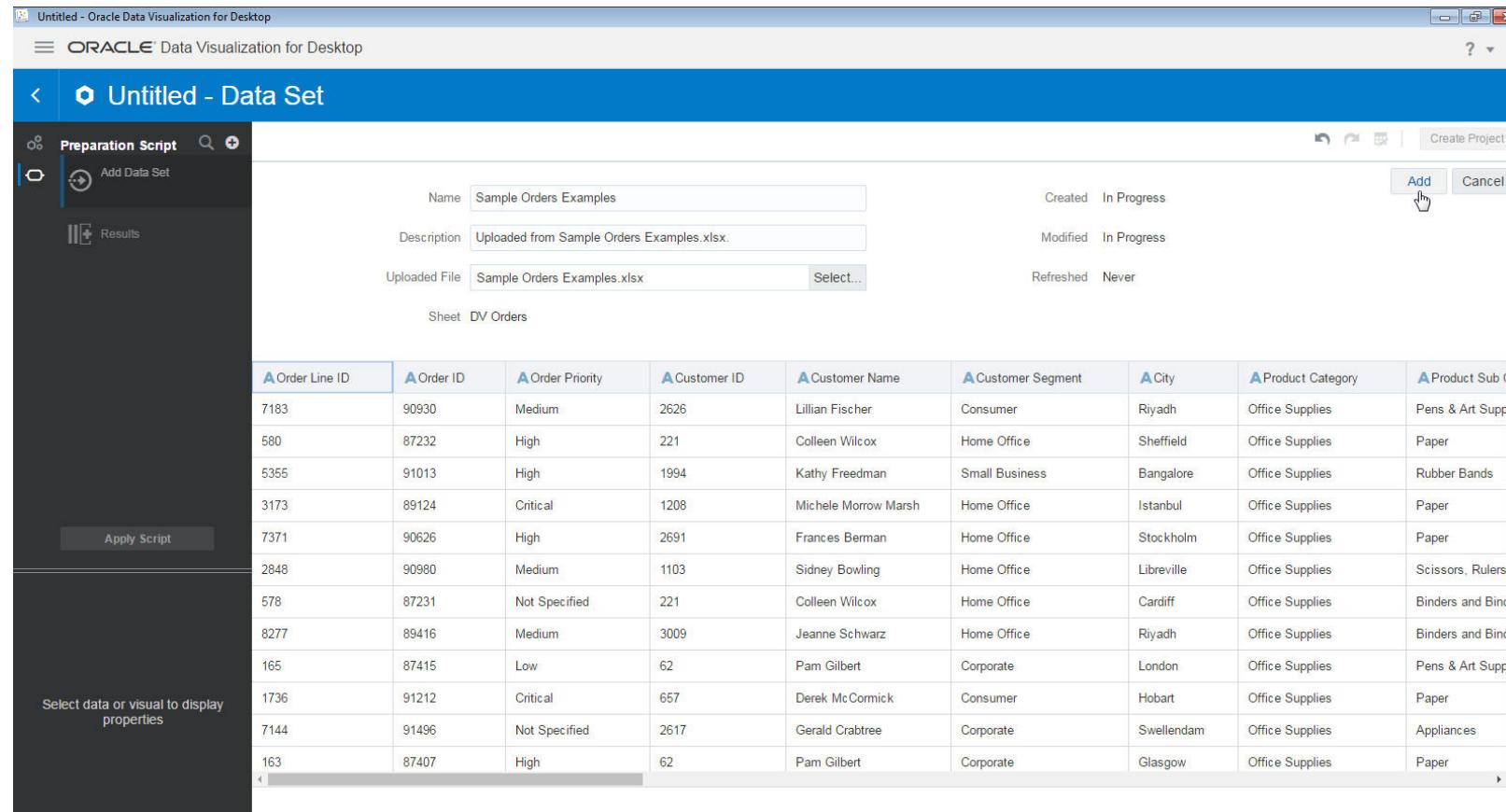
A new window, pops up, Click on
“click to browse”

Assignment Screens: Create a Reference for your Data with One-Click



Browse to the location on your desktop, where you have downloaded and save the “Sample Orders Examples.xlsx” file.

Assignment Screens: Create a Reference for your Data with One-Click



The screenshot shows the Oracle Data Visualization for Desktop interface. The main title bar says "Untitled - Oracle Data Visualization for Desktop". Below it, the application name is "ORACLE Data Visualization for Desktop". The central window is titled "Untitled - Data Set". On the left, there's a sidebar with "Preparation Script" selected, showing options like "Add Data Set" and "Results". The main area has fields for "Name" (Sample Orders Examples), "Created" (In Progress), "Description" (Uploaded from Sample Orders Examples.xlsx.), "Modified" (In Progress), "Uploaded File" (Sample Orders Examples.xlsx), and "Refreshed" (Never). Below these fields is a table titled "DV Orders" with columns: Order Line ID, Order ID, Order Priority, Customer ID, Customer Name, Customer Segment, City, Product Category, and Product Sub C. The table contains 15 rows of sample data. At the bottom left of the main area, there's a "Select data or visual to display properties" section and a "Apply Script" button.

The file opens up, you need to Click “Add” to bring in the data file as a Data Set on your analytics environment.

Assignment Screens: Create a Reference for your Data with One-Click

The screenshot shows the Oracle Data Visualization for Desktop application. The main window title is "Sample Orders Examples - Oracle Data Visualization for Desktop". The central area displays a "Results" grid with columns: Order Line ID, Order ID, Order Priority, Customer ID, Customer Name, Customer Segment, City, and Product. The grid contains 20 rows of sample data. To the left is a "Preparation Script" sidebar with a "Results" tab selected. On the right is a "Recommendations" panel titled "Recommendations (59)" which lists various data extraction and transformation options.

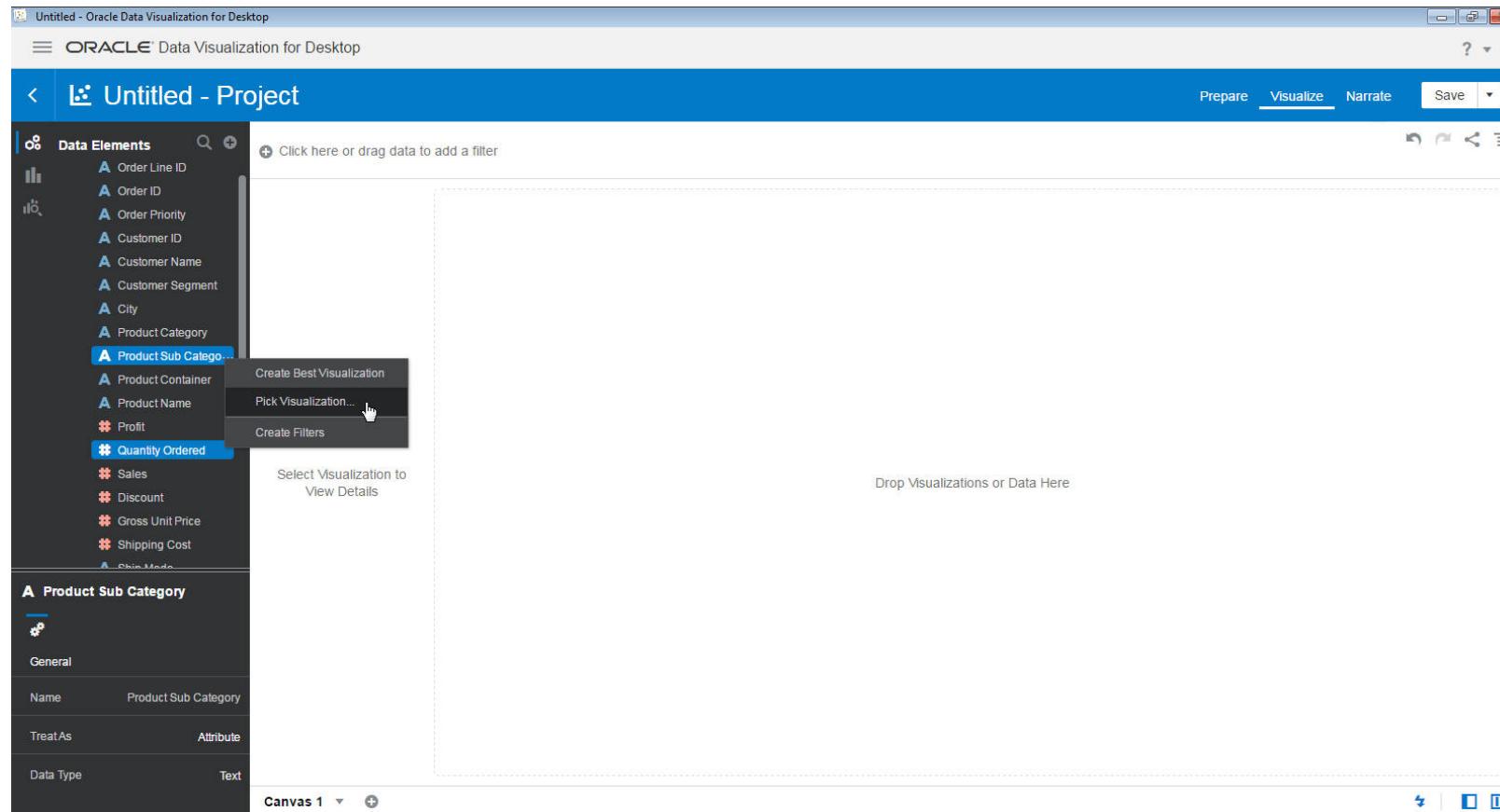
Order Line ID	Order ID	Order Priority	Customer ID	Customer Name	Customer Segment	City	Product
4578	90791	Not Specified	1719	Russell W Melton	Corporate	Toronto	Technology
580	87232	High	221	Colleen Wilcox	Home Office	Sheffield	Office Supply
1436	86190	Not Specified	555	Walter Young	Corporate	Perth	Technology
1721	91365	Not Specified	648	Steve O'Brien	Home Office	Canberra	Furniture
5359	91012	Medium	1995	Howard Page	Small Business	Gurgaon	Office Supply
61	87669	Low	23	Lynn Moss	Corporate	Edinburgh	Furniture
1056	89324	Critical	398	Bruce Stark	Corporate	Hobart	Office Supply
6743	91529	High	2475	James Craft	Small Business	Tokyo	Office Supply
6012	86262	Not Specified	2206	Bobby Powell	Consumer	Swellendam	Office Supply
5005	90611	Critical	1843	Melinda Leonard	Consumer	Toronto	Technology
2897	86420	High	1109	Dennis Welch	Small Business	Córdoba	Office Supply
6855	91312	Medium	2503	Neil Jacobson	Home Office	Barcelona	Office Supply
3888	86404	High	1462	Billie Hensley	Home Office	Rio de Janeiro	Office Supply
7665	87564	High	2795	Harry Burns	Consumer	Denver	Technology
7631	86980	Low	2785	George Shields	Corporate	Glendale	Office Supply
9029	89837	Not Specified	3265	Glenn Morgan	Corporate	Hartford	Office Supply
5713	87894	Low	2101	Gail Ellis	Home Office	Bogota	Office Supply
281	42599	Medium	102	Caroline Johnston	Consumer	London	Furniture
4212	90938	Medium	1579	Carlos Bynum	Corporate	Merida	Office Supply

The data then opens up on the data preparation panel, here you can prepare, transform or enrich your data in a machine assisted environment.

For the purpose of this project, you will not go-thru any data transformation or enrichment.

Let's start off the project, by clicking "Create Project" on the top-right.

Assignment Screens: Create a Reference for your Data with One-Click

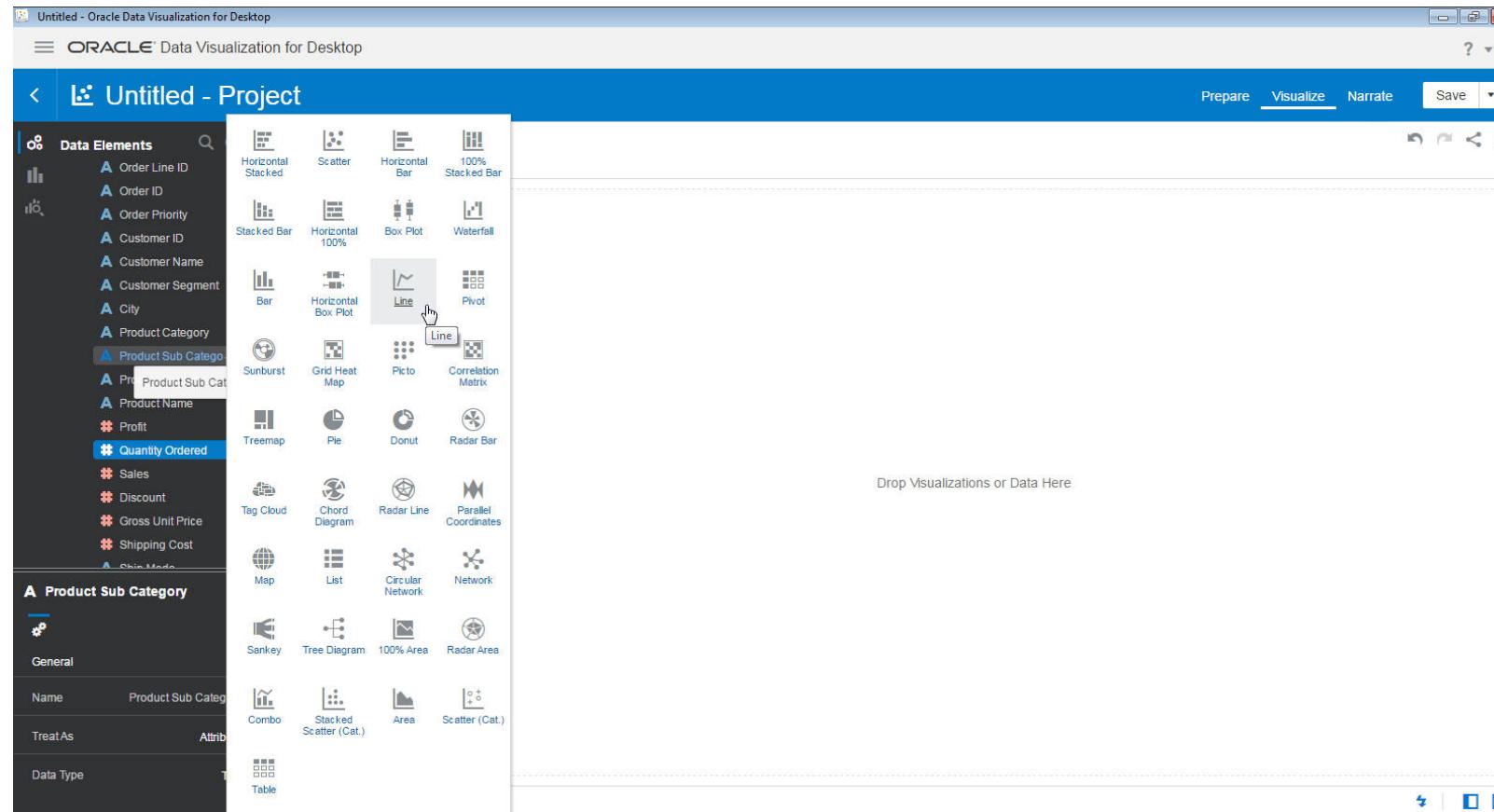


You are brought to the Visualize Pane of the Project.

You decide to analyze “Quantity Ordered”

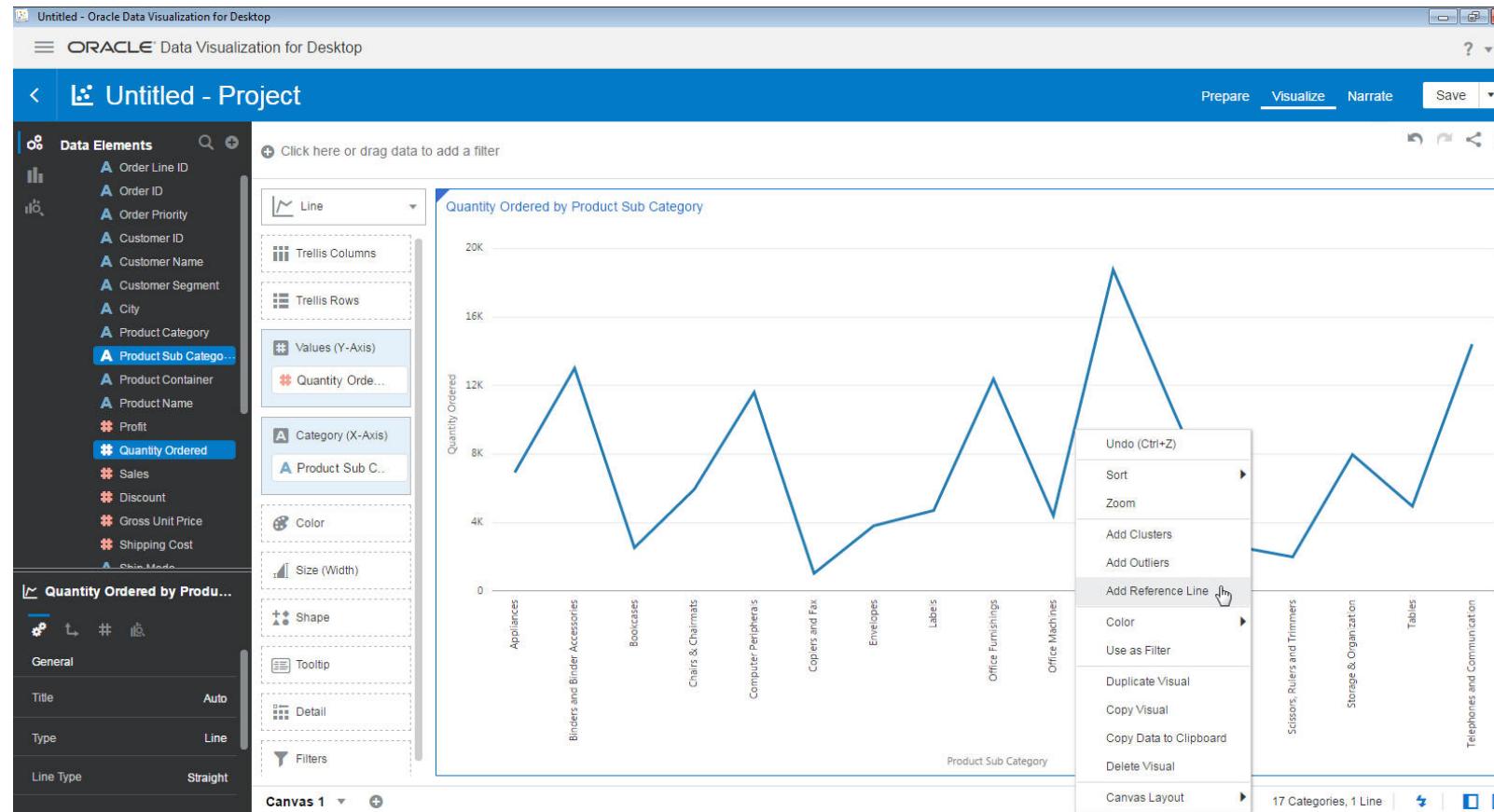
Select “Quantity Ordered” and “Product Sub Category”, with the “Ctrl Key” pressed on, right-click and select “Pick Visualization”

Assignment Screens: Create a Reference for your Data with One-Click



Let's select “Line” from the available list of visuals.

Assignment Screens: Create a Reference for your Data with One-Click

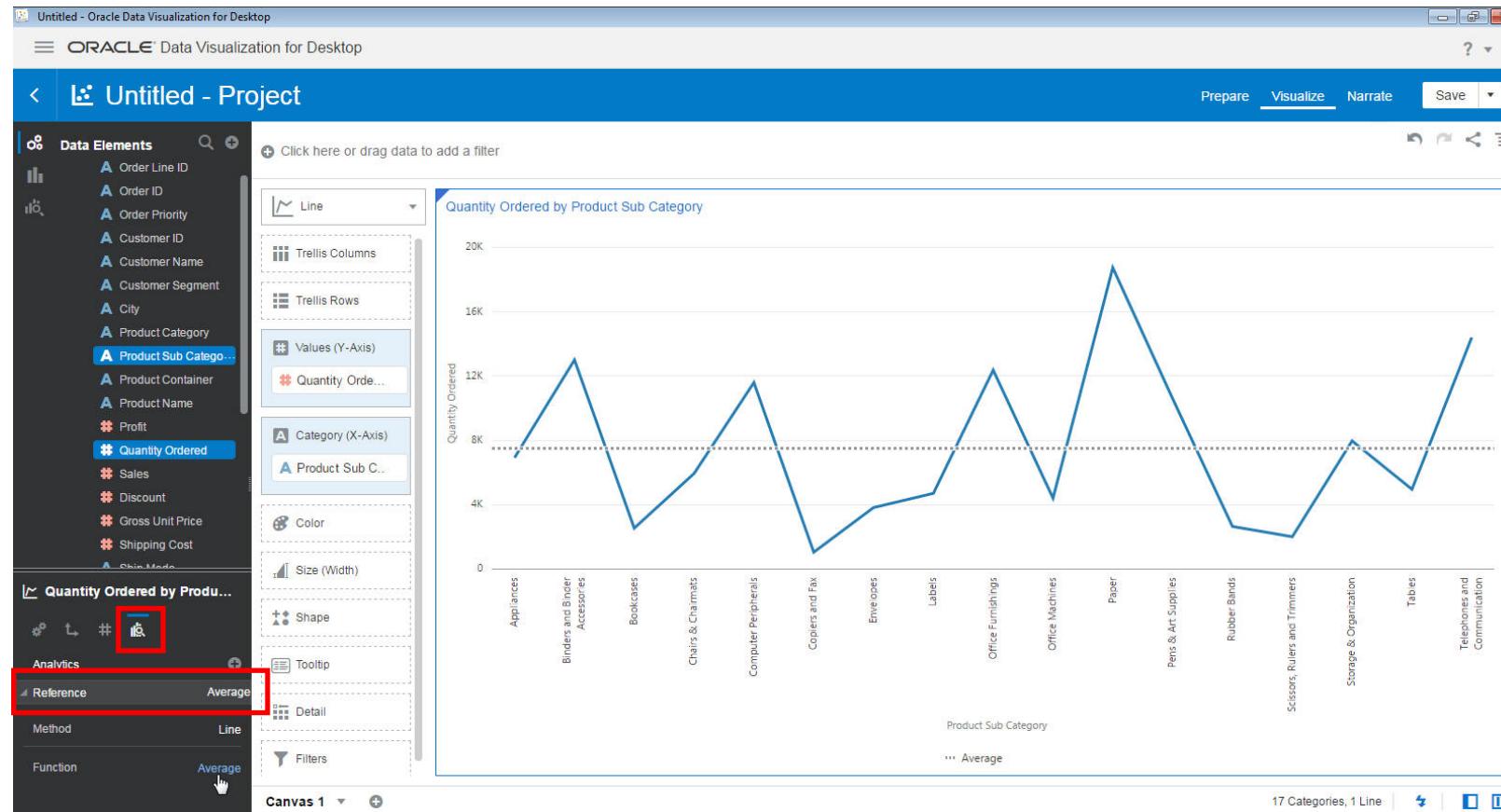


You now see a “Quantity Ordered by Product Sub Category” visual.

How each product category, compares to each other, is a question one needs to answer, not an easy one for an untrained eye.

Let's make it easy, right click on the visual, and click “Add Reference Line”

Assignment Screens: Create a Reference for your Data with One-Click

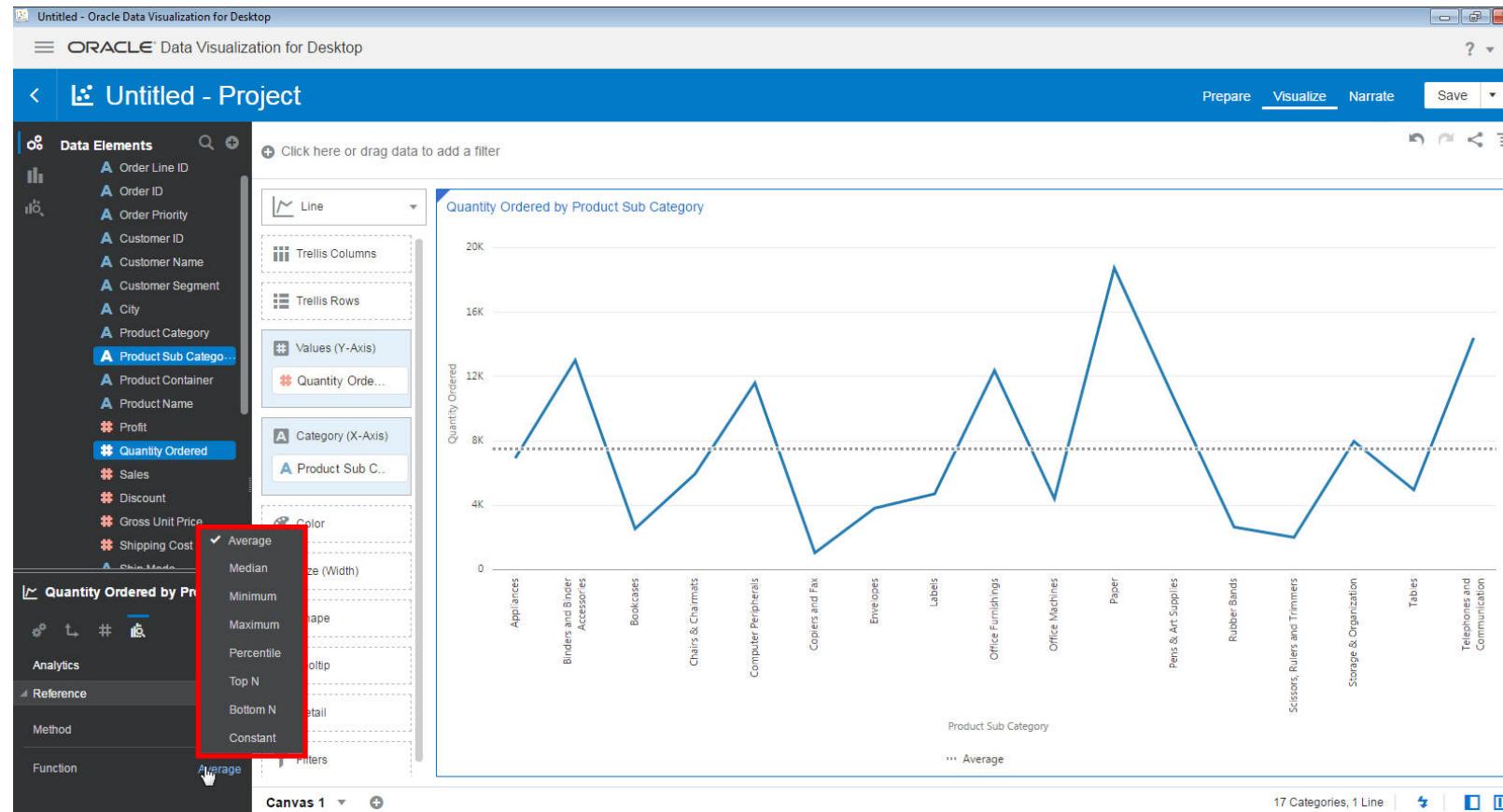


A reference line is drawn, it clearly shows which products are doing better than average, and which products need to pull up.

On the left bottom pane, you see the properties of the current visual.

Click on the “Analytics” Tab, in the “Reference” section, click on “Average”

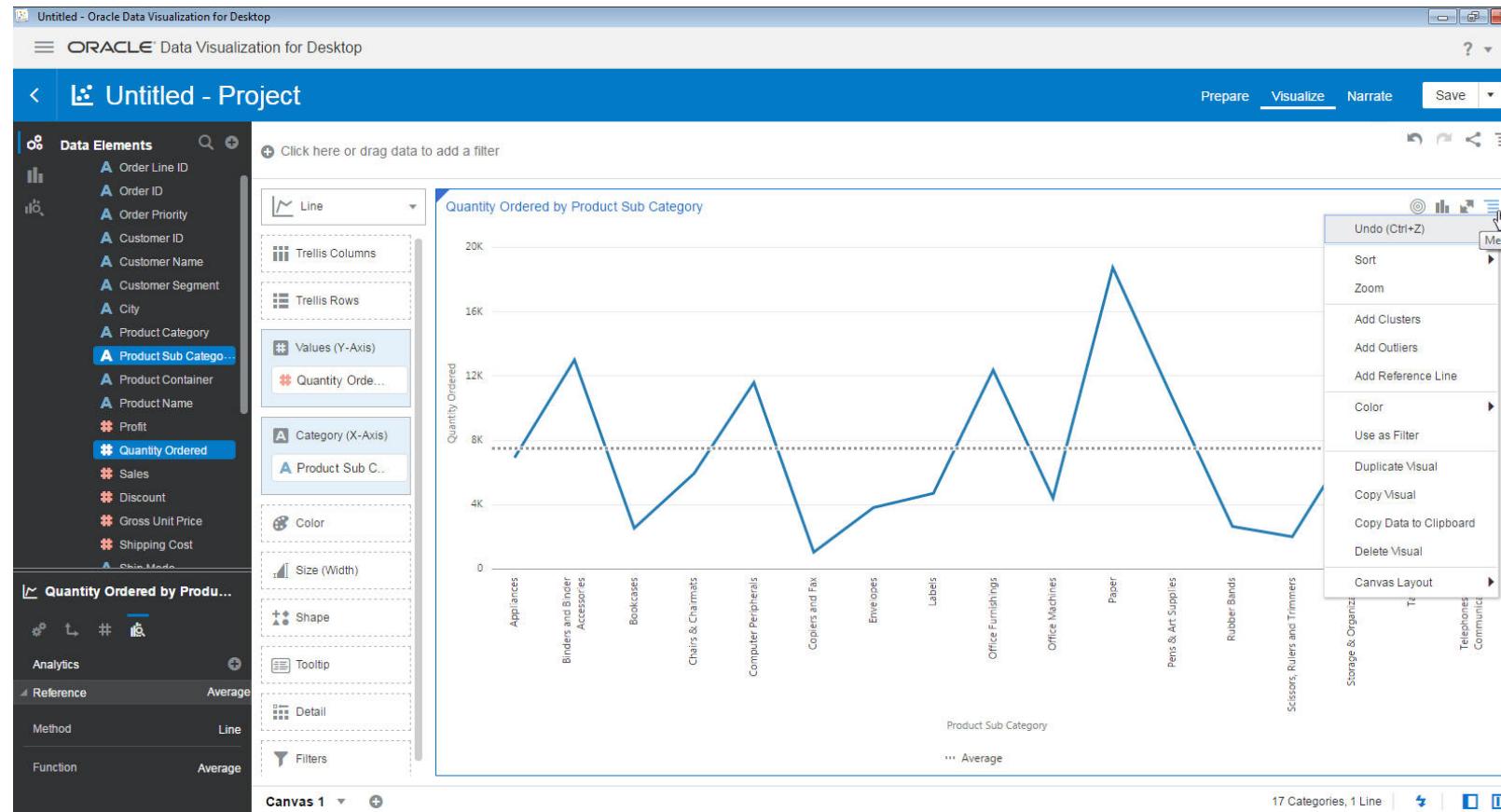
Assignment Screens: Create a Reference for your Data with One-Click



You can select from multiple functions, to generate your trendline, functions like median, percentile, amongst others.

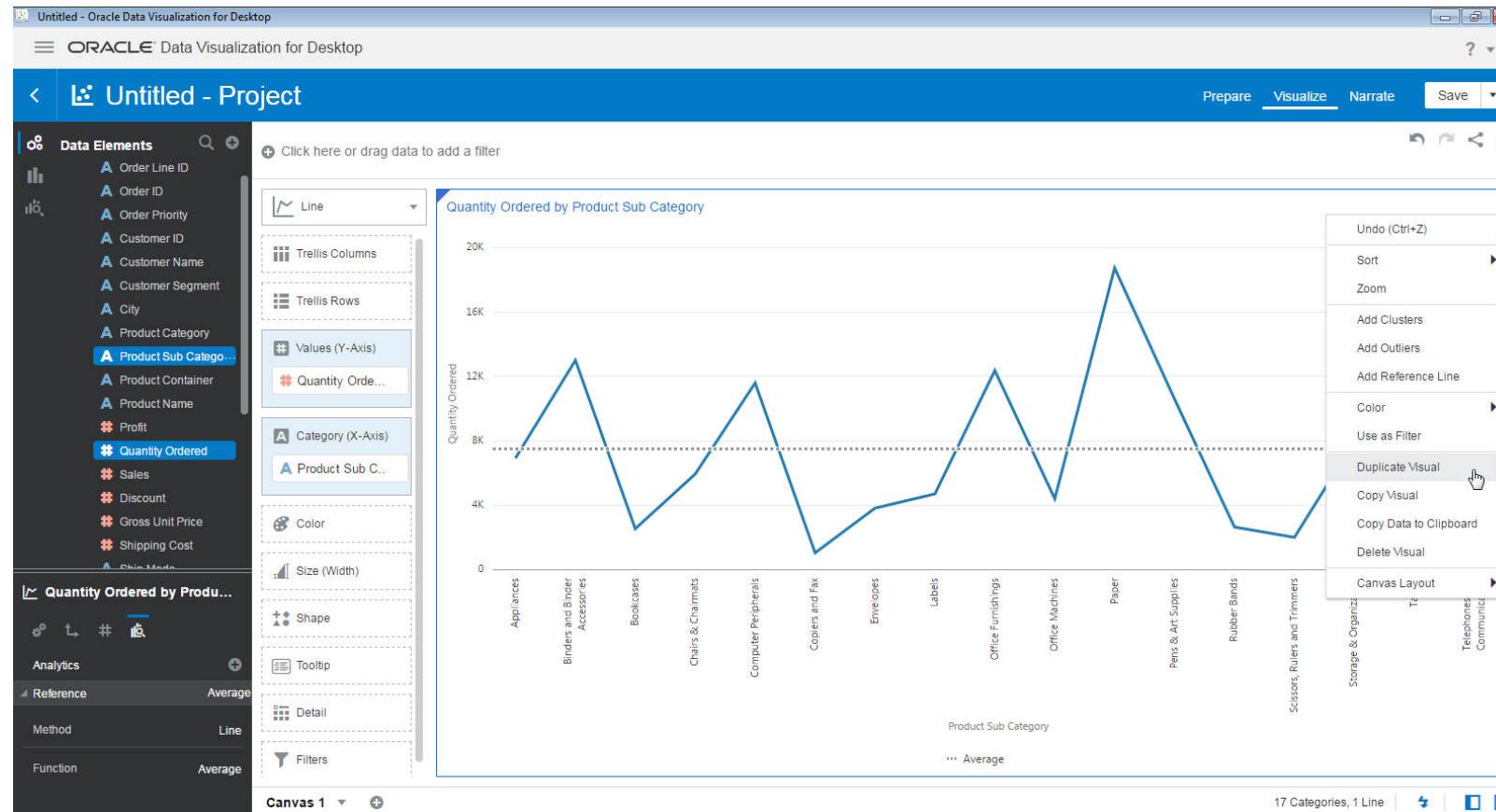
For the purpose of this project, we leave it at “Average”

Assignment Screens: Create a Reference for your Data with One-Click



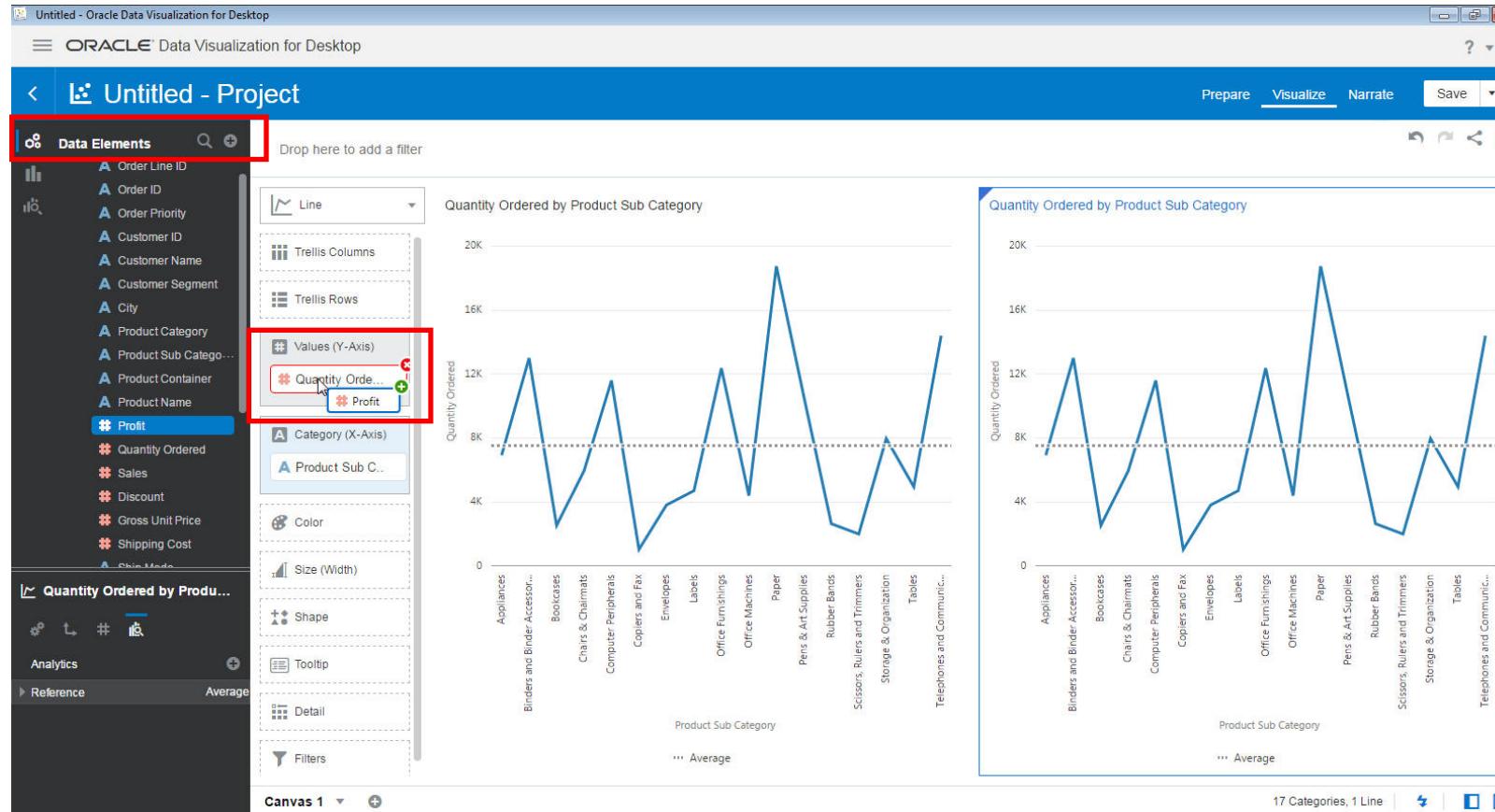
Lets quickly create another visual, click on the “Menu” available on the top right corner of the visual.

Assignment Screens: Create a Reference for your Data with One-Click



Select “Duplicate Visual” from the available menu options.

Assignment Screens: Create a Reference for your Data with One-Click

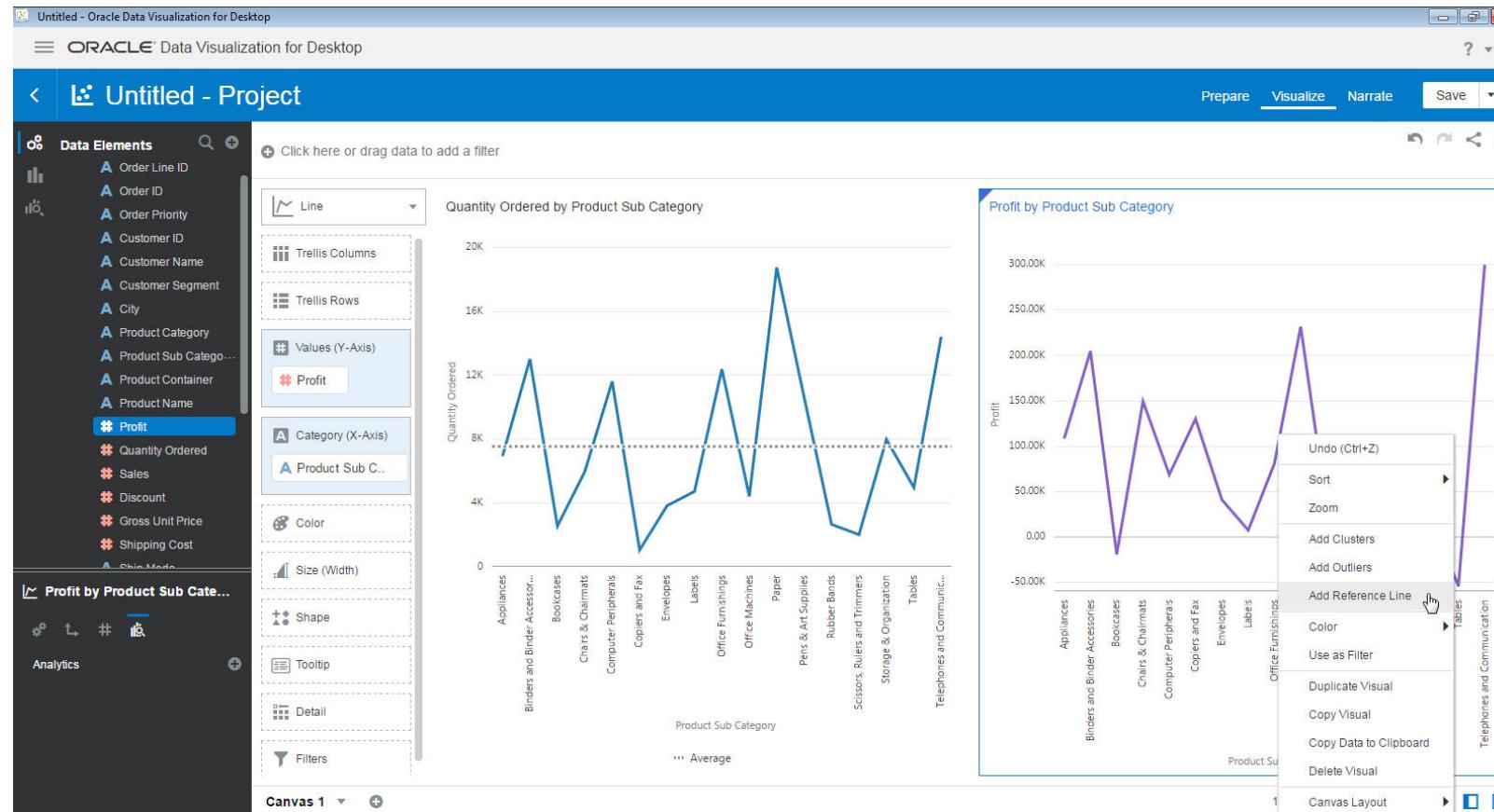


While you are on the second visual, lets change our focus from Sales to Profit.

Drag and Drop “Profit” from the “Data Elements” pane to the “Values (Y-Axis)” section of the visual grammar pane.

Replace “Quantity Ordered” with “Profit”

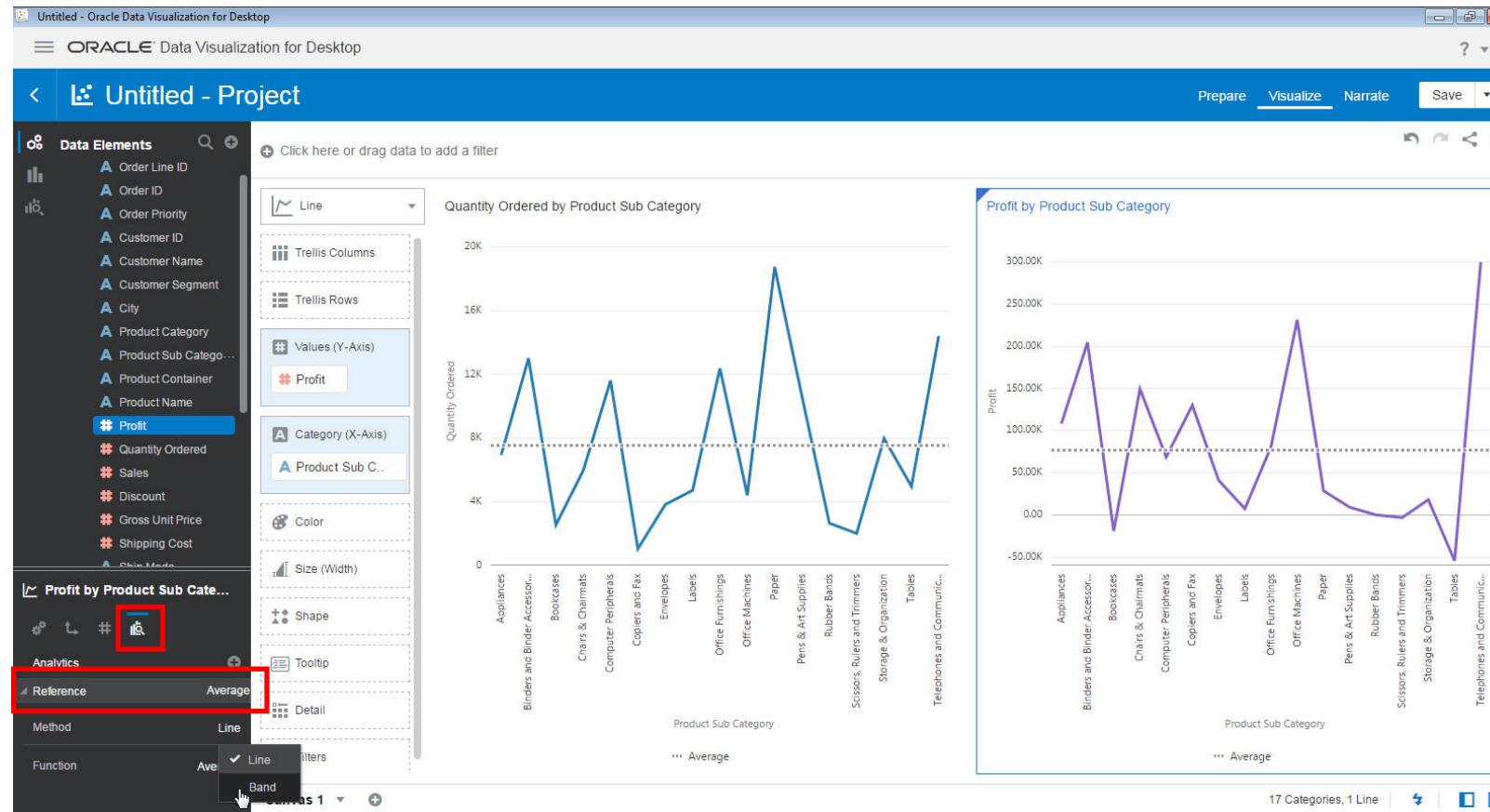
Assignment Screens: Create a Reference for your Data with One-Click



Faced with the same issue of comparatives, Let's put up a reference line.

Right-click on the visual and click "Add Reference Line"

Assignment Screens: Create a Reference for your Data with One-Click



You had earlier seen reference drawn as a line, you also have the option to overlay the reference as a band.

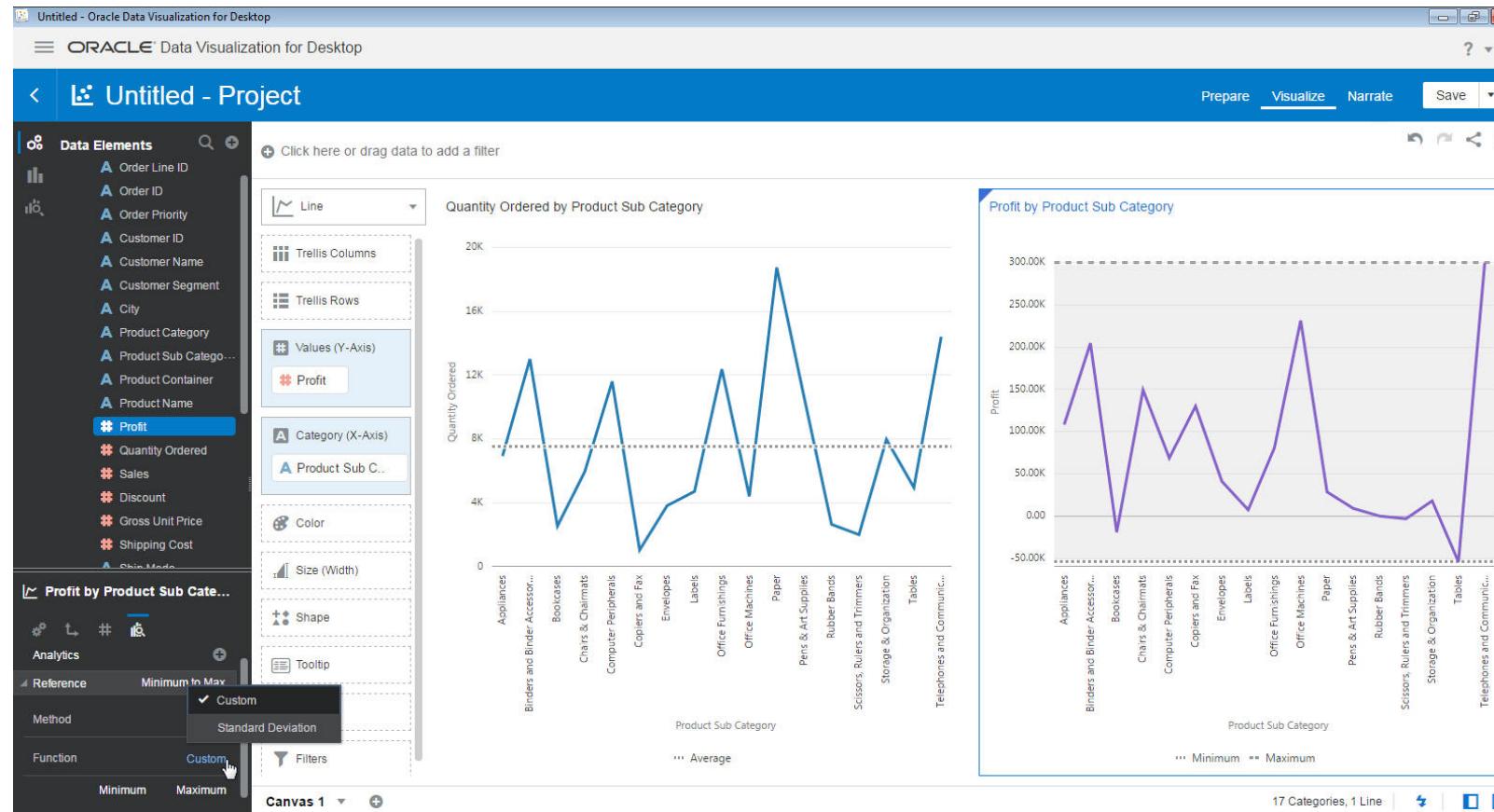
To overlay a band.

On the left bottom pane, you see the properties of the current visual.

Click on the “Analytics” Tab, in the “Reference” section, click on “Line” on the “Method” Field.

Two options open up, Select “Band”

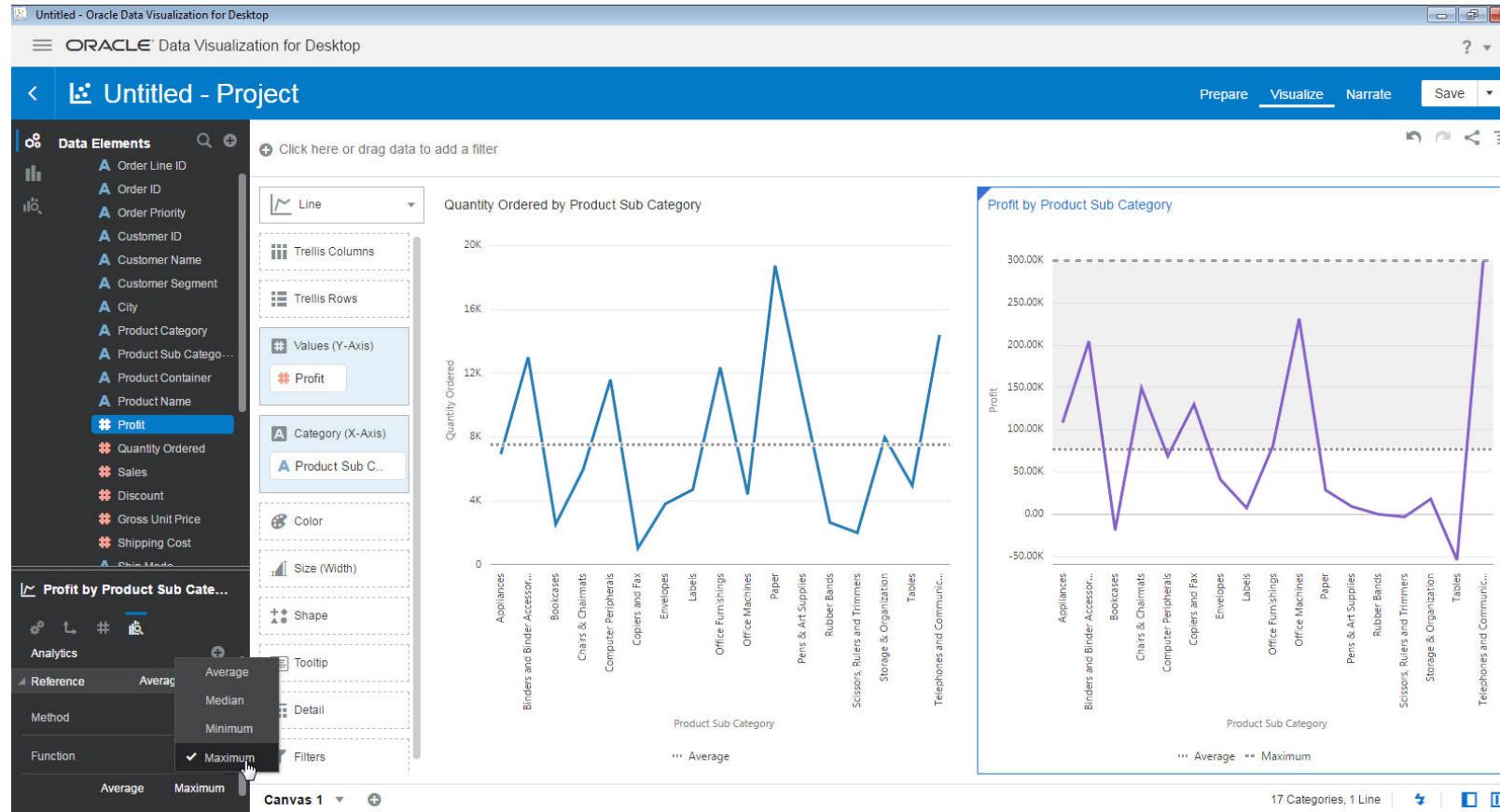
Assignment Screens: Create a Reference for your Data with One-Click



After you select the Method as "Band", click on "Custom".

