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# On-Demand Training: Getting Started Transcript

Welcome to Getting Started with Tableau Desktop. You can download the data set to follow along in your own copy of Tableau.

This is the start screen. Here, we can connect to new data, connect to saved data sources, or open recently used workbooks.

## Connecting to Data

In the Connect pane, we can see the wide variety of data sources Tableau connects to natively such as: excel and text files, relational databases, online data sources, and many others.

For this video, we'll connect to the global Superstore data available for download with this video. The Superstore data is an Excel file that looks like this.

The data is shaped like a database table: The first row contains the column headers. This data set contains transactions of customers purchasing specific products.

Let's go back to Tableau Desktop and choose connect to Microsoft Excel. Navigate to the file on your machine and double click to open it. Now we're in the data connection window.

From here, we can choose which sheets or tables we'd like to use. We can drag Orders out into the canvas. If we wanted to add another table, such as Returns, we could double click or drag it out as well.

## Joins & Data Preparation

Tableau Desktop automatically creates a default join as we can see in the icon here. Clicking on the icon shows us what the join clause looks like and allows us to edit it if we choose.

For this presentation, we're going to connect to a single table, Orders. Down here we can see a preview of the data. This allows us to verify any joins we may have made, and we can rename columns here or even change data types, such as changing Row ID to a string.

The Order ID field in this dataset has three parts, the distribution center code, the year, and the product ID=. If we want to split this field and keep only the distribution center code, it's easy – just click on the drop-down next to the field name and select Split. Now we have a column for each of those pieces. We can use that drop-down again to delete splits 2 and 3 and just keep the 1st. Let's rename that field "Distribution Center".

## Connecting Live versus Extracting

Next, we can decide if we'd like to connect live to the data or extract it. Connecting live is great when we have constantly changing data or when we want to leverage a high performance database.

Alternatively, we may choose to import data into Tableau's fast data engine. This takes the data offline, and allows us to take query load off critical systems.

We'll connect live and click on our sheet tab down here at the bottom.

## Dimensions and Measures

We're now connected to that data set. Before we go over anything else, let's see how easy it is to start building something. We simply drag the fields out, let's bring Category to rows, Quantity to columns, Customer Segment to

Rows, Market to Columns, and let's bring Market to Color, as well.

It's that easy to create a visualization of how our Sales are looking per category, customer segment and market, in terms of number of items sold. We can quickly see that Canada is an emerging market for us.

You'll notice that I brought in those fields from this data window here on the left. It's broken up into dimensions and measures that represent the column headers in the excel sheet.

What are dimensions and measures?

Dimensions are categorical fields, in this case, fields such as date, customer, and Category. These are fields that we want to slice and dice our numerical data by. Dimensions are often discrete. Discrete fields create labels in the chart and are color coded blue in the data pane and in the view.

Measures, on the other hand, are our metrics. They are the numbers we want to analyze. Measures are often continuous. Continuous fields create axes in the chart and their pills are color coded green.

## Building Views

In this case, let's say we're interested in our total sales number. Let's place Sales in the view. We can see that Tableau queries the database and returns a single result giving us the sum of Sales.

This company has done about 12.5 million in sales.

If we want to see this over time, we can drag Order Date to the top of the view. Tableau Desktop aggregates our dates at the year level. We can choose to expand this with the plus (+) symbol. Now we see both quarters and years in the view. To see how all our Q1s are doing over the years, we can easily pivot the data so Quarter is in front of Year. Now we can compare how our growth looks by quarter across the years. Moving Year to Color shows us all the years on top of each other. If, instead of drilling down further, we want to change quarters to months, we can click on the pill to access the drop-down menu and change it.

If looking at an average of sales is more useful than sum of sales, we simply change that by using the dropdown menu and changing the aggregation to average. But let's undo that.

## Quick Table Calculations

What about something like year over year growth? In Tableau Desktop, calculations like this are easy. Once again, clicking on the dropdown brings up the menu, and now going to Quick Table Calculation, we can see common business calculations as single click options. Let's select "Year over Year Growth".

If we still want to see the original Sales, we can simply place it back into the visualization.

If we want to have the Year over Year Growth values appear in a tooltip instead of a graph, we can move it to the Tooltip shelf. The tooltip allows us to hover over values in the graph to see additional information.

For example, here in September, we see we're almost 28% up from the previous year. What if we want to compare how sales in our different categories are doing? Let's drag Category to the Rows shelf. We can now see which categories are doing well, and when they were doing well.

We could even leave comments. For example, we see there's a yearly dip in sales in July, and we always have a sale in August.

We can leave an annotation by right-clicking, selecting Annotate, and adding an Area Annotation. If we choose, we could now right-click, copy this image, and share it with other people in our organization. We'll right click on the sheet tab and rename this sheet "Sales Seasonality".