You see two options for Band Method, one is custom and other Standard Deviation, for this project select "Custom"

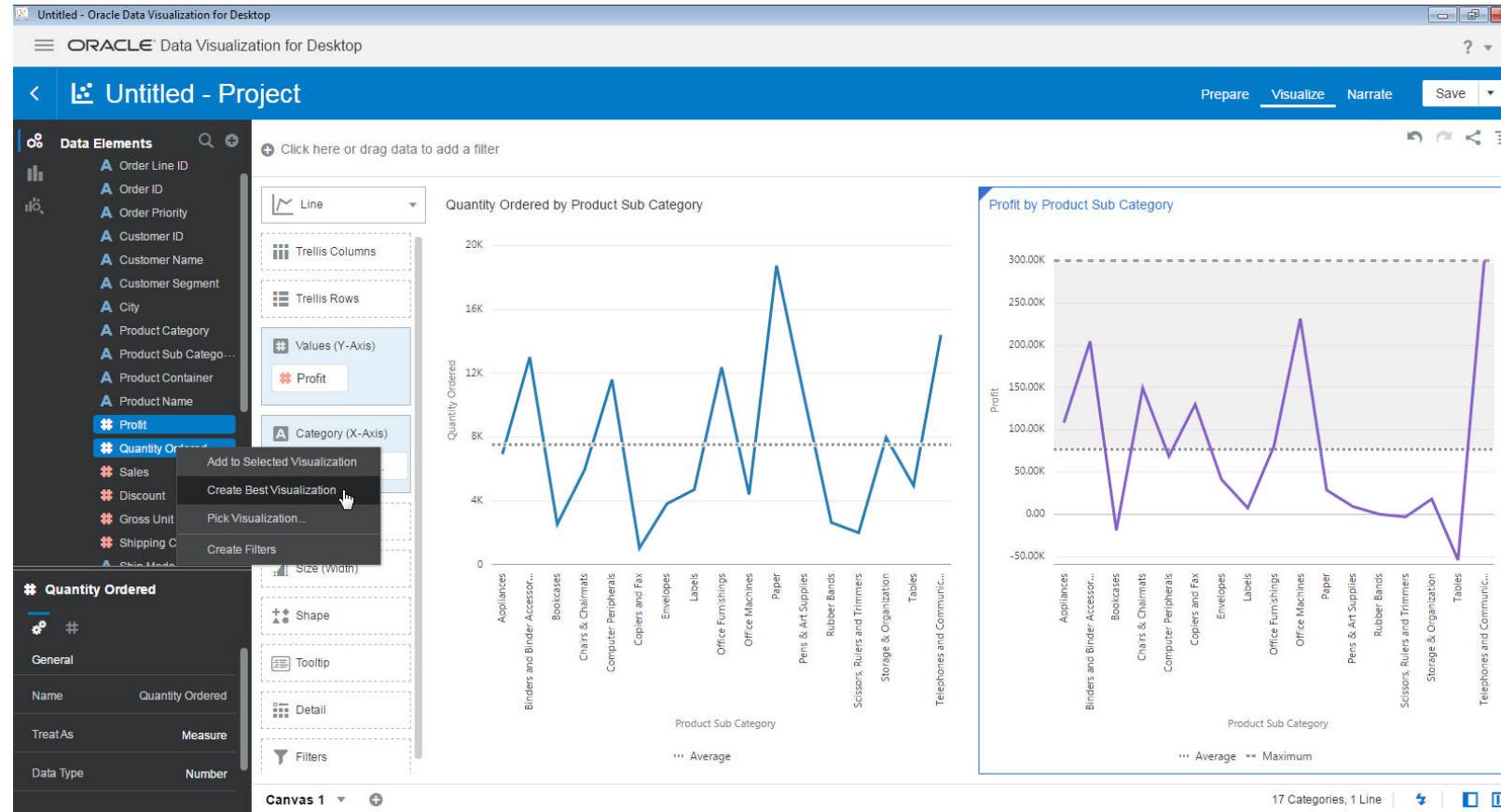
Assignment Screens: Create a Reference for your Data with One-Click



You are now able to define the two ends of the band, Let's select "Average" and "Minimum" as the two ends of the band.

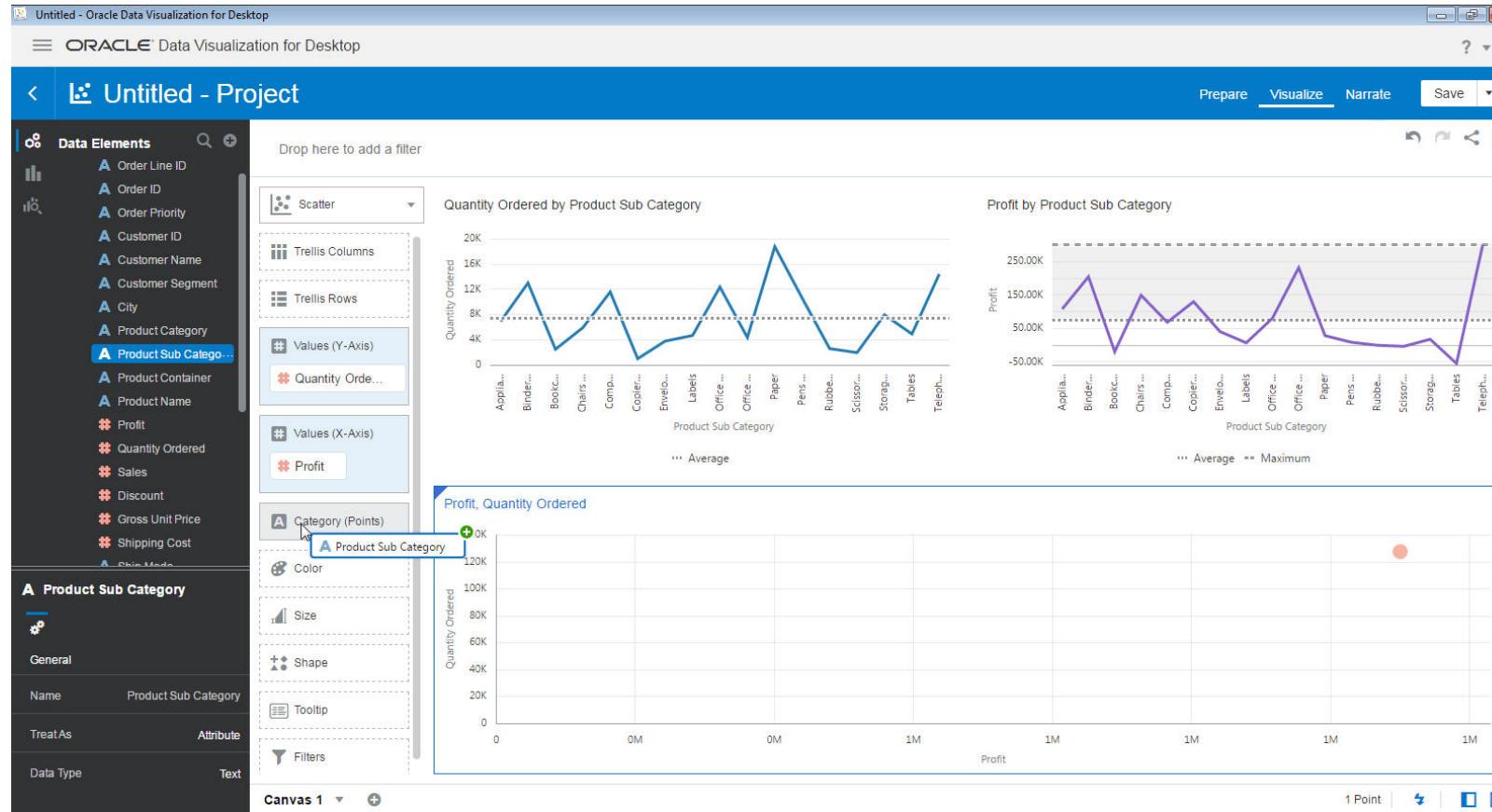
You now see the band on the visual, clearly highlighting the products that lie between average and the best.

Assignment Screens: Create a Reference for your Data with One-Click



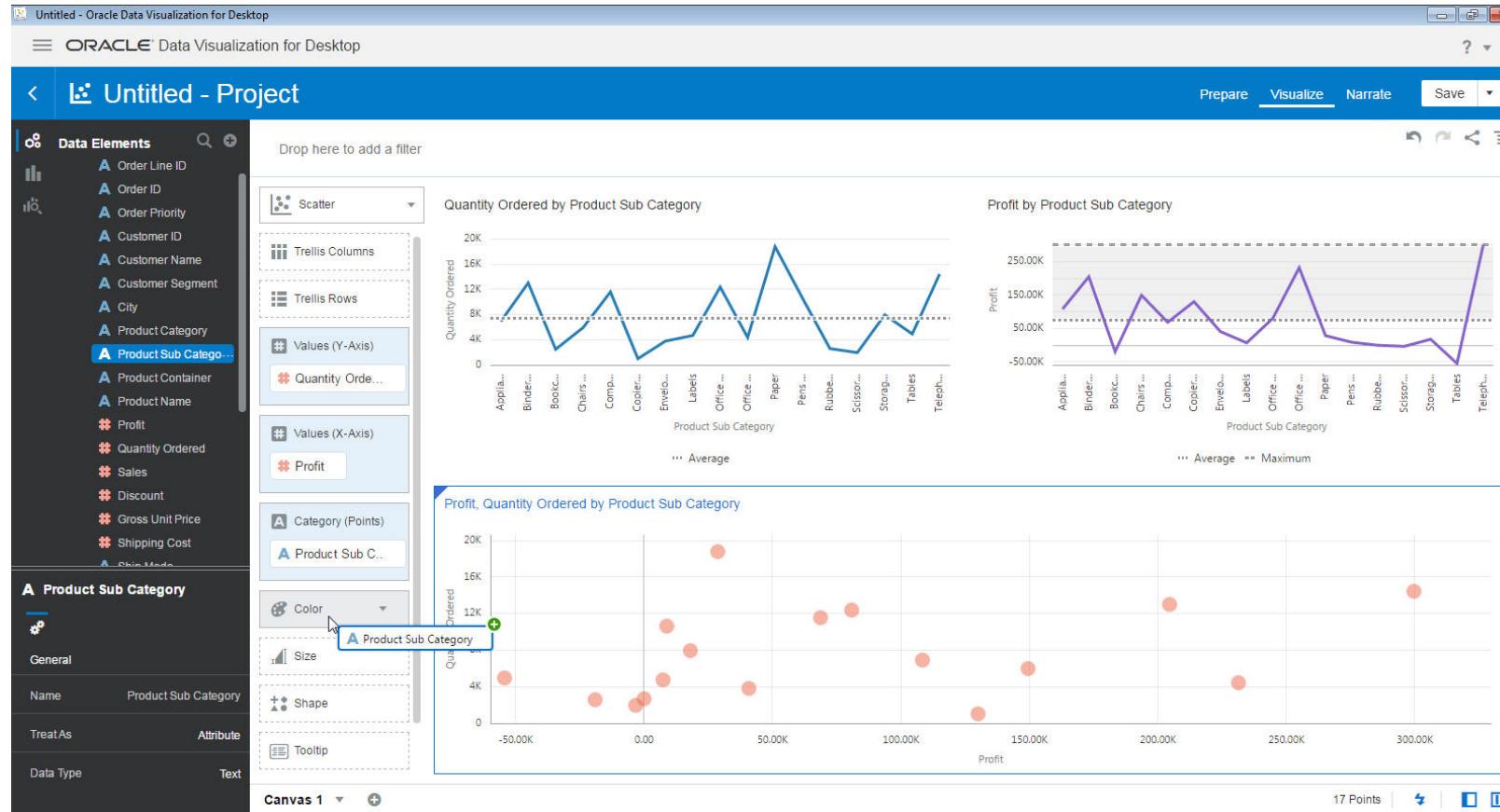
To further analyze, the relationship between “Quantity Ordered” and “Profit”, You select the two measures, with Ctrl Key pressed on, Right click and select “Create Best Visualization”

Assignment Screens: Create a Reference for your Data with One-Click



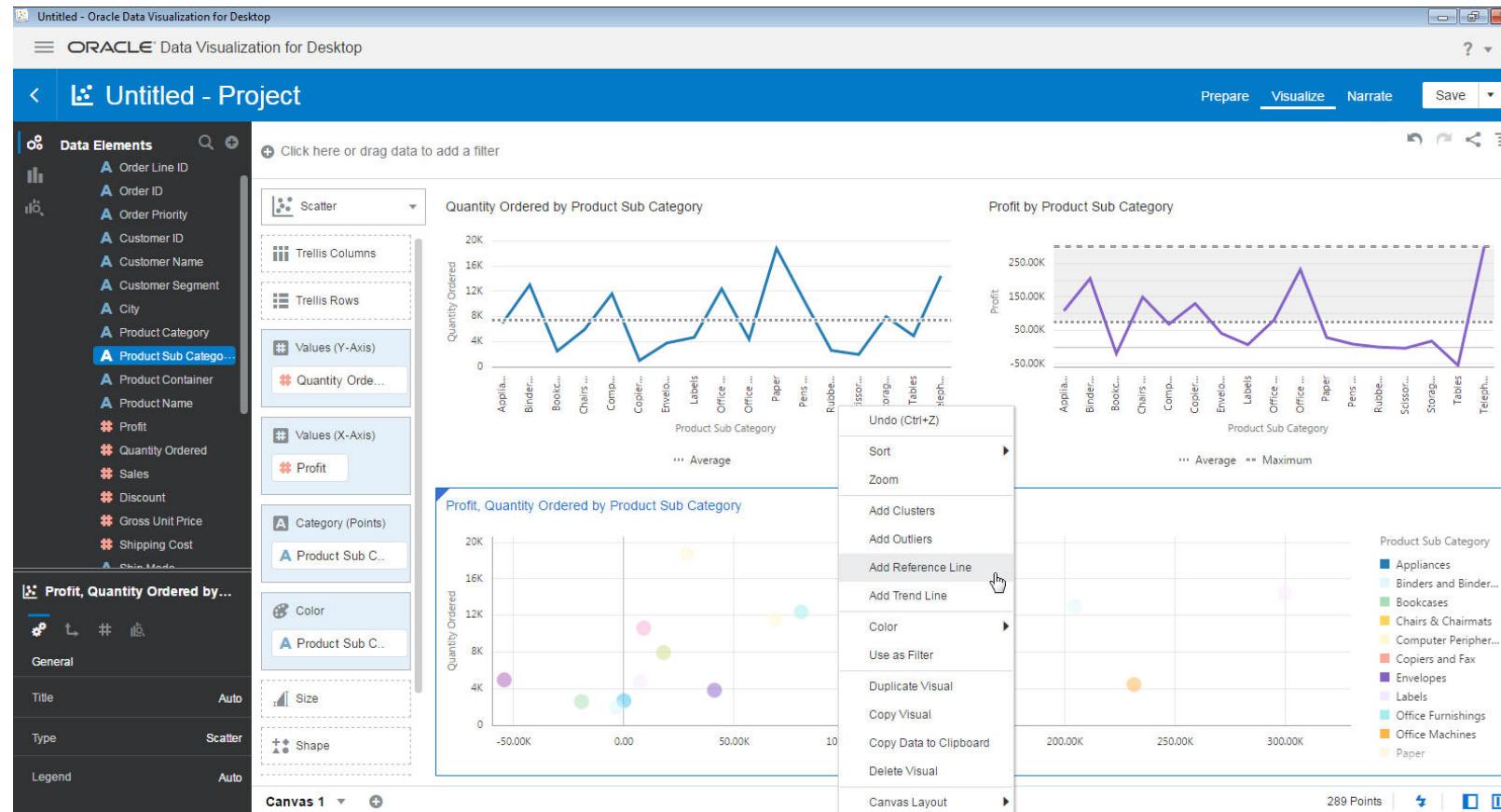
You now Drag and Drop,
“Product Sub Category” on to
the “Category (Points)”

Assignment Screens: Create a Reference for your Data with One-Click



To make products stand out on this visual, You now Drag and Drop, “Product Sub Category” on to the “Color” Field in the grammar panel.

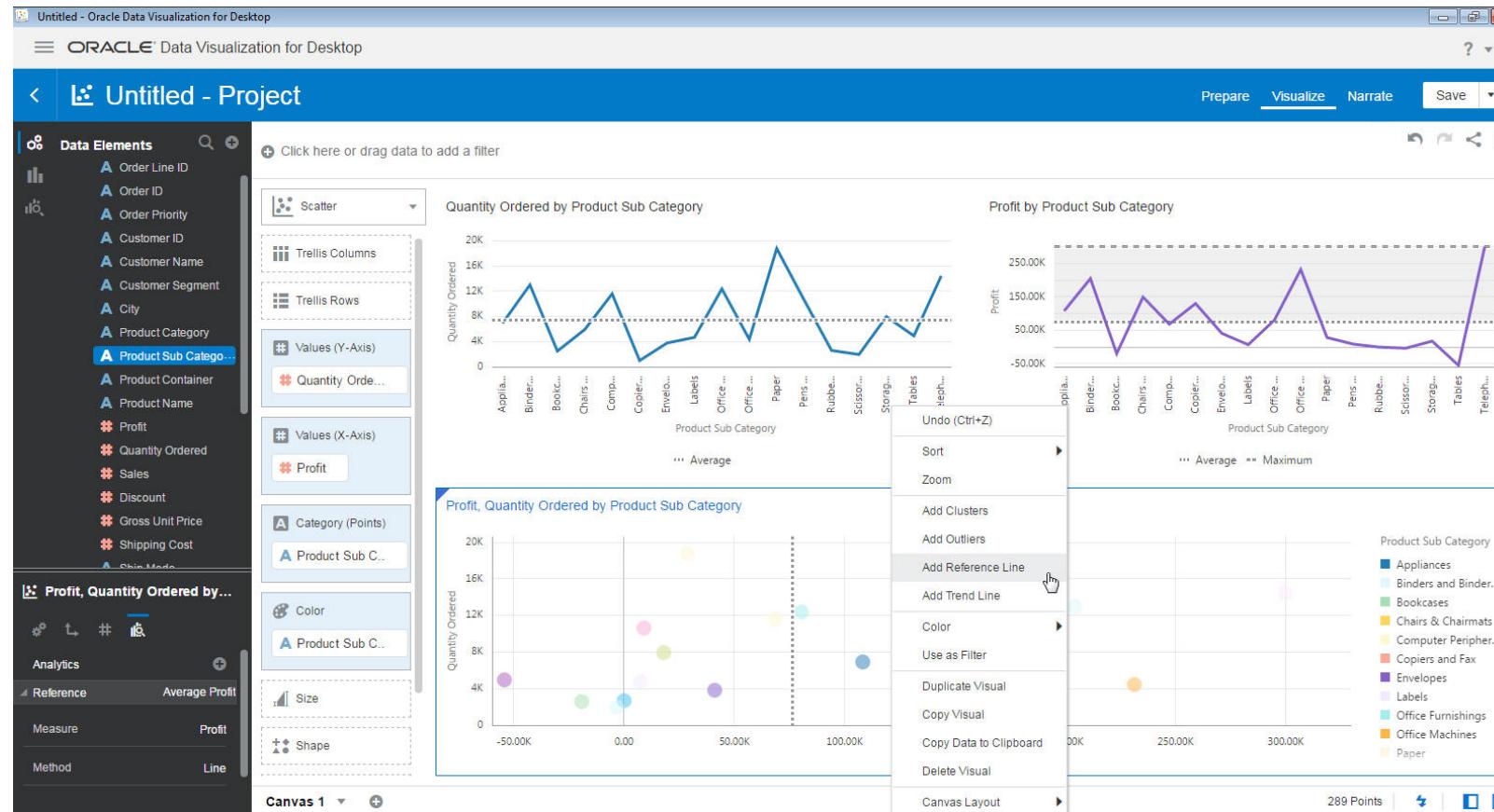
Assignment Screens: Create a Reference for your Data with One-Click



We see a scatter of products, with various combinations of profits and qty ordered.

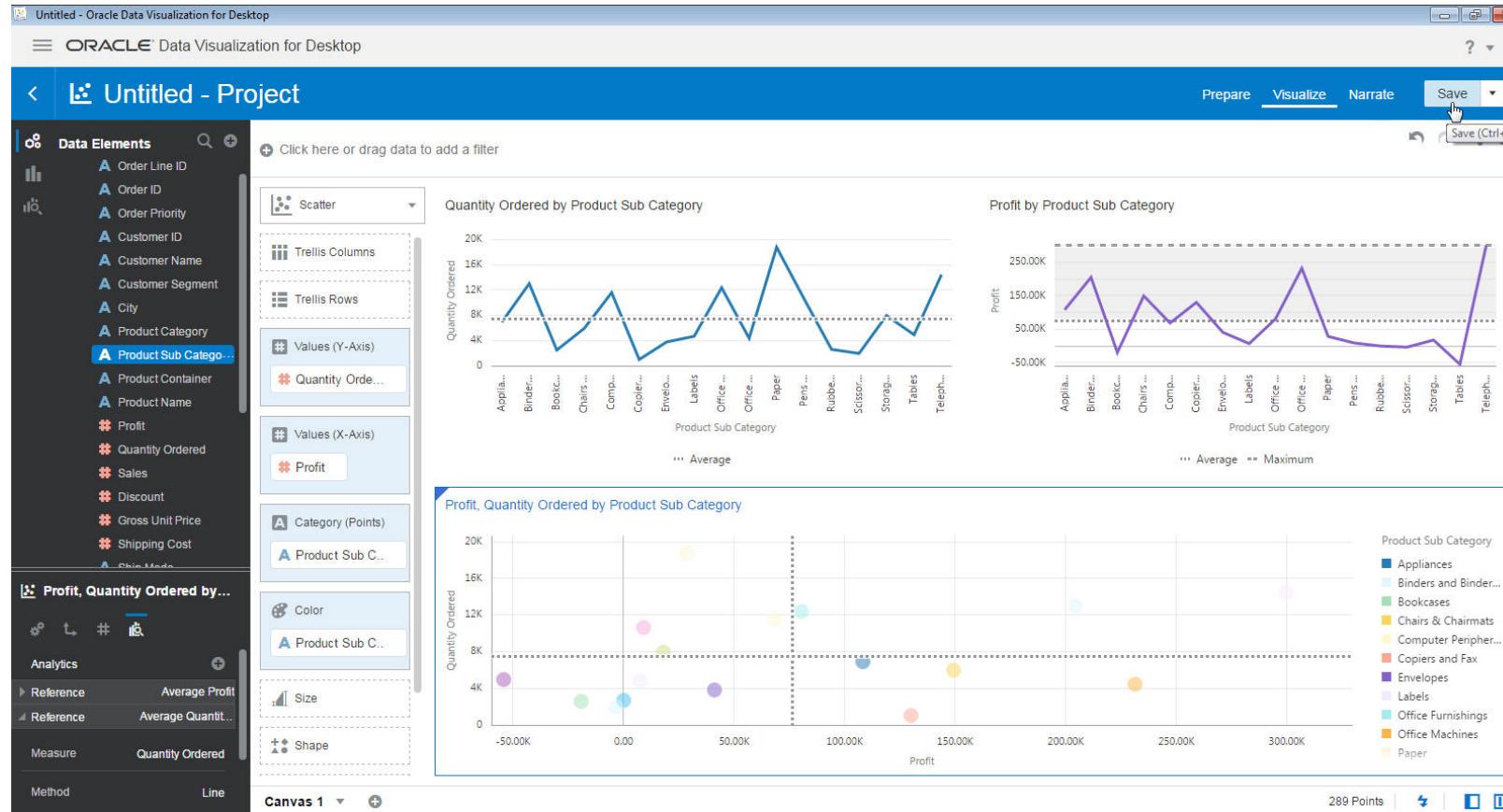
To classify this data for some actionable insights, lets add reference lines, you right click on the visual, select “Add Reference Line”

Assignment Screens: Create a Reference for your Data with One-Click



You see an average profit line overlaid. Lets again right click on the visual and again select “Add Reference Line”

Assignment Screens: Create a Reference for your Data with One-Click

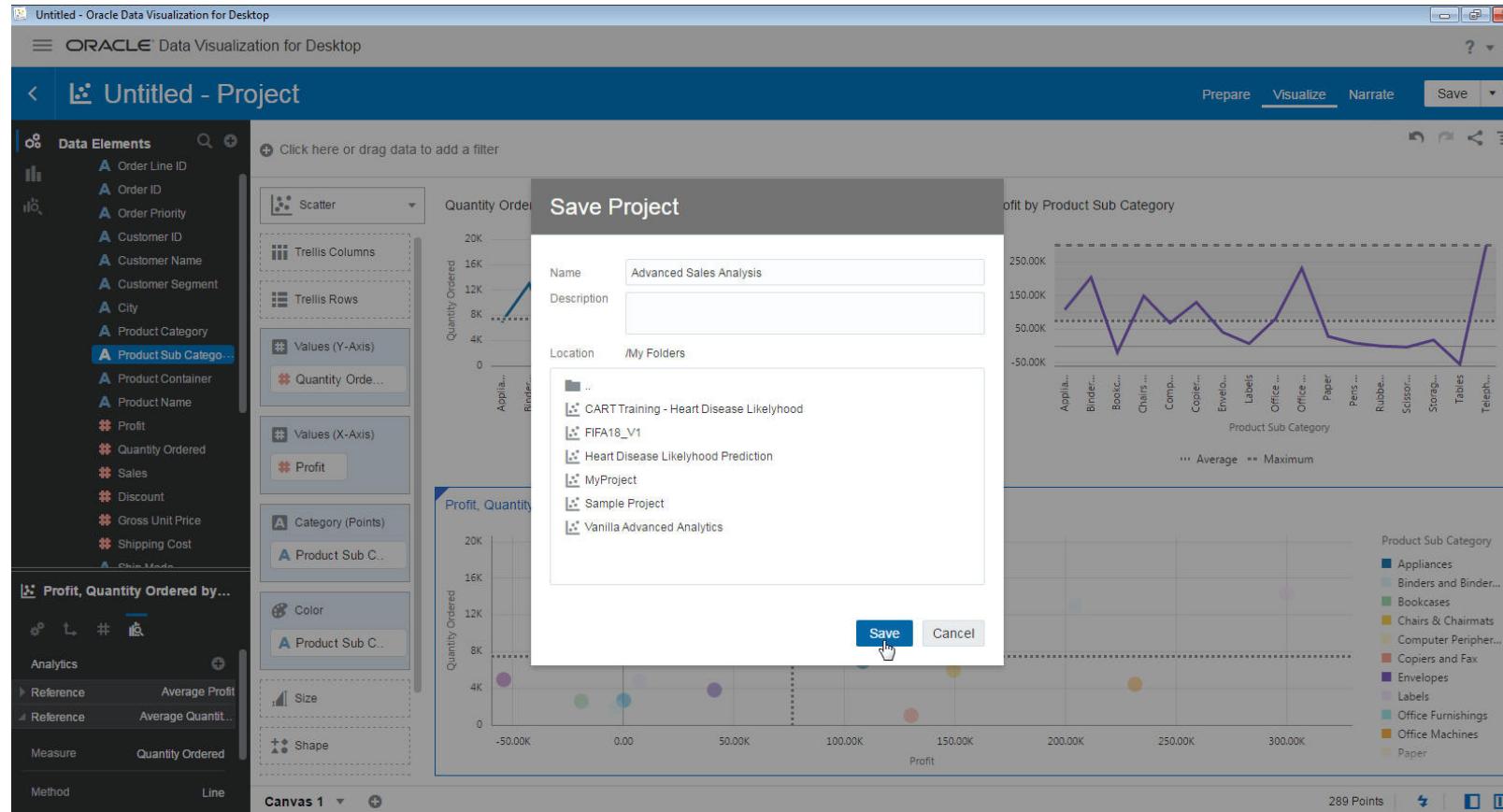


This time, another “Quantity Ordered” average is overlaid on the visual.

It clearly splits the data in four quadrants and suggests tactical steps that business needs to take to improve performance.

Products in Quadrant 2,top-left, need a cost rationalization to improve profits and Products in Quadrant 4, bottom-right, need a marketing push to bump up volumes.

Assignment Screens: Create a Reference for your Data with One-Click



At this stage, you saw how reference line is put to use in a performance evaluation and decision making process. Lets save the project, click on the “Save” button at top right.

On the Save Project Window, for the Name field enter “Advanced Sales Analysis” then click “Save” at the bottom of the Window.

(more assignments on this project to follow)

Data Driven Prediction

Predict The Future



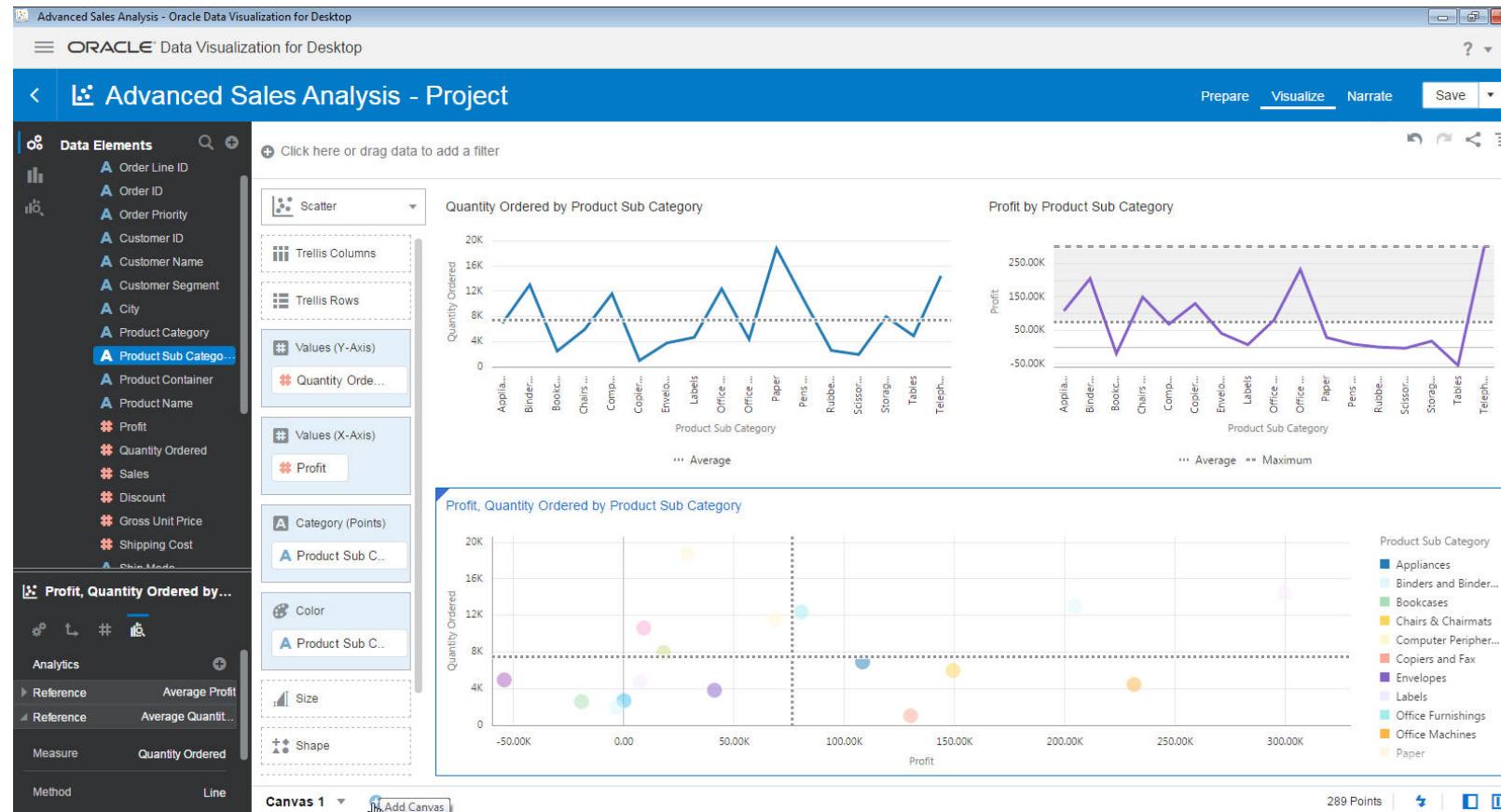
Section 4: Advanced Analytics Made Easy with Oracle Analytics

Generate Trendline and Forecast with One-Click

Where are we heading to ?

- Trendline
 - Highlights a general pattern or direction of data when seen in relation to a time series
 - A Trendline also shows how one measure or business KPI relates with the other
 - This feature is invoked by a right-click menu choice
 - It offers Linear, Exponential and Polynomial methods of trendlines
- Forecast
 - It predicts the measure or business KPI over a time series
 - This feature is invoked by a right-click menu choice
 - It offers choice of the two forecasting models namely Seasonal ARIMA and ARIMA

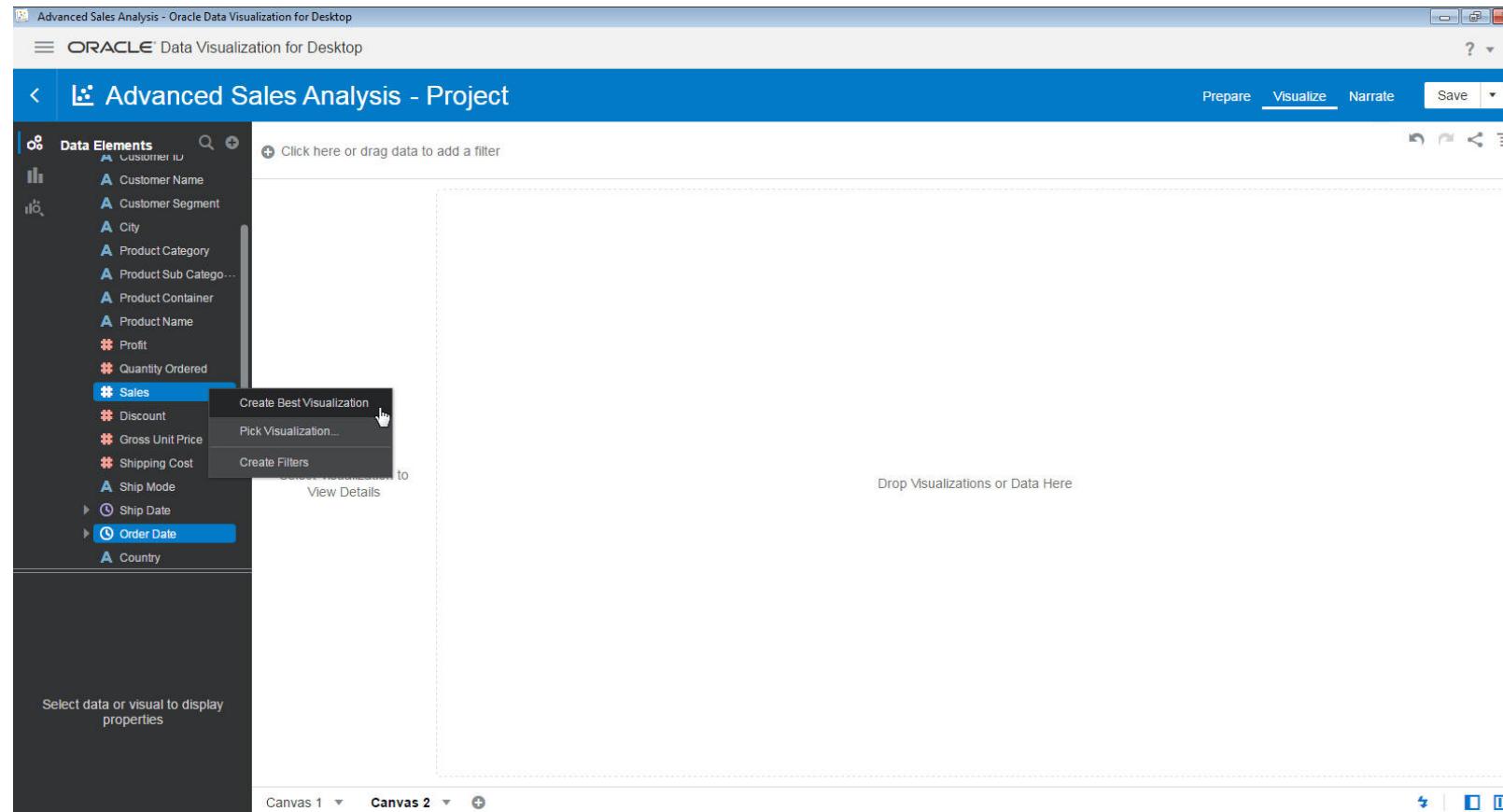
Assignment Screens: Generate Trendline and Forecast with One-Click



Lets continue in the same project. You need to add a canvas.

You click at the + icon at the bottom of the page.

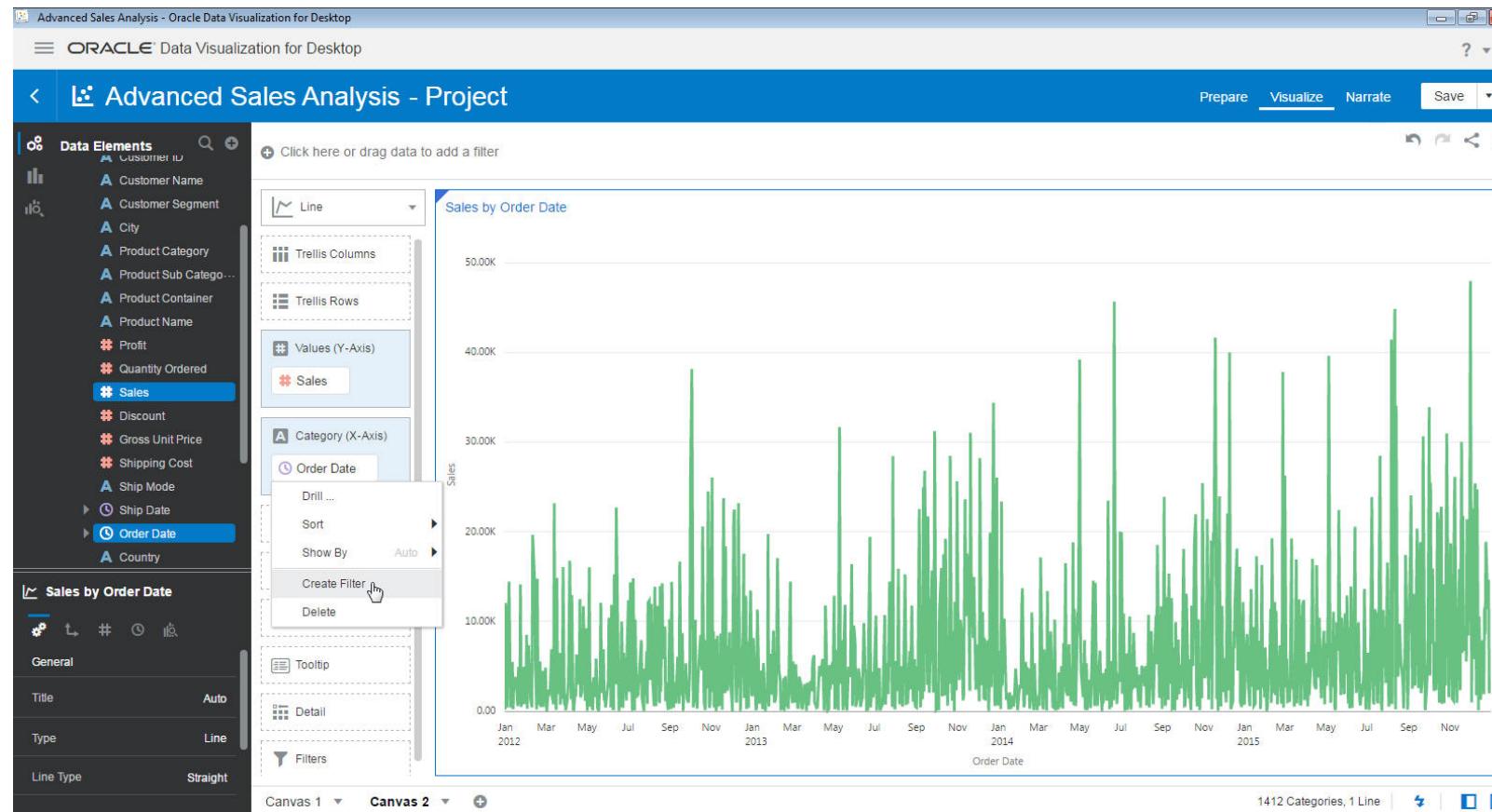
Assignment Screens: Generate Trendline and Forecast with One-Click



A new canvas opens up. You will create a sales over time visual.

For this you, select “Sales” and “Order Date”, keeping the Ctrl Key pressed, right click and select “Create Best Visualization”

Assignment Screens: Generate Trendline and Forecast with One-Click

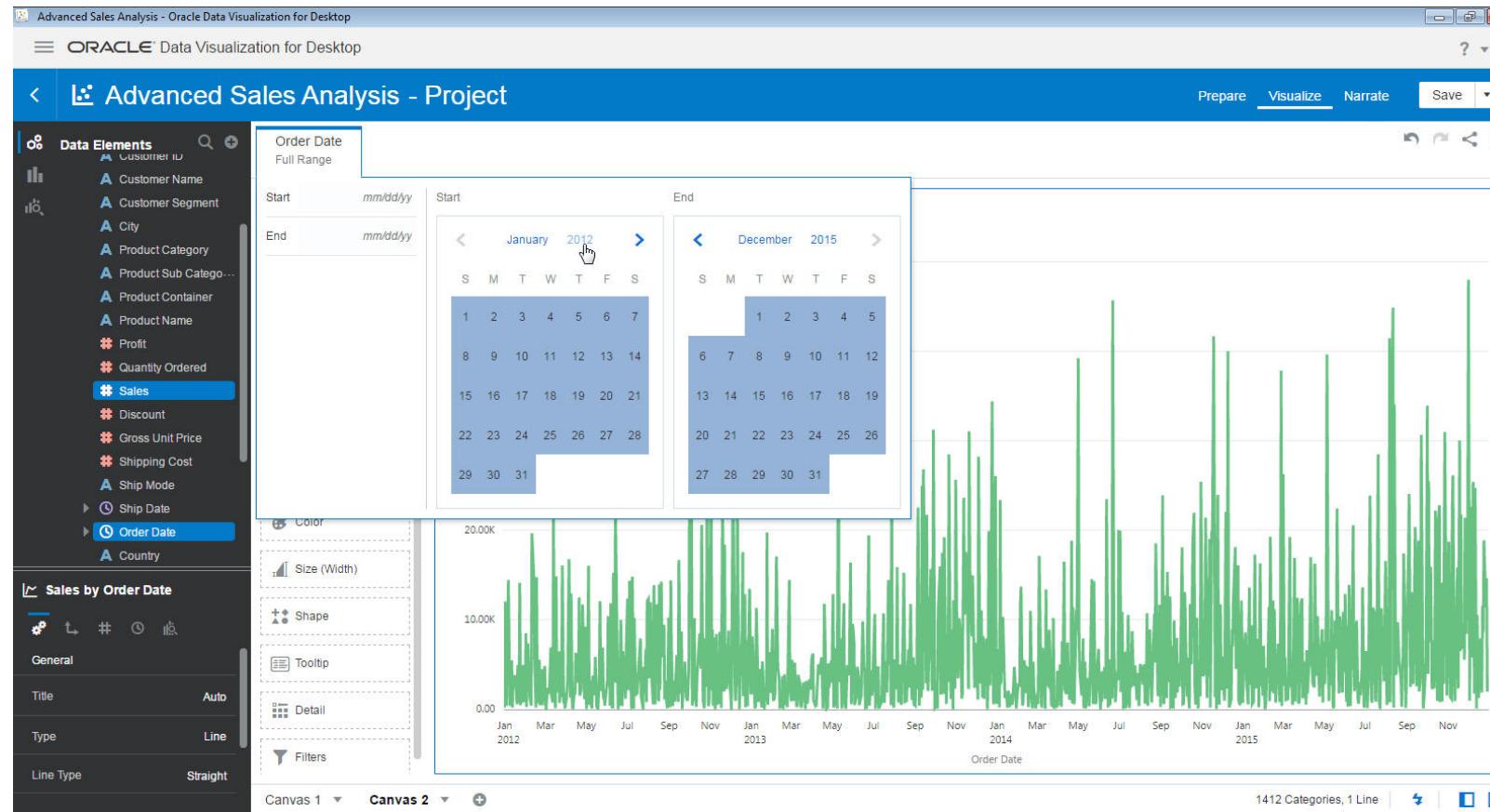


Data across all 5 years show up.

Lets focus on data for the last year.

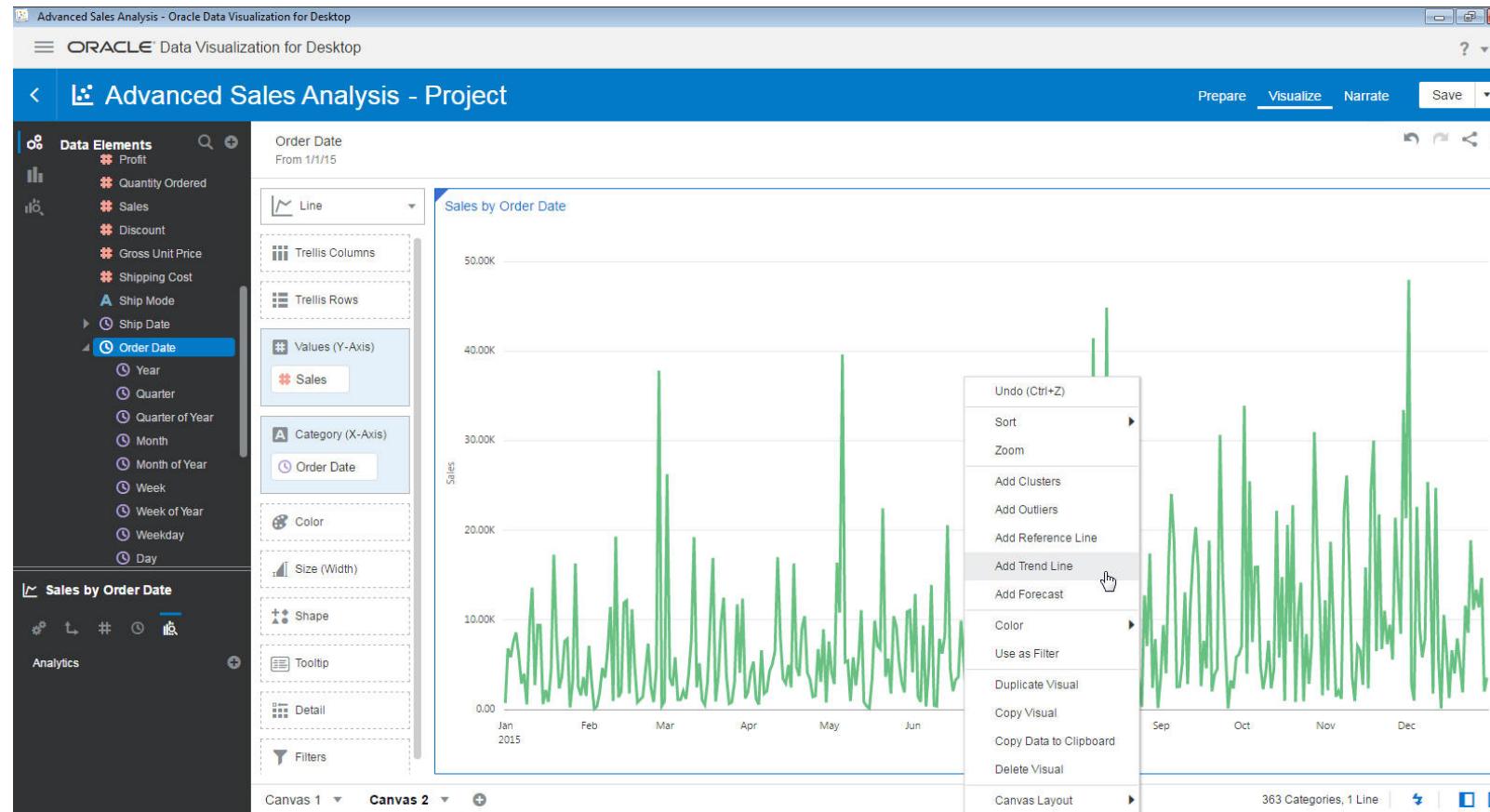
You click on “Order Date” and from the available options select “Create Filter”

Assignment Screens: Generate Trendline and Forecast with One-Click



For the Start Date, choose “January 1, 2015”, then click out of Filter window on the visual.

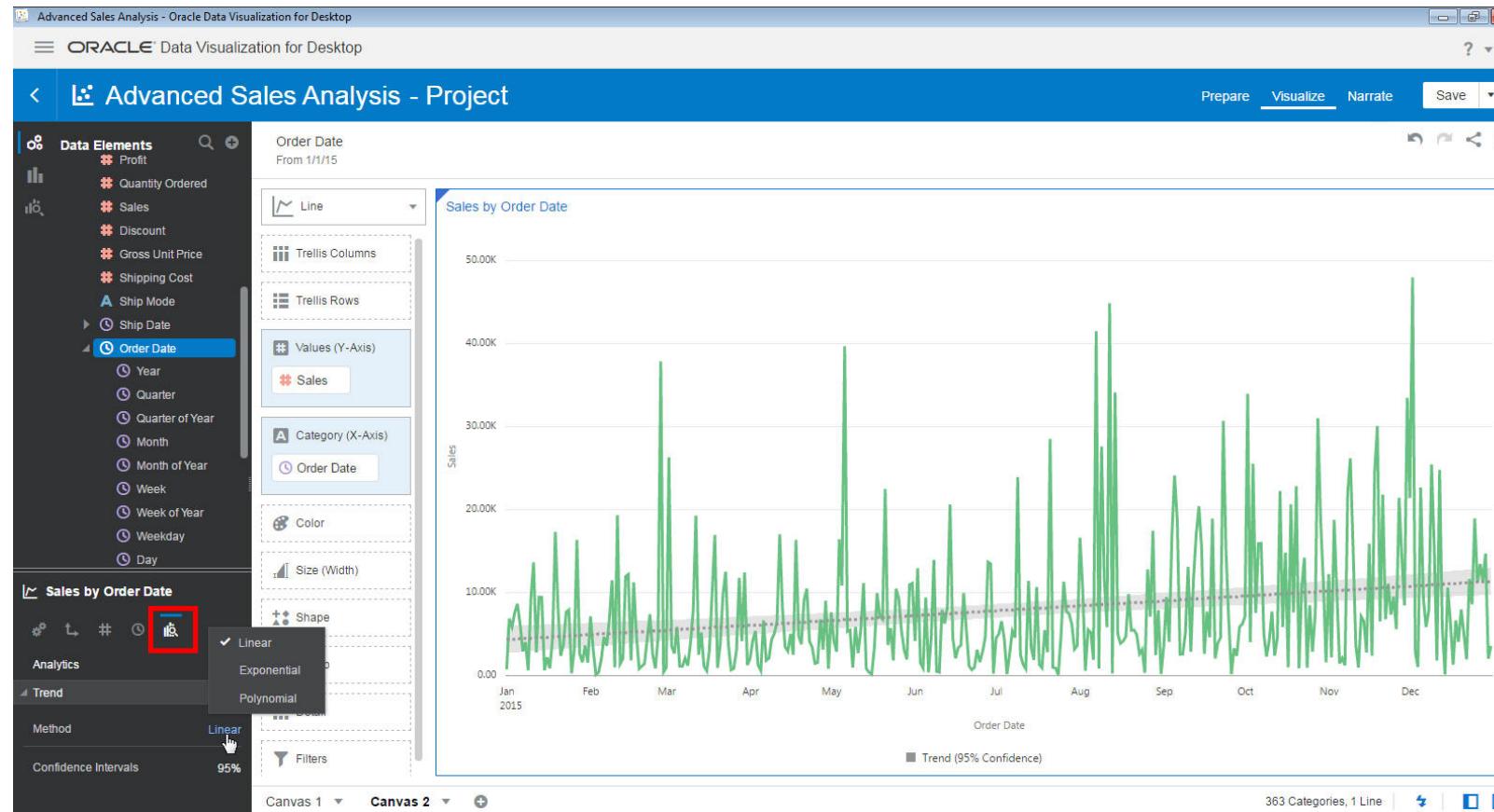
Assignment Screens: Generate Trendline and Forecast with One-Click



The filter applies, it is rather difficult to see a broad direction of sales over the 365 day period on the visual.

You right-click on the visual, select “Add Trend Line”

Assignment Screens: Generate Trendline and Forecast with One-Click



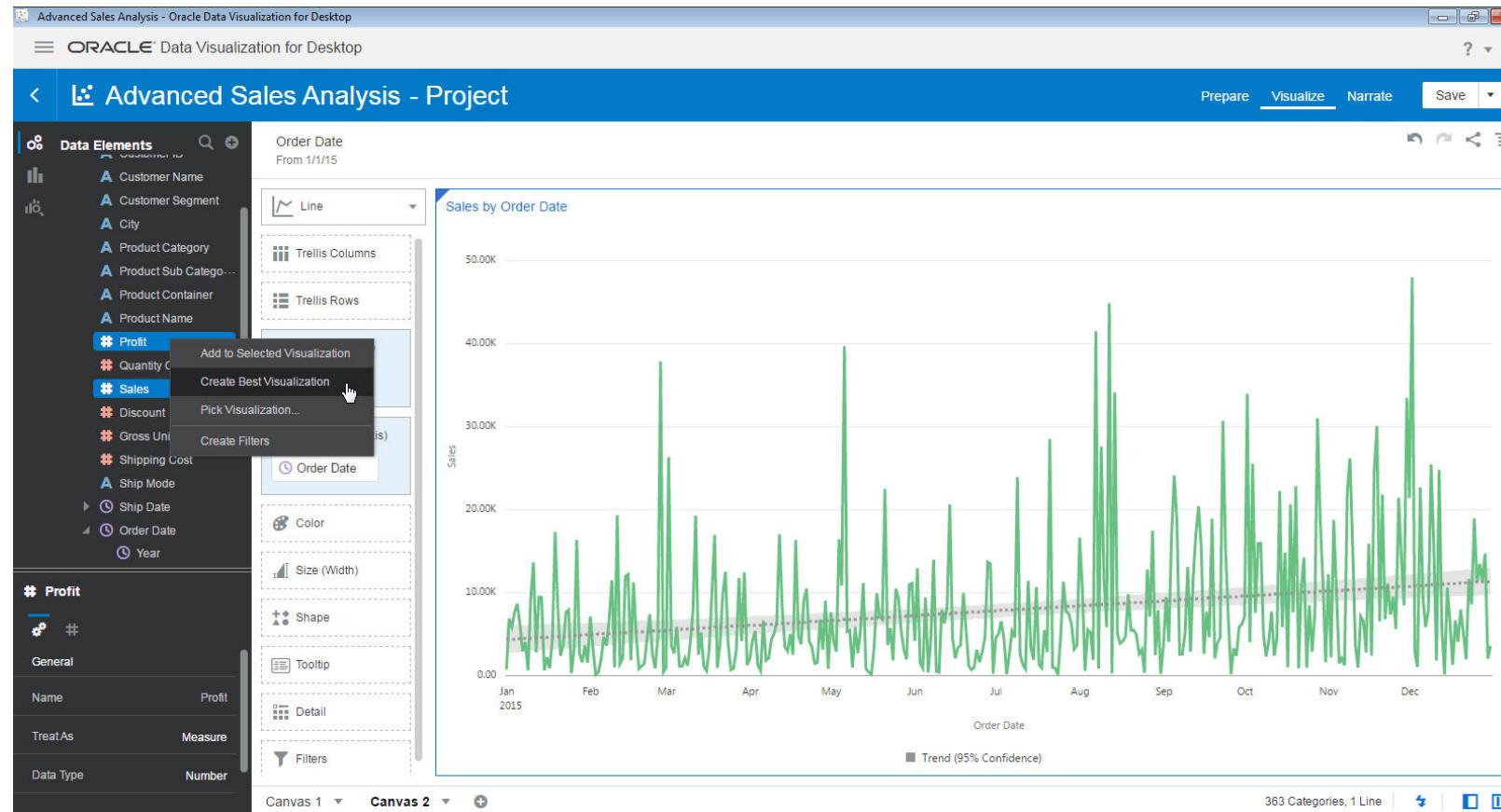
You now are presented with a clear sense of the direction of the Sales. It is an upward trend represented by a linear trend line.

On the left bottom pane, you see the properties of the current visual.

Click on the “Analytics” Tab, in the “Trend” section, click on “Linear”, you see the other OOTB methods.

For the purpose of this project we leave it at linear.

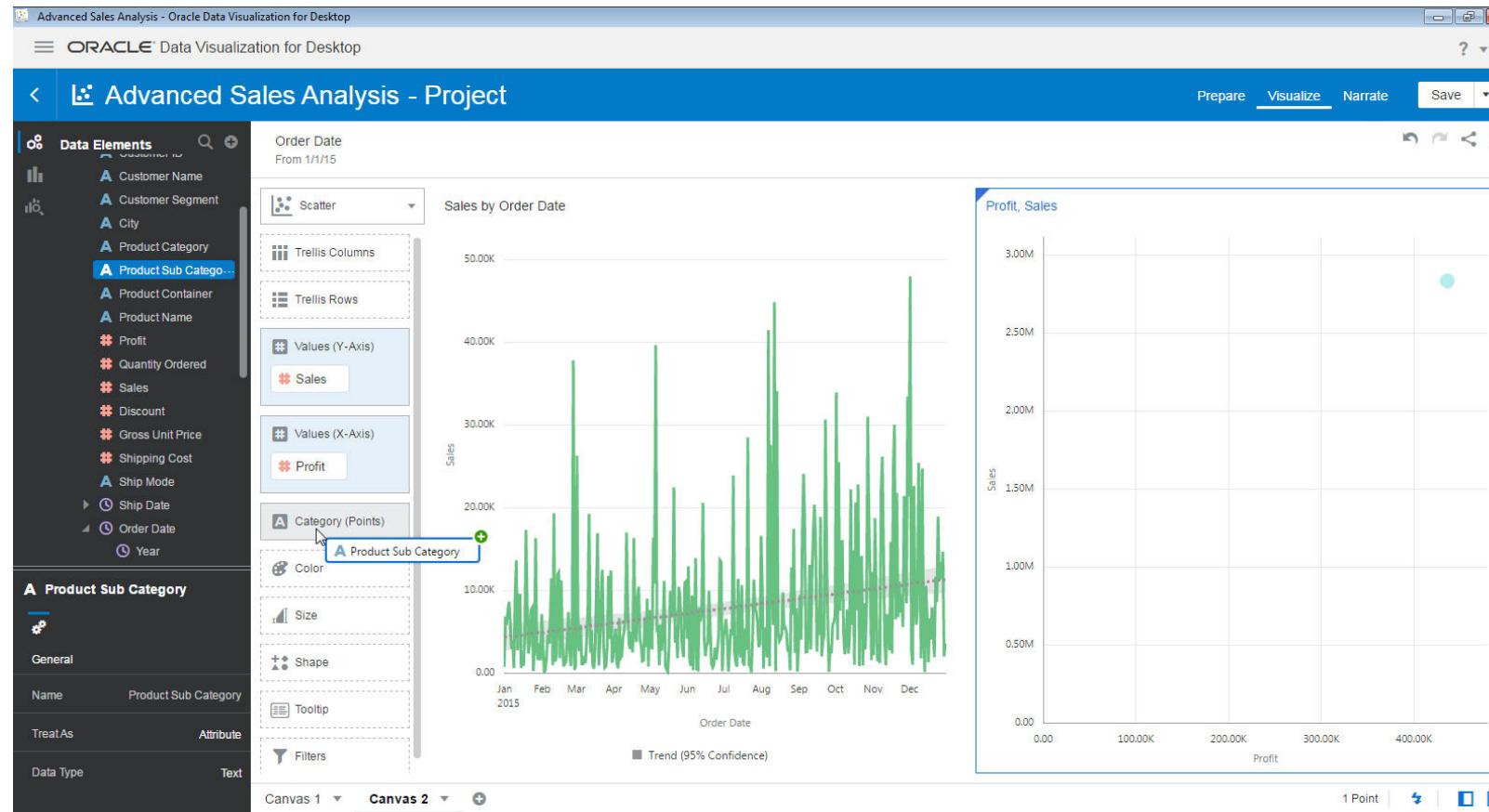
Assignment Screens: Generate Trendline and Forecast with One-Click



You have seen trendline on a time series visual, lets take up a analysis between two measures.

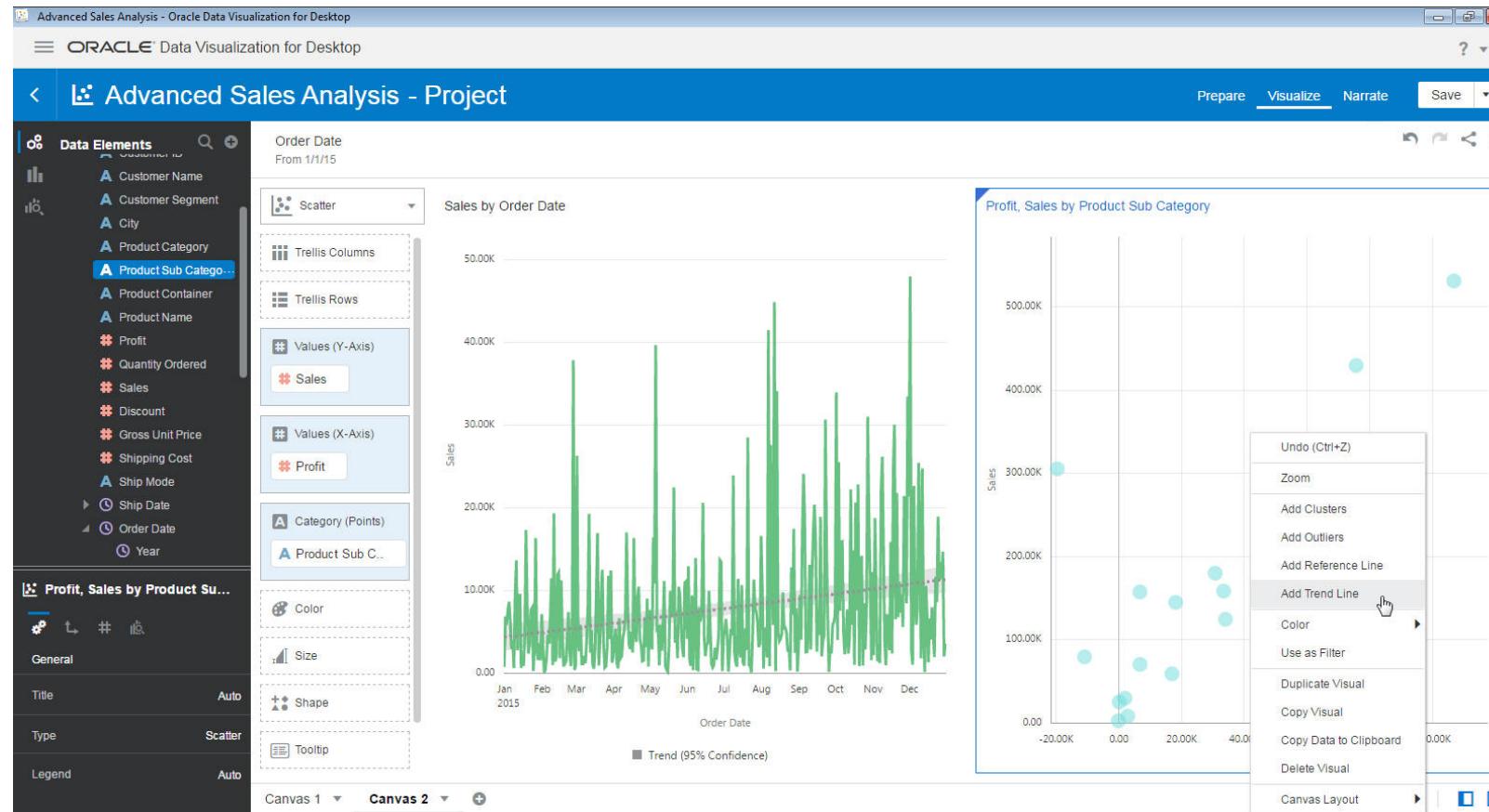
You select “Profit” and “Sales”, with Ctrl Key, pressed on, right-click and select “Create Best Visualization”

Assignment Screens: Generate Trendline and Forecast with One-Click



You Drag and Drop “Product Sub Category” to “Category (Points)” on the grammar panel.

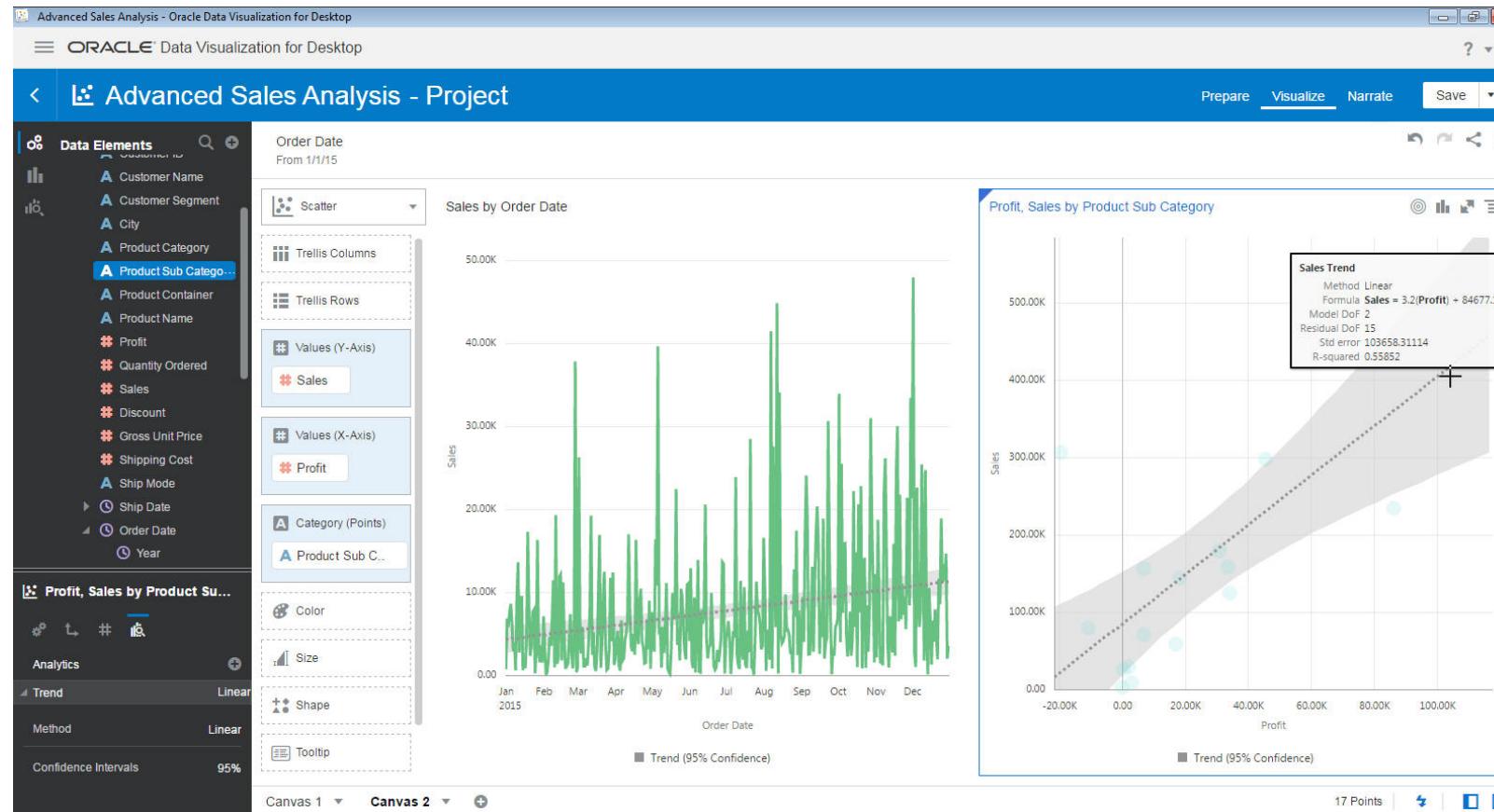
Assignment Screens: Generate Trendline and Forecast with One-Click



You want to understand the relationship between the two measures, in this case two business KPI's.

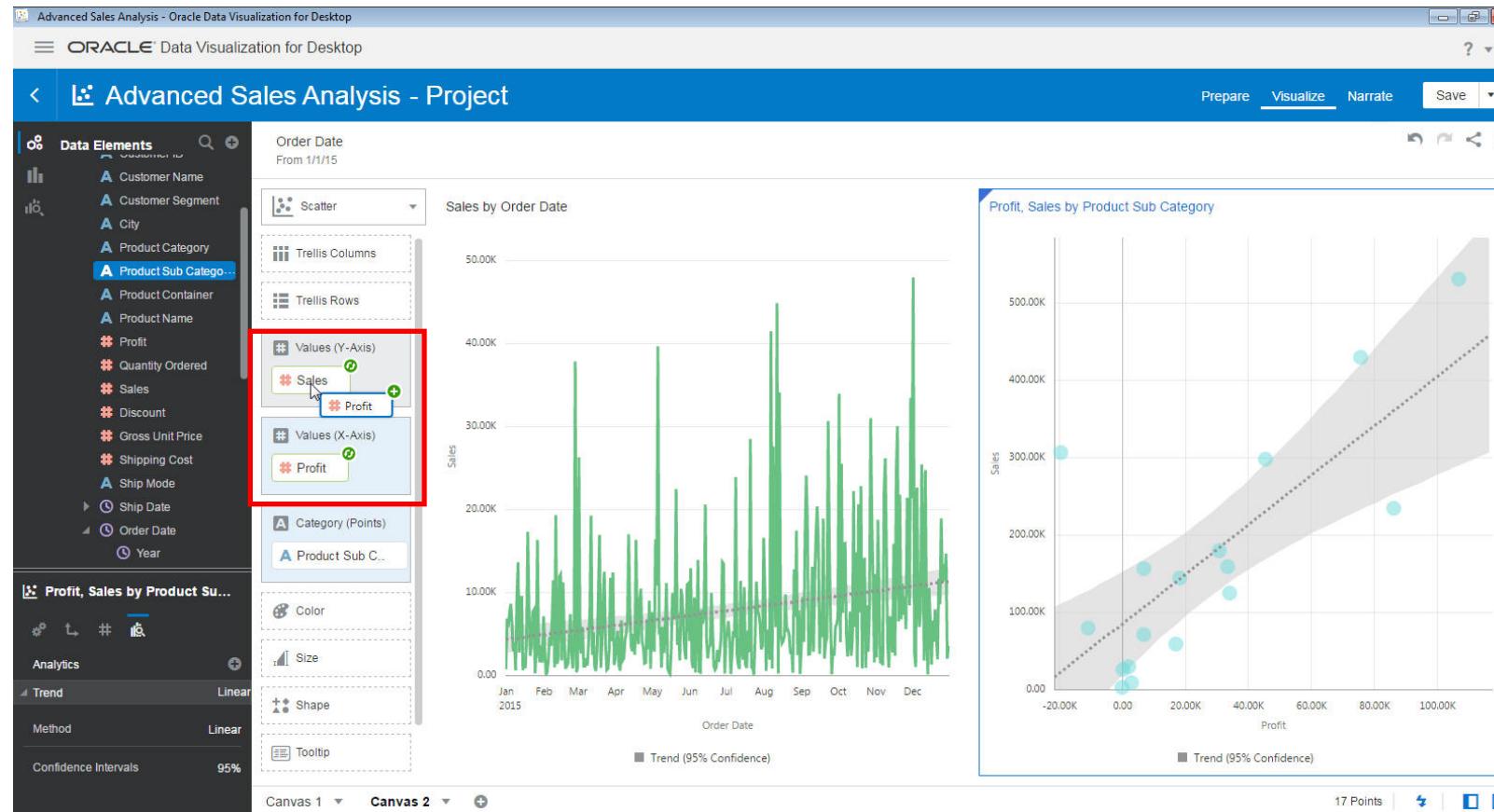
You right-click on the visual and select “Add Trend Line”

Assignment Screens: Generate Trendline and Forecast with One-Click



A Sales trend line is created, the linear line equation or formula, can be used to predict the value of either “Sales” or “Profit”, if one of the variables is known.

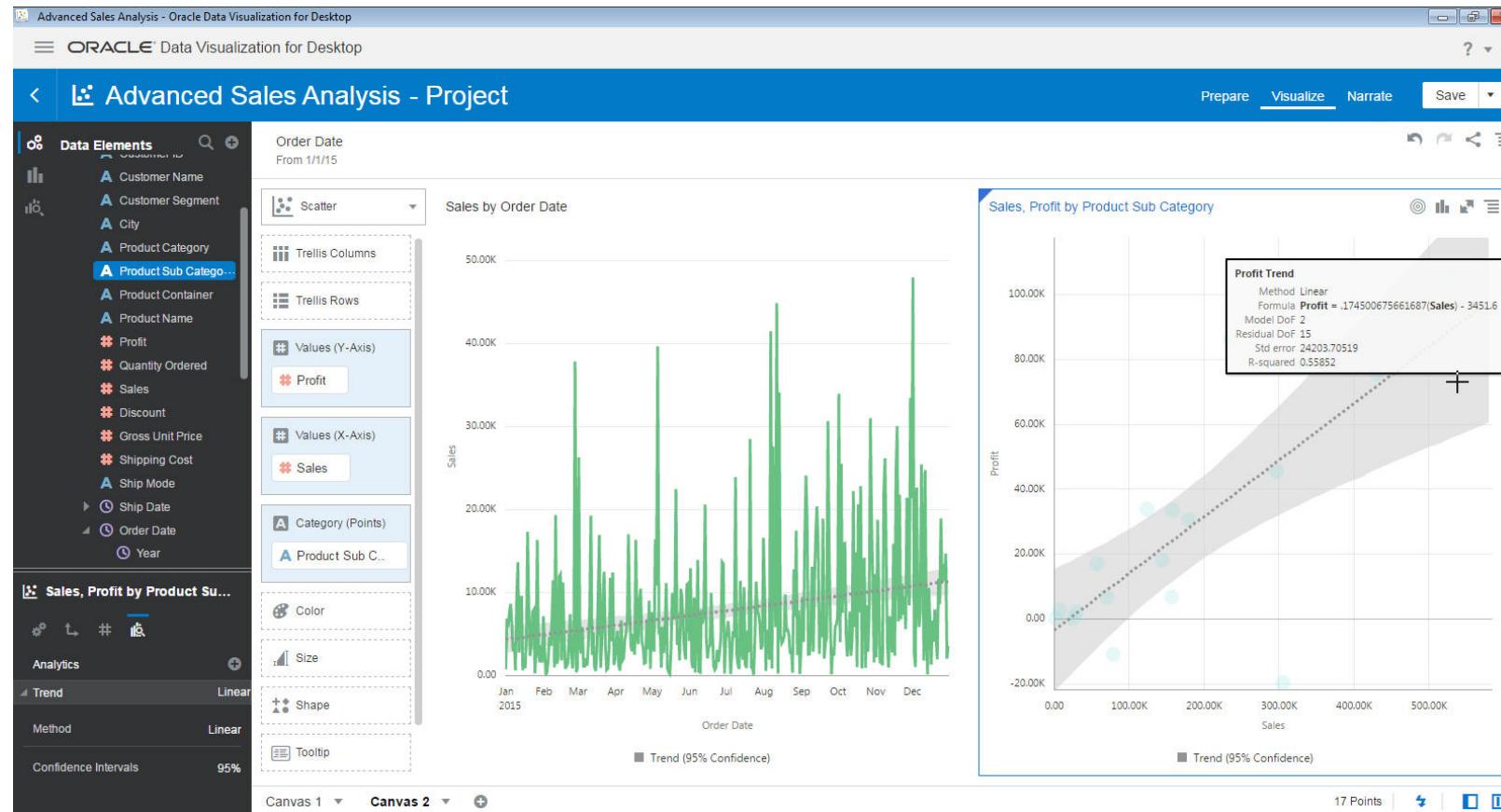
Assignment Screens: Generate Trendline and Forecast with One-Click



You swap profit with sales on this visual at the grammar pane.

You drag and drop Profit on Sales

Assignment Screens: Generate Trendline and Forecast with One-Click

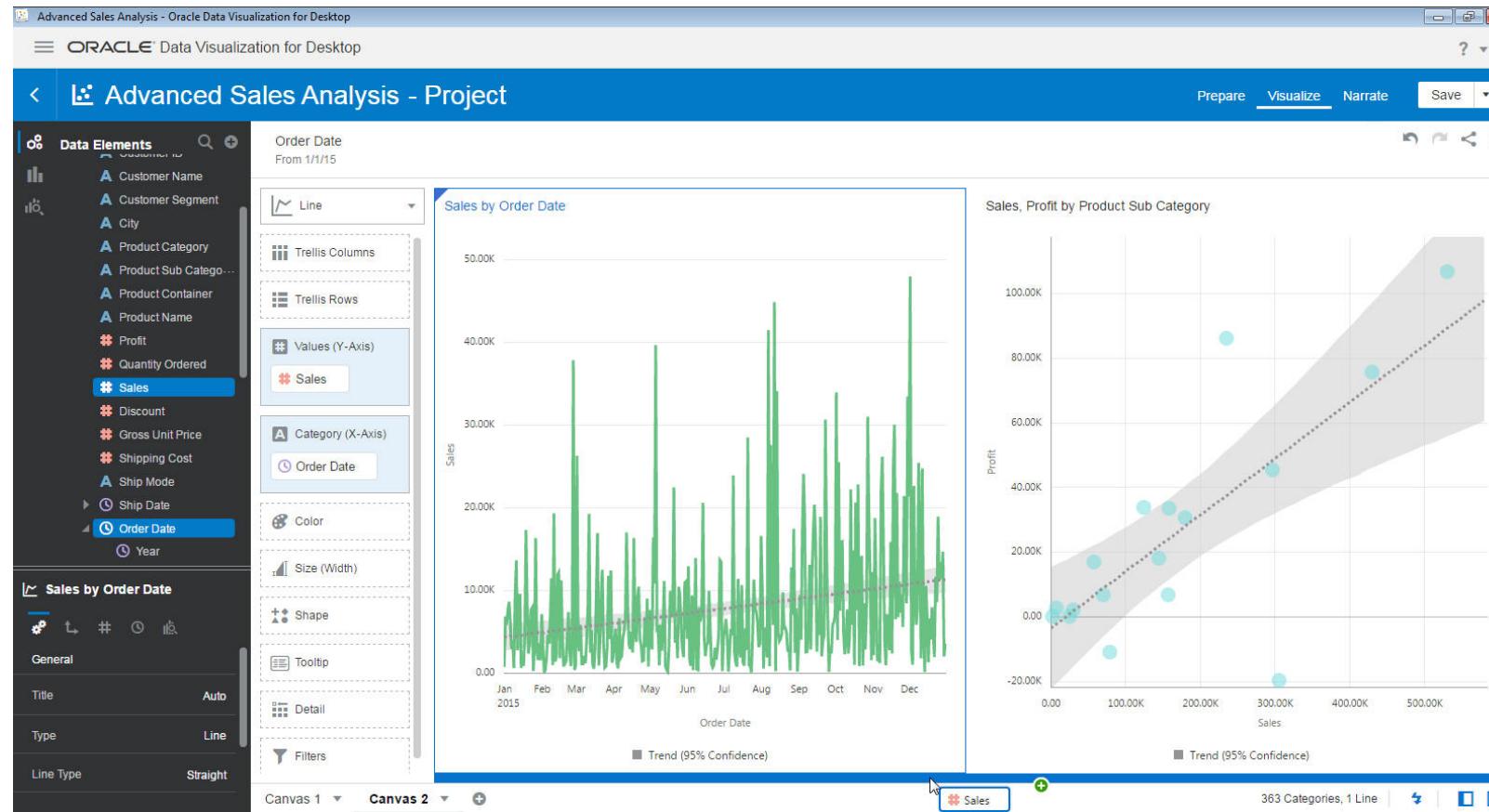


The trend line is now clear, you can compute profit, by substituting the value of Sales in this equation.

You have seen how you can use trend line not only to see trend against a time series, but to use the trend line as a tool to spell out a mathematical relation between two variables.

This relationship can be linear, exponential or polynomial.

Assignment Screens: Generate Trendline and Forecast with One-Click



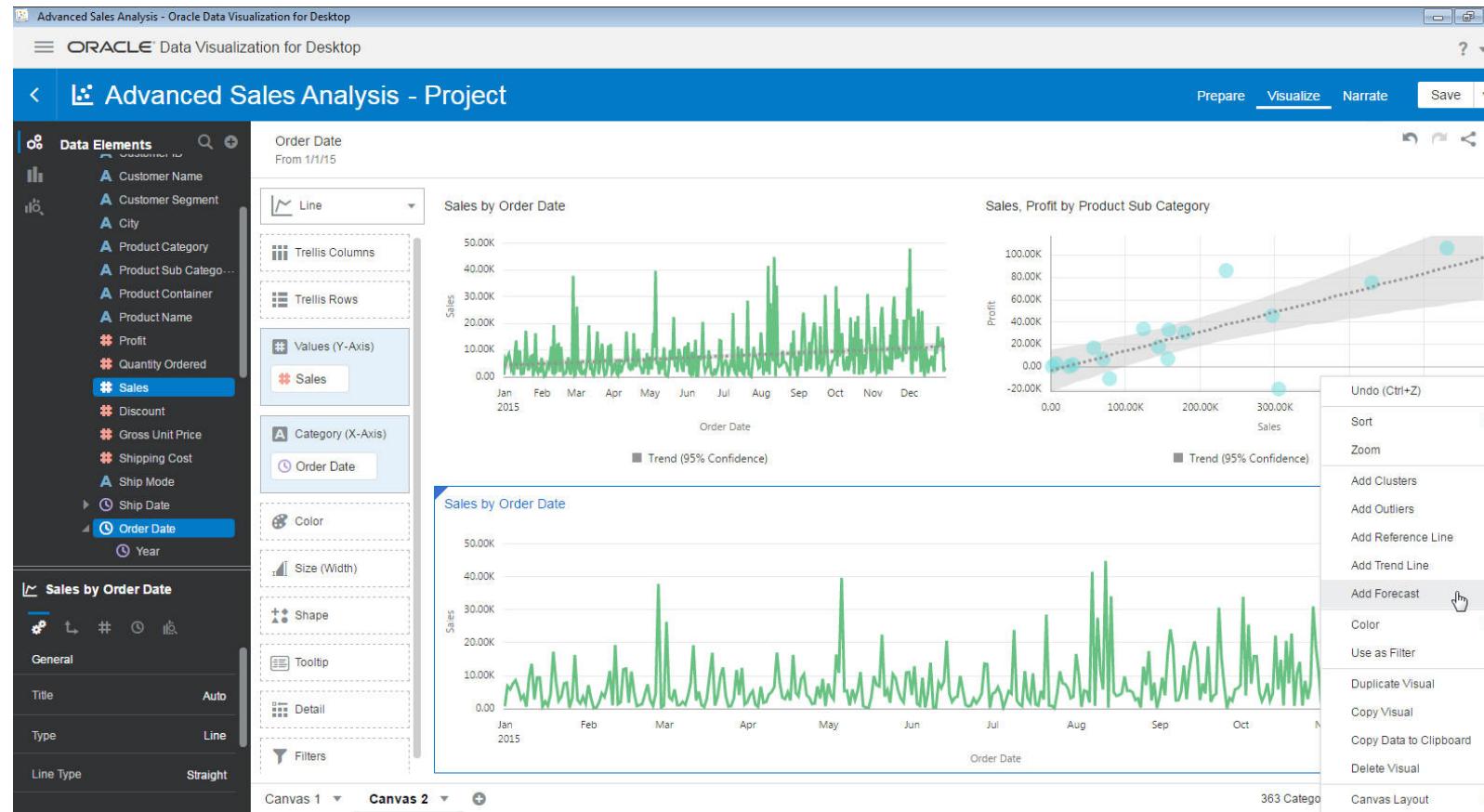
You have your Sales trend, now, can you use it to build forecasted Sales ?

Yes you can !

Lets see how.

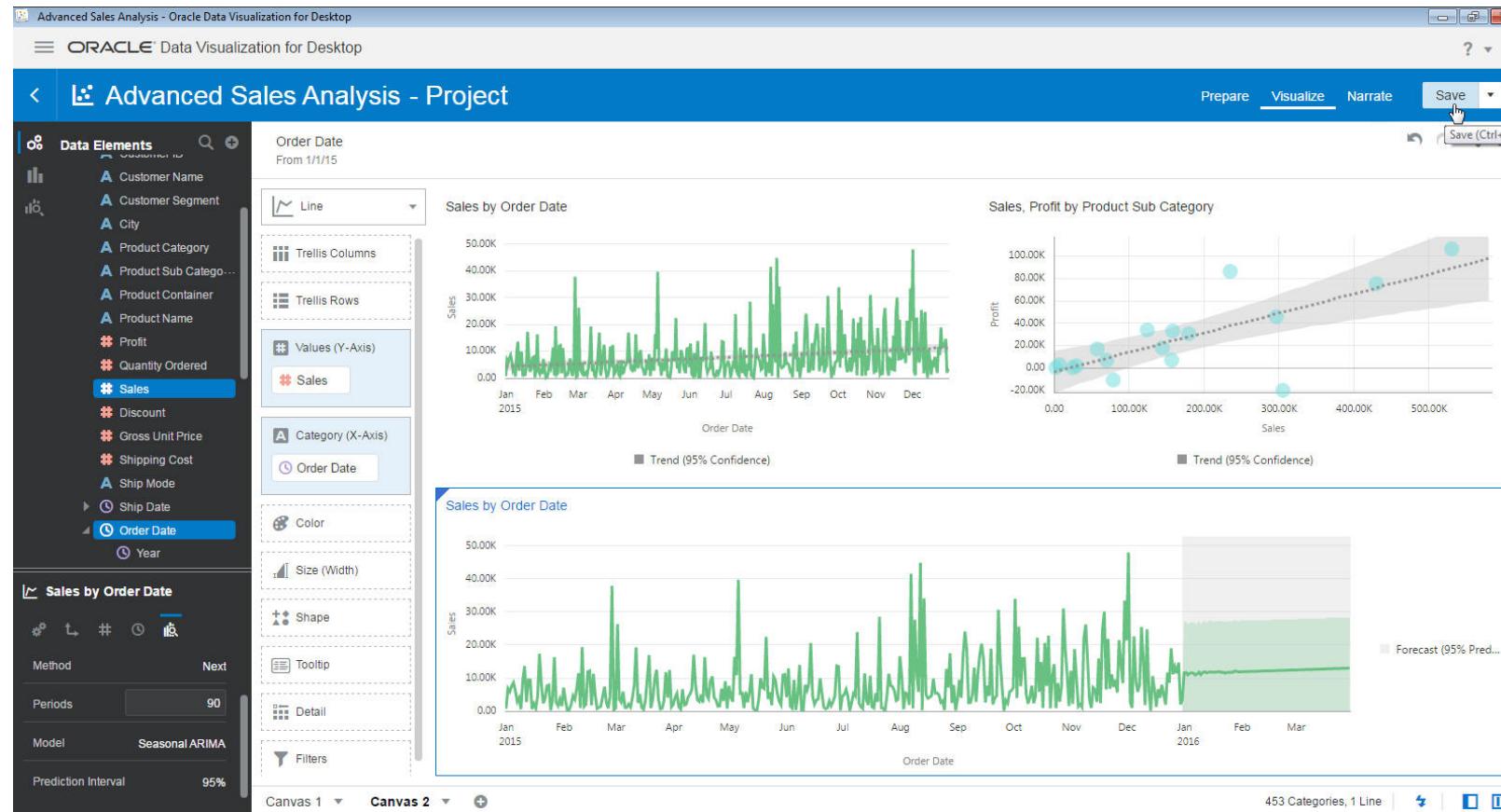
Select “Sales” and “Order Date”, keep the Ctrl Key pressed on, for multiple selection, Drag and drop the same below the two visuals.

Assignment Screens: Generate Trendline and Forecast with One-Click



Right-click on this new visual and select “Add Forecast”

Assignment Screens: Generate Trendline and Forecast with One-Click

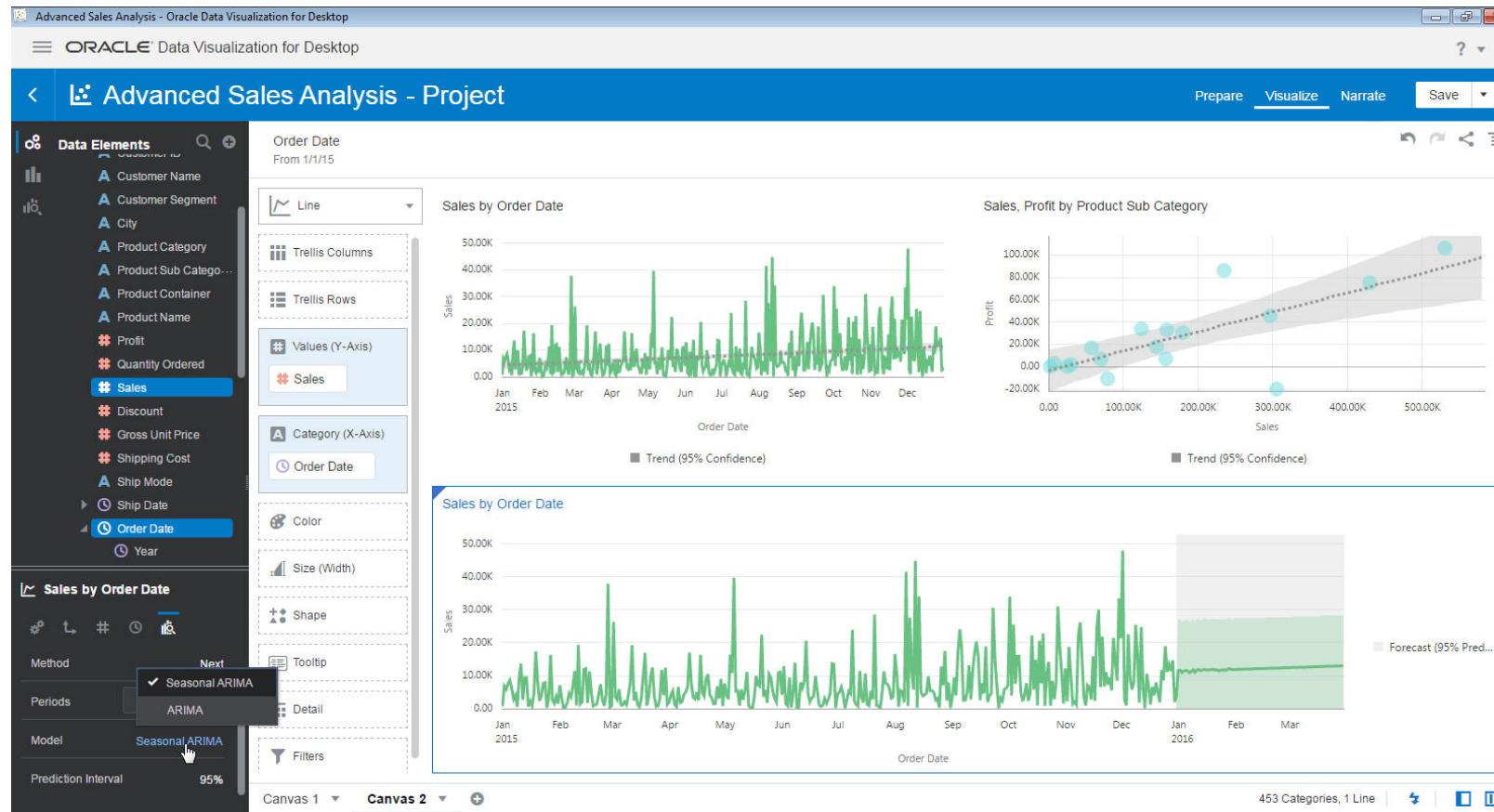


On the left bottom pane, you see the properties of the current visual.

Click on the “Analytics” Tab, in the “Forecast” section, on the Periods field, enter “90”, representing 90 days of forecast period.

Lets Save our project, click “Save” button at top-right

Assignment Screens: Generate Trendline and Forecast with One-Click



While on the properties tab, click on “Seasonal ARIMA”, it shows two options for calculating forecast, “Seasonal ARIMA” and “ARIMA”. For the purpose of the project we leave it at “Seasonal ARIMA”

You saw how we could use trendline and forecasting in problem solving situations.

(more assignments on this project to follow)

Know Your Data

Identify Clusters and Outliers



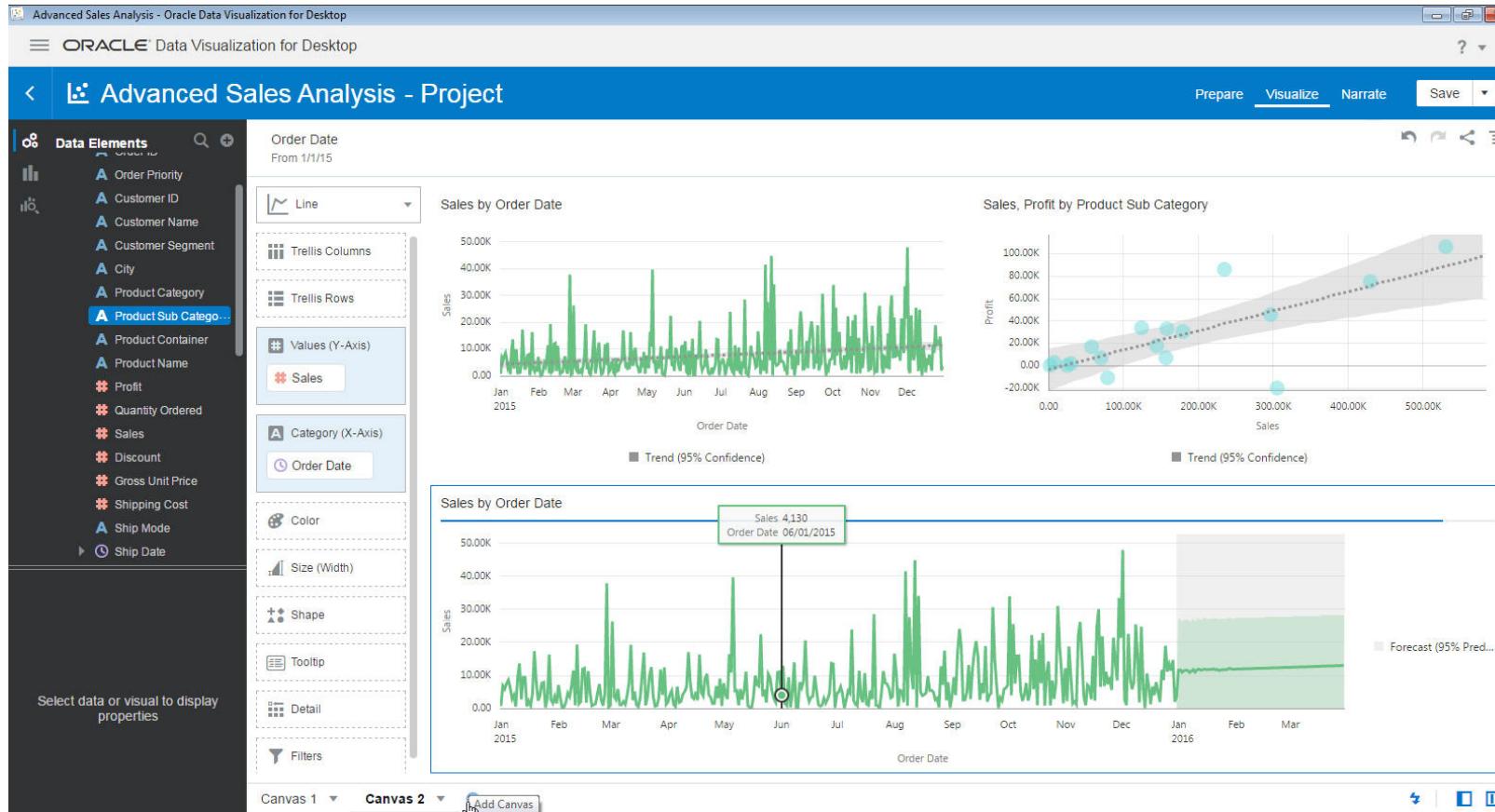
Section 4: Advanced Analytics Made Easy with Oracle Analytics

Generate Outliers and Clusters

Automated Highlighting of Patterns in your Data Set

- Outliers
 - Highlights anomalies in the datapoints on a given visual
 - This feature is invoked by a right-click menu choice
 - OOTB algorithms available are K-Means and Hierarchical Clustering
- Clusters
 - Cluster analysis tries to identify homogenous groups of data-points
 - This feature is invoked by a right-click menu choice
 - OOTB algorithms available are K-Means and Hierarchical Clustering

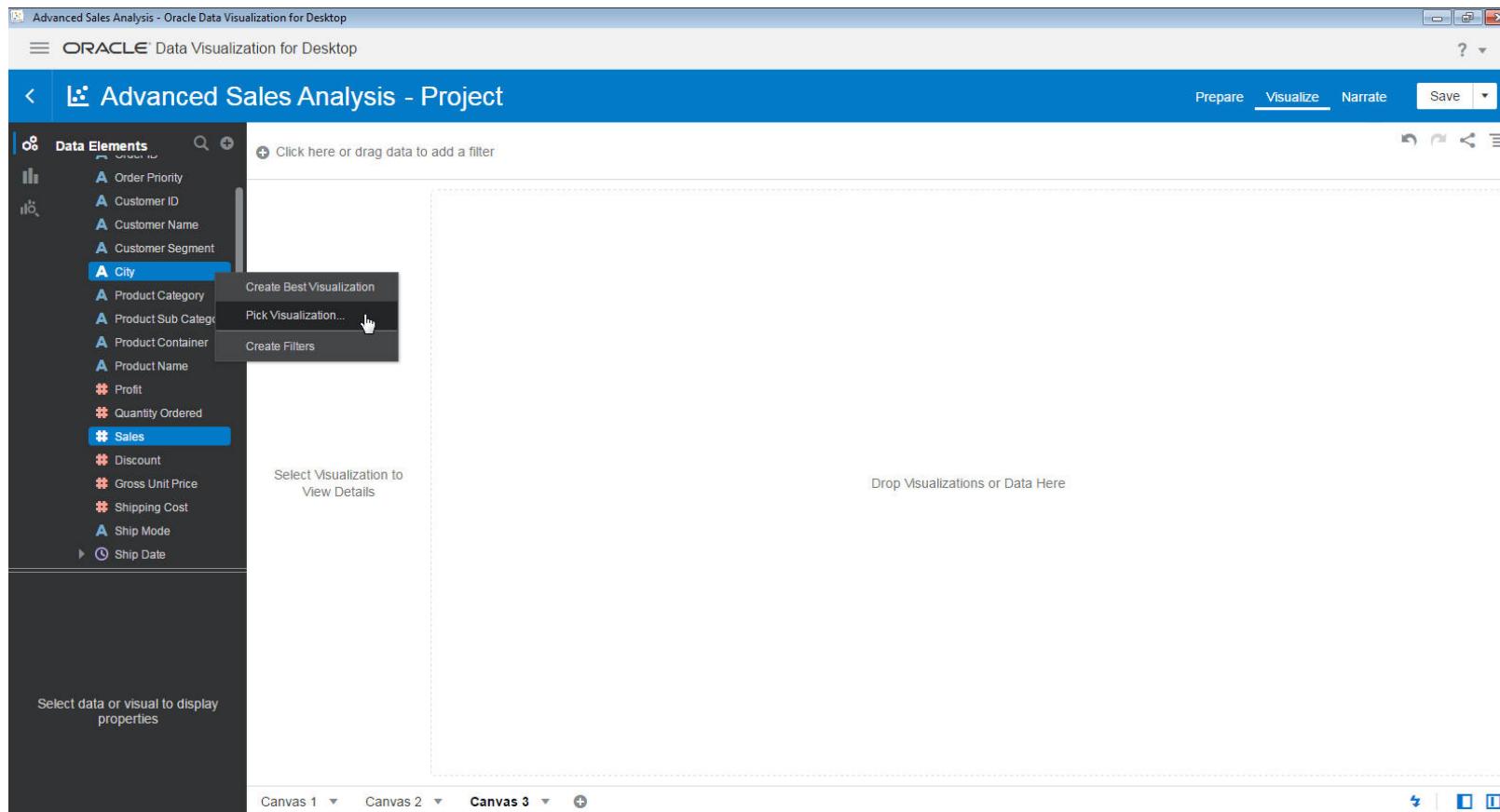
Assignment Screens: Generate Outliers and Clusters



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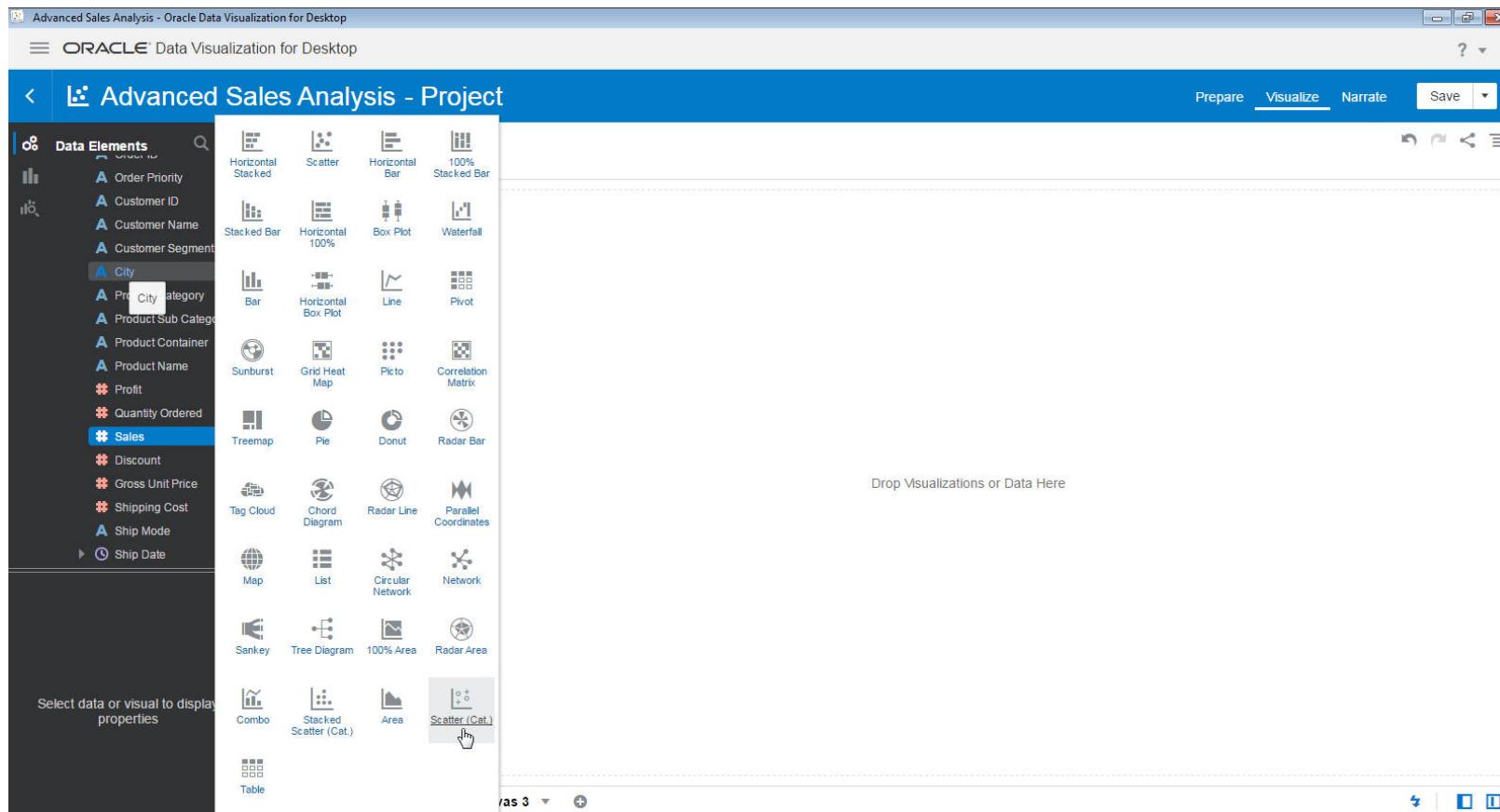
Assignment Screens: Generate Outliers and Clusters



You want to evaluate performance of cities.

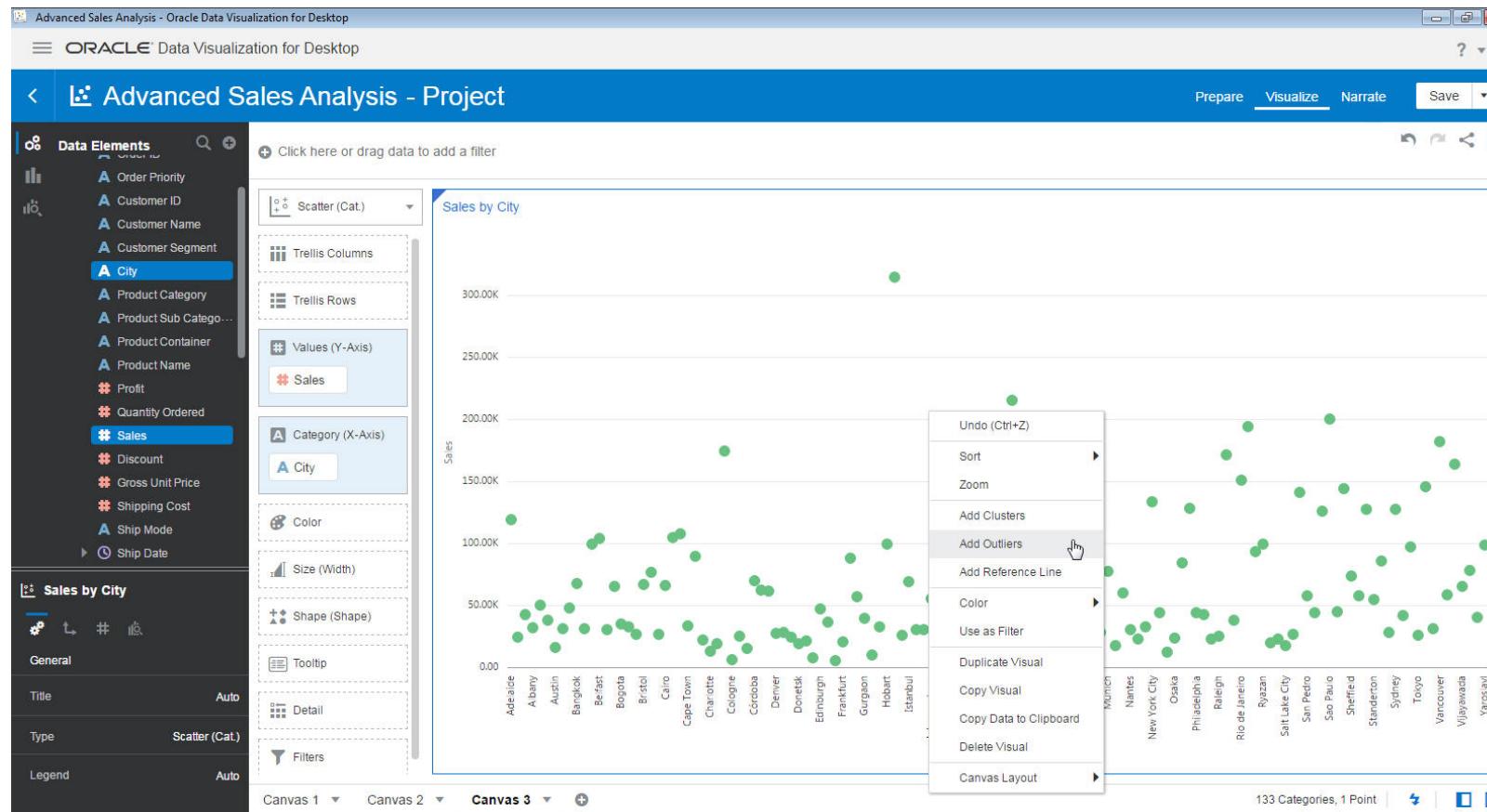
You select “Sales” and “City”, keep the Ctrl Key pressed on, for multiple selection, right-click and select “Pick Visualization”

Assignment Screens: Generate Outliers and Clusters



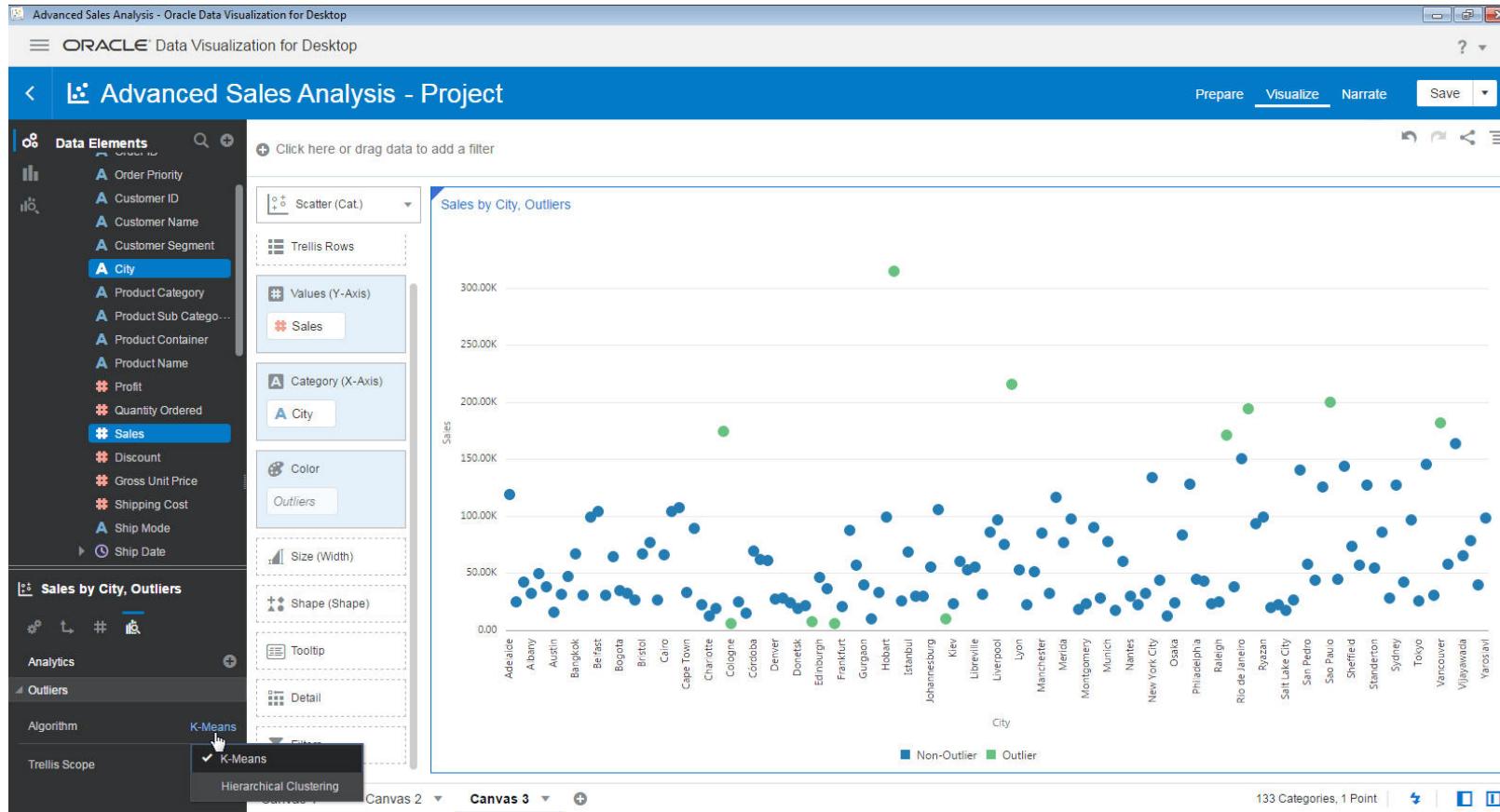
You select the “Scatter(Cat)” from the available list.