## Crosstab and Exporting Data

What if we want the raw numbers behind this timeline? Tableau Desktop makes this very easy to do. We can right click on the viz and copy the data, and then paste it into Excel – this includes even that Quick Table calculation we did – or we can simply right-click on the tab and "Duplicate as a Crosstab". We can easily swap our axes and move Category to the Rows shelf. Let's make this fit a little better.

This looks nice, but we're worried that profits weren't good during our annual sale. Let's add profit to the crosstab and find out how we're doing. Adding Profit to color gives us a clearer understanding of overall trends.

These colors are too pale, though, so let's edit them. We'll click on color and click "Edit Colors". Here, we can choose from a wide variety of colors in the drop-down menu, or we can select "Use Full Color Range" and we'll use 6 stepped colors and press OK.

Or if we want to make this even more visual, let's undo that tweak in colors, change the mark type to square and turn on mark labels. Now we have a highlight table that does an even better job of showing what's going on.

We can quickly see that although our fall profits are doing well in technology and office supplies, furniture doesn't have that same dark green upswing in profit.

Is this happening across all our stores in our sales region? Let's find out! We'll double click on the sheet tab and rename this sheet "Crosstab" and create a new sheet.

## Show Me

We know that furniture's profits are bad, but we don't know where furniture is doing poorly, and we don't necessarily know how we want to view the data.

Tableau Desktop provides a simple tool called "Show Me" to help in cases where we know the data we want to look at, but don't know how to create an effective view. "Show Me" contains a list of common chart types that can help you start your analysis. Let's drag Show Me down here

Note: it's possible to build an enormous variety of charts in Tableau – Show Me is the one-click options, not a comprehensive list of possibilities.

Let's begin by selecting different dimensions and measures while holding down the control key. We're curious about our Sales, and how they're doing in different Countries. Notice how different chart types will highlight based on what measures and dimensions we've chosen. Symbol maps look like a good choice for these fields. Let's also add State.

We can increase the size of these dots by clicking on the size shelf, let's also adjust the transparency and add some borders. We'll hide the size legend, and let's color these states by Profit.

Note that we can do geographic search, here – if we want to see how profits are doing in a certain location, we can navigate right to it. Let's unpin to zoom back out.

## Filters

Earlier, we found that furniture had poor profits. To investigate this further, let's drag Category to the filters shelf.

We'll choose Furniture. To give our end-user the option to choose their own categories, we'll right click the pill and select "Show Quick Filter". We can also modify filters by selecting their drop-down menu to choose from a variety of options. Here we'll choose "Single Value List". Now anyone can easily choose the categories they're interested in, such as Furniture or Technology.

Alternatively, we can create quick filters for elements in the view or directly from the data pane by right-clicking the field's name and selecting "Show Quick Filter". We can double click the sheet tab to rename this sheet "Global Sales and Profits" and then create a new sheet.

## Bar Chart

We know we have problems with furniture, but what types of furniture are doing poorly? Let's use Show Me to find out – click to open the menu. Again, as we hold down control (or Command, on a Mac) and select the variables we're interested in such as Category, Sub-Category and Sales, we see Show Me making various suggestions. We can click through a few charts to see which one looks best. Let's choose a bar chart and collapse Show Me.

## Hierarchies

There is a hierarchical nature between Category and Sub-Category. In Tableau Desktop, we can create hierarchies by simply dragging and dropping fields on top of each other in the data window.

Let's drag Sub-Category on top of Category and call it "Products". We can add Product Name to this hierarchy as well. Creating this hierarchy in Tableau Desktop only takes seconds and gives us full drill down capability. Now, we can expand and contract our Hierarchy using the pluses and minuses on the pills or in the view.

## Sorting

Let's swap our axes and size the view. To sort the three Categories by overall sales, we'll select the pill and click the appropriate sort button in the ribbon. Now we see that technology has the most total sales, then Furniture, then Office Supplies.

Let's sort again – this time by Sub-Category – and we'll do a quick sort from the axis, like so – and note that the order of categories stayed the same and we're only sorting the bars WITHIN each category. We can see the actual sales values by clicking on the ABC button in the ribbon to turn on or off mark labels.

But again, how's profit? Let's place Profit on Color. We quickly see that Tables are doing poorly from a profitability standpoint, despite how good the sales looked. Is this happening across all our markets? Let's place Market here on the left. We quickly see that this problem seems to be coming from several markets.

## Grouping

Here, it's useful to note that we can group similar items together. We see in Office Supplies that several items have very small sales. We can select the headers for all of those sub-categories and group them using the paperclip icon. To rename that column, right click and select Edit Alias, we'll call it "Small Office Supplies".