Assignment Screens: Generate Outliers and Clusters



Right click the visual and select
“Add Outliers”

Assignment Screens: Generate Outliers and Clusters



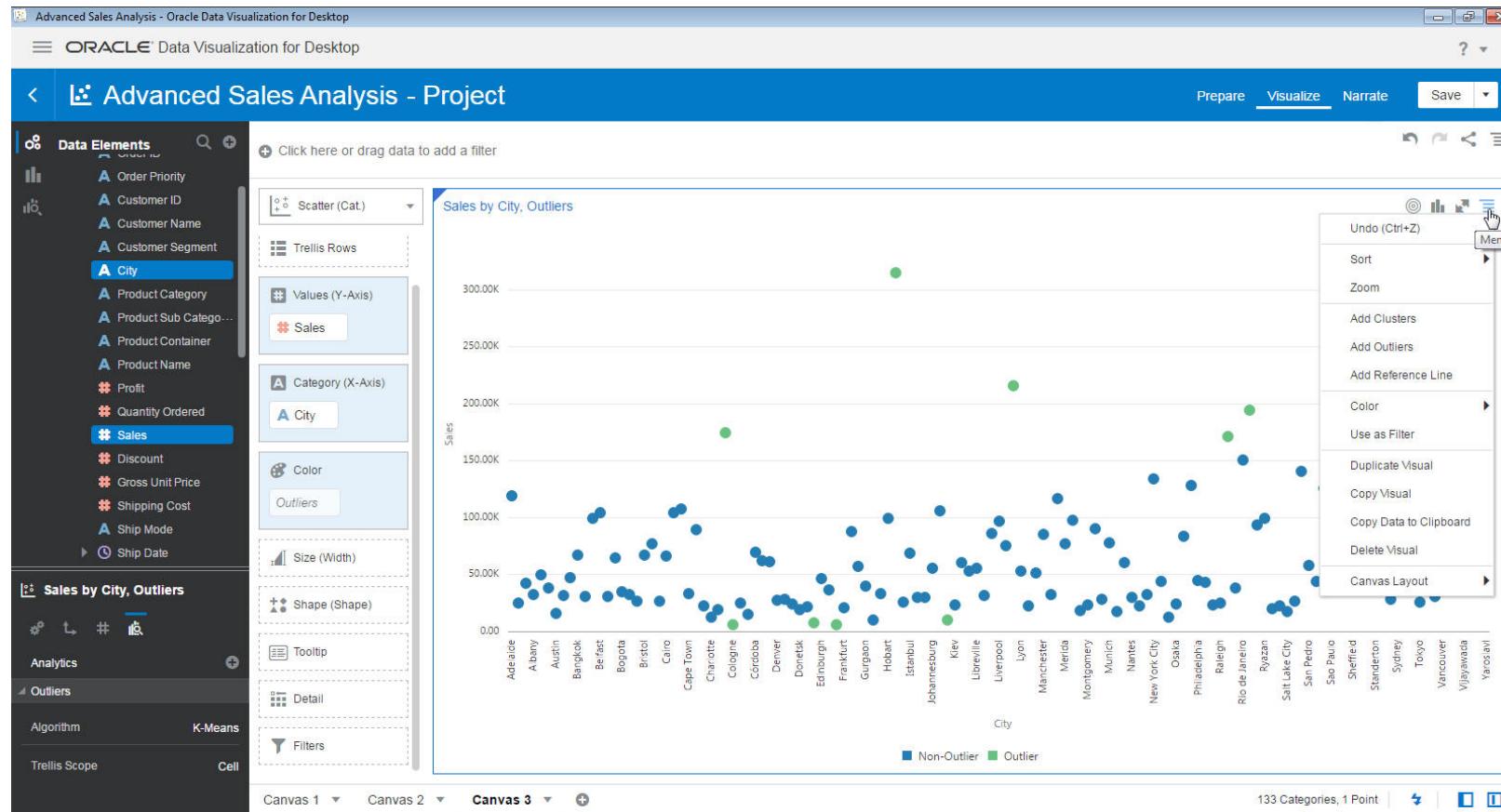
You see the outliers in green, both at the top side and the bottom. These outliers typically require further investigation.

On the left bottom pane, you see the properties of the current visual.

Click on the “Analytics” Tab, in the “Outliers” section, on the Algorithm field, Click on “K-Means”, it shows the two algorithms available to choose from.

For the current project, we leave it at “K-Means”

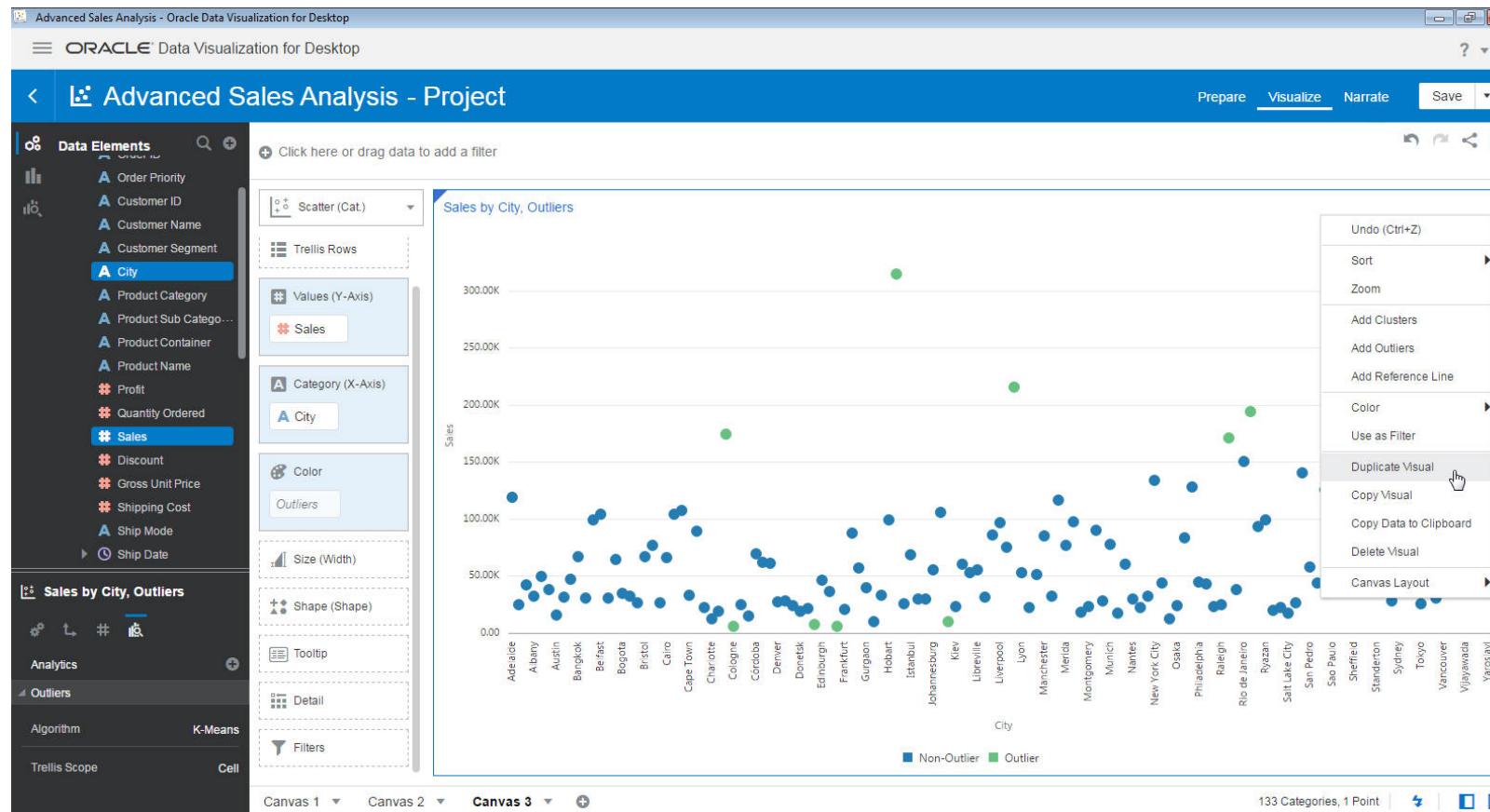
Assignment Screens: Generate Outliers and Clusters



Lets create another visual, quickly and see outliers for a different measure.

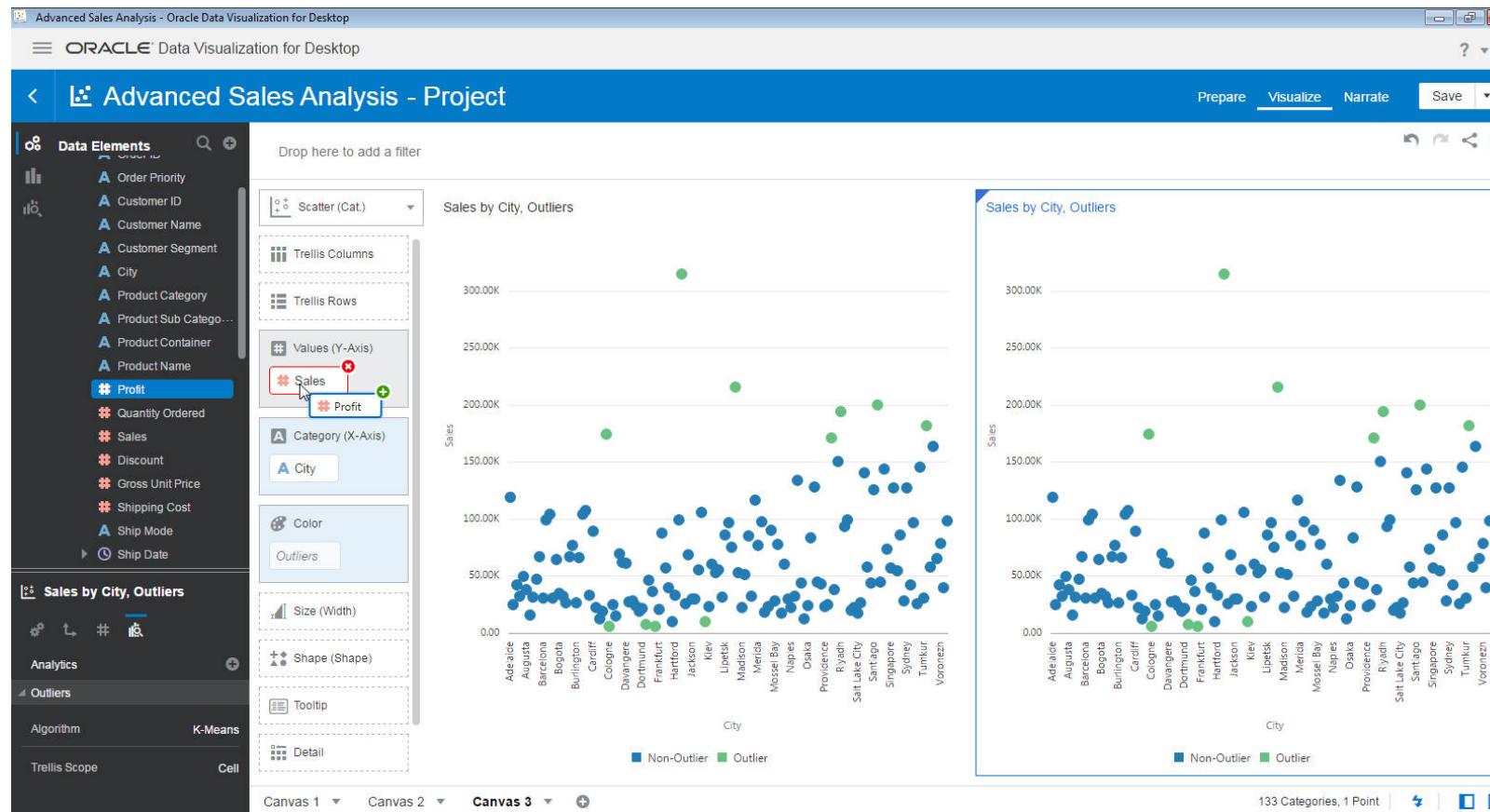
Click on the Menu icon on the visual

Assignment Screens: Generate Outliers and Clusters



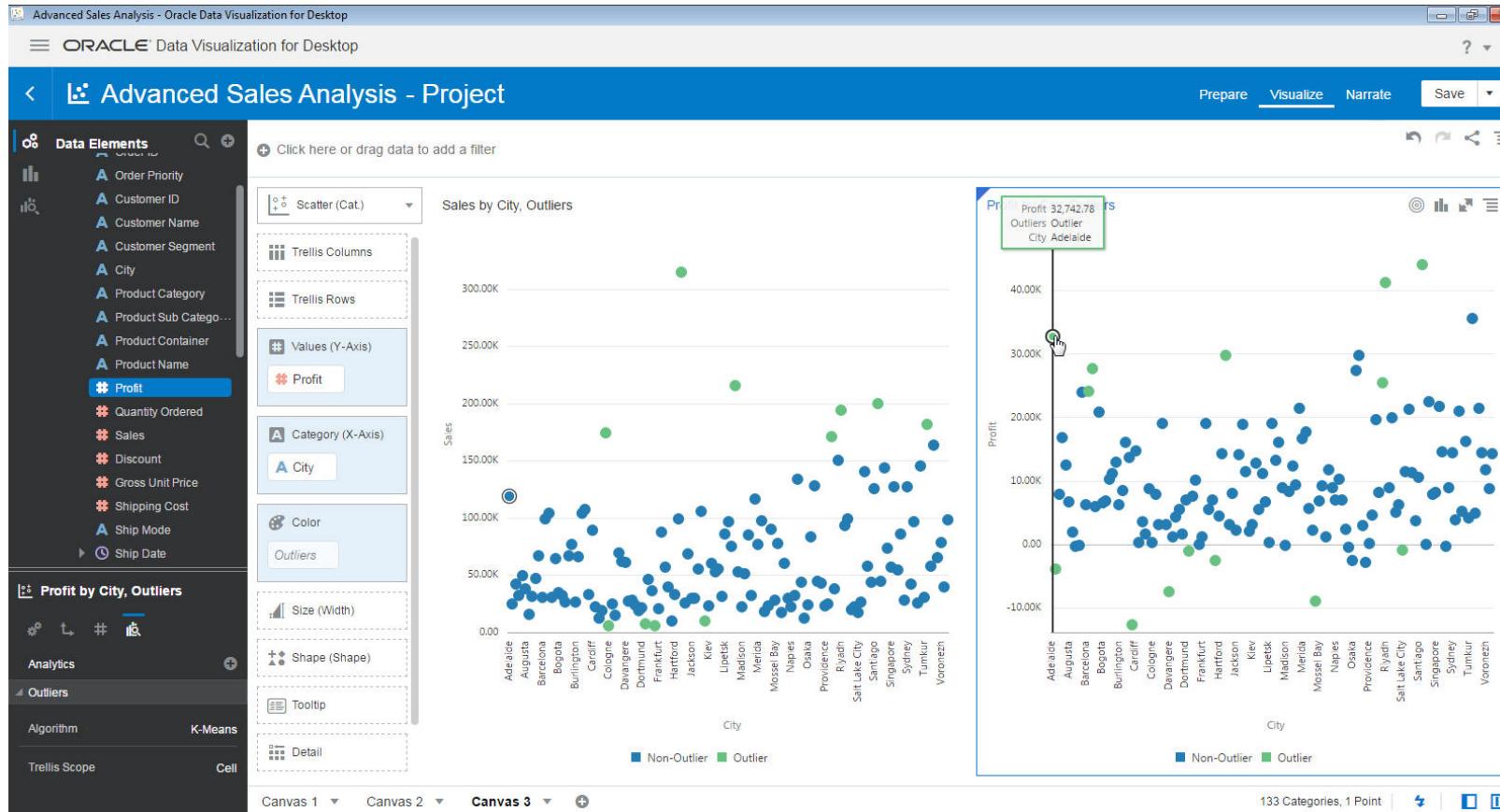
Select “Duplicate Visual”

Assignment Screens: Generate Outliers and Clusters



Drag and Drop “Profit” on “Sales”

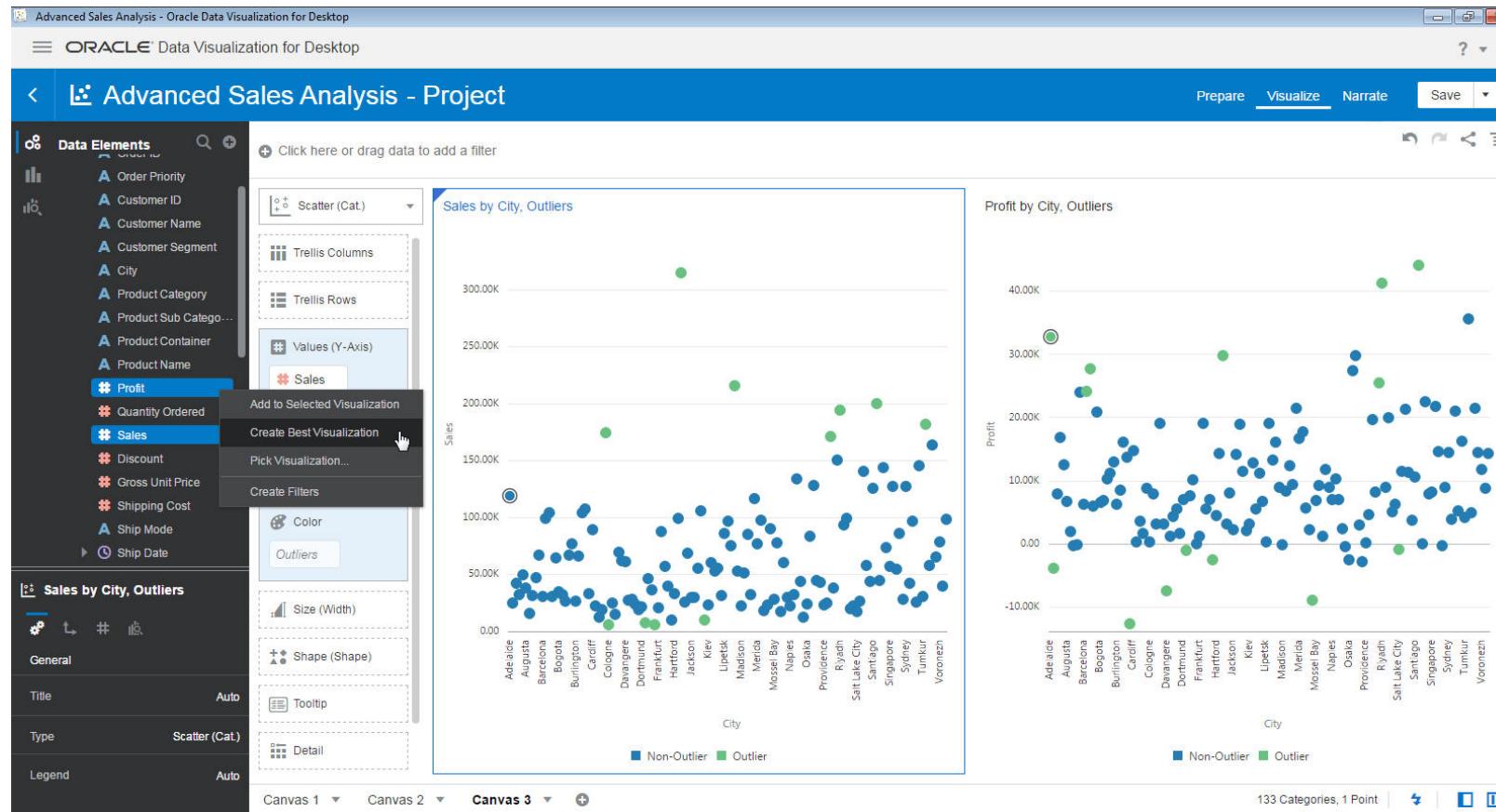
Assignment Screens: Generate Outliers and Clusters



That makes it a visual with Profit by Cities, showing outliers.

City of “Adelaide” can be an Outlier, by “Profit”, but a Non-Outlier when algorithm is run with Sales to identify Outliers

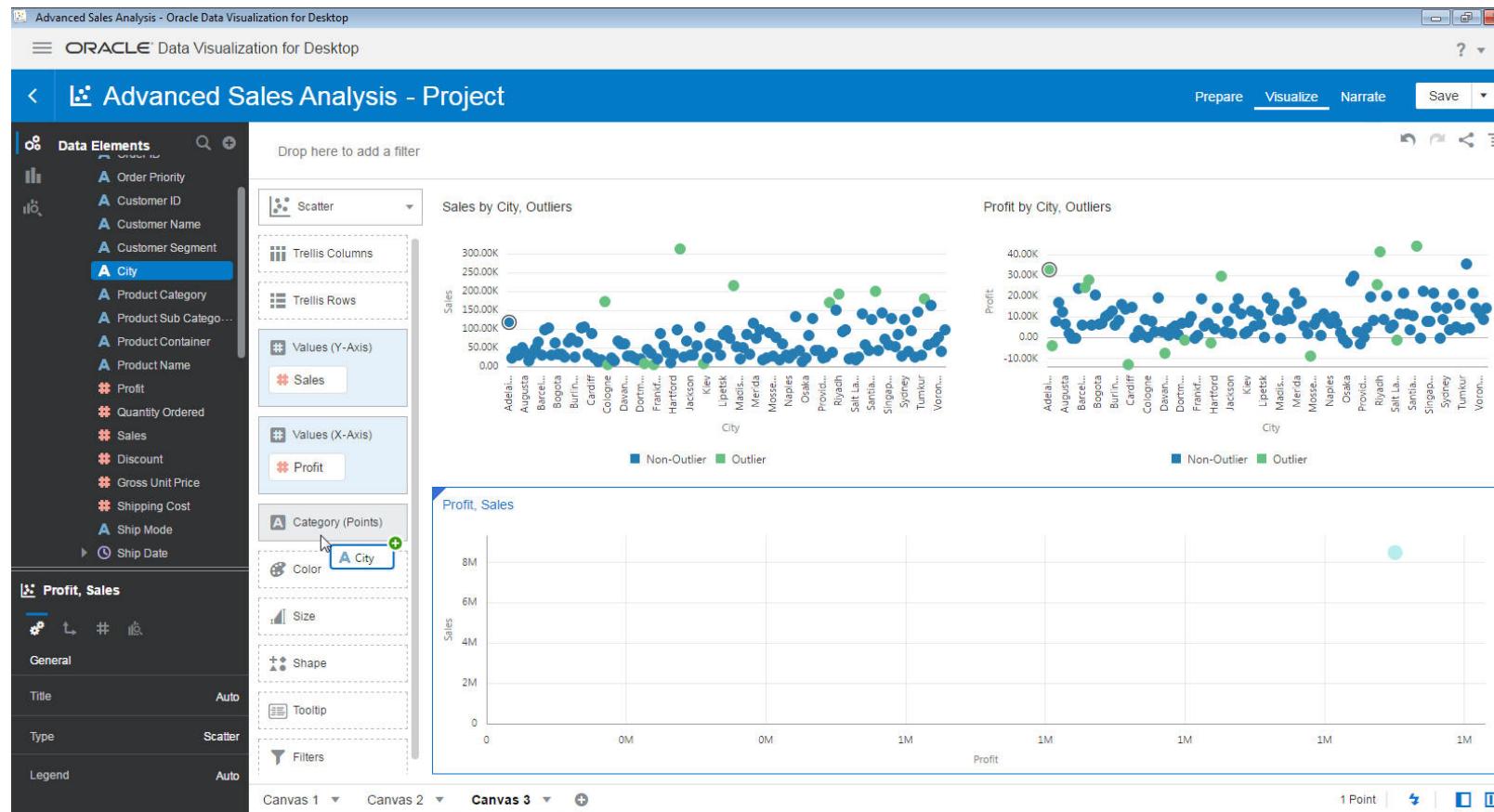
Assignment Screens: Generate Outliers and Clusters



You saw how outliers can be found by using single measure, now you will find outliers for multiple measures.

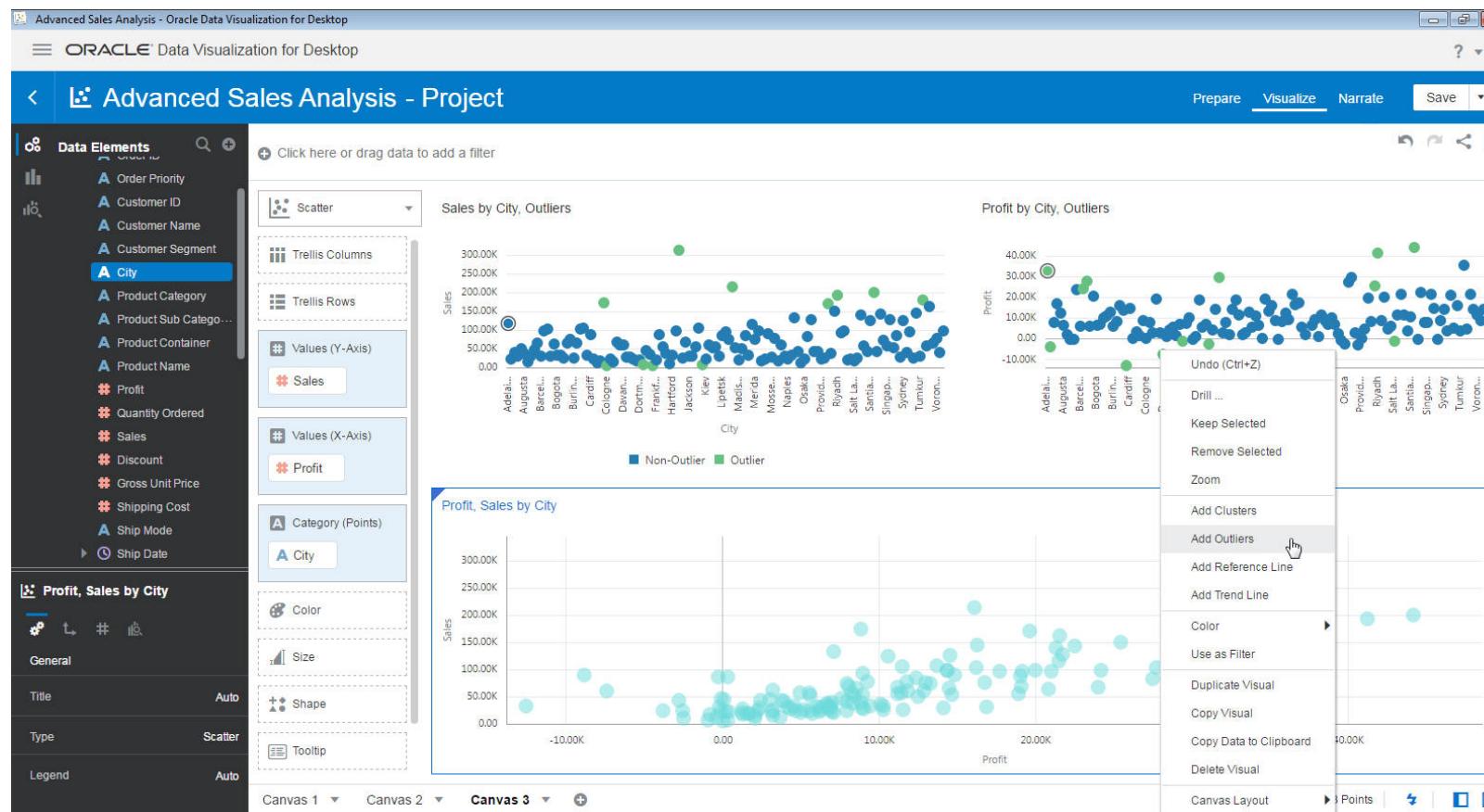
Select “Sales” and “Profit”, keep the Ctrl Key pressed on, for multiple selection, right-click and select “Create Best Visualizations”

Assignment Screens: Generate Outliers and Clusters



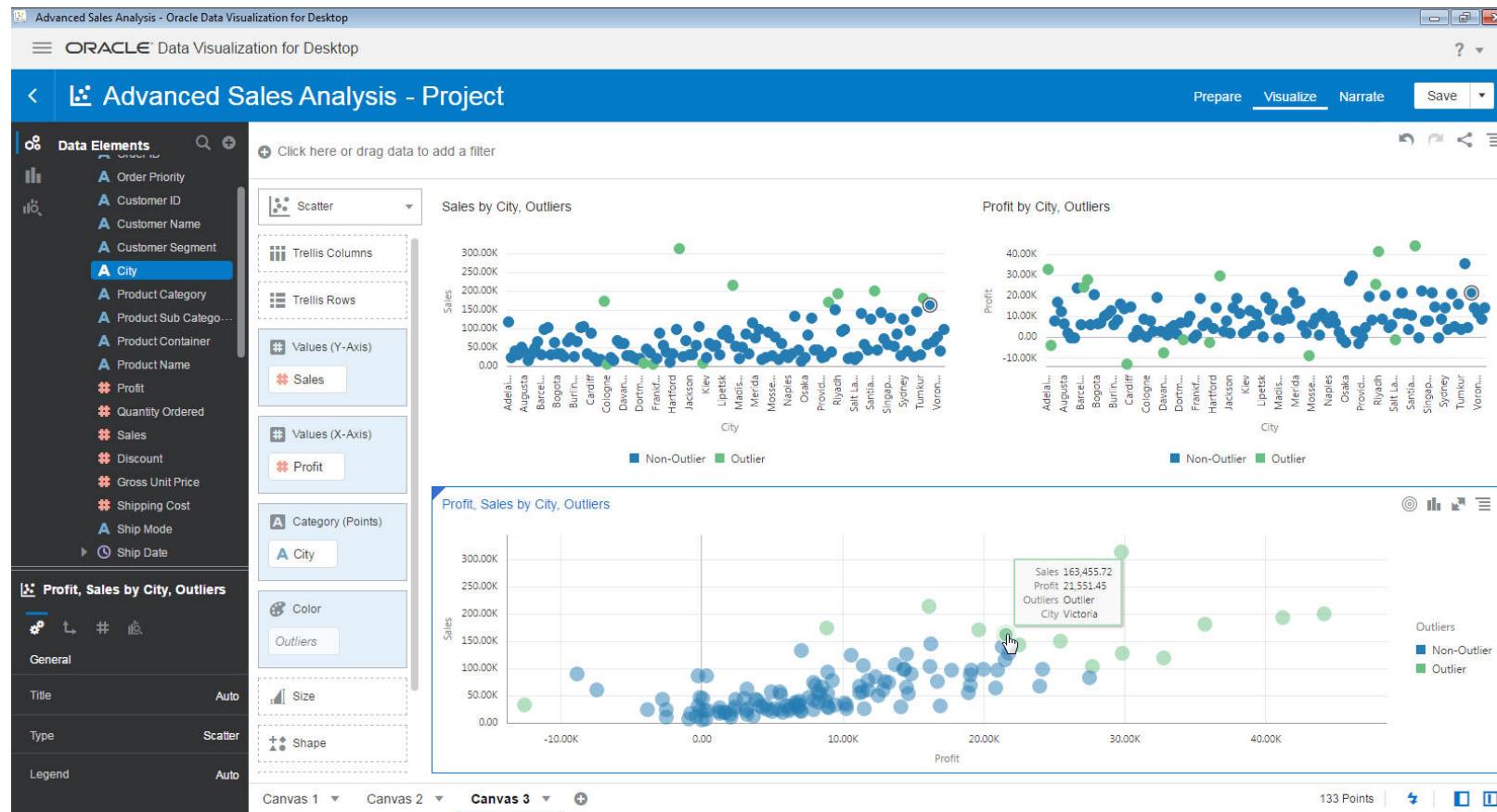
Drag and drop “City” to
“Category (Points)” in the
grammar panel.

Assignment Screens: Generate Outliers and Clusters



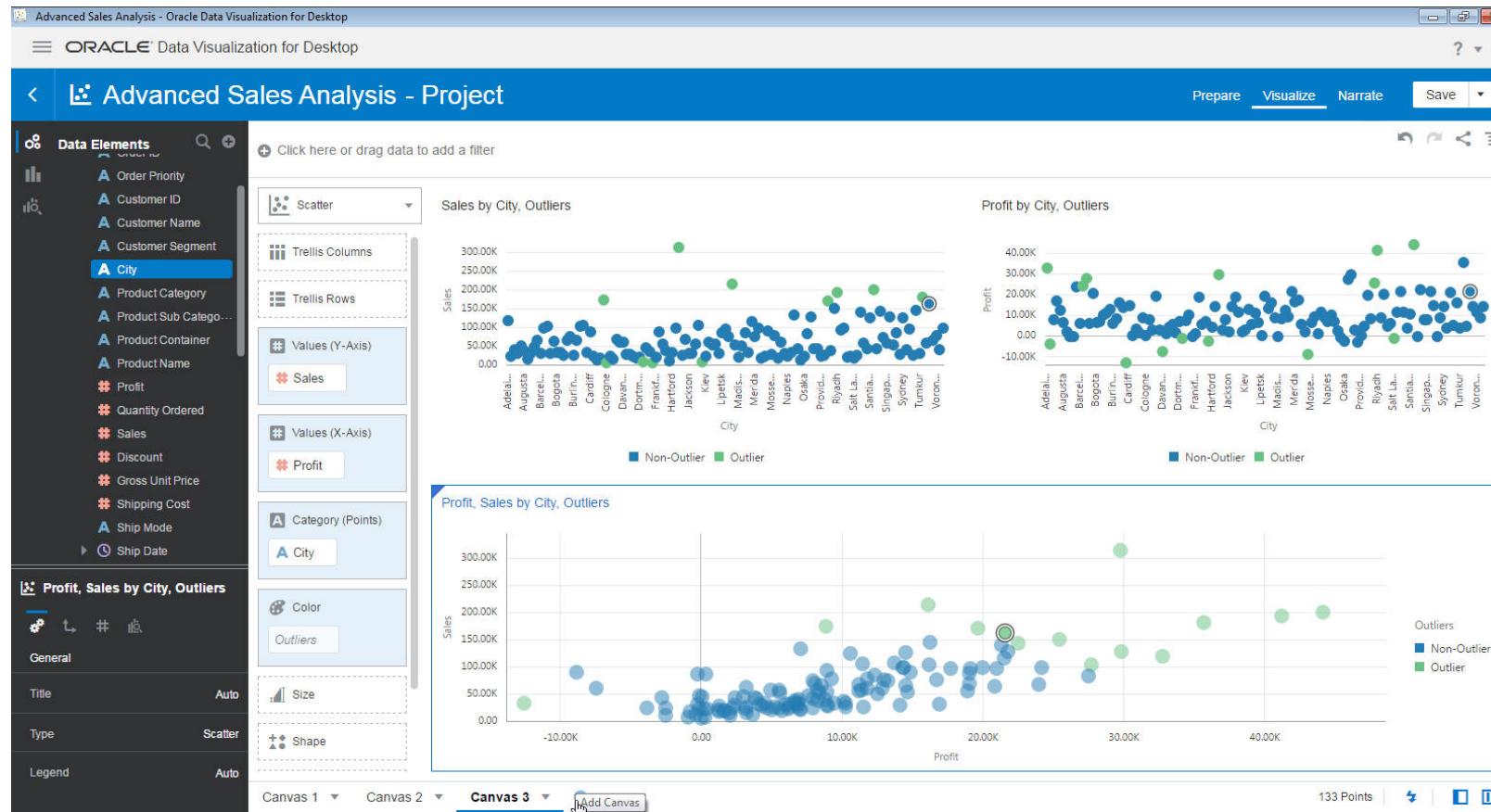
Right click on the new visual and select “Add Outliers”

Assignment Screens: Generate Outliers and Clusters



Again you see, that the classification of outliers are different based on the measures against which the outliers are being found.

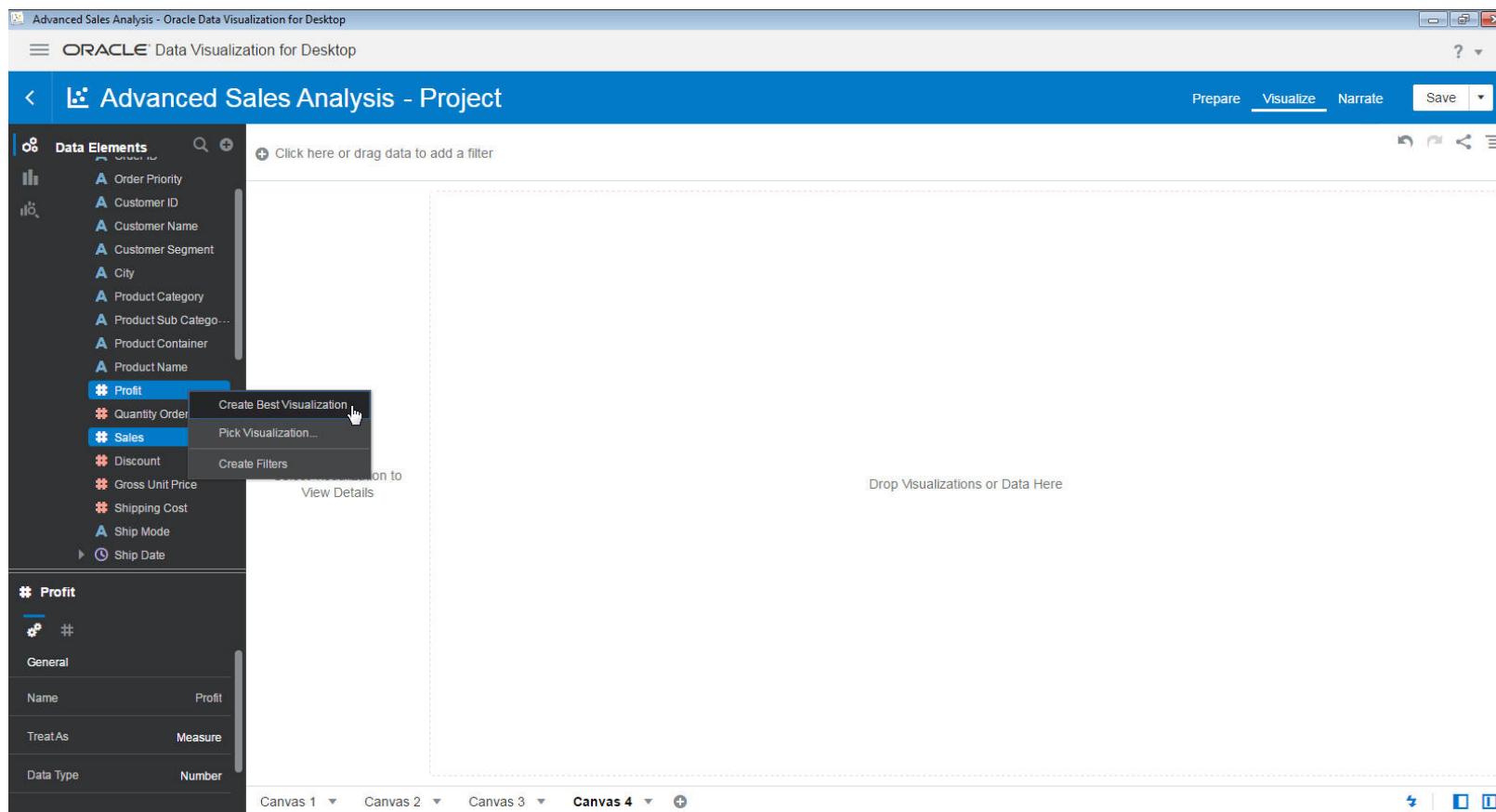
Assignment Screens: Generate Outliers and Clusters



Lets create a new Canvas, to explore “Clusters”

Click on the + icon at the bottom of the page

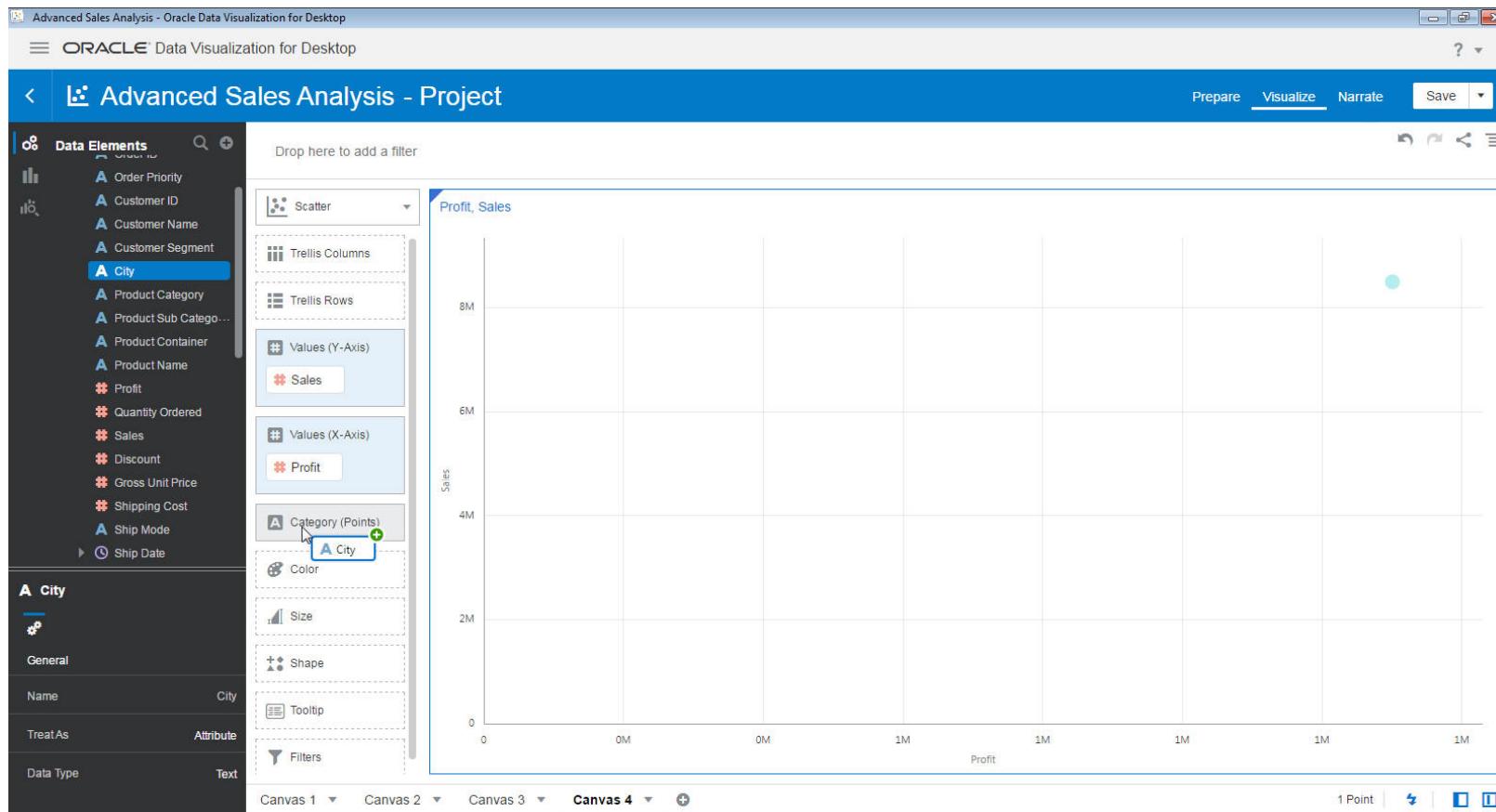
Assignment Screens: Generate Outliers and Clusters



A new canvas is added.

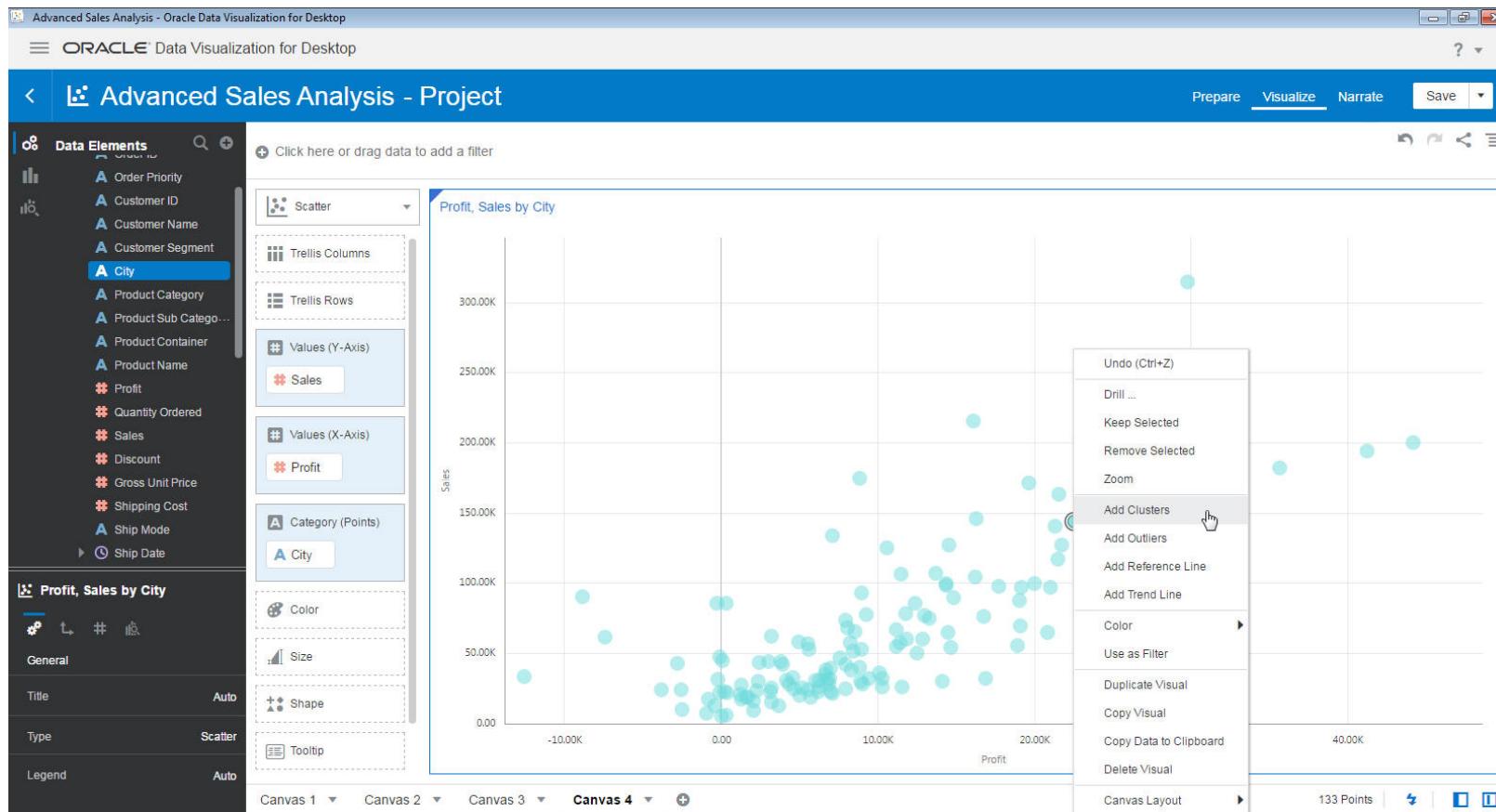
Select “Sales” and “Profit”, keep the Ctrl Key pressed on, for multiple selection, right-click and then select “Create Best Visualization”

Assignment Screens: Generate Outliers and Clusters



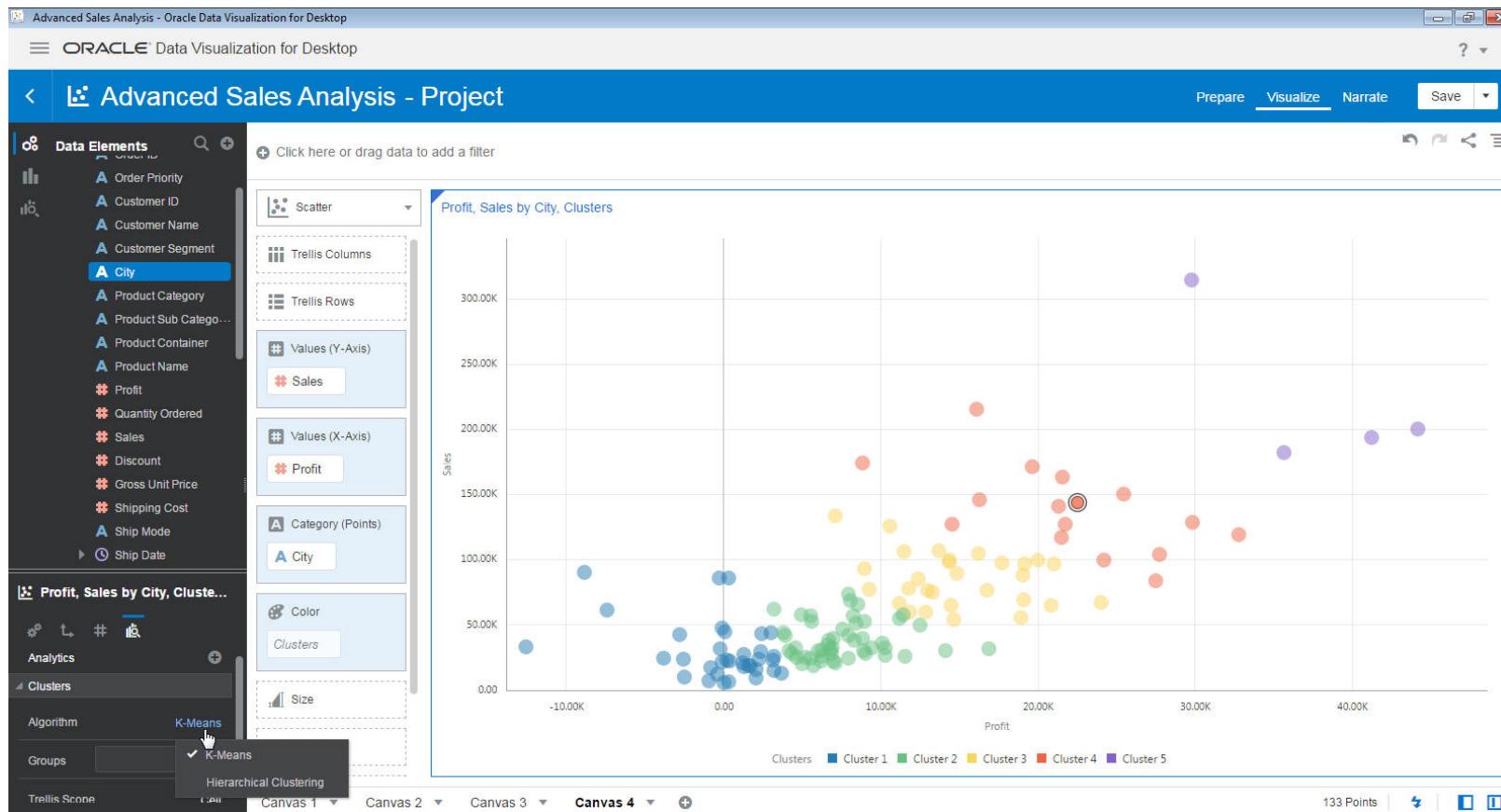
Drag and Drop “City” in the “Category (Points)” field on the grammar panel.

Assignment Screens: Generate Outliers and Clusters



Right-Click on the visual and select “Add Clusters”

Assignment Screens: Generate Outliers and Clusters



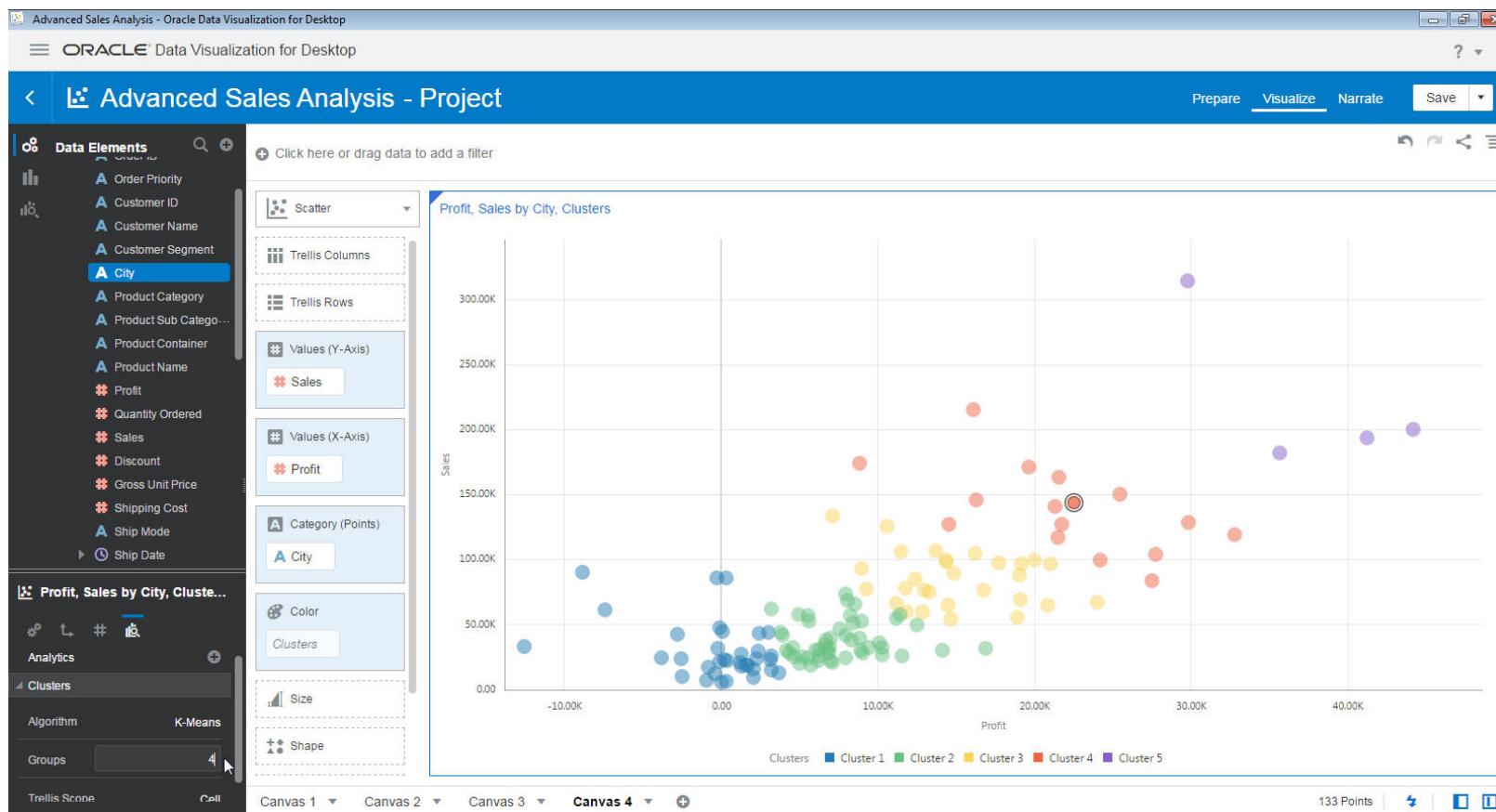
Based on the Sales and Profit Performance the cities are now classified or grouped under five clusters.

Typically this can be the starting point for any segmentation exercise.

On the left bottom pane, you see the properties of the current visual.

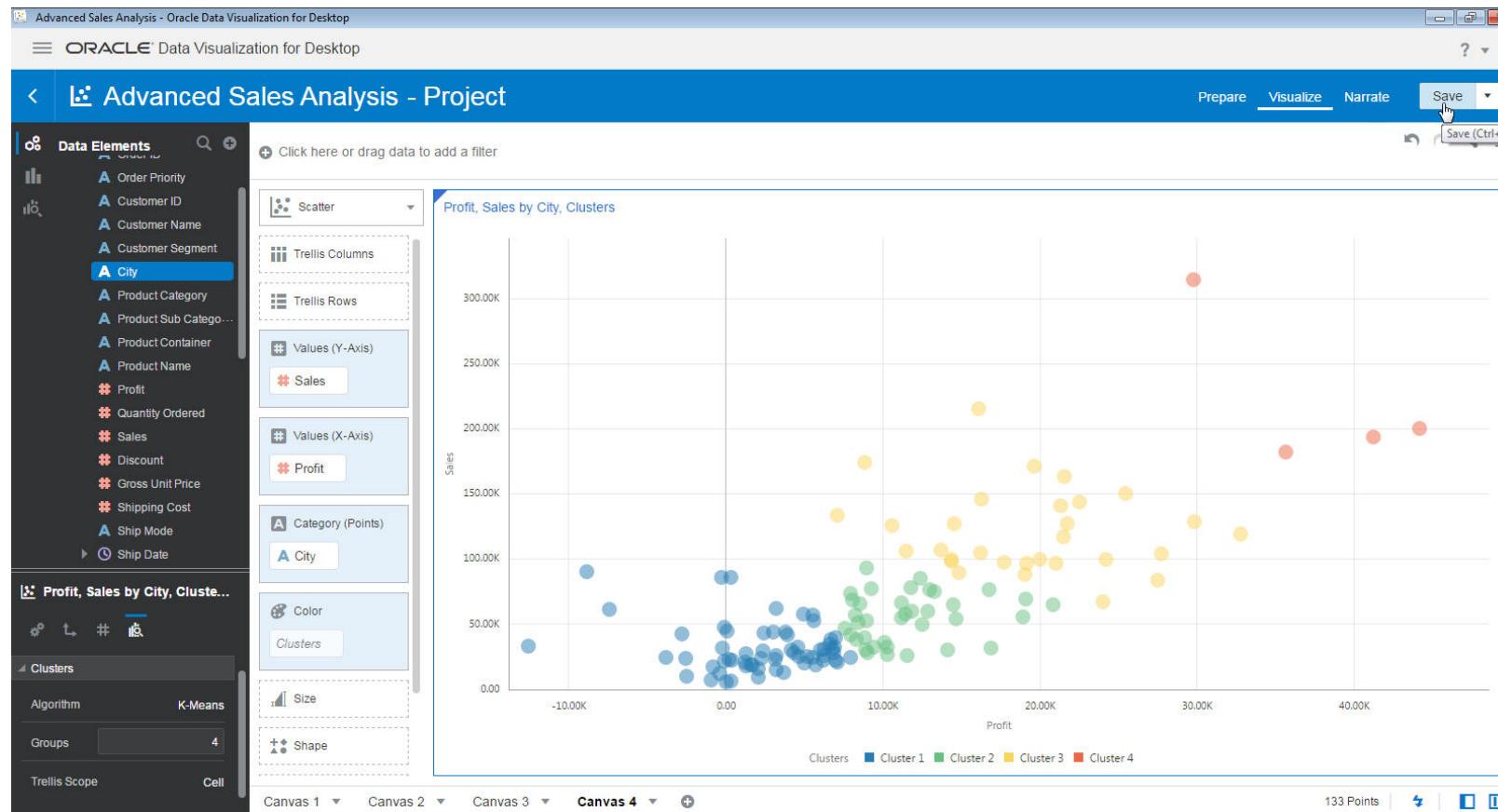
Click on the “Analytics” Tab, in the “Clusters” section, on the Algorithm field, Click on “K-Means”, it shows the two algorithms available to choose from. For the current project, we leave it at “K-Means”

Assignment Screens: Generate Outliers and Clusters



On the same section, on the “Groups” field, type in “4” and press enter.

Assignment Screens: Generate Outliers and Clusters



You will see 4 clusters now, depending on your need you could create appropriate groups or segments.

Click “Save” on the top right.

You saw how you could create both outliers and clusters with a single click and also manage its properties, if required.

(more assignments on this project to follow)

Review Outliers

They may have a story to tell



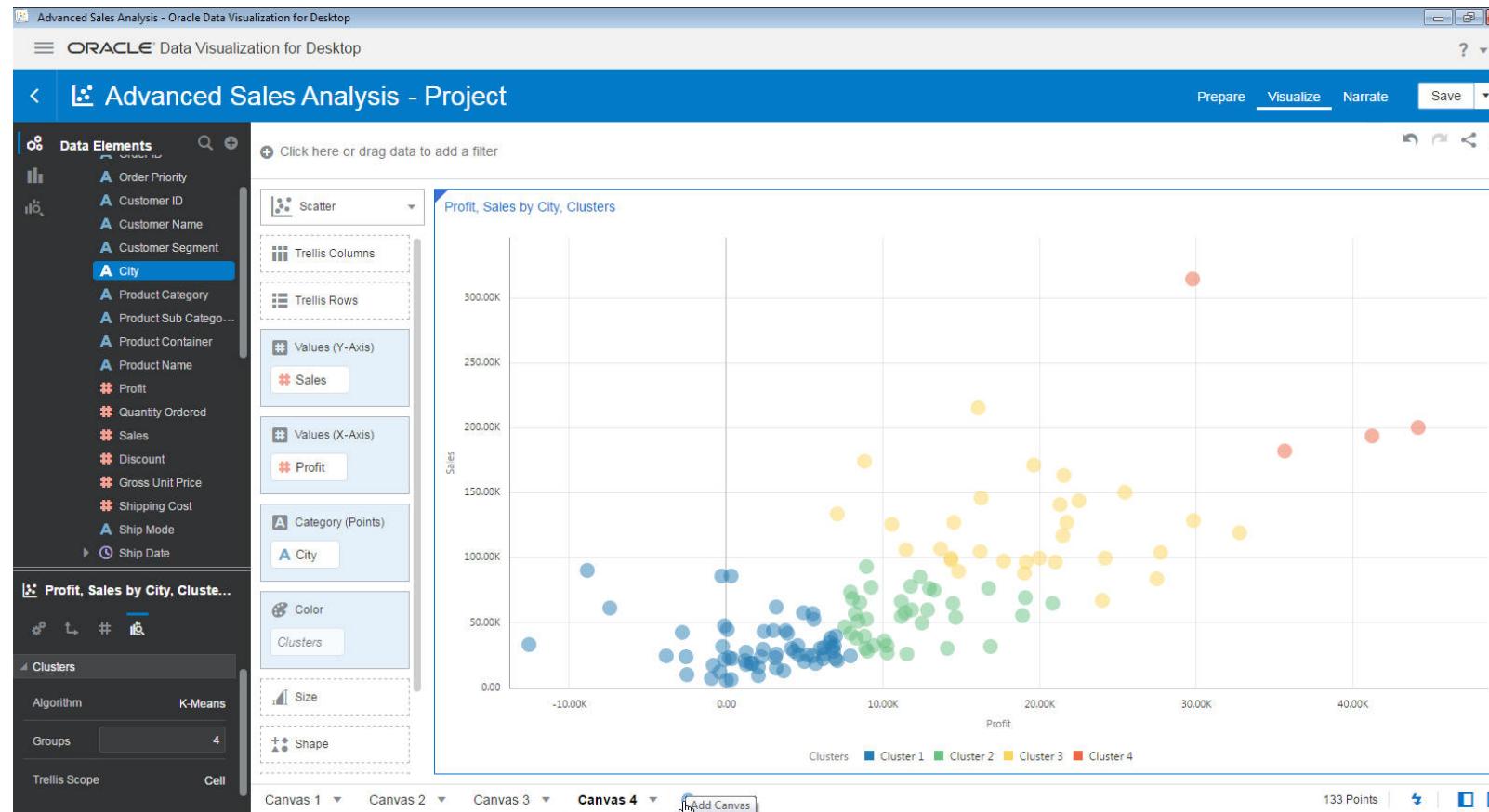
Section 4: Advanced Analytics Made Easy with Oracle Analytics

Use Explain Functionality to Review Outliers

Augmented Advanced Analytics at work

- Explain Feature
 - Uses Advanced Analytics to recognize patterns and trends in your data set
 - Understand what drives your business
 - Isolate segments that have highest predictive significance
 - Identify anomalies that require further investigation
 - This feature is invoked by a right-click menu choice
 - It works both on Measure and Attributes of datasets

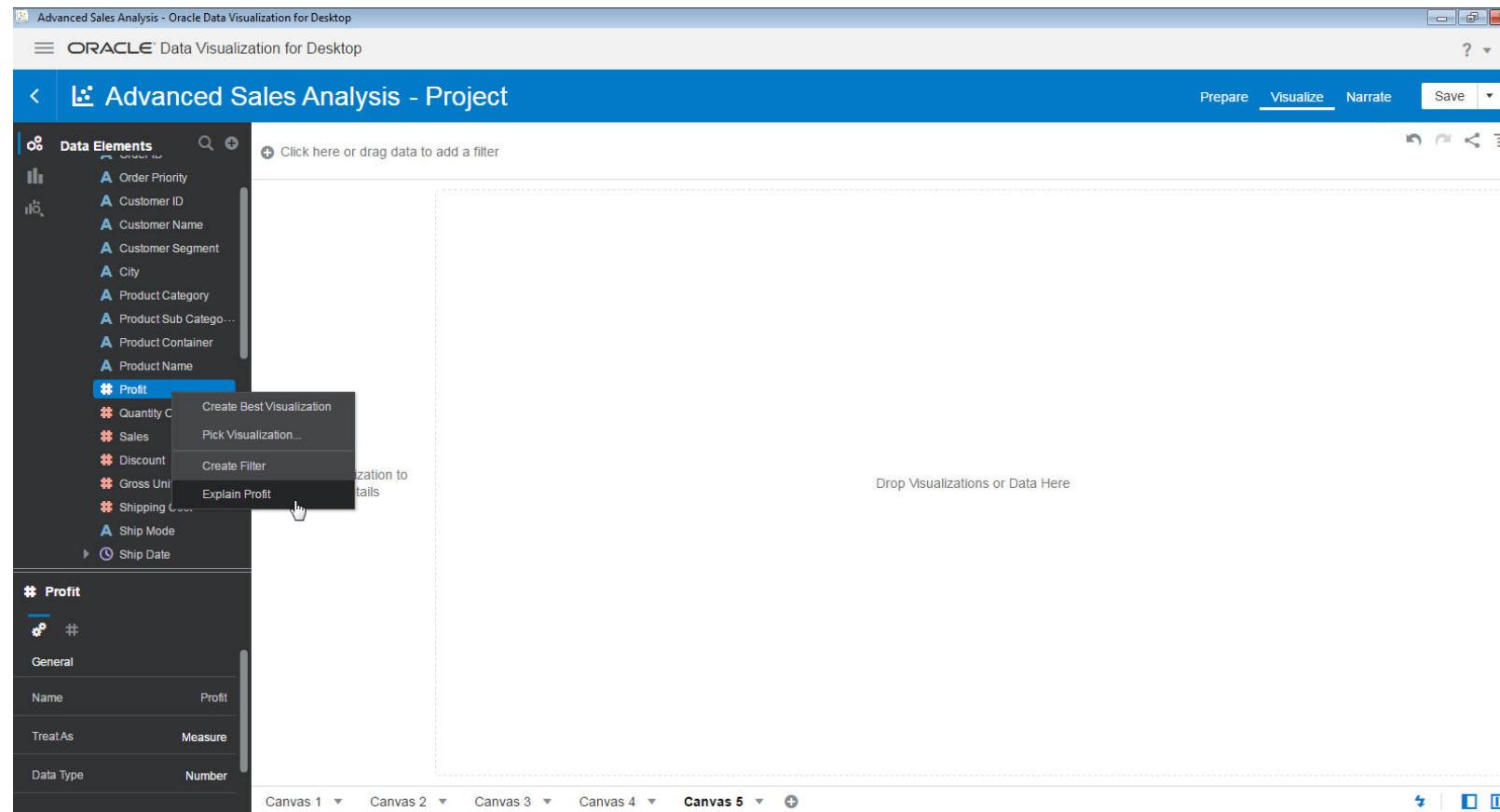
Assignment Screens: Use Explain Functionality to Review Outliers



Lets continue in the same project. You need to add a canvas.

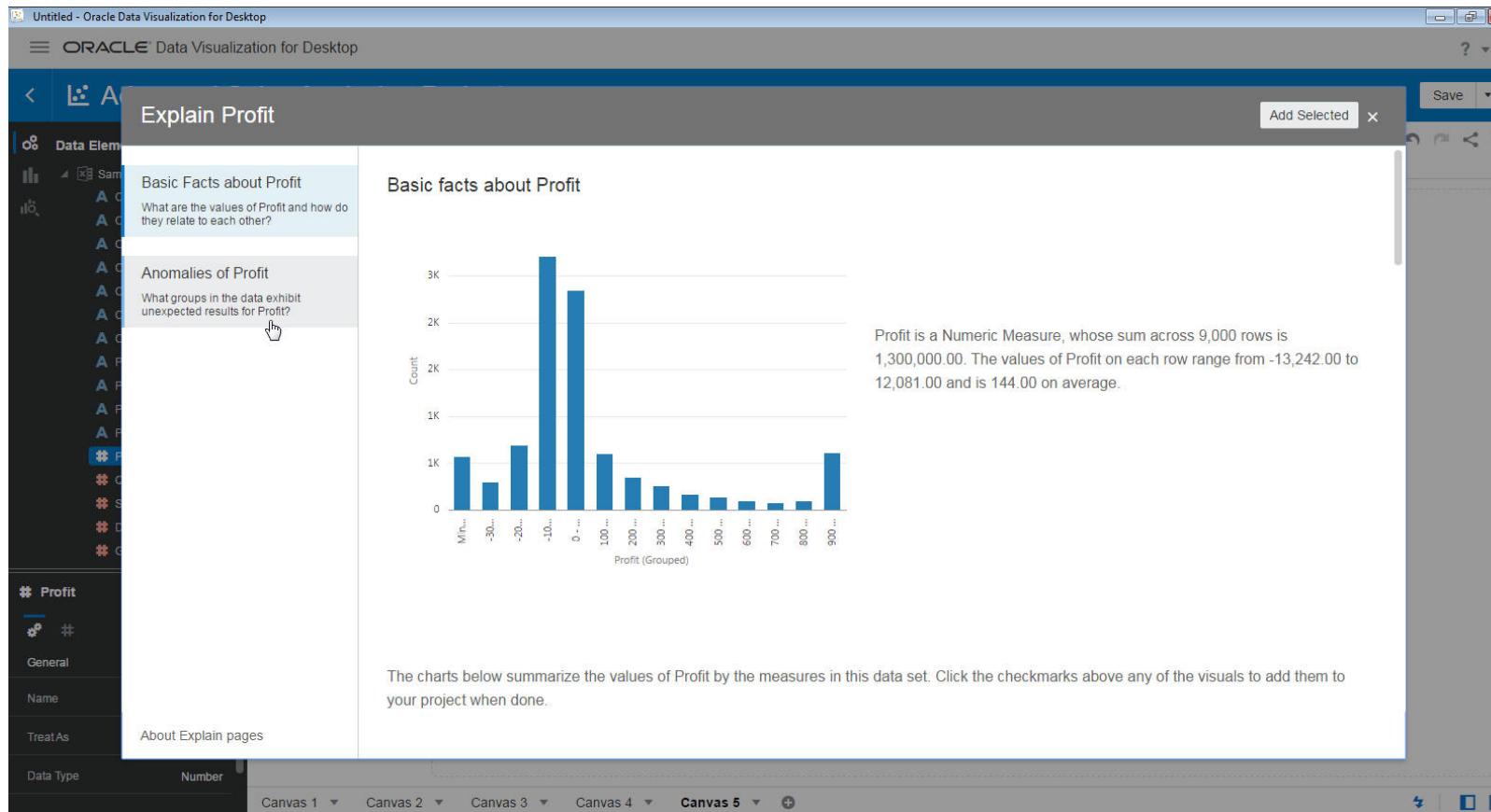
You click at the + icon at the bottom of the page.

Assignment Screens: Use Explain Functionality to Review Outliers



Select “Profit”, right-click, and click “Explain Profit”

Assignment Screens: Use Explain Functionality to Review Outliers

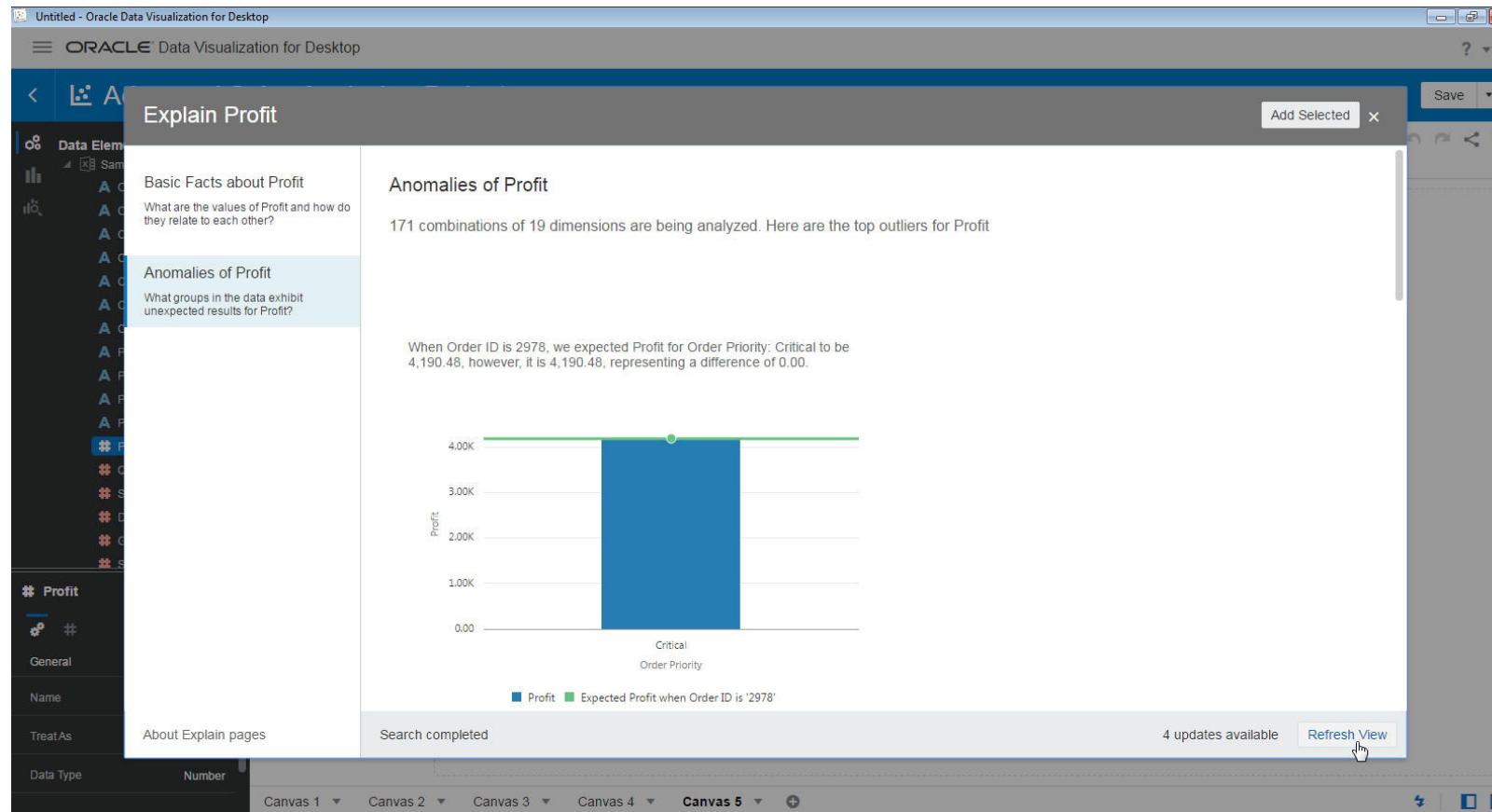


This is an ML feature, it presents how the selected measure, in this case profit, relates to all attributes in the data set.

It also highlights the top Anomalies of Profit.

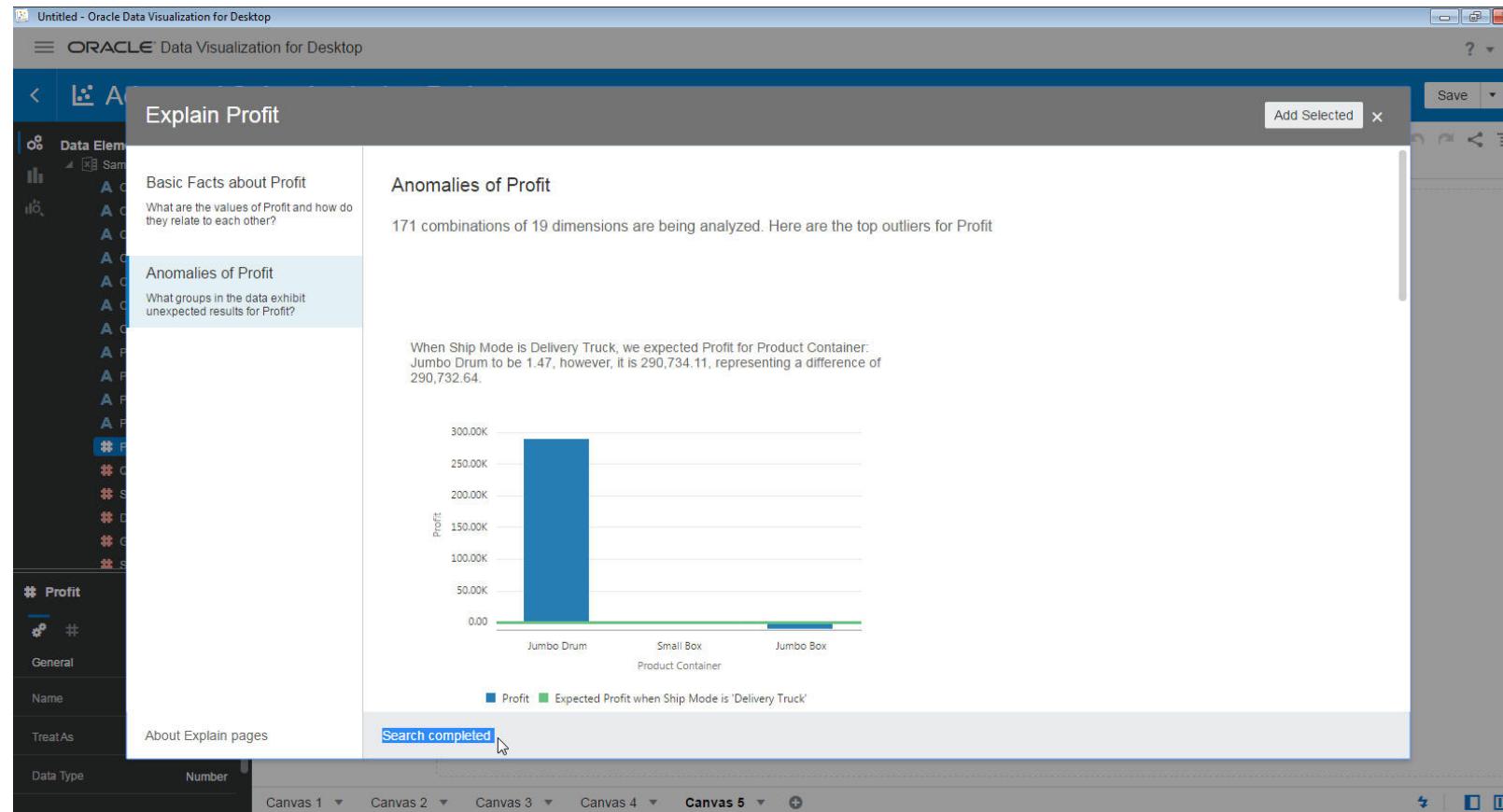
Click on “Anomalies of Profit”

Assignment Screens: Use Explain Functionality to Review Outliers



At the bottom panel, when you see “Search completed”, click on “Refresh View”

Assignment Screens: Use Explain Functionality to Review Outliers



You are presented with the top outliers of Profit.

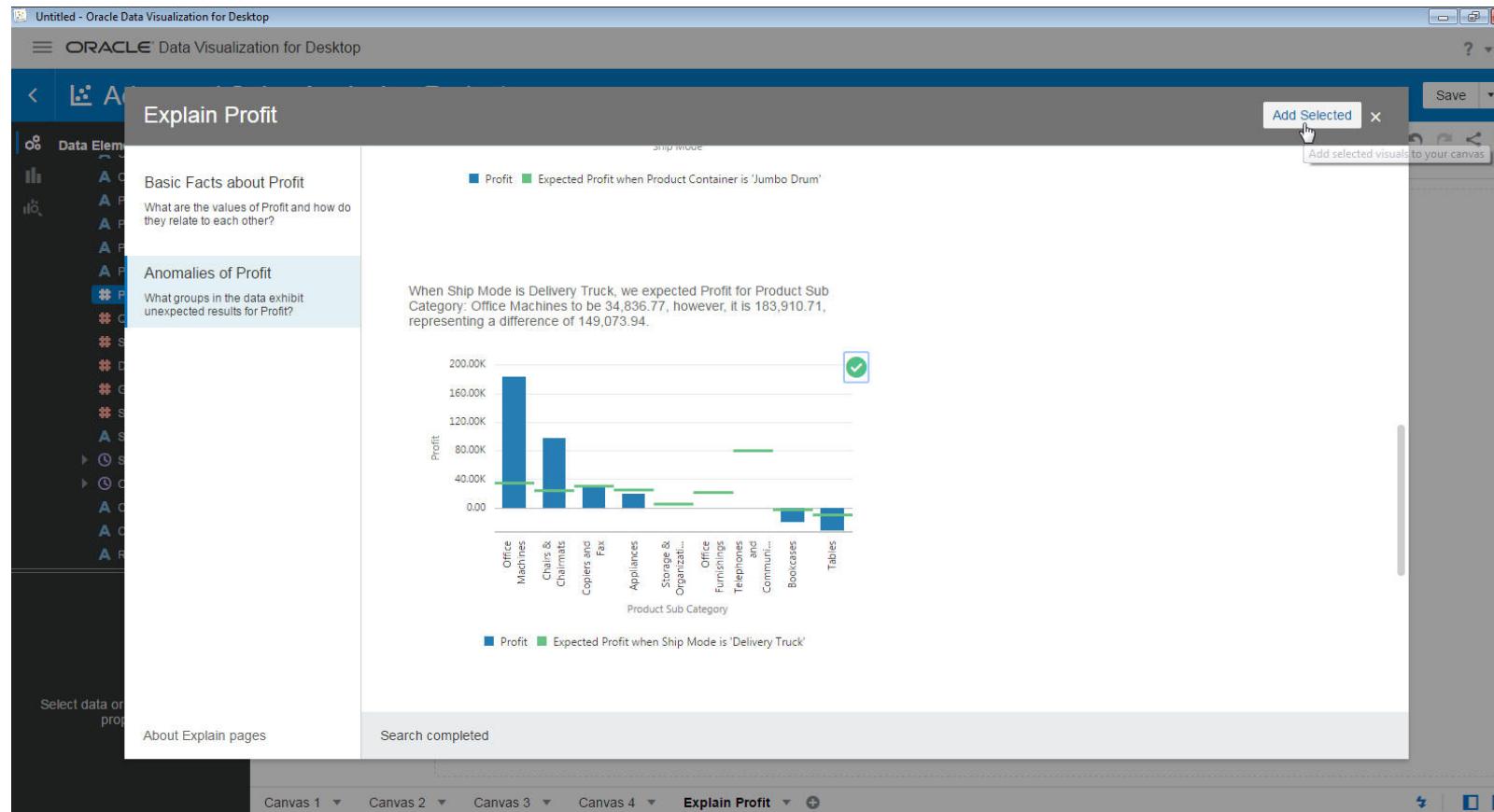
As you saw in your earlier lecture, identification of outlier can be a analyst/user driven process. Explain feature has automated it and now is able to present top outliers for user review.

Assignment Screens: Use Explain Functionality to Review Outliers



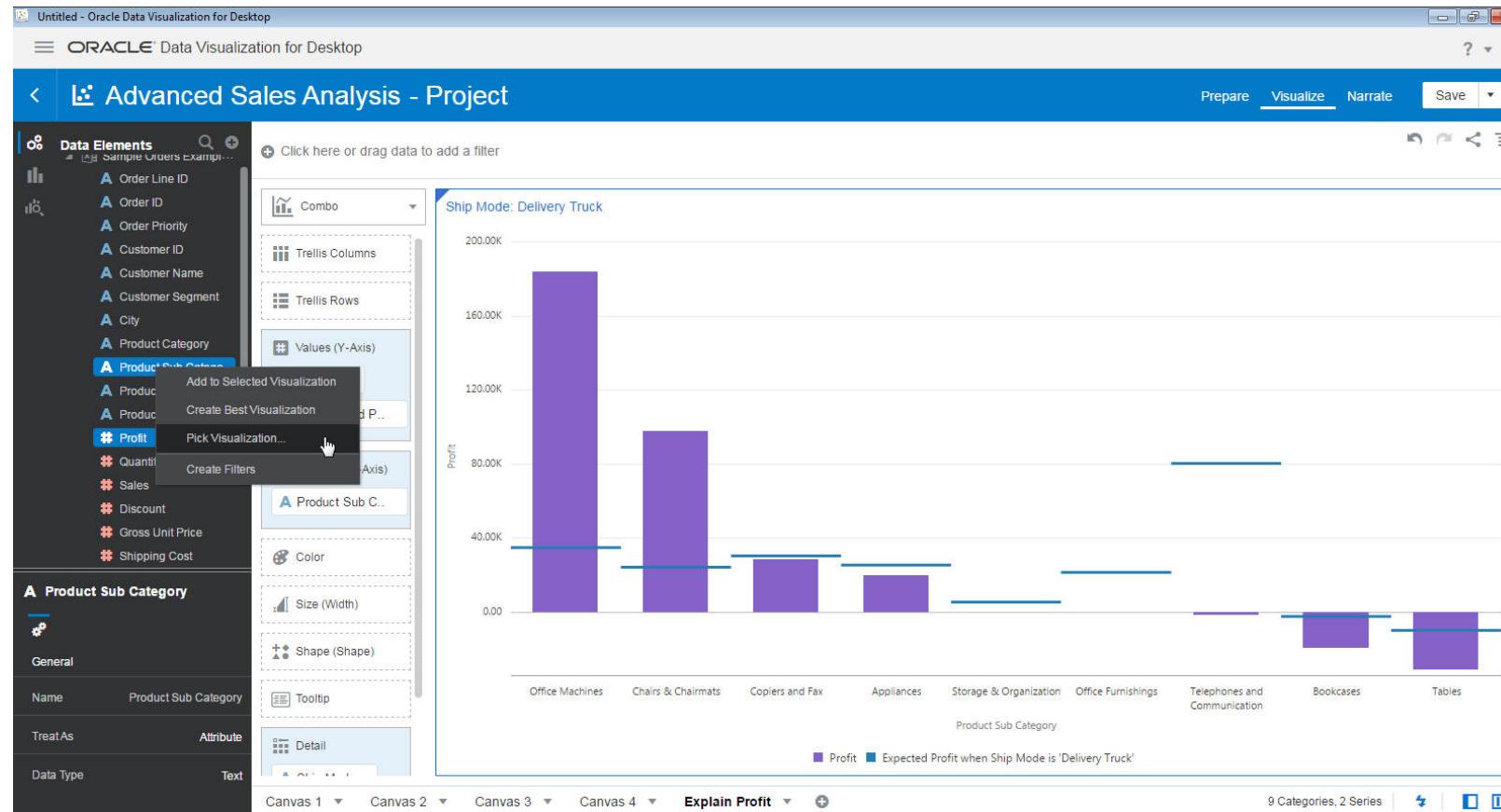
You choose the third outlier, from the top four, “check” the “Select for Canvas” icon from the auto created visual.

Assignment Screens: Use Explain Functionality to Review Outliers



Then click on the “Add Selected” button on the “Explain Profit” window.

Assignment Screens: Use Explain Functionality to Review Outliers



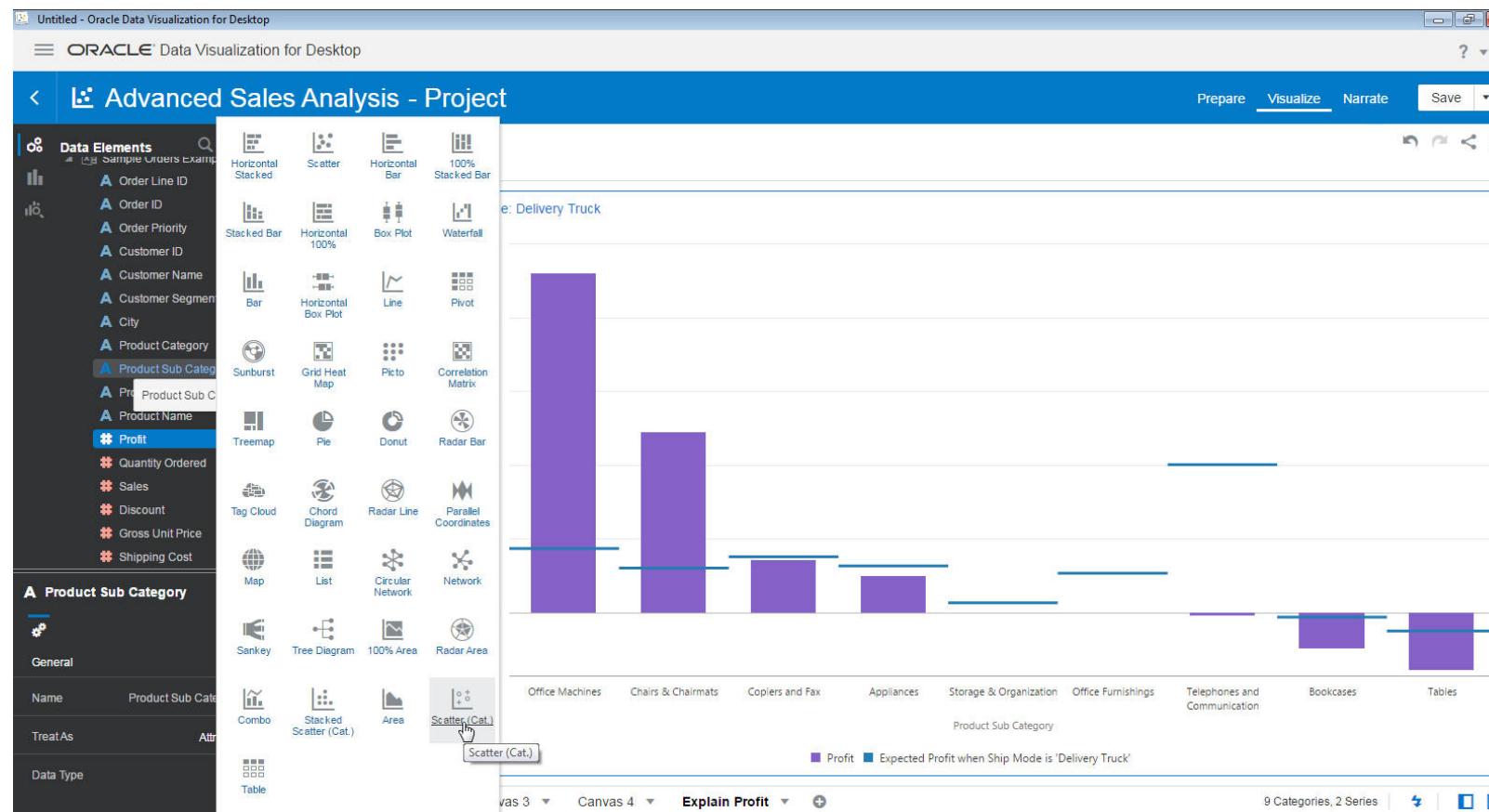
The auto created visual is now part of your project.

Alternatively, you could have also identified the same outlier, by multiple iterations.

For the purpose of this project, we will not go thru with multiple iterations, but quickly create one.

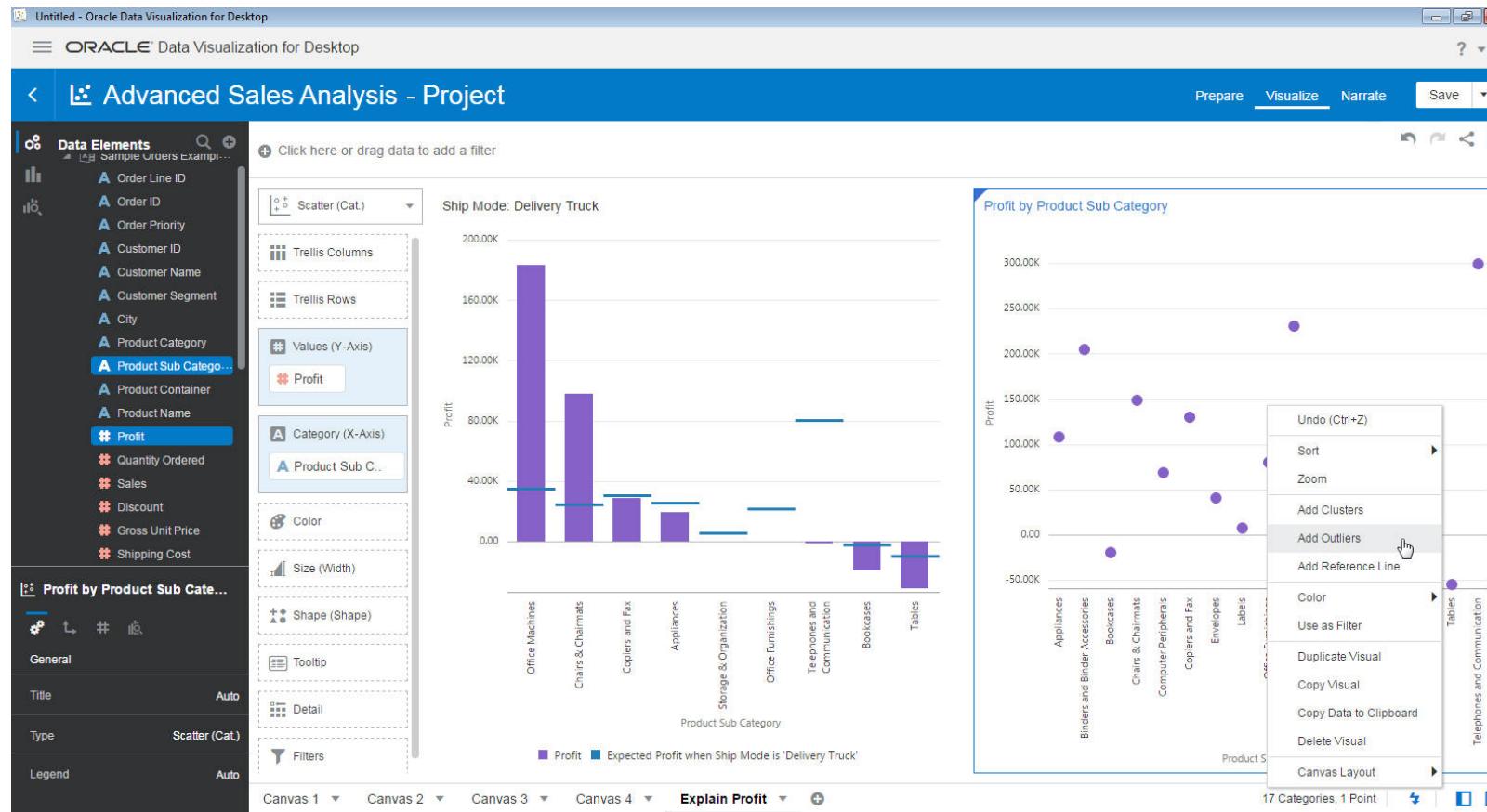
Select “Product Sub Category” and “Profit”, keep the Ctrl Key pressed on, for multiple selection, right-click and select “Pick Visualization”

Assignment Screens: Use Explain Functionality to Review Outliers



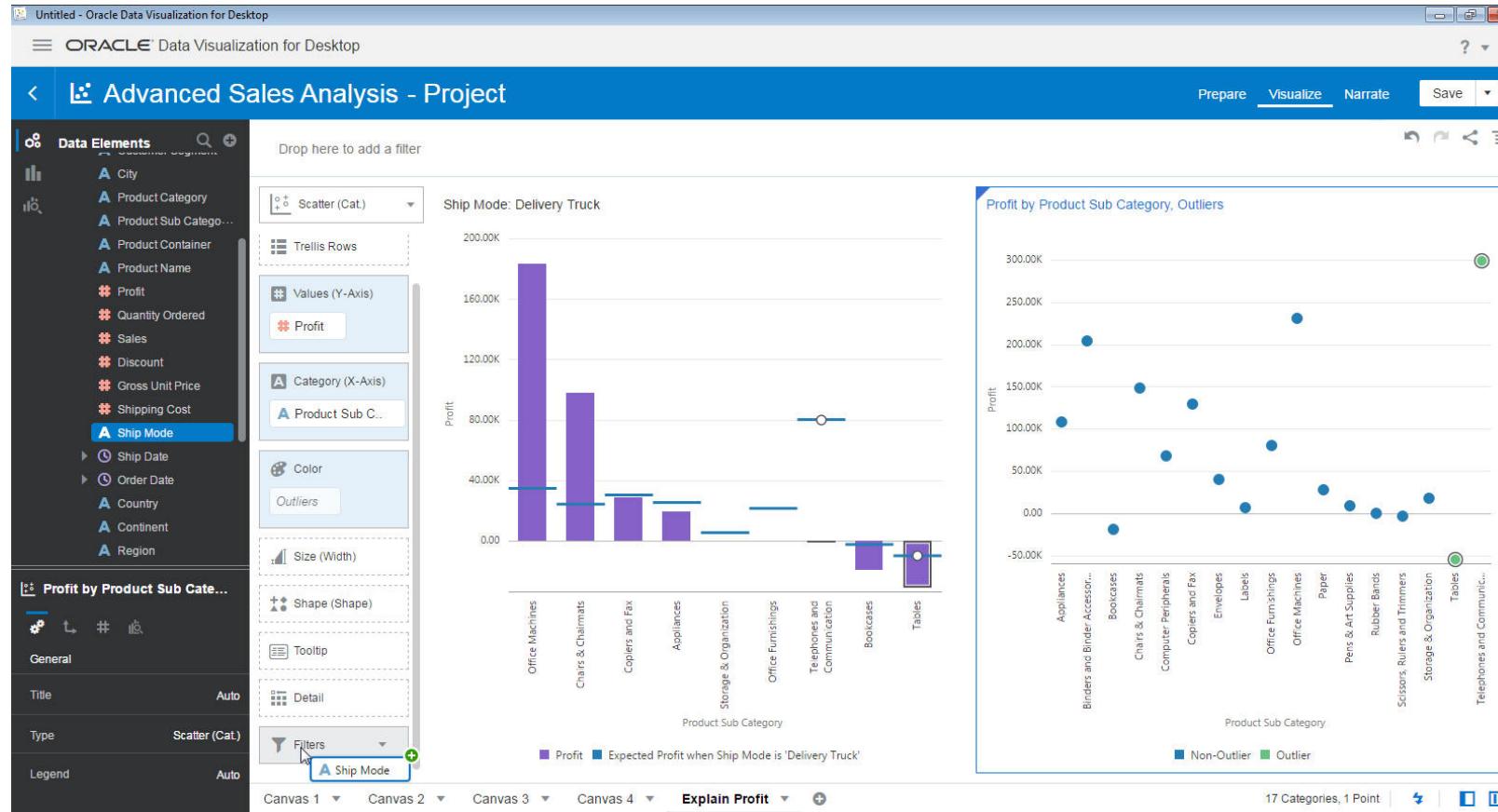
Select “Scatter(Cat)”

Assignment Screens: Use Explain Functionality to Review Outliers



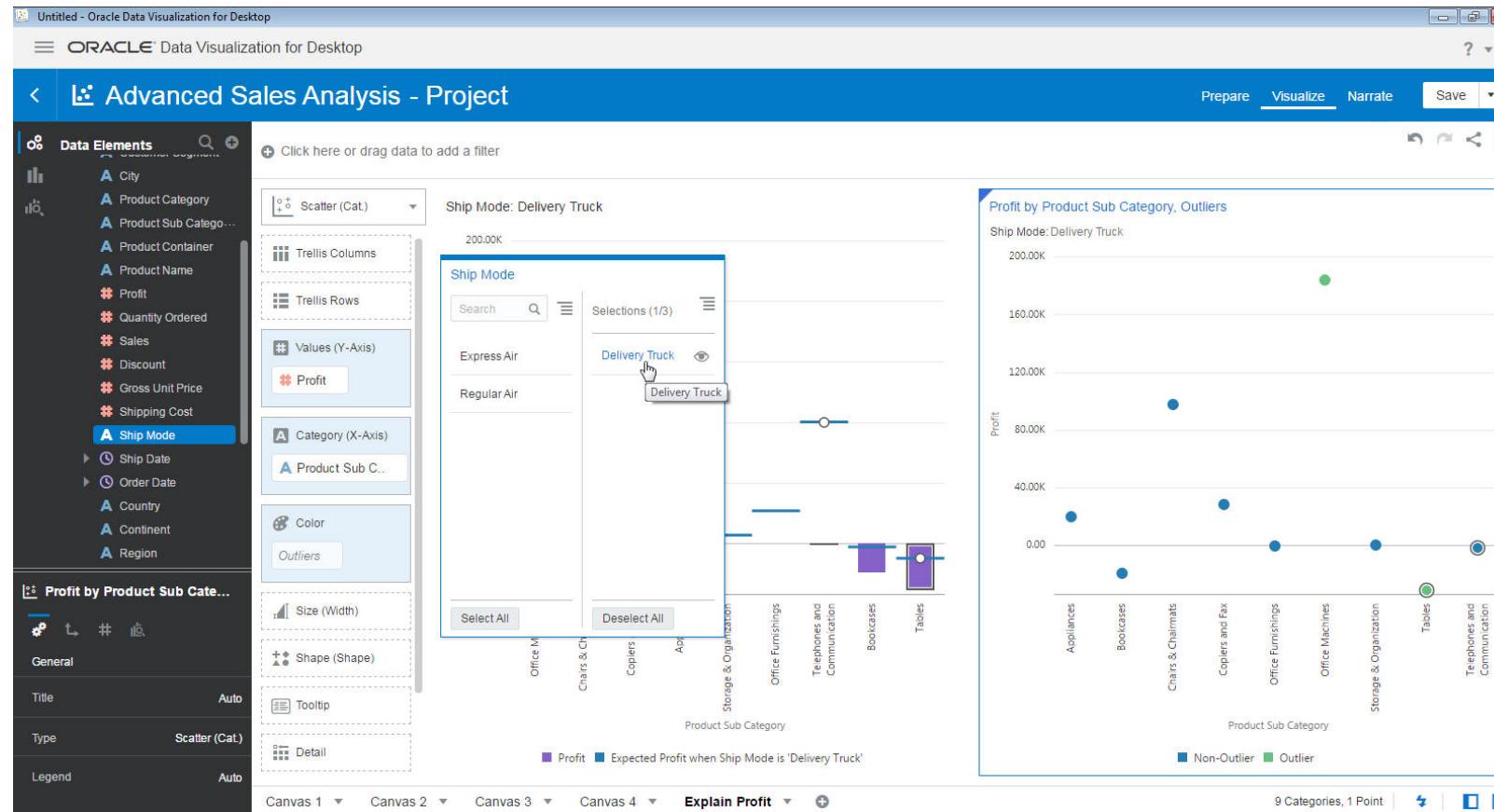
Right-click on the new visual,
select “Add Outlier”

Assignment Screens: Use Explain Functionality to Review Outliers



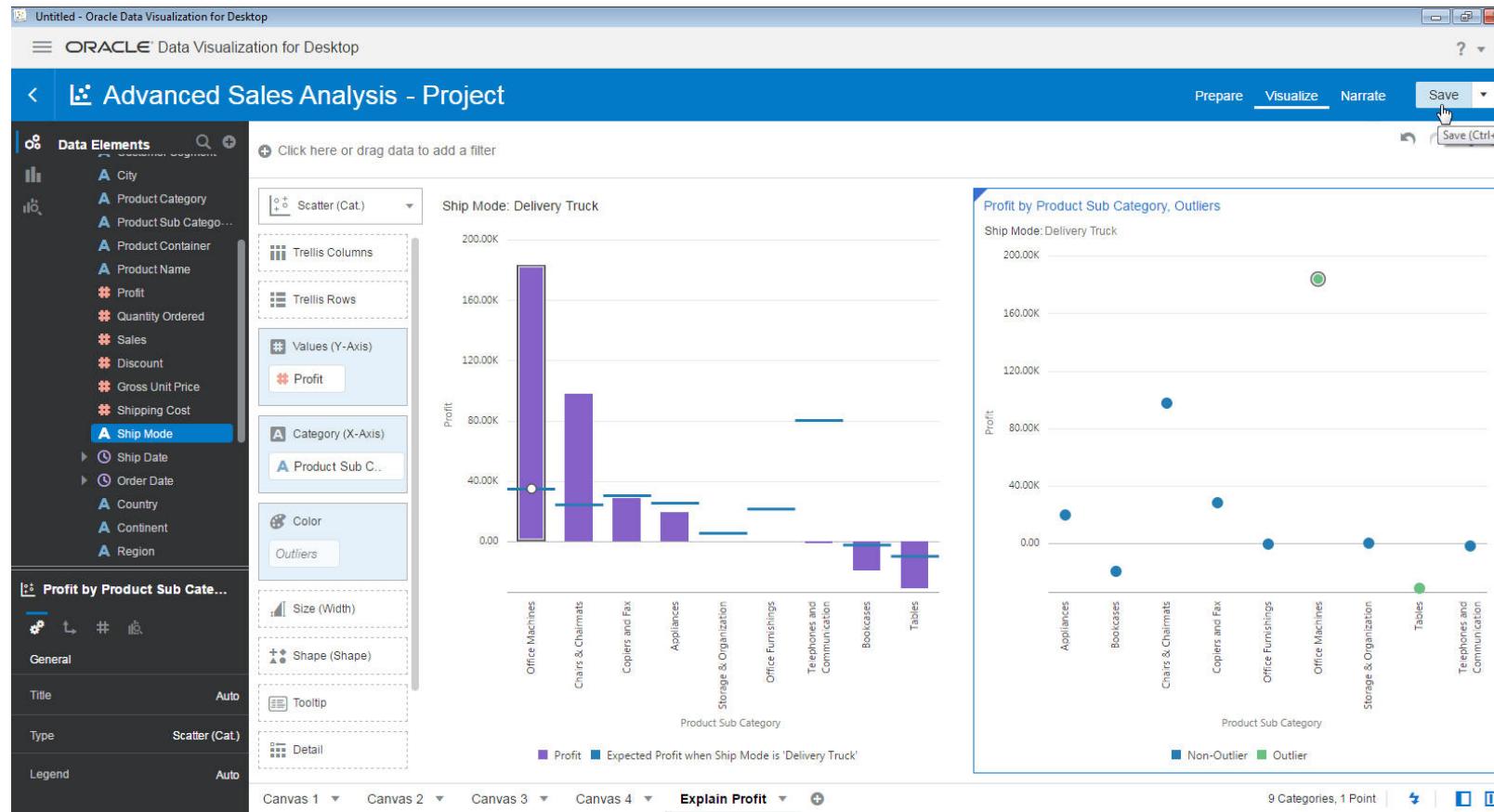
To match it with the visual on the left, you drag and drop “Ship Mode” on the “Filter” Field of the grammar panel.