To simplify the view, let's swap the axes, switch back to Normal, remove Market, and hide field labels for rows by right clicking. Let's call this sheet, "Sales by Category" and create a new sheet.

## Working with Marks

From our map, we saw that profitability was doing poorly in specific locations. We have a hunch that these locations have a high shipping cost, which is eating into our profits.

Let's place: Profit on the Rows shelf, Shipping Cost on the Columns shelf, Market onto Shape, Category onto Color, and Customer ID onto Detail. Notice that by placing Customer ID onto Detail, Tableau makes a mark for each customer ID just as it made a mark per department and market when we dragged them into the view.

Currently, these points represent the SUM of shipping cost and profit for all transactions per customer. We could also fully disaggregate our data to plot each and every transaction at the record level by going to the analysis menu and disaggregating the data. From here, we can see that we have a significant number of transactions with low profits, so there's definitely something worth looking into.

We can assign fields on the Marks card to different roles. For instance, we can click on the dropdown menu next to Customer ID and change it to Label. We can choose to add additional fields to the label, such as Sales by bringing it to the Label shelf. We can edit this label by clicking and then again by text and modifying as we see fit.

## Trend Lines

Let's add trend lines. We can do this easily from the analytics pane, selecting trend lines and bringing them into the view. As shipping cost goes up, profits go up less sharply in furniture. We can quickly identify customers who are contributing to this problem, and look into them further.

Hovering over a low profit, high shipping cost mark brings up the tooltip. From here, we can look at the underlying data, and see more about what's going on for that transaction. Let's remove Sales and turn off the trend line by right-clicking in the view and unchecking "Show Trend Lines". We'll call this sheet "Customer Breakdown".

## Dashboards

We've created some insightful views of this data set. Now, we want to share this with our team and compile a dashboard. Multiple individual views can be combined into a single dashboard. We'll click on this icon to create a dashboard, let's size this to Laptop, and all of our sheets are here to the left. Hovering brings up a preview. We'll drag our Map into the view, and place "Sales by Category" and our "Customer Breakdown" below it. We can also adjust these graphs to fit more cleanly. We can right-click on the dashboard's tab and rename it "Sales Dashboard". We can add the title to this dashboard as well, and editing it is easy, double clicking pulls up this rich text editor.

On the quick filter, notice that when we click on various categories, our map will change to reflect what we've selected. But what if we want all the visualizations to change? We can select the drop-down menu and choose apply

to all. Now when we filter by something such as Office Supplies, all of our sheets will update. But what if we want to drill down into details on the map? For instance, there's a red mark on the map and we would like to see which customers and products make up that red point? On the map, we can use the caret in the upper right-hand corner and select "Use as filter". Now, the bar chart and scatter plot update to show just that point's information.

## Story Points

What if we want to lead our audience through the path of our discovery of these profitability issues? Tableau Desktop offers a feature called Story Points that lets you assemble a series of specific views to walk the audience through an analysis.

We can build a story by clicking New Story from the menu. We can resize it to fit better. Just like with a dashboard, we can bring in any visualizations we'd previously made. Let's pull out Global Sales and Profits and name this point "Overall, our profits look strong".

The viz is still fully interactive – we can select from the filter. When we do, the word Update appears above the navigator. Clicking "update" will save this state of the viz, or we can save it as a new point. This is one of the key aspects of Story Points, the ability to snapshot a specific insight of a visualization. We can name this "But not across all categories" and add a description to the point by dragging it out, saying "Furniture appears to have poor profitability in some areas"

Let's add another point. We want to explore that profit issue with Furniture, so we'll bring out Sales by Category, by double clicking, and name it "Here's the biggest problem". We can call out that "Tables are dragging down Furniture's profits".

Because we built that great dashboard that lets us look into this issue more fully, we can bring out the dashboard itself into the story – let's make it fit a bit better, we'll go back to the underlying sheet using this 'Go to sheet' icon and resize it to fit our story, and we can take off the title.

Now, back on the story, if we click on "Furniture" in the filter, then a point on the map, we see that interactivity. Let's name this story point "What's behind it? Next steps..." then click on Tables and update the point. Clicking through the navigator walks us through the entire analysis, culminating in that exploratory dashboard. We'll name the story "Profitability: The Whole Story"

## Sharing

Now that we have gone from raw data to insight in this workbook, we want to think about how to distribute it with others. Workbooks can be shared in any number of ways, but the most effective way to share a workbook is to publish it with Tableau Server or Tableau online. Published workbooks are up-to-date, secure, fully interactive, and viewable by web browser or on a mobile device.

## Conclusion

Thank you for watching Getting Started with Tableau Desktop. We invite you to continue with the On Demand Training videos to learn more.