Assignment Screens: Use Explain Functionality to Review Outliers



Select “Delivery Truck” and click on the visual.

Assignment Screens: Use Explain Functionality to Review Outliers



You see the top outlier to be the “office machines” Product as suggested by the auto generated visual.

In summary, identification of outliers could be a long drawn process, however the explain feature has made it easy by auto suggesting top outliers.

Click “Save” on the top right.

(more assignments on this project to follow)

Advanced Calculations

What more with Adv Analytics



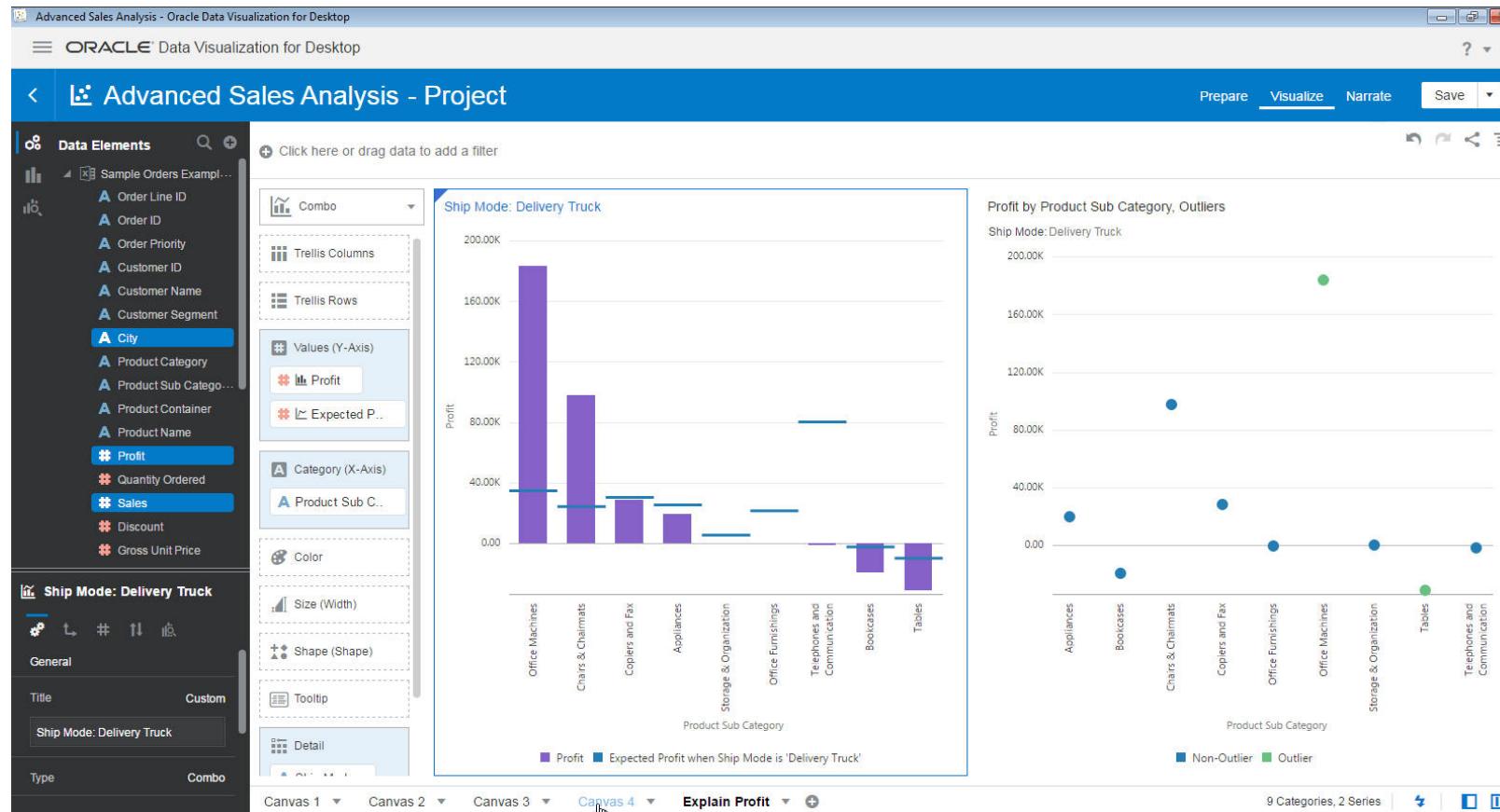
Section 4: Advanced Analytics Made Easy with Oracle Analytics

Use Expression Builder for Advanced Calculations

Take control of the Advanced Analytics functions

- Expression Builder
 - Need more control on the functions and its parameters
 - Useful to analysts, who understand data science and statistics in details
 - Analysts can bring their own python scripts

Assignment Screens: Use Expression Builder for Advanced Calculations

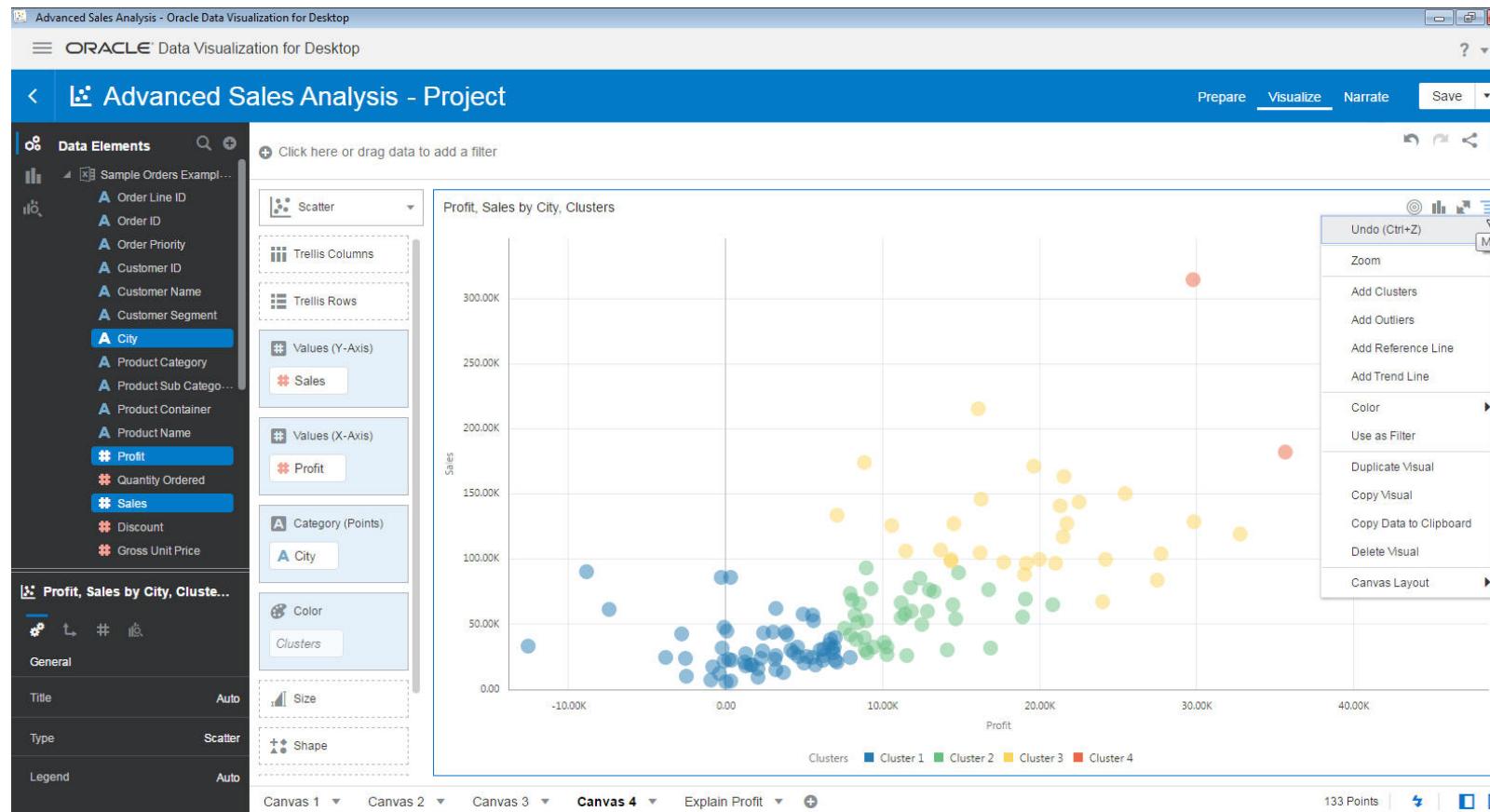


Lets continue in the same project.

You go back to the “Canvas 4”.

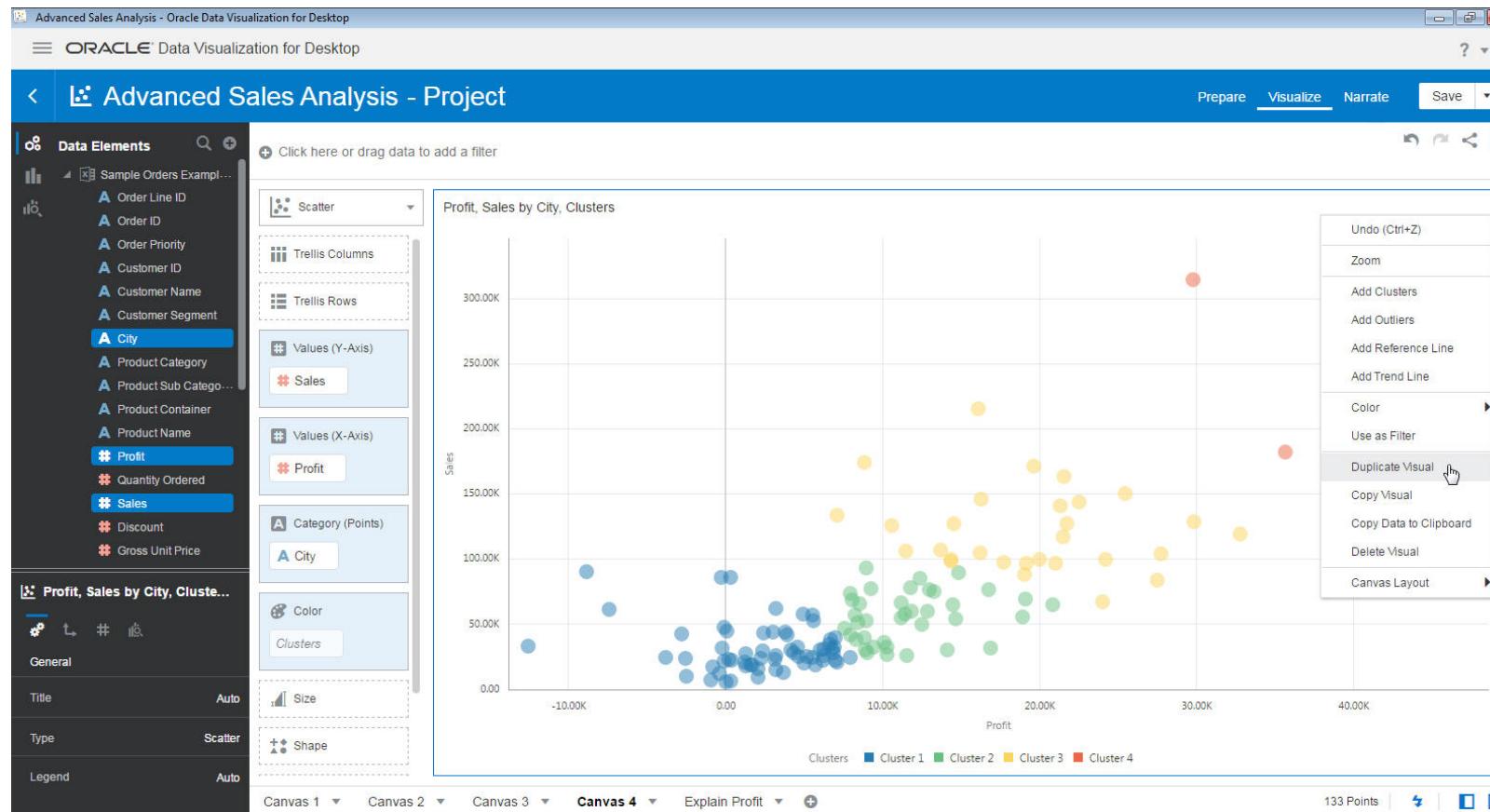
Select “Canvas 4”, from the bottom of the page.

Assignment Screens: Use Expression Builder for Advanced Calculations



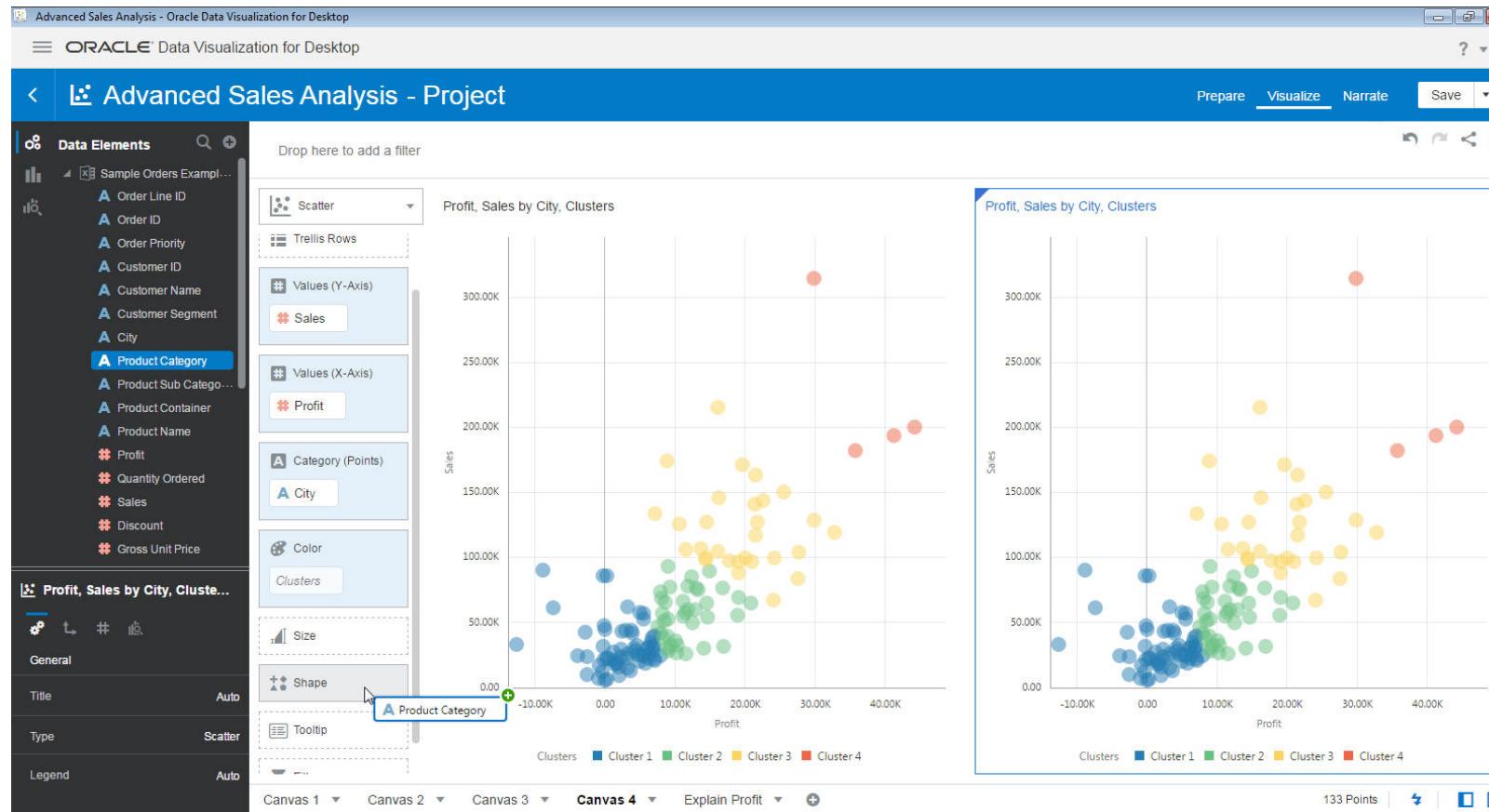
Click on the “Menu” icon on the visual

Assignment Screens: Use Expression Builder for Advanced Calculations



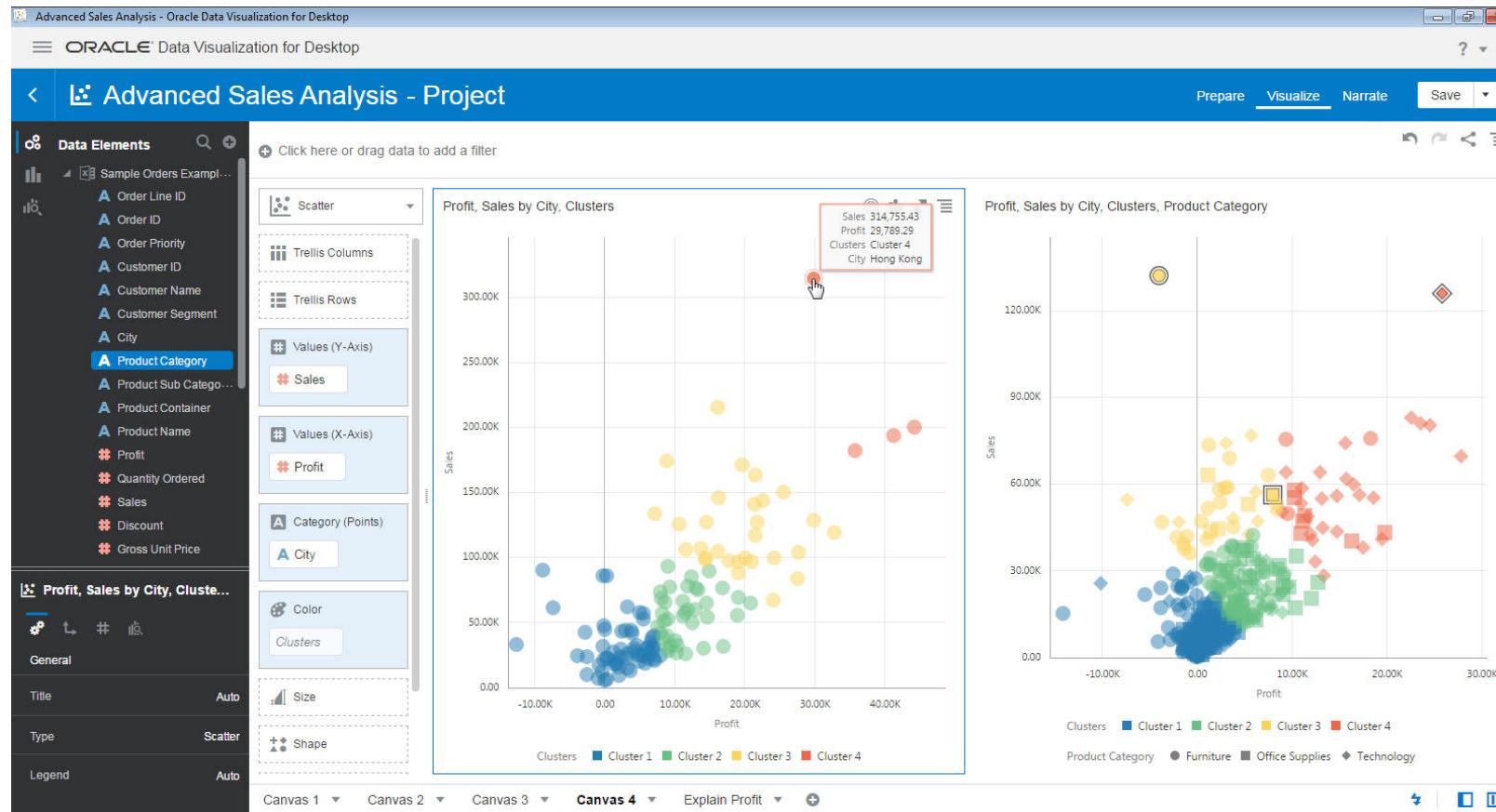
From the available options select
“Duplicate Visual”

Assignment Screens: Use Expression Builder for Advanced Calculations



Drag and drop “Product Category” on the “Shape’ Field of the grammar panel.

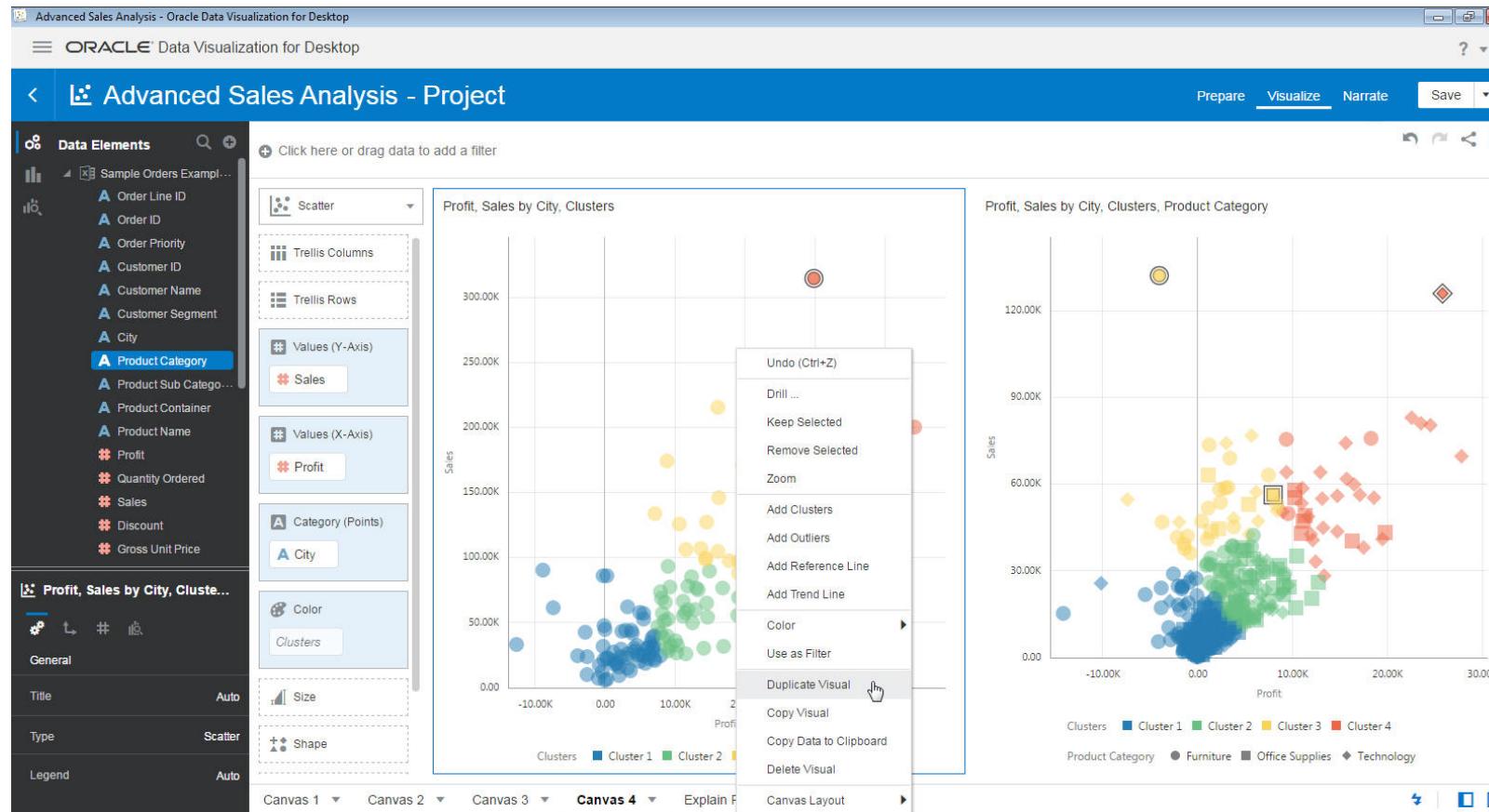
Assignment Screens: Use Expression Builder for Advanced Calculations



On the left visual, click on the city “Hong Kong”, you see the same city now falls under two clusters or segments, when we brought in product category as a dimension for segmentation.

Sometimes you may want a common definition of cluster or segmentation to persist across all visuals, in that case you could use a custom defined cluster and use the cluster as a definition that can persist across visuals.

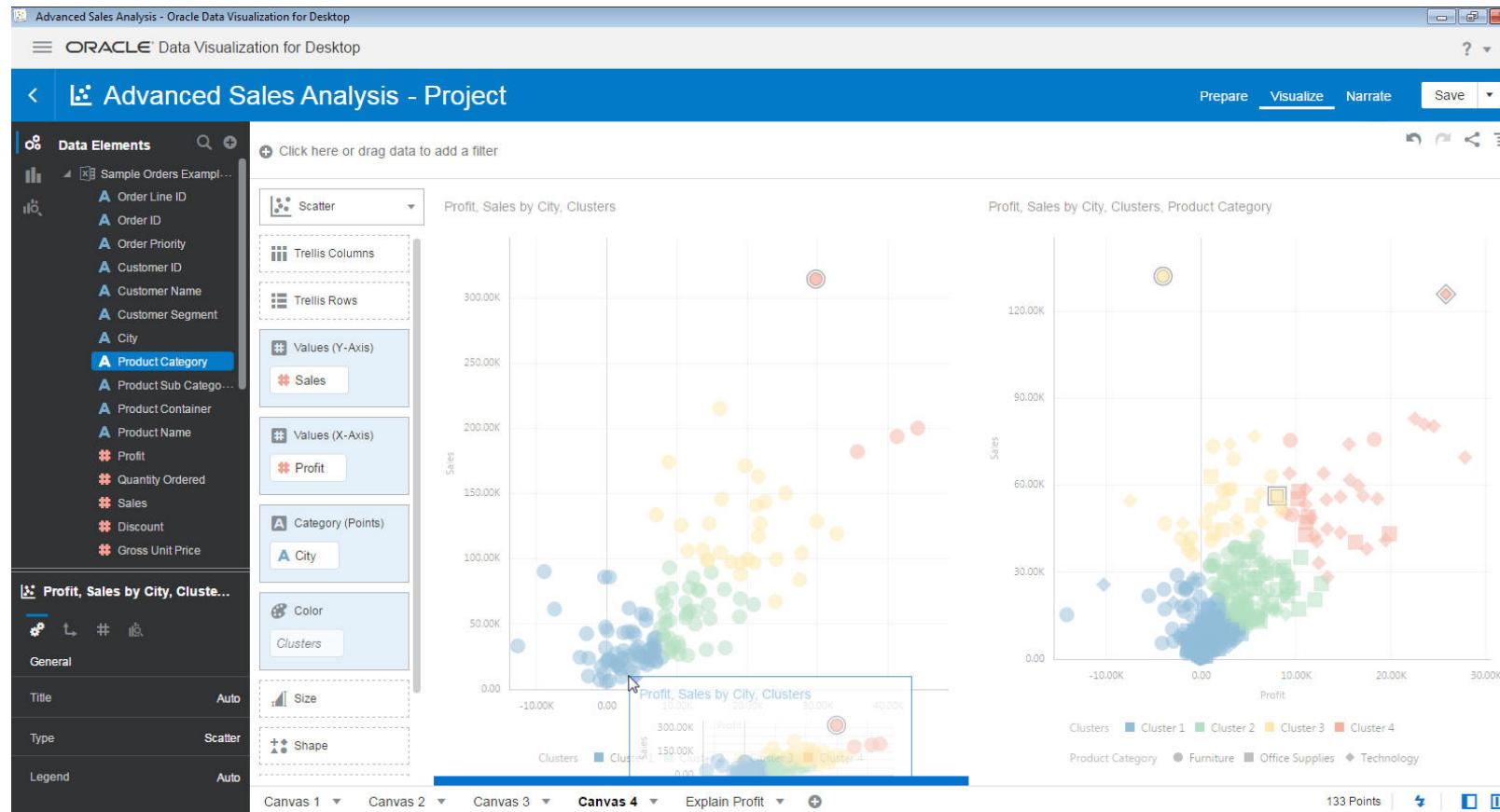
Assignment Screens: Use Expression Builder for Advanced Calculations



You duplicate the visual on the left.

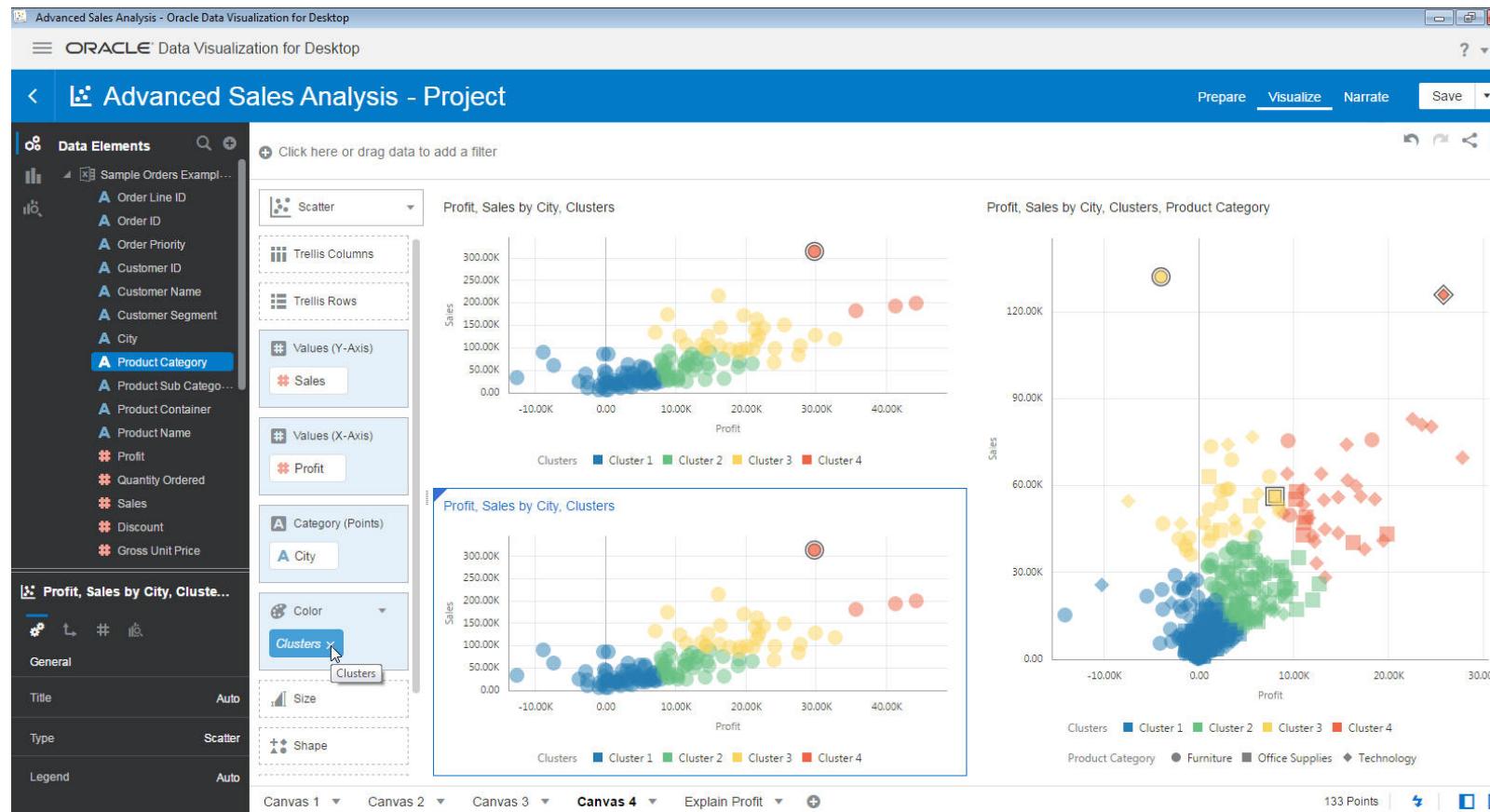
Right click on the visual and select “Duplicate visual”

Assignment Screens: Use Expression Builder for Advanced Calculations



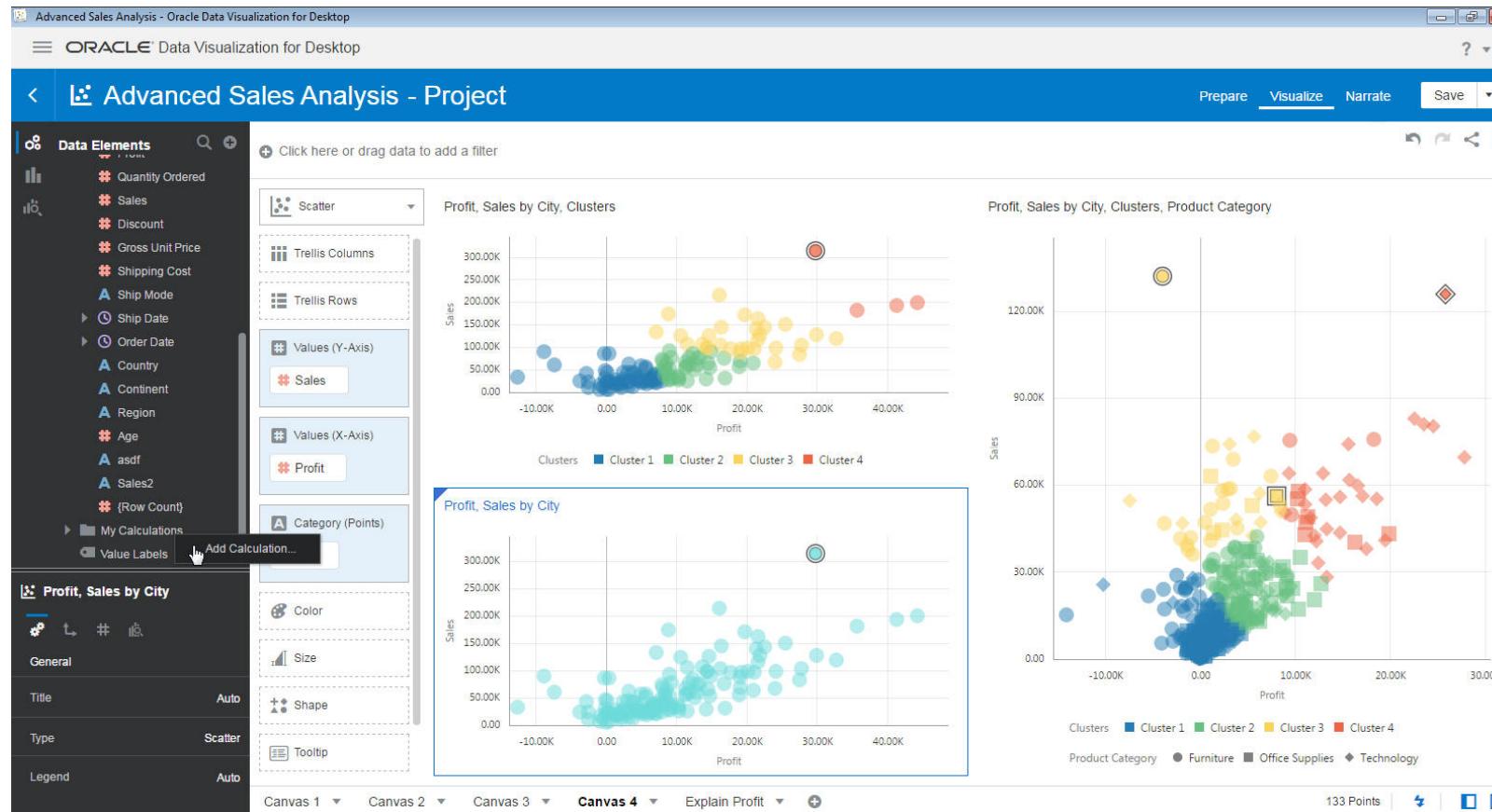
Drag and drop the visual below, the first visual that was there on left

Assignment Screens: Use Expression Builder for Advanced Calculations



Remove the earlier “Cluster” definition.

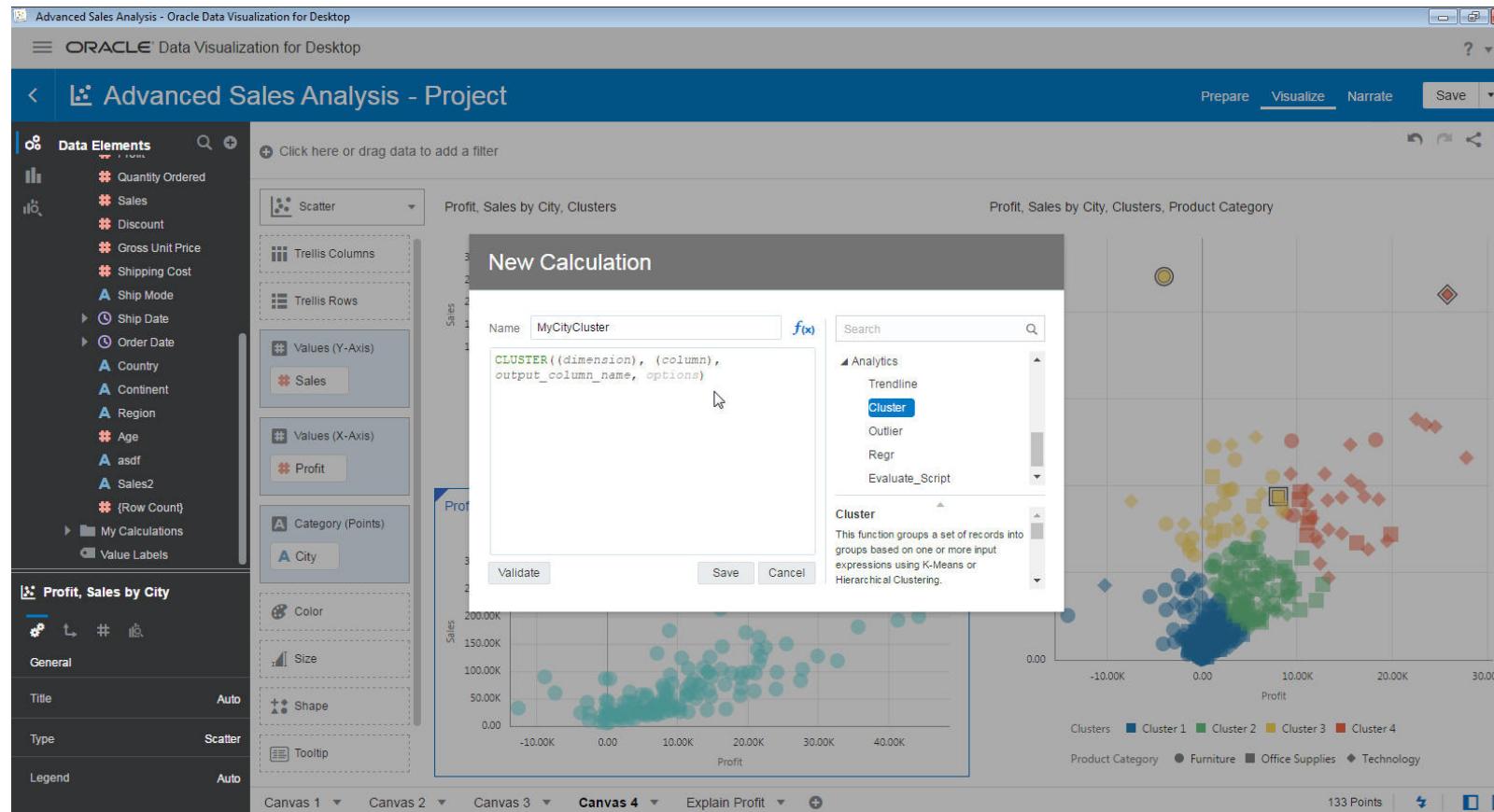
Assignment Screens: Use Expression Builder for Advanced Calculations



You create your own cluster definition.

For that on “My Calculation” right-click and select “Add Calculation”

Assignment Screens: Use Expression Builder for Advanced Calculations

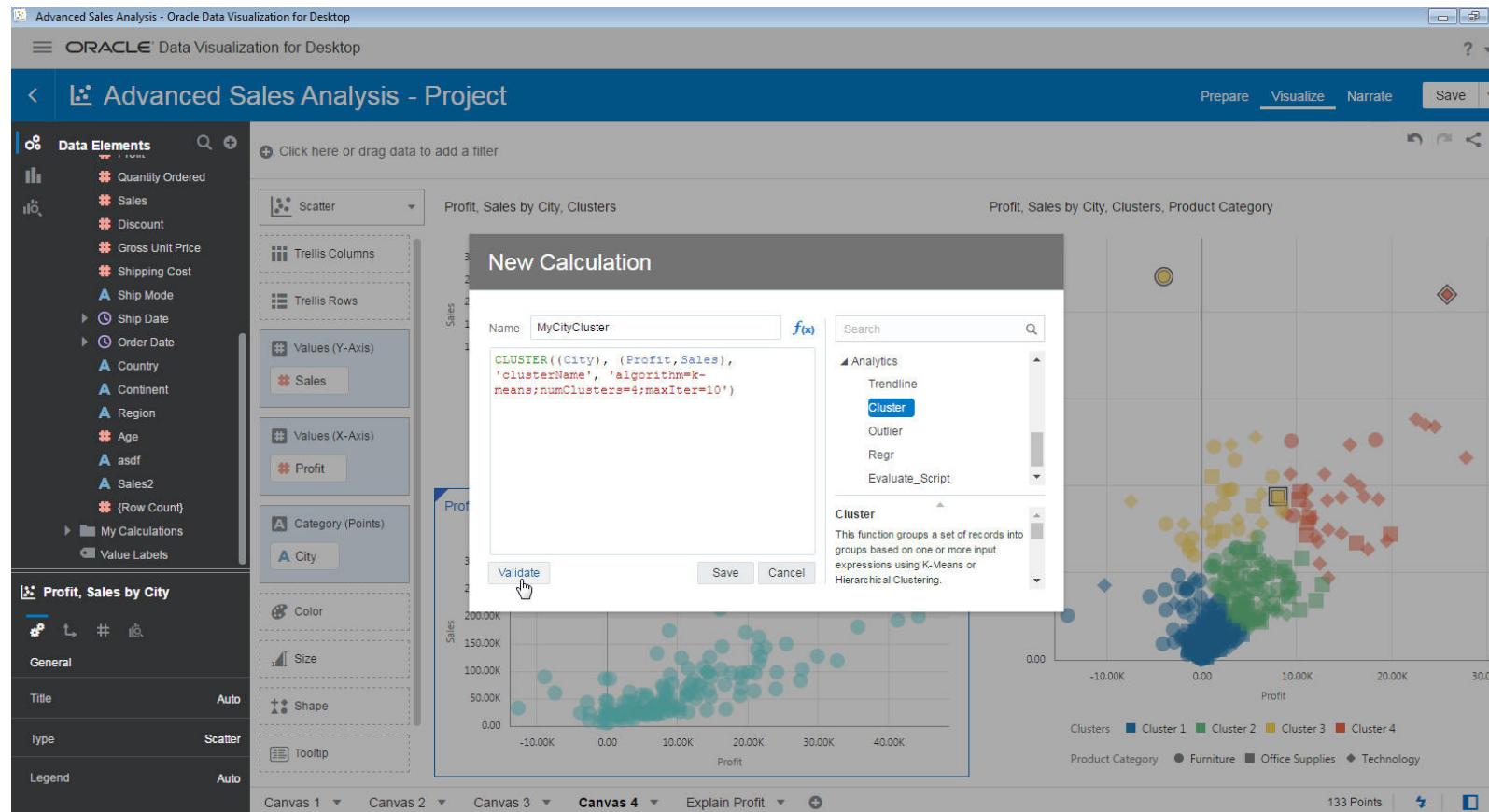


On the “New Calculation” window, in the name field enter “MyCityCluster”.

From the function builder on the right, click on the “Analytics” dropdown, select “Cluster”

The cluster function shows up.

Assignment Screens: Use Expression Builder for Advanced Calculations

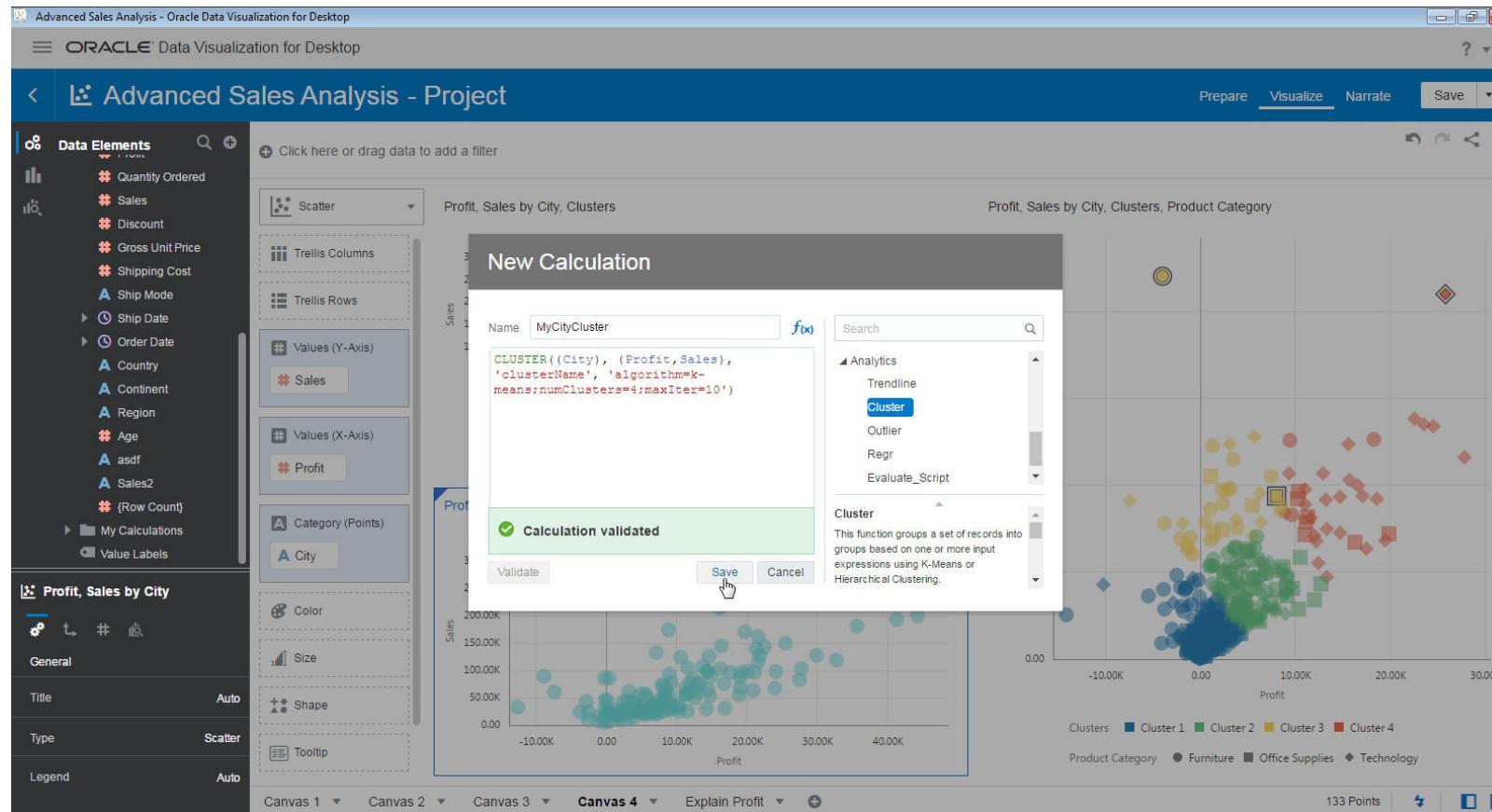


Type in

```
CLUSTER(("City"), ("Profit",  
"Sales"), 'clusterName',  
'algorithm=k-means;  
numClusters=4;maxIter=10')
```

Click Validate

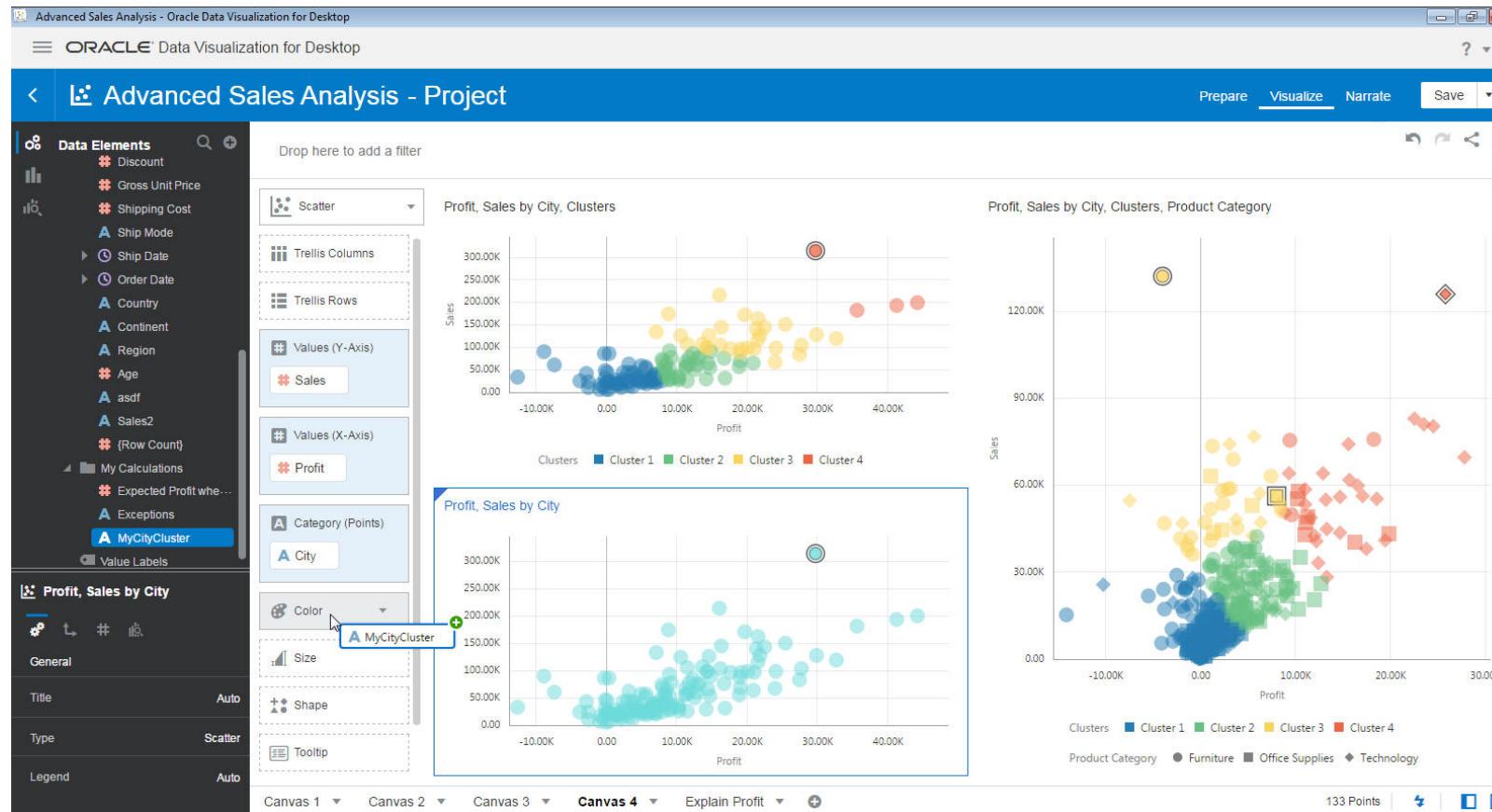
Assignment Screens: Use Expression Builder for Advanced Calculations



You have taken control of the parameters required for your specific calculation.

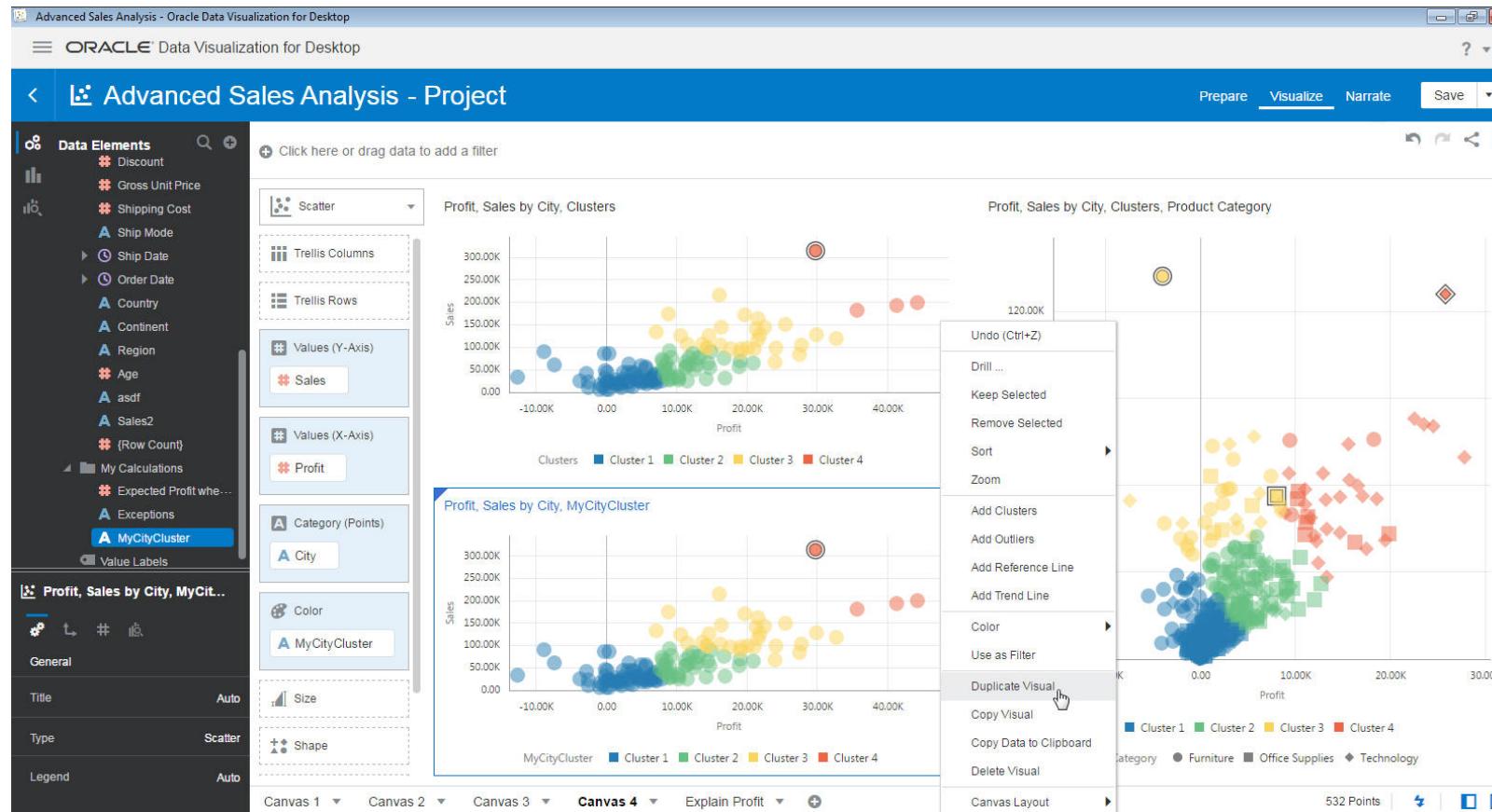
Now click “Save” on the “New Calculation” window.

Assignment Screens: Use Expression Builder for Advanced Calculations



Drop this new column
“MyCityCluster” on the “Color”
field of the grammar panel.

Assignment Screens: Use Expression Builder for Advanced Calculations

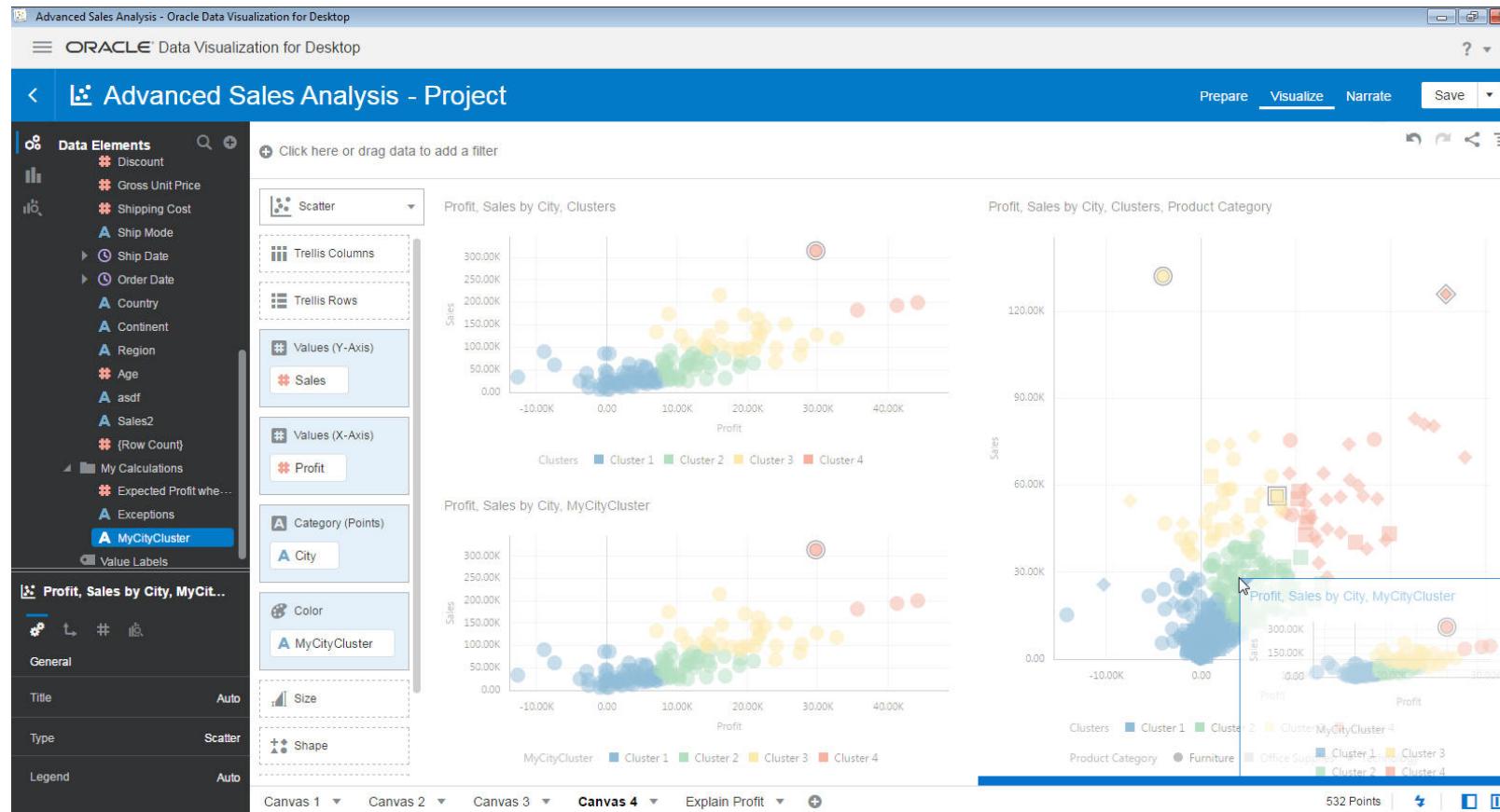


You now see the grouping, similar to the grouping shown earlier.

Lets use this third visual to create another visual.

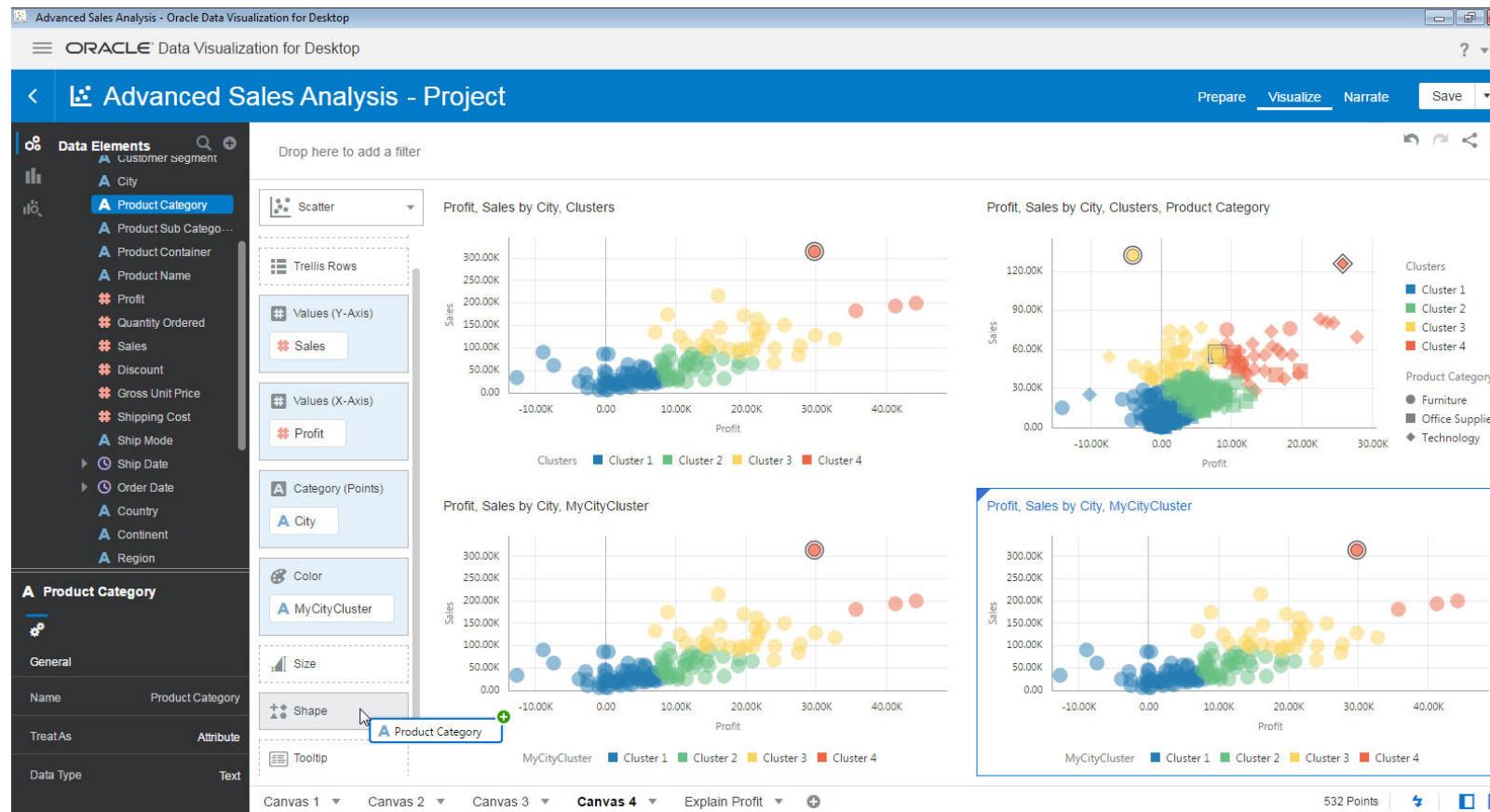
Right click on the visual and select “Duplicate Visual”

Assignment Screens: Use Expression Builder for Advanced Calculations



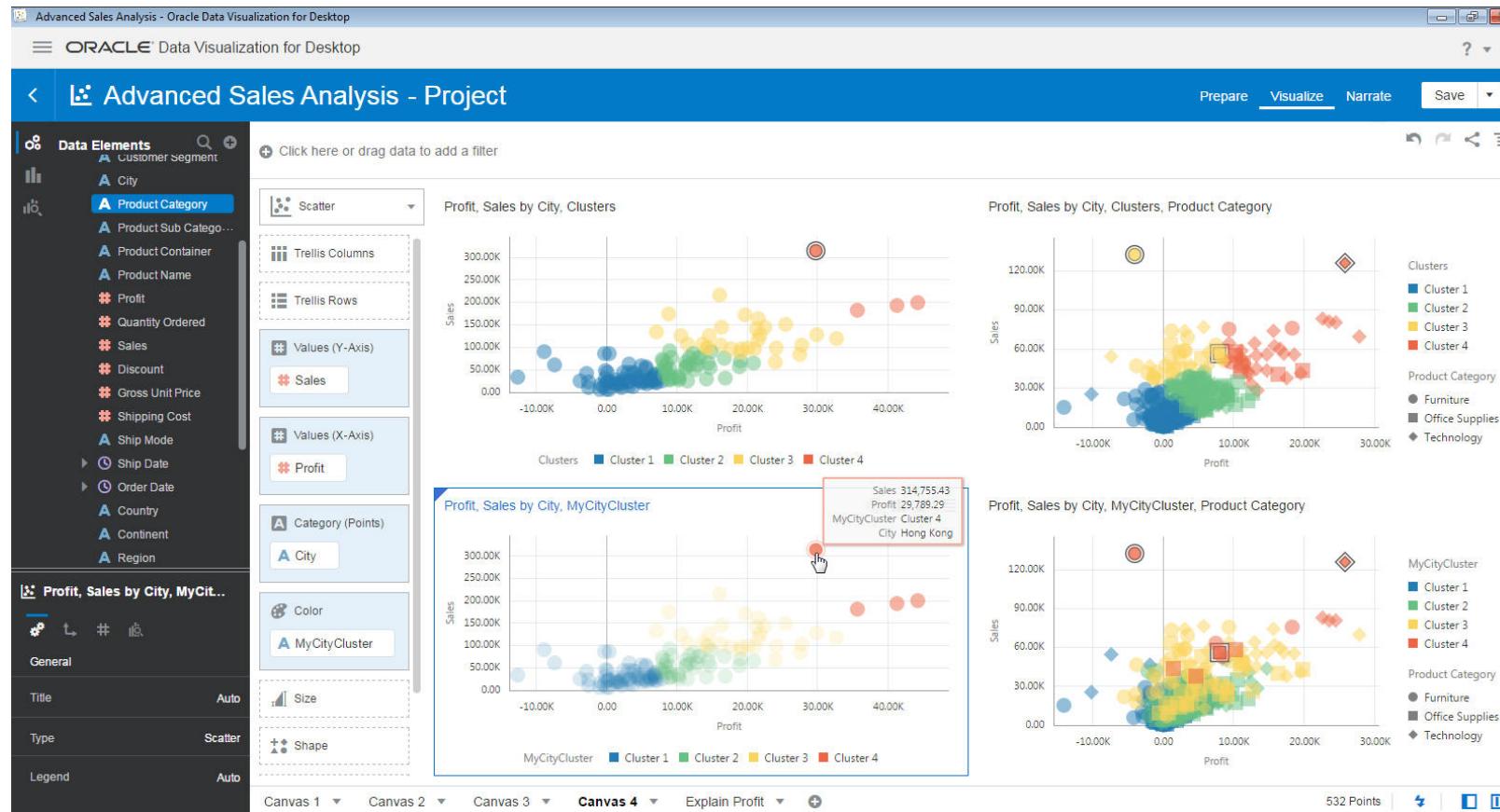
Drag and drop the new visual below the one on the right.

Assignment Screens: Use Expression Builder for Advanced Calculations



On this new visual, drag and drop the “Product Category” column on the “Shape” field on the grammar panel.

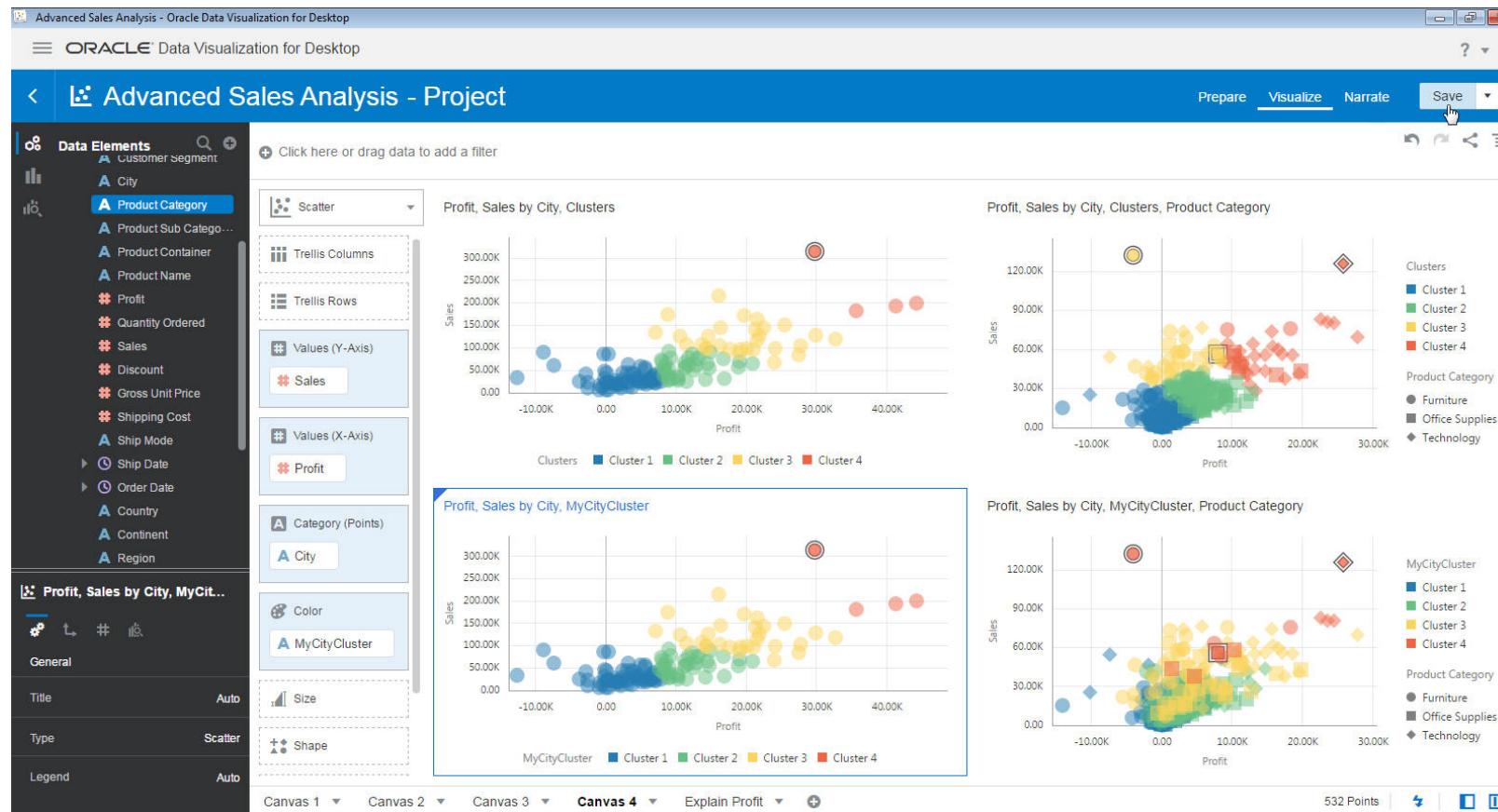
Assignment Screens: Use Expression Builder for Advanced Calculations



On the bottom left visual, now select “Hong Kong”, you will see the “City” cluster definition now persists on the visual on the bottom right, ie. the product category of the products sold in Hong Kong are still marked under the same cluster or segment.

This is because, it is using the custom defined Cluster we created earlier using the expression builder.

Assignment Screens: Use Expression Builder for Advanced Calculations



In this lecture you learnt to create custom definitions of advanced analytic functions, using the expression builder.

It allows users control over the parameters of the algorithm and also help persistent usage of the custom definitions for all segmentation requirements.

Click “Save” on the top right.

(more assignments on this project to follow)

What is your project all about ?

Tell your story



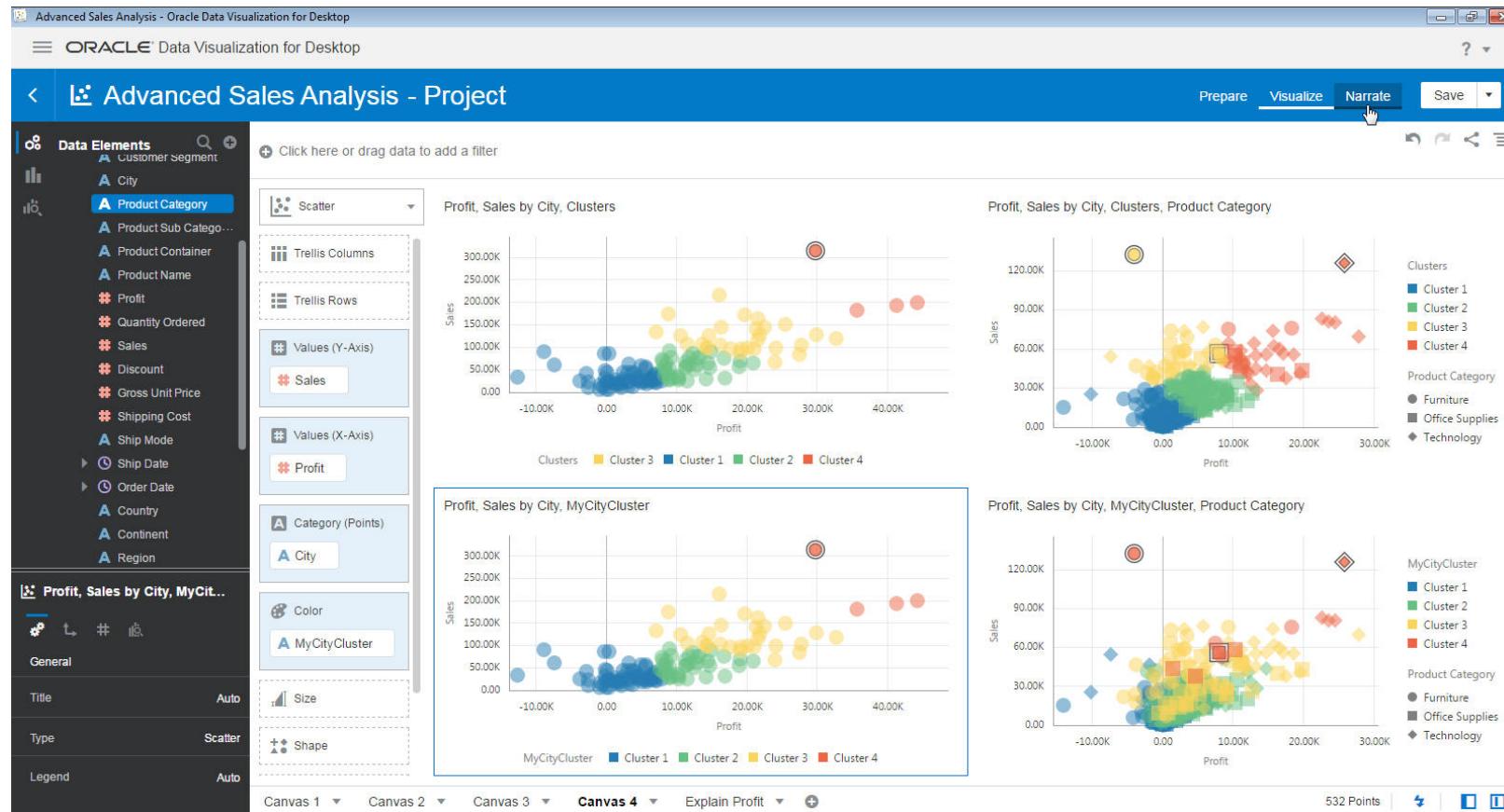
Section 4: Advanced Analytics Made Easy with Oracle Analytics

Build Story Telling to Explain Sales Performance

Narrate your story

- Business users can leverage Narrate feature to create a story
- Story telling allows analysts to
 - Organize your hypothesis, to initiate discussions amongst stakeholders
 - Present your story in “power-point” like mode
 - Share your story with other stakeholders

Assignment Screens: Build Story Telling to Explain Sales Performance

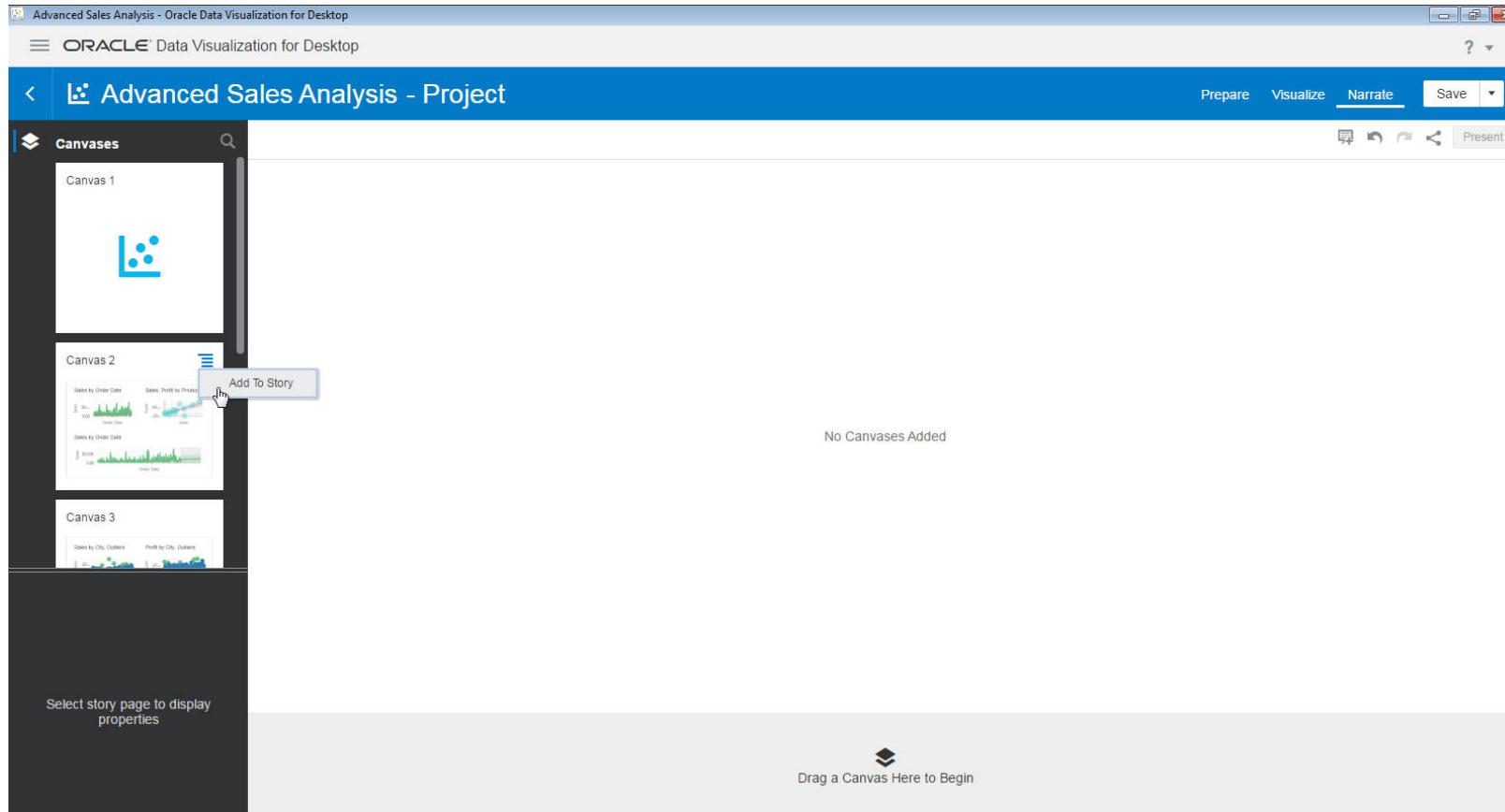


Let's continue in the same project.

To be able to create a story and present it, you have to use the “Narrate” button on top-right.

Click “Narrate”

Assignment Screens: Build Story Telling to Explain Sales Performance

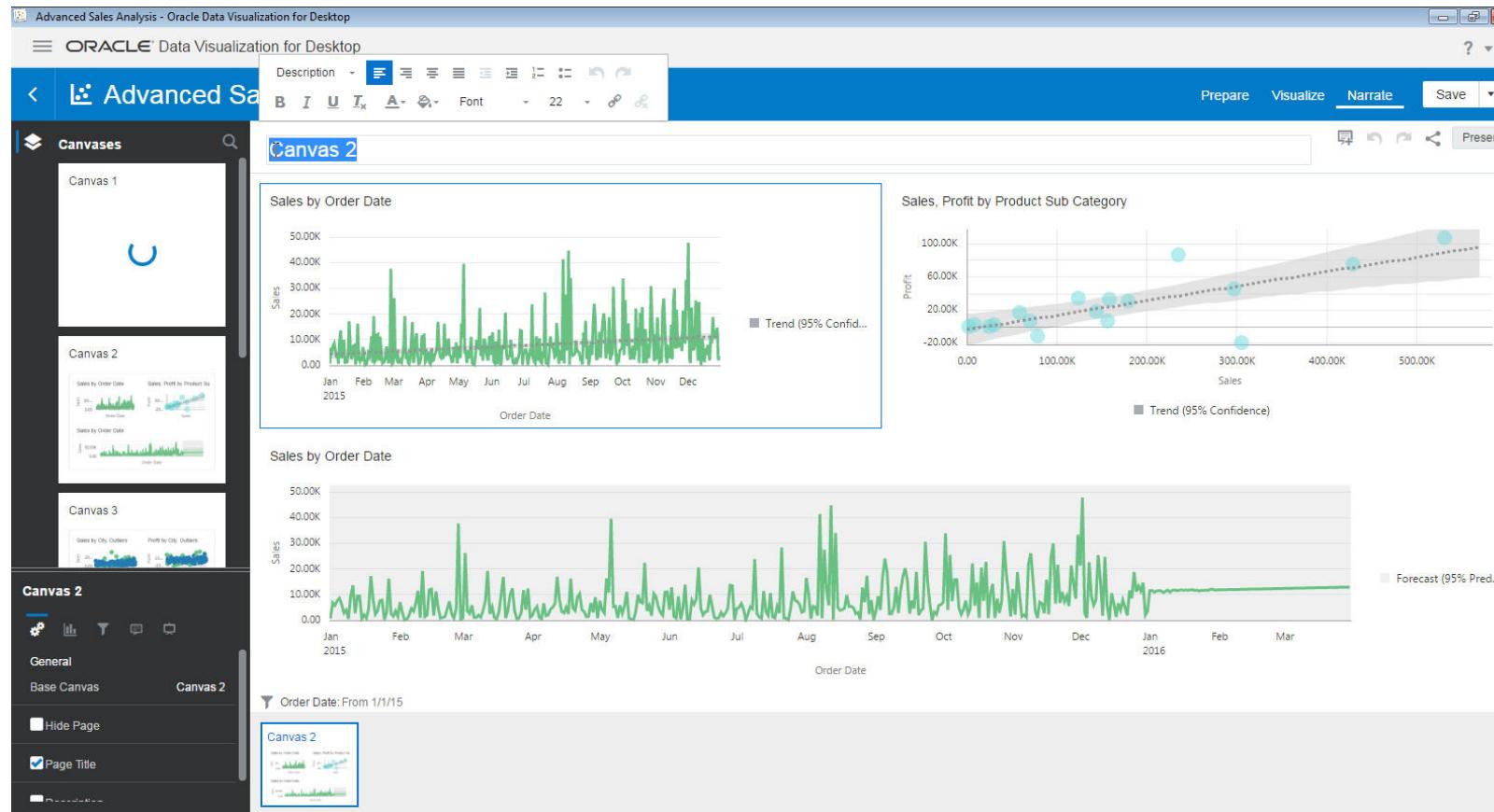


While on the Narrate section you see a list of canvases that you have made in the project.

You may choose all or few of the canvases to present your business case.

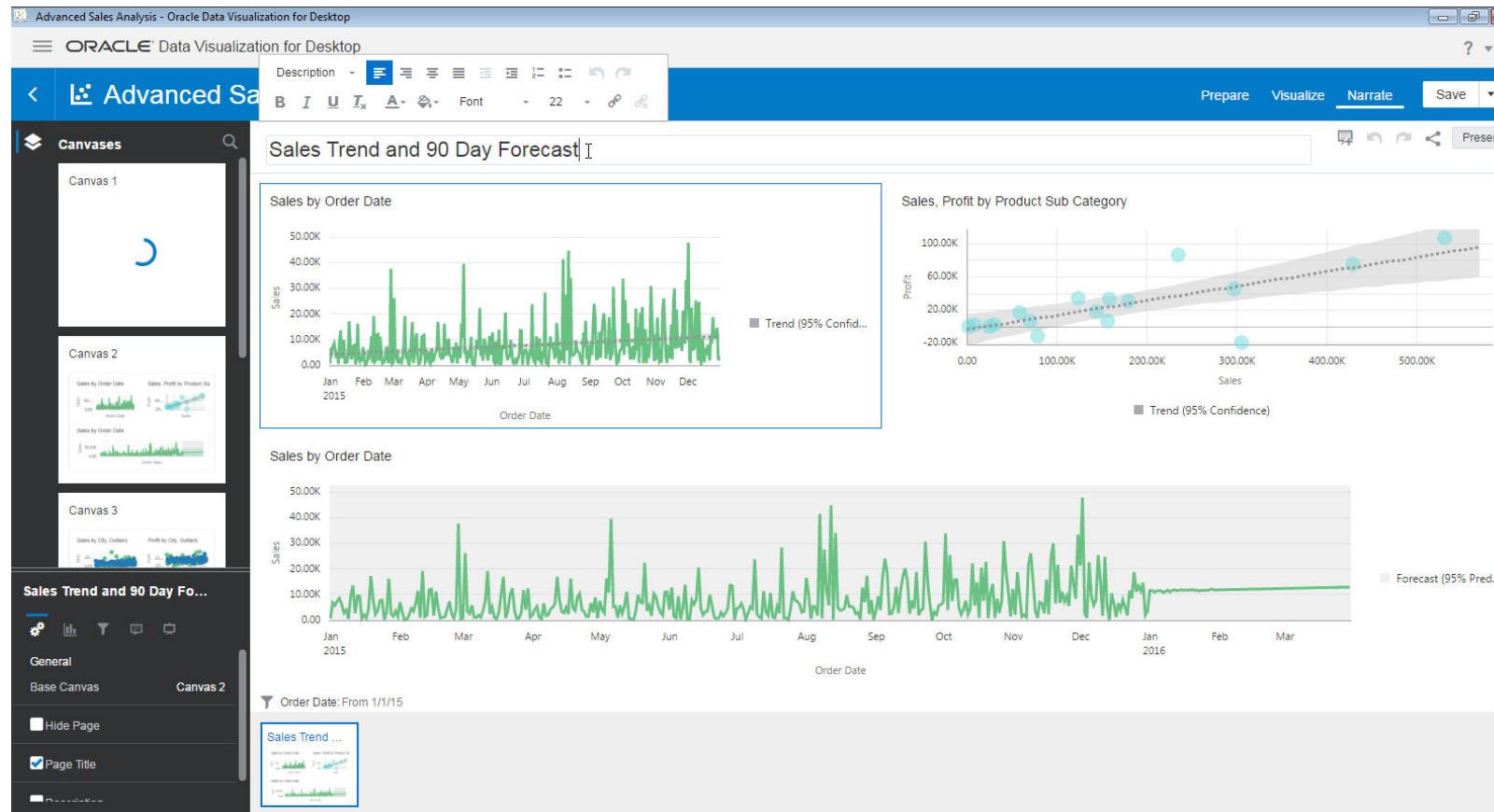
For this project you select the “Canvas 2” and from the “Menu”, click “Add to Story”

Assignment Screens: Build Story Telling to Explain Sales Performance



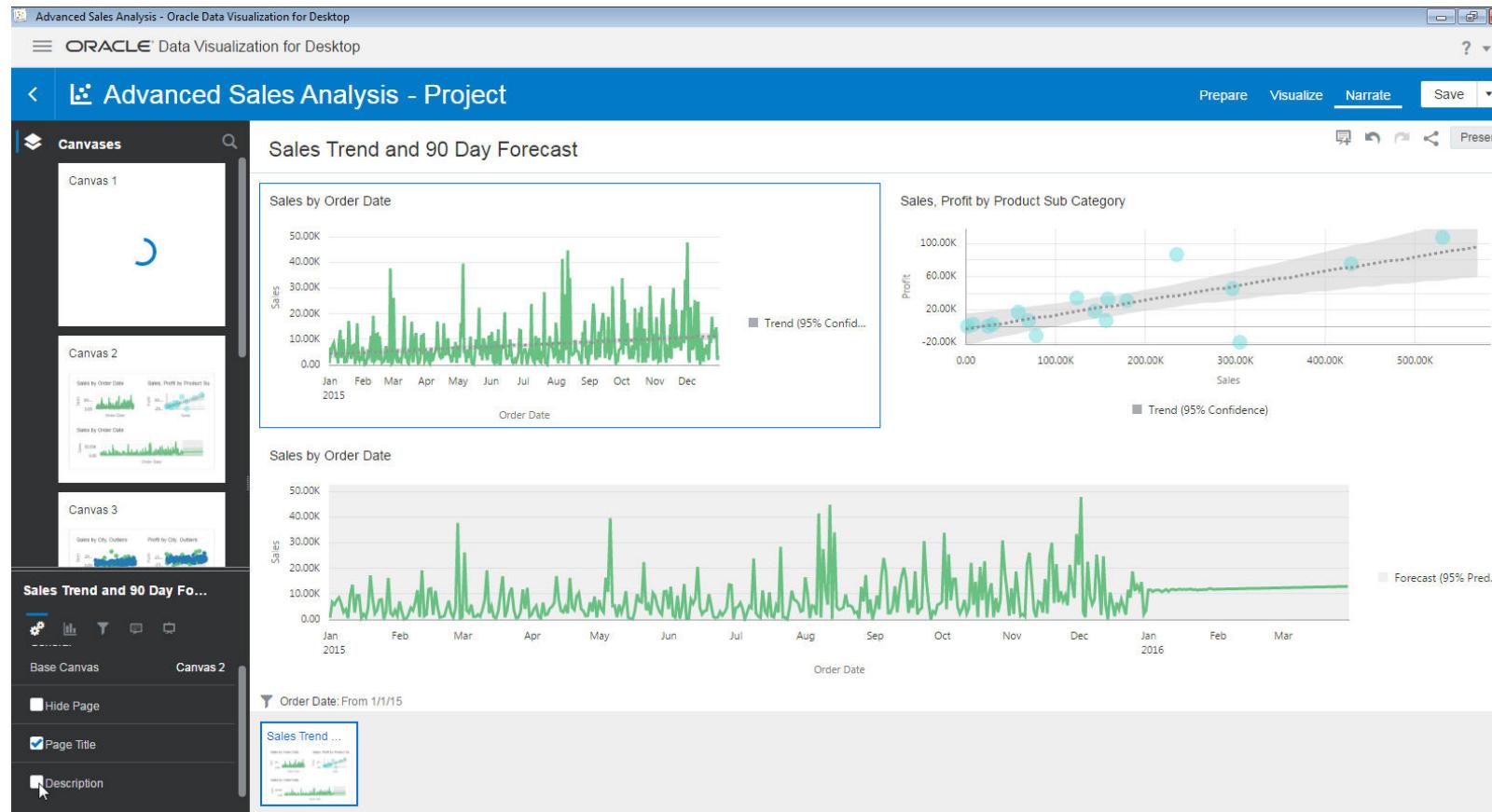
The canvas is added, on the Page Title, double click on “Canvas 2”, to change the title of the canvas.

Assignment Screens: Build Story Telling to Explain Sales Performance



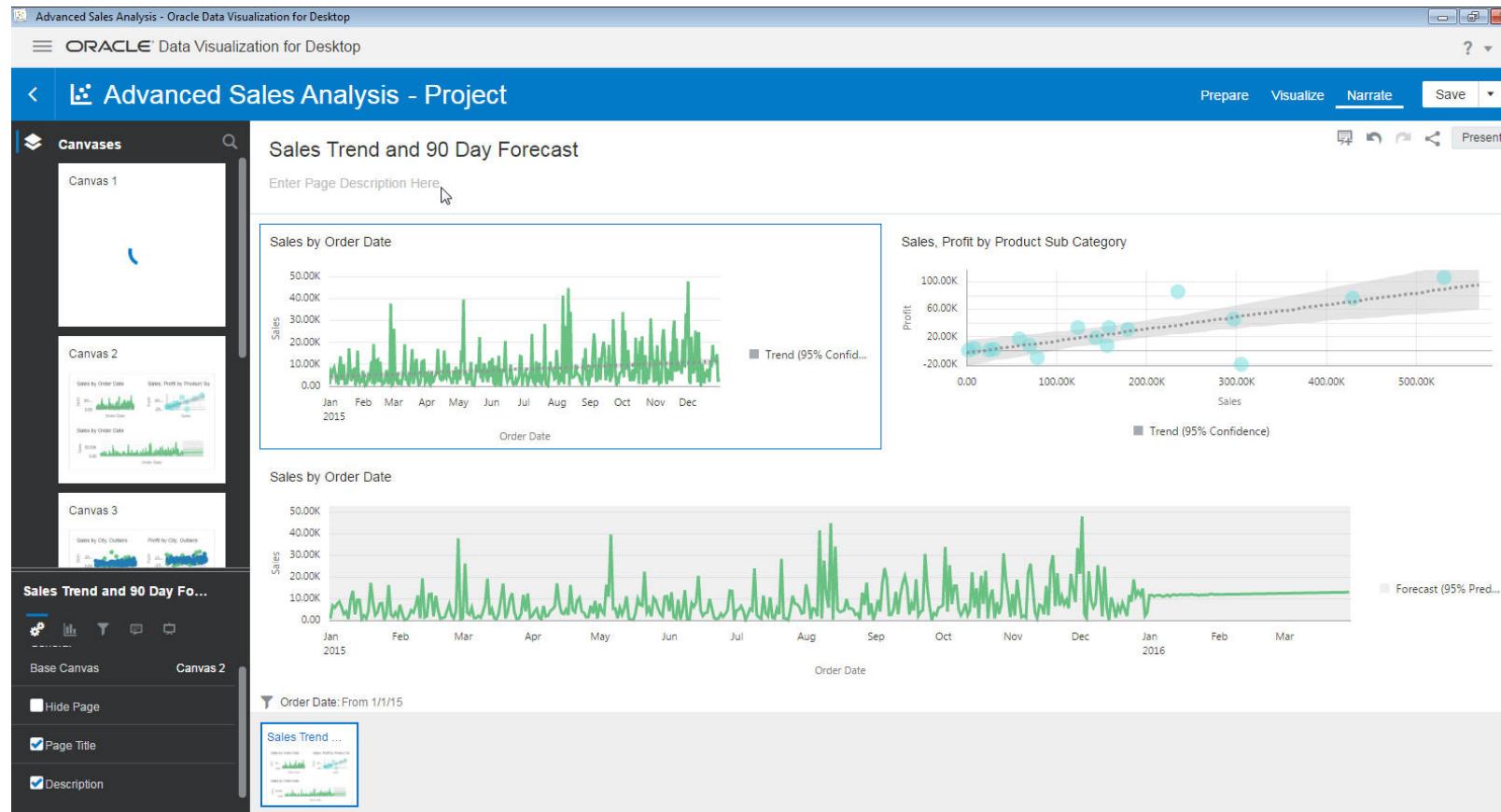
Type in “Sales Trend and 90 Day Forecast”, you could use the font section for additional formatting, if required.

Assignment Screens: Build Story Telling to Explain Sales Performance



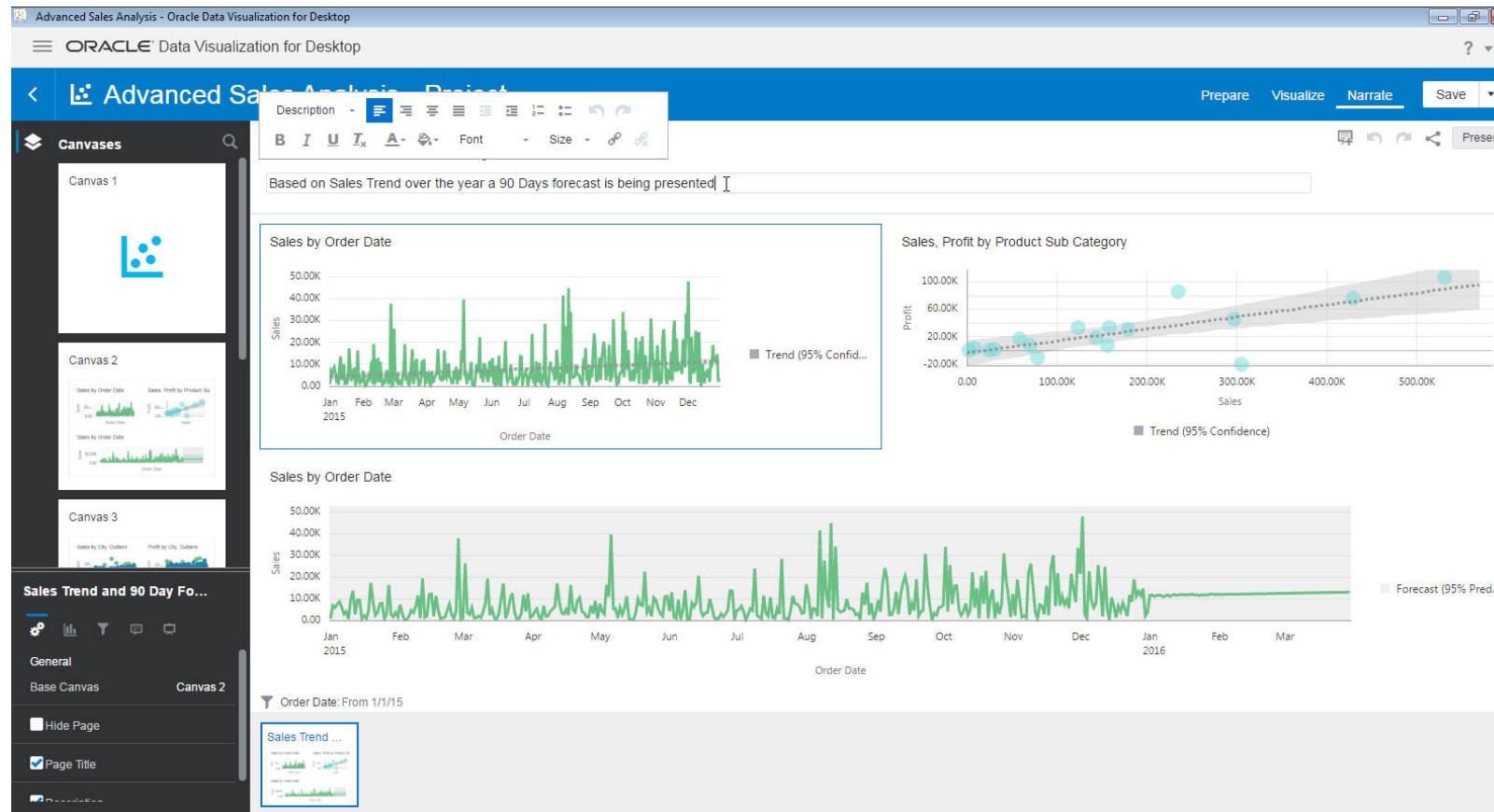
On the Canvas property pane, at the left bottom, click “Description”

Assignment Screens: Build Story Telling to Explain Sales Performance



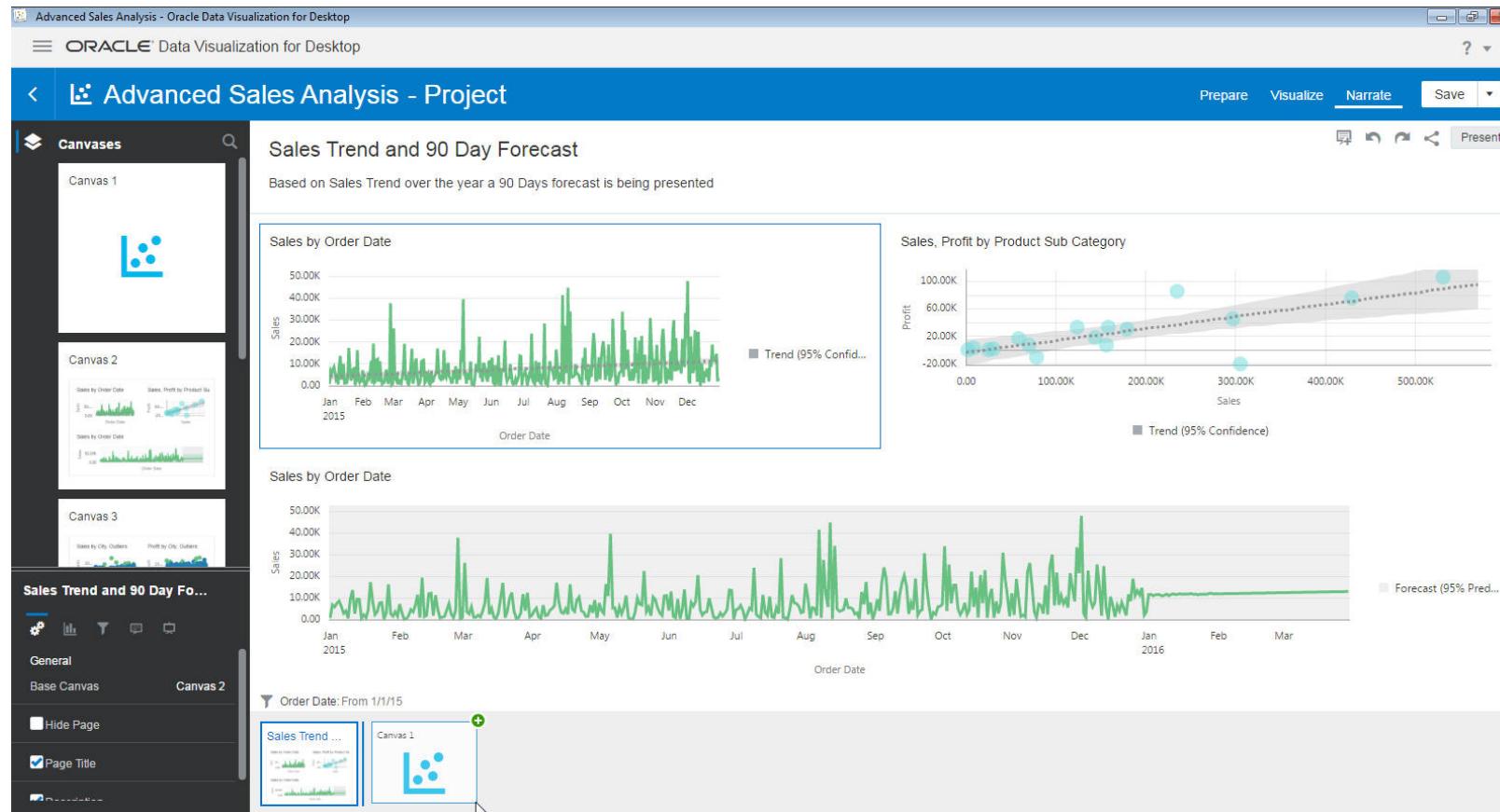
A description text box, opens up , below the “Page Title”, recently entered.

Assignment Screens: Build Story Telling to Explain Sales Performance



Double click on the text box and type in “Based on sales Trend over the year a 90 Days forecast is being presented”

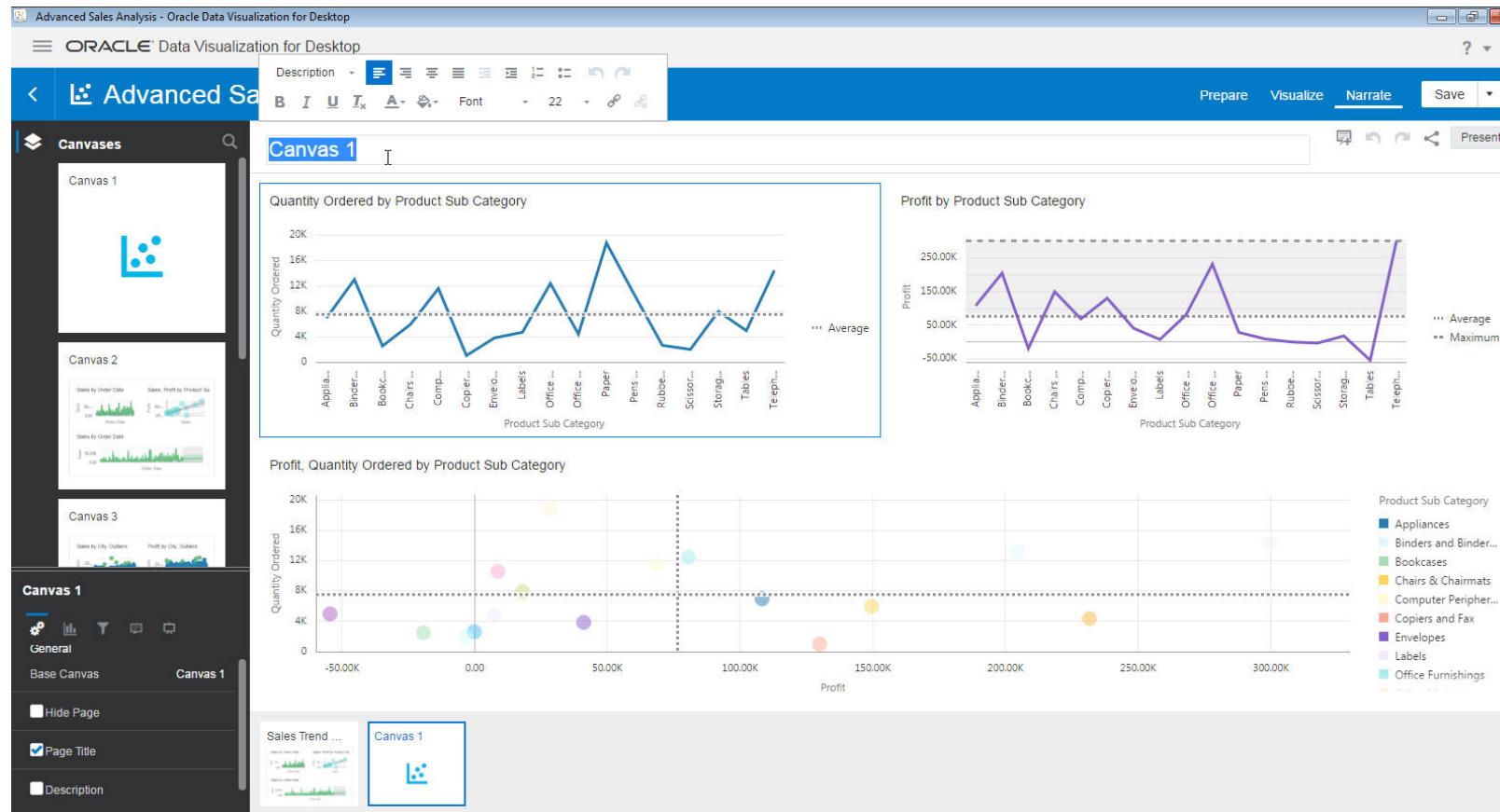
Assignment Screens: Build Story Telling to Explain Sales Performance



Your first slide or story board of the presentation is ready.

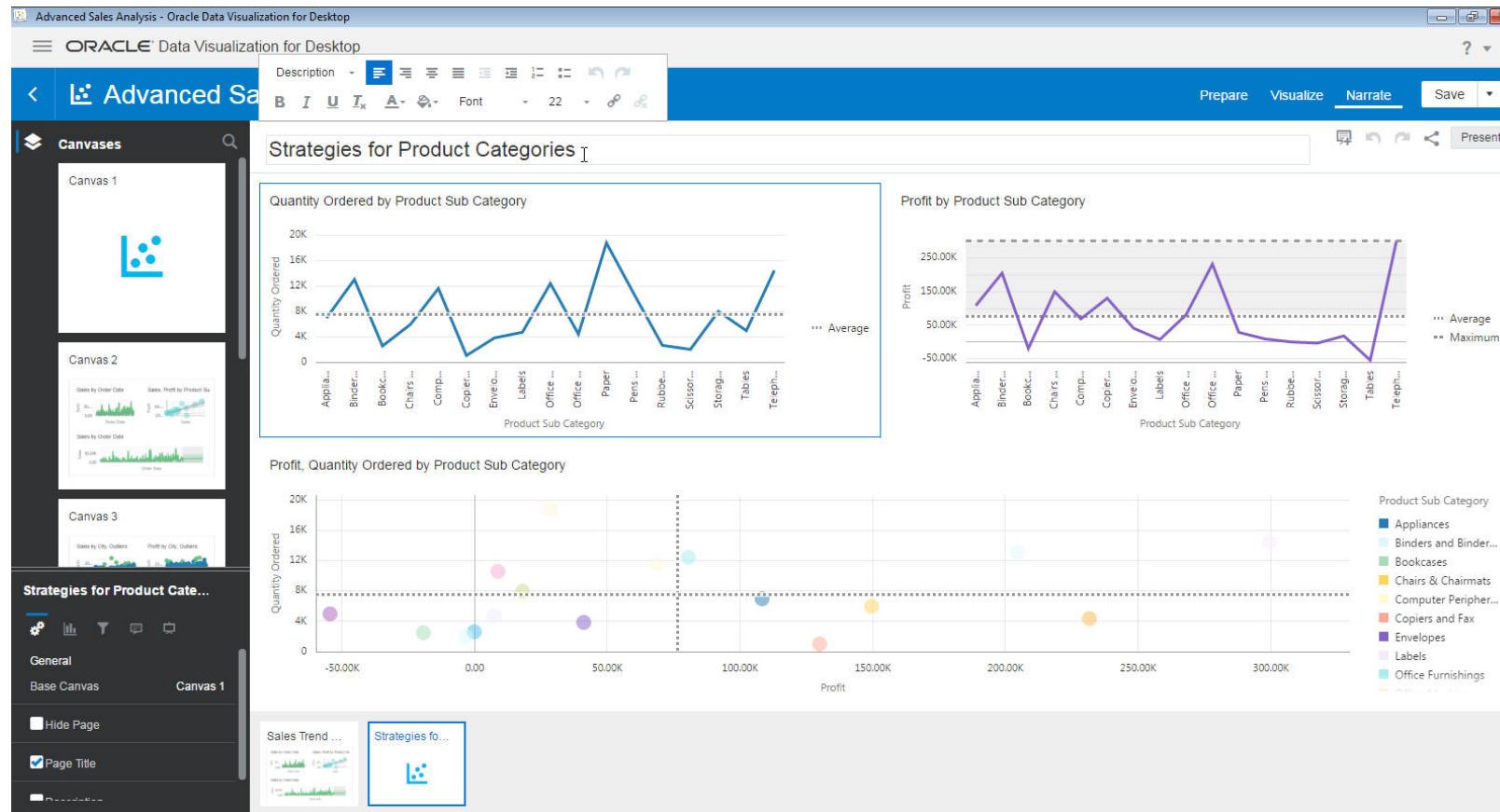
You now drag and drop the “Canvas 1” to the strip below, this adds the second slide or story board to the story

Assignment Screens: Build Story Telling to Explain Sales Performance



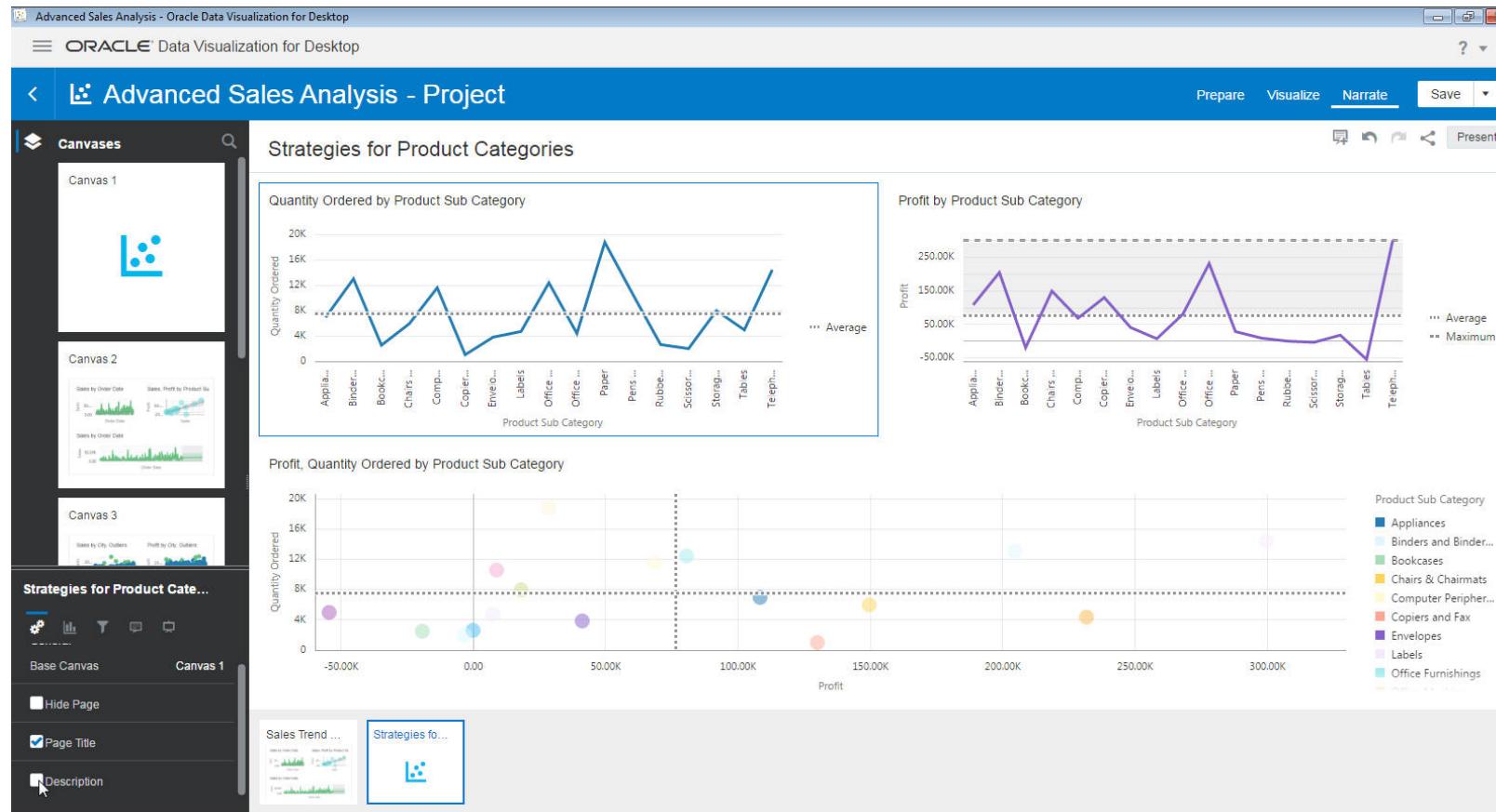
On the Page Title, double click on “Canvas 1”, to change the title of the canvas.

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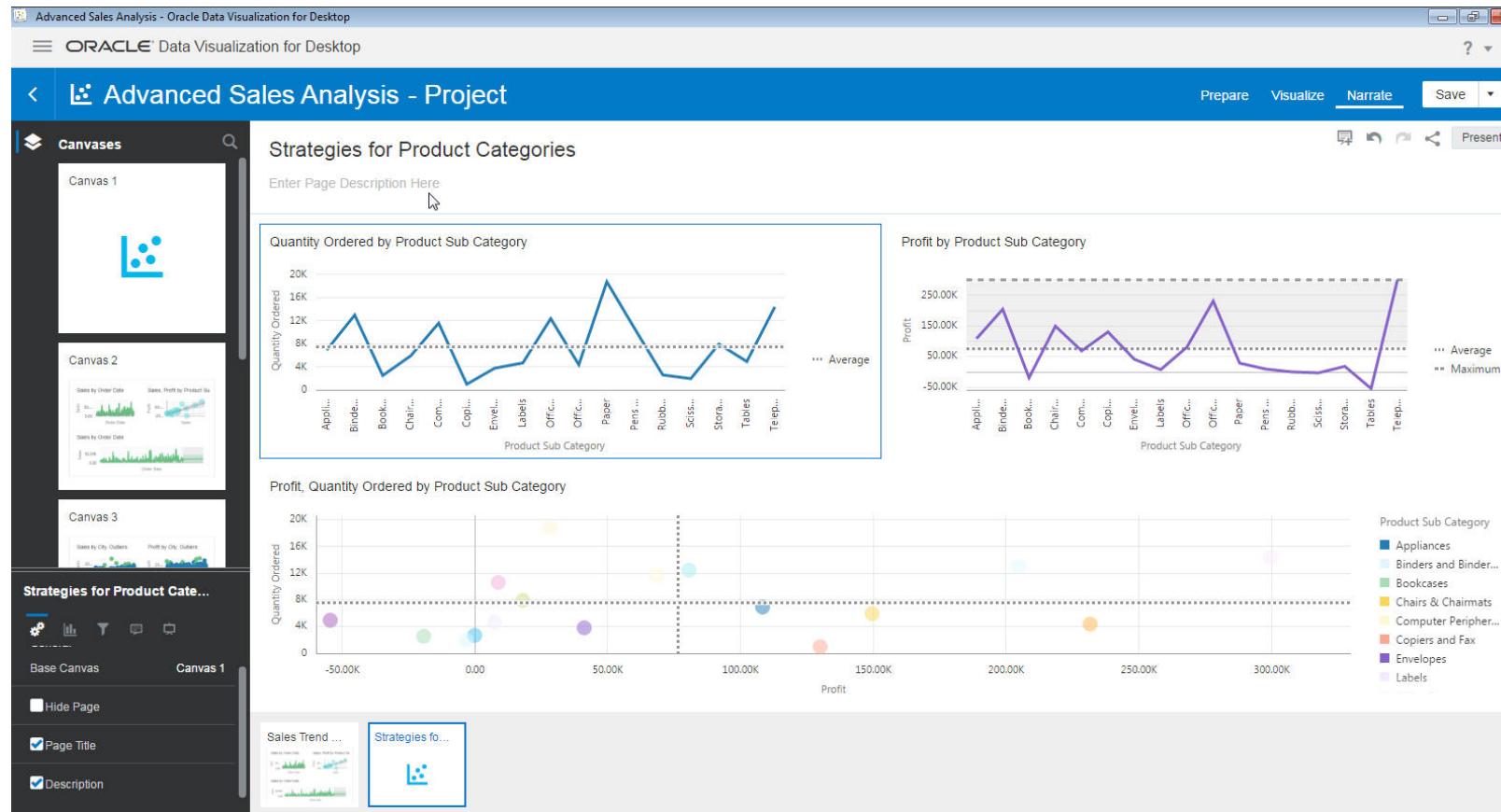
Type in “Strategies for Product categories”, you could use the font section for additional formatting, if required.

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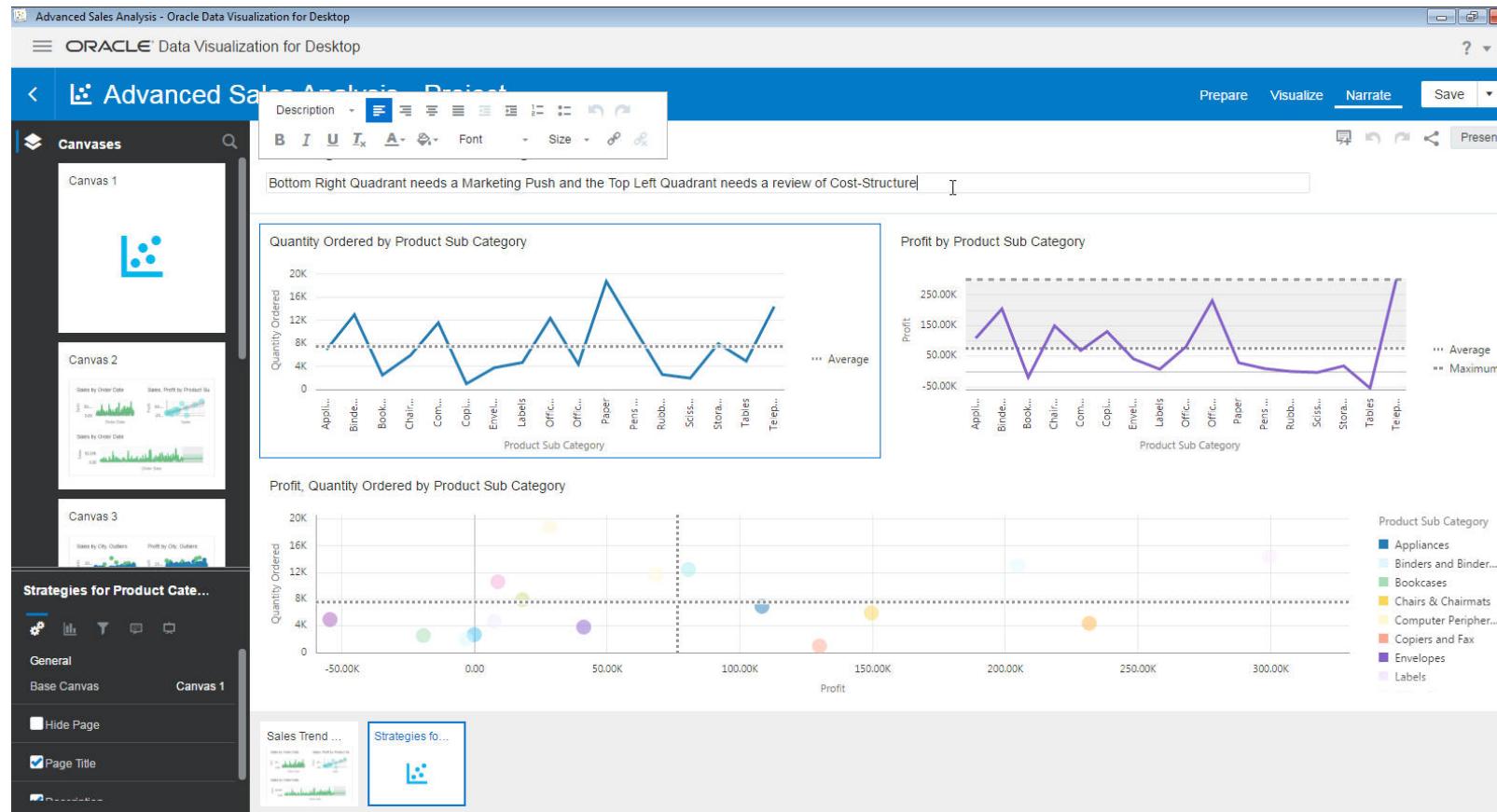
On the Canvas property pane, at the left bottom, click “Description”

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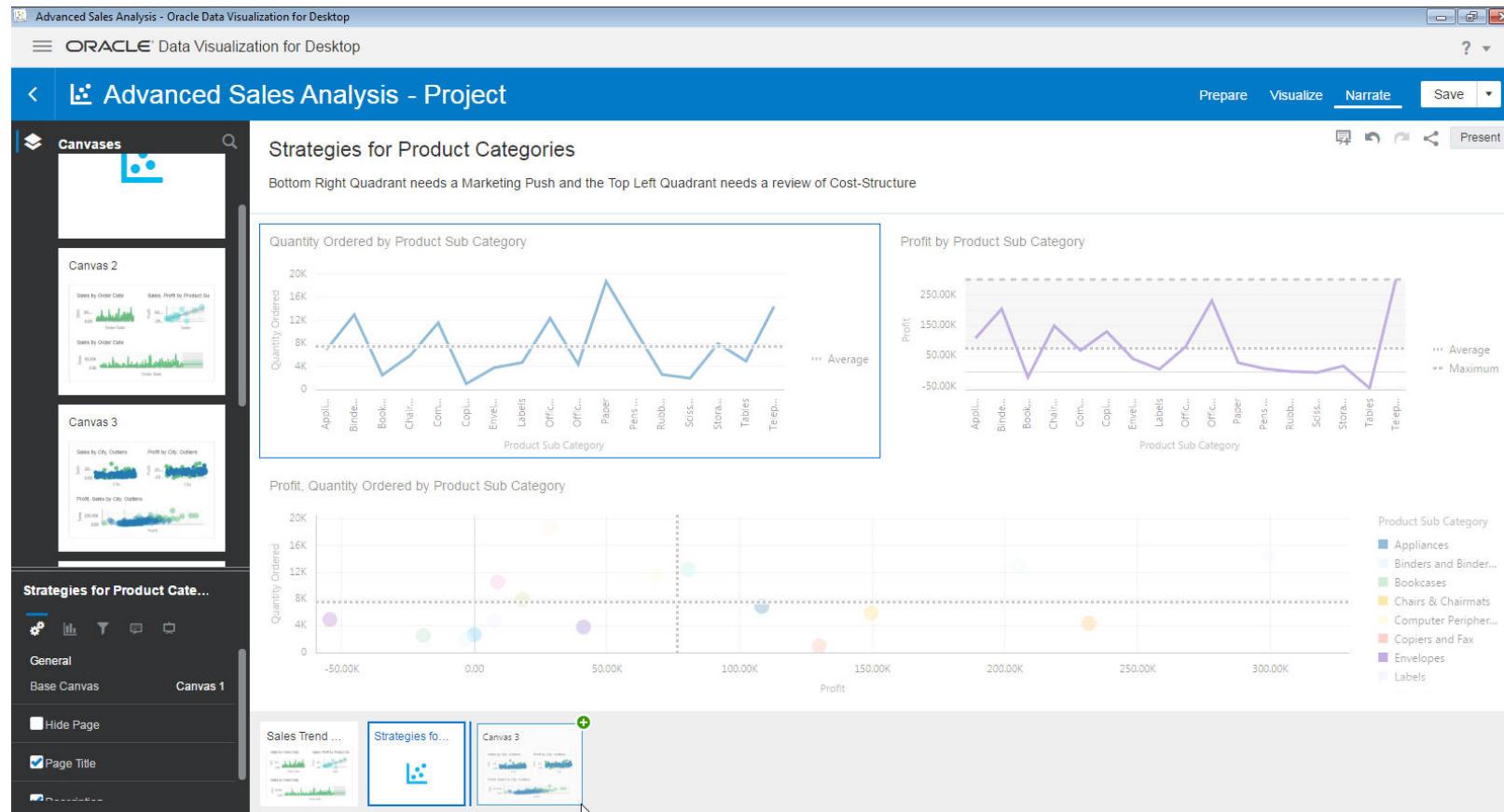
A description text box, opens up , below the “Page Title”, recently entered.

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Double click on the text box and type in “Bottom Right Quadrant needs a Marketing Push and the Top Left Quadrant needs a review of Cost-Structure”

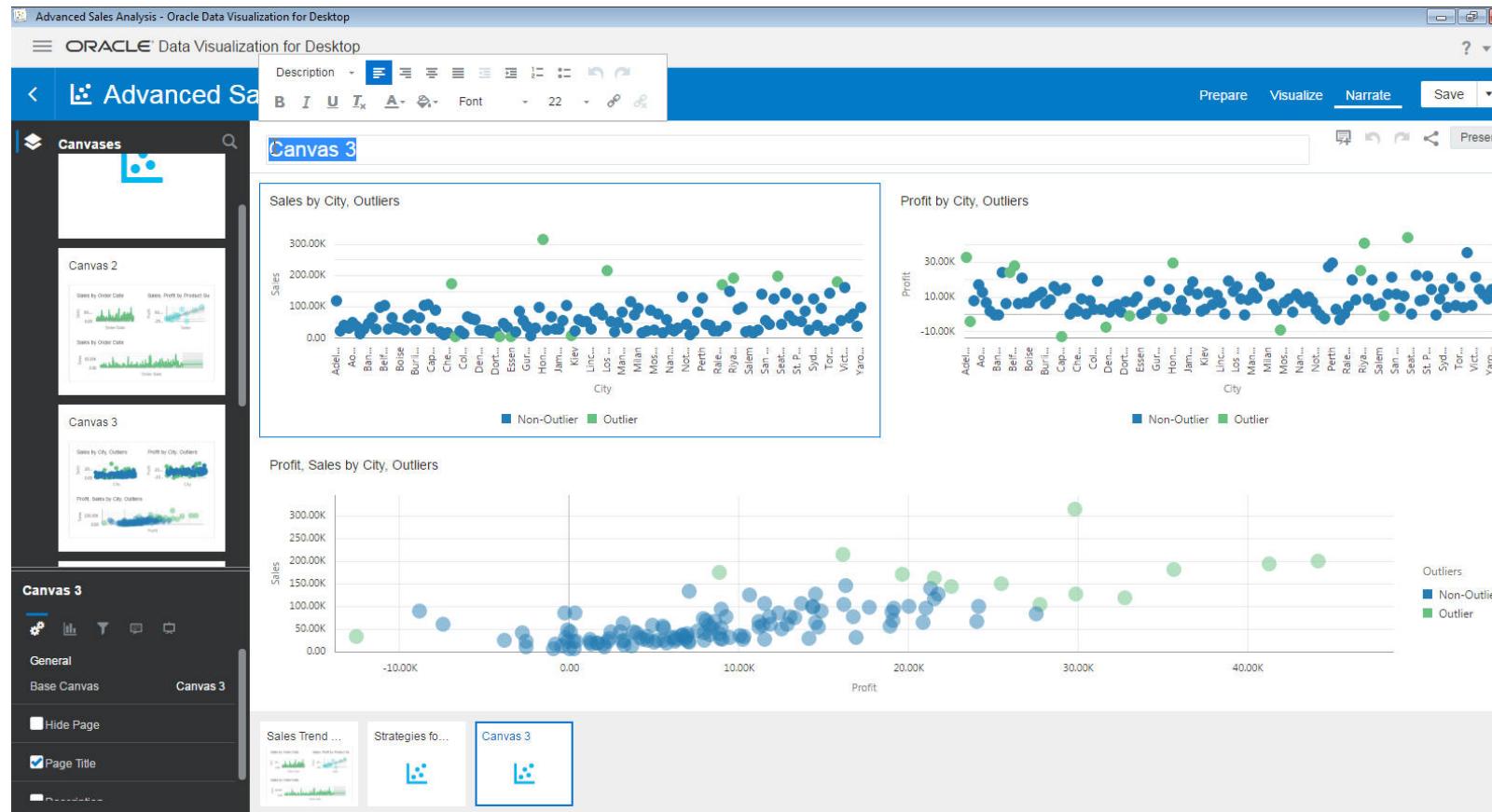
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Your second slide or story board of the presentation is ready.

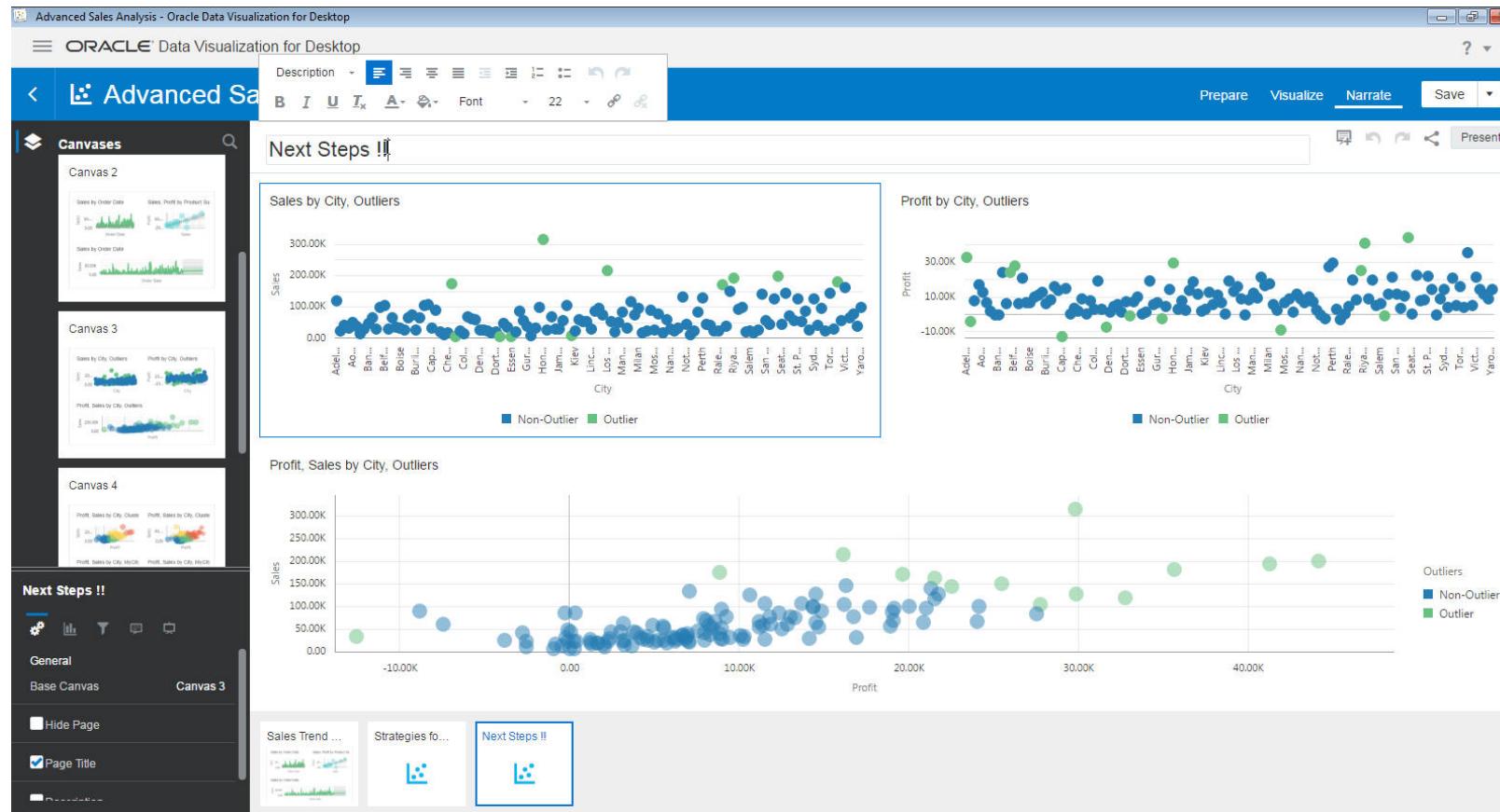
You now drag and drop the “Canvas 3” to the strip below, this adds the third slide or story board to the story

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On the Page Title, double click on “Canvas 3”, to change the title of the canvas.

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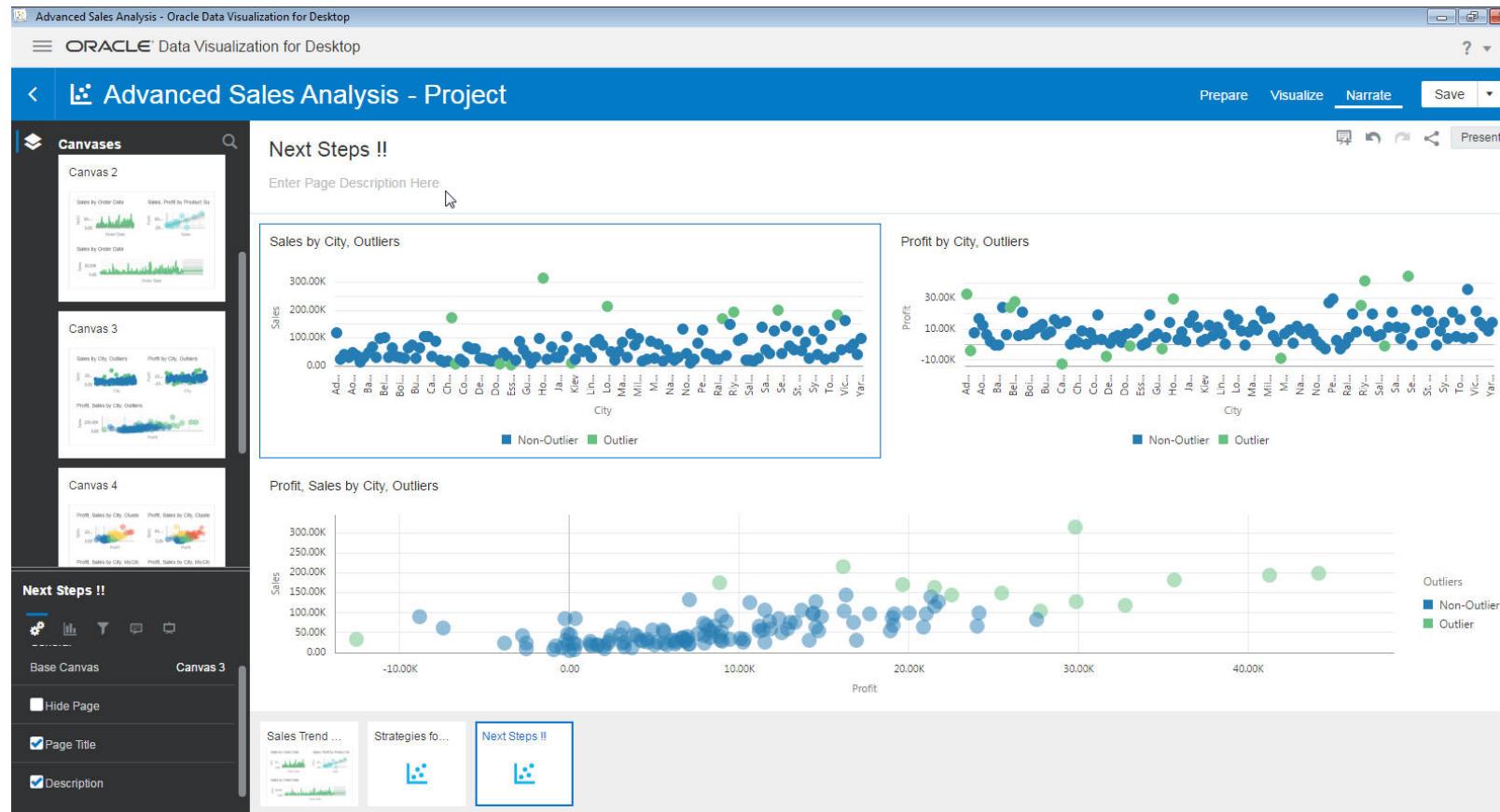
Type in “Next Steps !!”, you could use the font section for additional formatting, if required.

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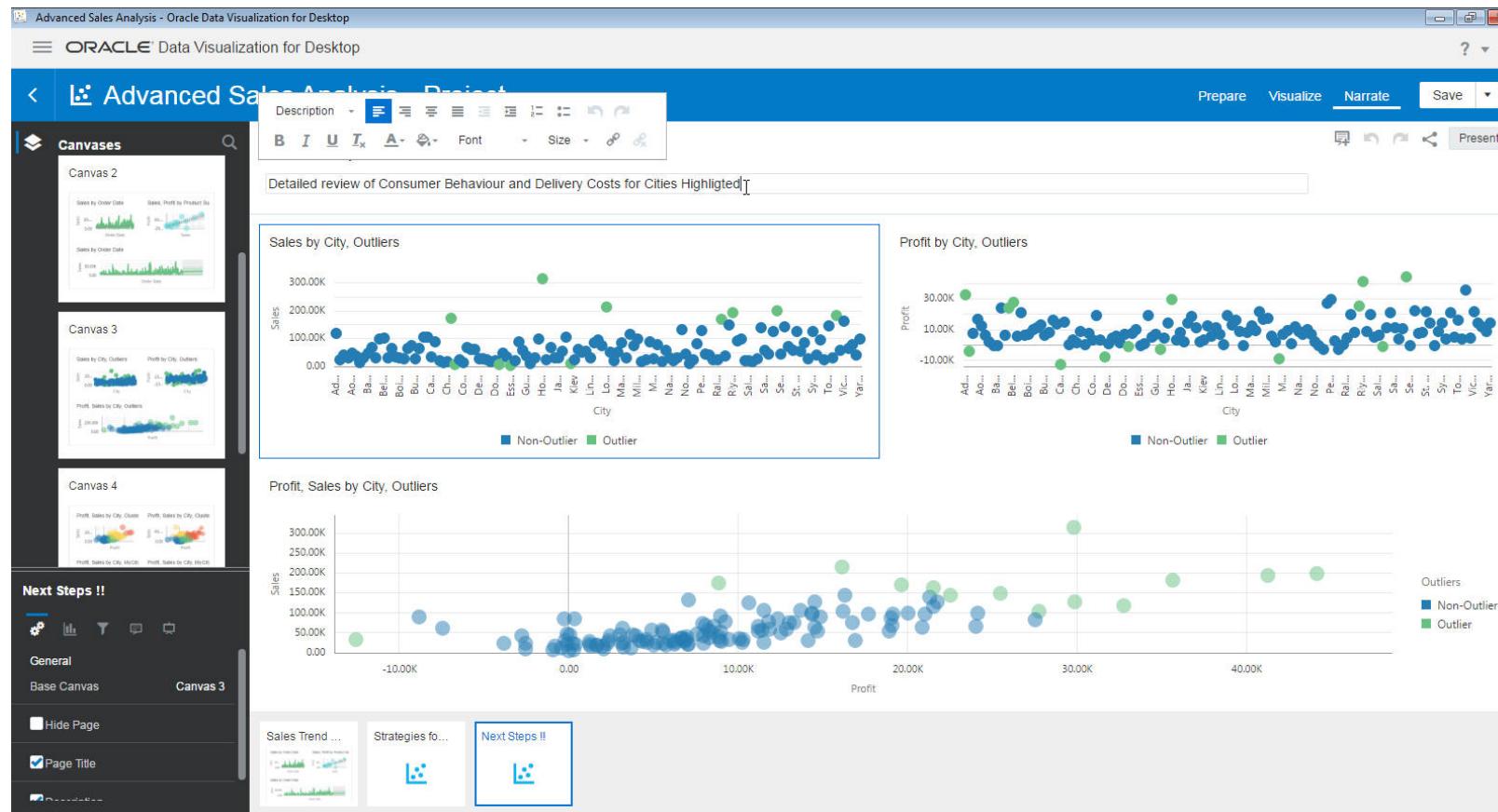
On the Canvas property pane, at the left bottom, click “Description”

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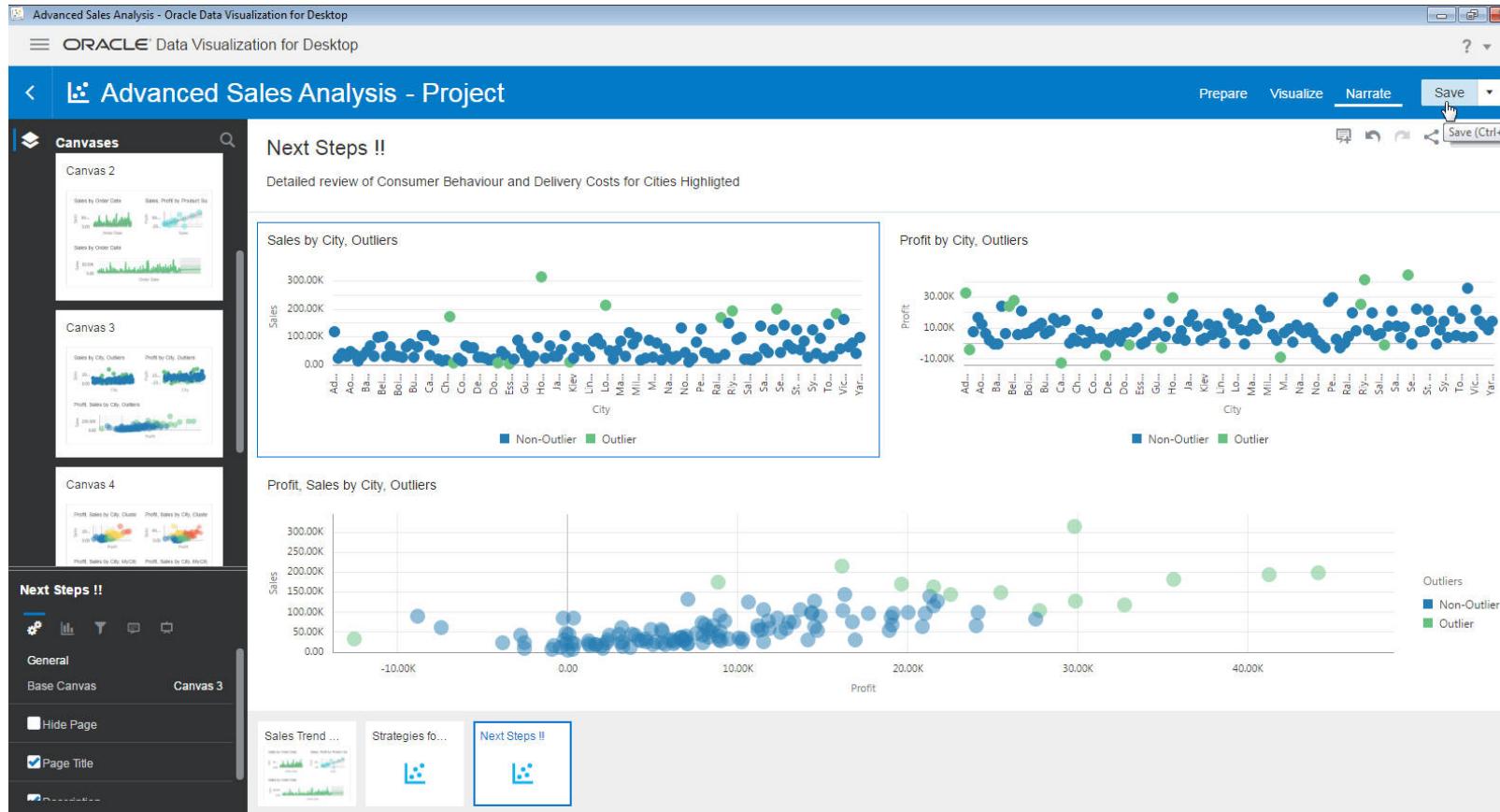
A description text box, opens up , below the “Page Title”, recently entered.

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Double click on the text box and type in “Detailed review of Consumer Behavior and Delivery Costs for Cities Highlighted”

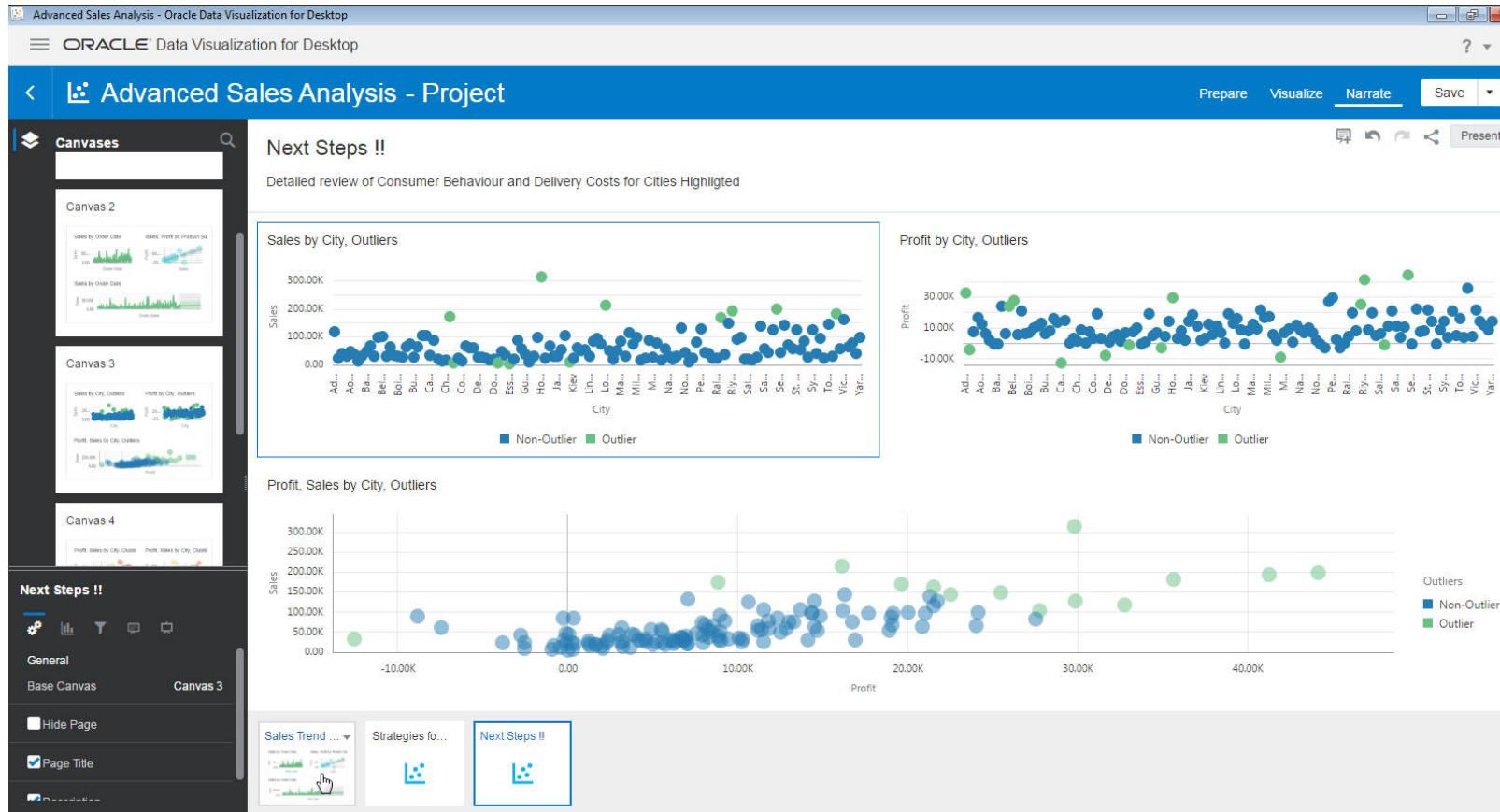
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Our Story preparation is almost done.

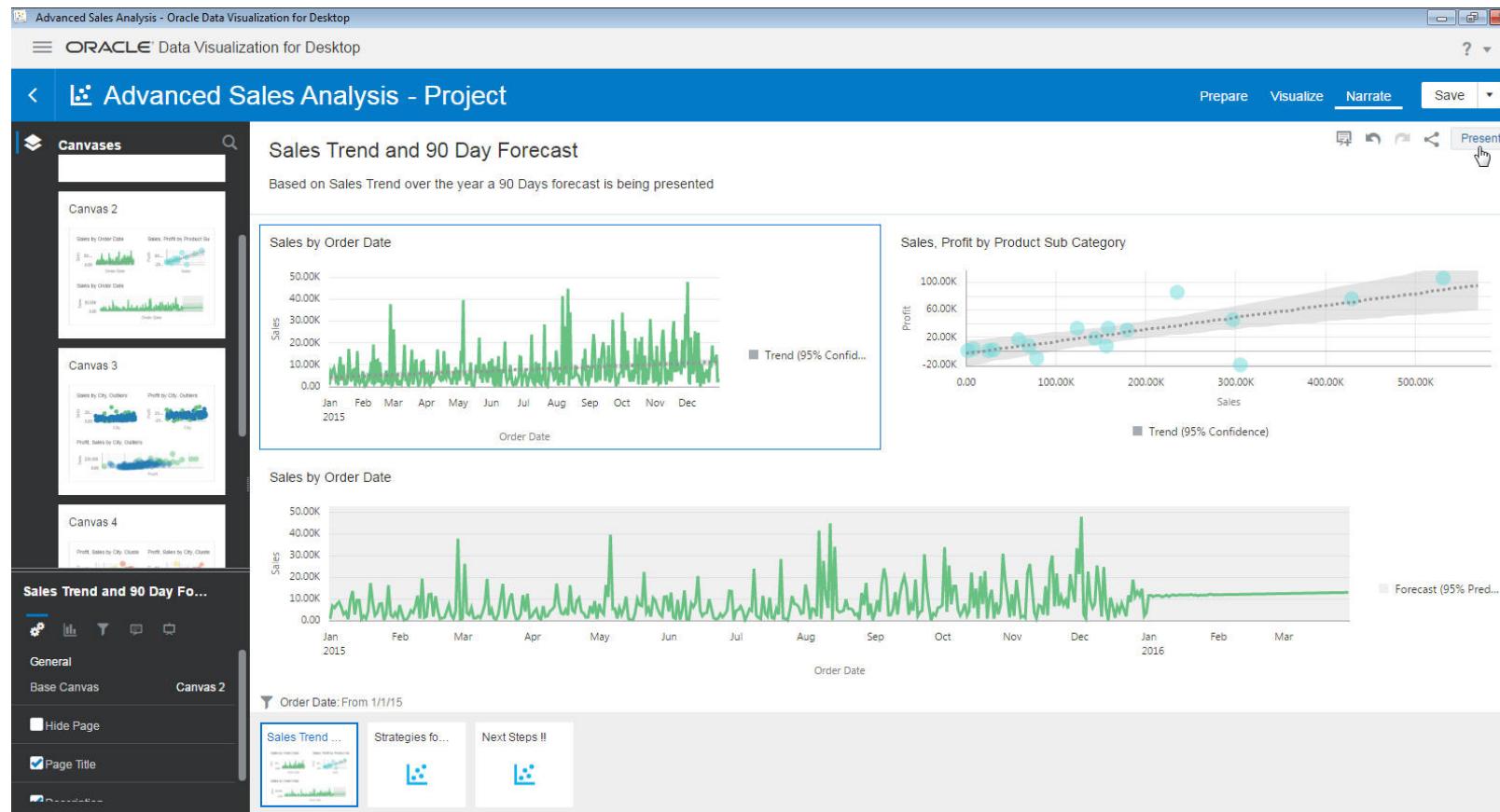
Let's Save our Project, click "Save" at the top-right corner.

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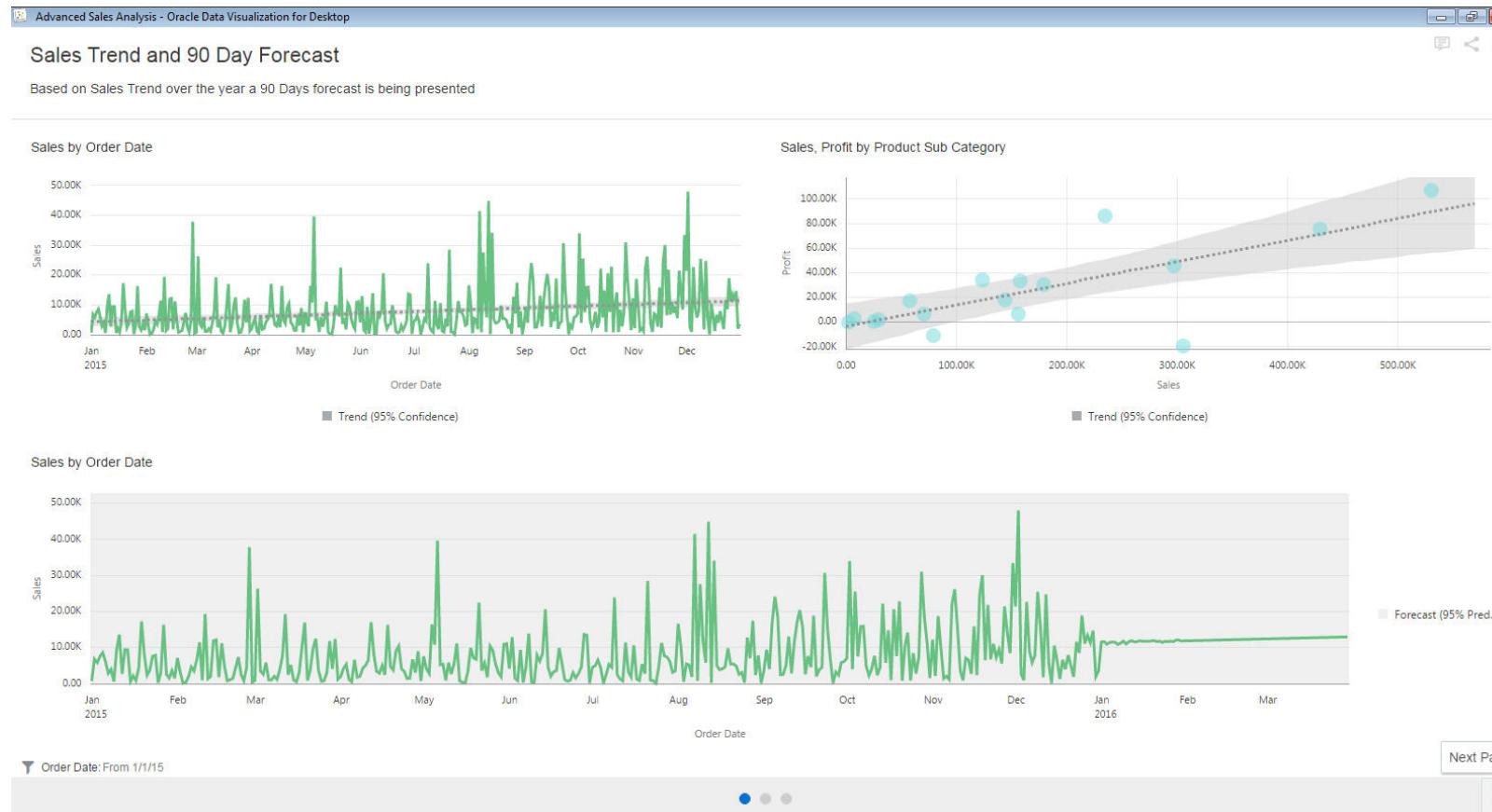
Let's click back on the first slide of the story board.

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To start the presentation, click
“Present” at the top right.

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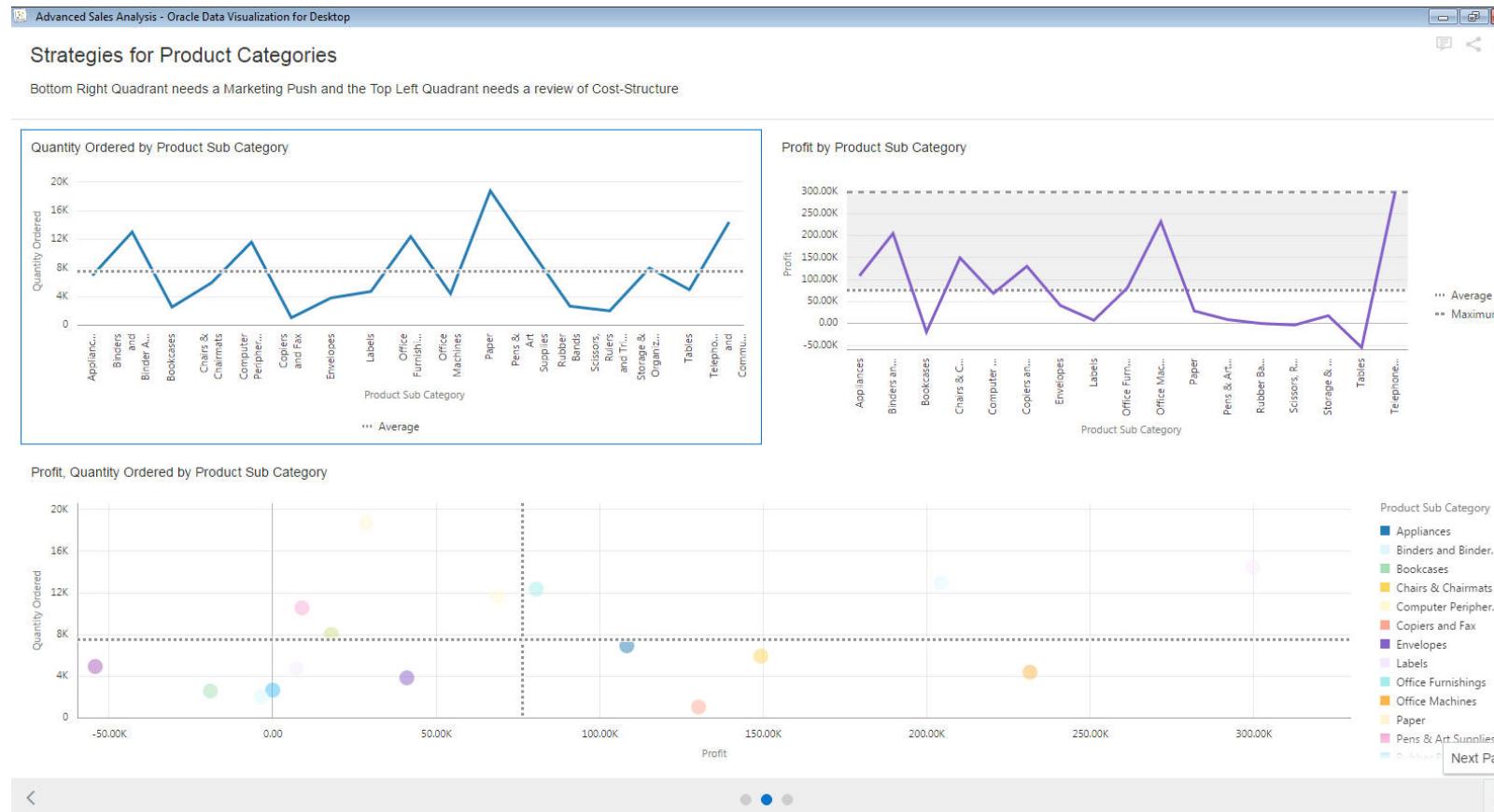
Your story board opens up, the title and description add to the context of the canvas being presented.

Here you present your trend and forecast.

Navigate to the other canvas, thru the navigation strip at the bottom.

Click on “Next Page” at the bottom right corner.

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On the second page you talk about the strategies to improve your performance.

Navigate to the other canvas, thru the navigation strip at the bottom.

Click on “Next Page” at the bottom right corner.

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On the third page, you conclude with the next steps.

You close the “Presentation Mode”, from the x icon.

You learnt how to utilize the advanced analytical features and present your business case in this project.

Thank You !

Bonus Projects for Practice



Section 4: Advanced Analytics Made Easy with Oracle Analytics

Labs

Hands on exercise

- Lab – Sales forecasting and Advanced Analysis
 - Use the data set provided “Sample Orders Examples.xlsx” and the lab guide in pdf
 - The final output of the lab is also provided as a dva file, “Advanced Sales Analysis” (password Admin123), you can load it in your environment
- Additional Labs
 - An additional project with more visuals is provided in “Vanilla Advanced Analytics.dva”
 - Use the project to explore the visuals and learn more
 - For more hands on content visit <https://www.oracle.com/in/solutions/business-analytics/data-visualization/library-overview.html>

Quiz



Section 4: Advanced Analytics Made Easy with Oracle Analytics

Q1

- Average, Median, Percentile are functions that are used to create Reference Line on visuals, True or False ?
 - True
 - False
- Note: Answer have been marked in Green

Q2

- Trendline helps understand direction of data. Which of the following statement is true ?
 - Trendline can be created only with a time series data
 - Trendline helps understand relations between measures eg. a scatter plot between two measures
- Note: Answer have been marked in Green

Q3

- Which of the following statement is true ?
 - Outliers classify data into two buckets
 - Outliers classify data into multiple buckets
- Note: Answer have been marked in Green

Q4

- Analysts can build their own Analytic functions using the Expression Editor, True or False?
 - True
 - False
- Note: Answer have been marked in Green

Q5

- Explain Feature, provides auto suggested top outliers for a measure in a Data Set, True OR False ?
 - True
 - False
- Note: Answer have been marked in Green