Module 5

Introduction

Tableau Desktop is a powerful yet user-friendly data visualization tool. This beginner-friendly guide will walk you through the essential steps of using Tableau Desktop, from connecting to data all the way to building interactive dashboards. We'll start with Tableau's Sample "Superstore" dataset – a built-in retail sales data source – and later discuss how to apply these steps to real-world datasets. Each section provides a brief overview of the concept, followed by step-by-step instructions. By the end, you will have the confidence to connect your own data, create basic charts, filter and sort information, add informative titles and labels, publish your work to **Tableau Cloud**, and enhance your visuals with interactivity like tooltips and dashboard actions. Let's get started!

Connecting to a Dataset

Before creating visualizations, you need to connect Tableau to your data source. Tableau can connect to various data formats (Excel, CSV, databases, etc.), but here we'll demonstrate with the built-in **Sample – Superstore** dataset for simplicity. The Superstore dataset is a fictitious retail store's sales data (orders, products, customers, etc.), which comes pre-packaged with Tableau Desktop (Step 1: Connect to a sample data source - Tableau). Using this sample data will let us practice Tableau's features in a controlled environment. In a real-world scenario, you might connect to an Excel file or a database – the process is very similar.

(Step 1: Connect to a sample data source - Tableau) *Tableau's Start Page, where you connect to data. The Sample – Superstore dataset is listed under **Saved Data Sources**, making it easy for beginners to get started (Step 1: Connect to a sample data source - Tableau).*

Steps to Connect to the Superstore Data:

1. **Launch Tableau Desktop:** After opening Tableau, you will see the **Start Page** with a left-side panel labeled **Connect** (Step 1: Connect to a sample

data source - Tableau). This is where you choose your data source.

2. **Choose the Data Source:** Under **Saved Data Sources** on the Connect pane, click **Sample – Superstore** (Step 1: Connect to a sample data source - Tableau). (If you were using your own file, you would click the appropriate connector, such as “Microsoft Excel” for an Excel file, and then navigate to your file.) Tableau will load the Superstore dataset.
3. **Verify Data (Optional):** Once connected, Tableau may display the **Data Source** tab. Here you can see the tables or sheets in the data (for Superstore, you’ll see an Orders table). Tableau automatically detects data types for each field (e.g., dates, numbers) and divides fields into **Dimensions** (categorical fields like Region or Product) and **Measures** (quantitative fields like Sales or Profit) in the pane on the left (Step 1: Connect to a sample data source - Tableau). You can click “Sheet 1” at the bottom to start working on a new worksheet.
4. **Start a Worksheet:** Tableau opens a new blank worksheet for you once the data is connected (Step 1: Connect to a sample data source - Tableau). You should see the Superstore data fields in the Data pane on the left. Now you’re ready to explore and visualize the data.

Real-World Example – Connecting Your Own Data: If you wanted to use your company’s sales data in Excel, you would click **Excel** under the Connect panel, select your workbook file, and then choose the sheet containing the data. Tableau would preview the data in the Data Source tab (you might have to drag a sheet to the canvas if prompted). After that, you’d click to a new worksheet just like with Superstore. The steps for connecting to a SQL database or cloud data source are analogous – you choose the appropriate connector (e.g., Microsoft SQL Server, Google Sheets, etc.) and provide any required credentials or file paths. The key point is that once connected, the interface for creating views is the same regardless of the data source.

Creating Charts (Bar Charts, Line Charts, etc.)

Once your data is connected, you can start creating visualizations. Tableau makes it easy to build common chart types by dragging and dropping fields onto shelves. In this section, we’ll create two basic chart types: a **bar chart** and a **line chart**. Bar charts are great for comparing data across categories (e.g., sales by category), while line charts are ideal for showing trends over

time (e.g., sales over months or years). We'll use the Superstore data for these examples. Tableau will automatically pick a chart type based on the data you use, but you can always change it using the Marks card or the **Show Me** panel. Let's walk through each example.

Creating a Bar Chart

A bar chart lets you compare values across different categories. In Superstore, suppose we want to see total **Sales** for each **Product Category** (Furniture, Office Supplies, and Technology). Tableau considers Category a *dimension* (discrete text field) and Sales a *measure* (numeric field), and this combination will produce a bar chart by default (Build a Bar Chart - Tableau) (Build a Bar Chart - Tableau). Here's how to build it:

1. **Open a Worksheet:** Use a new worksheet (Sheet 1) connected to the Superstore data.
2. **Drag a Dimension to Columns:** Find **Category** in the Data pane (under the Orders table). Drag **Category** to the Columns shelf at the top of the workspace. You'll see three column headers appear (one for each category) in the view.
3. **Drag a Measure to Rows:** In the Data pane, scroll to find **Sales** (it will be under Measures, usually colored green). Drag **Sales** to the Rows shelf. Tableau creates a vertical axis for the Sales measure and, by default, aggregates it as a sum. Now your view shows one bar for each Category, with the bar height indicating total sales (Build a Bar Chart - Tableau). Tableau automatically chose a bar mark type here since you placed a text dimension on Columns and a numeric measure on Rows, which fits the bar chart criteria.
4. **Format or Adjust if Needed:** Check that the Marks card is set to **Bar** (it should be, but if Tableau had chosen a different mark for some reason, you can click the Marks drop-down and select "Bar"). Also, you might want to sort the bars in descending order of sales – we'll cover sorting in the next section, but a quick way is to click the sort icon 🔽 on the Sales axis.
5. **Inspect the Chart:** You should now see a simple bar chart with three bars, one for each product category, and a Sales axis. If you hover over a bar, a tooltip will show the exact total sales for that category. (Build a Bar Chart - Tableau)】 *Building a bar chart in Tableau: "Category" is on*

Columns (producing one bar per category) and "SUM(Sales)" on Rows (vertical axis). Tableau displays the total Sales for each Category as bar length (Build a Bar Chart - Tableau) (Build a Bar Chart - Tableau)】.

Real-World Example – Bar Chart: The same steps apply to any categorical data. For instance, if you have a dataset of student enrollment by department, you could drag "Department" to Columns and "Number of Students" to Rows to see a bar for each department's enrollment. If the chart doesn't automatically appear as bars, simply choose the Bar mark type. You can also use the **Show Me** panel (on the top-right in Tableau Desktop) by selecting the relevant fields and clicking the bar chart icon – Tableau will build the bar chart for you.

Creating a Line Chart

Line charts are used to visualize data over a continuous range (often time). In Superstore, we might want to see how Sales trend over time, for example year by year. We'll create a time-series line chart of **Sales by Order Date**. Tableau recognizes date fields and typically will produce a time axis and line mark when a date is used with a measur (Build a Bar Chart - Tableau)】. Let's do that:

1. **New Worksheet:** Add a new worksheet (click the "New Worksheet" button at the bottom, or use the same sheet after removing the previous fields).
2. **Add a Date to Columns:** Drag **Order Date** from the Data pane to the Columns shelf. Tableau will automatically convert this to a date hierarchy. By default, it might use **YEAR(Order Date)** as a discrete field (blue pill) – resulting in separate columns for each year – or it might treat it as a continuous year (green pill) depending on your version. In either case, you'll see column headers or an axis for years (e.g., 2019, 2020, 2021, 2022 if those are in the data).
3. **Add Sales to Rows:** Drag **Sales** to the Rows shelf. Tableau aggregates Sales by year and draws a line connecting the points year to yea (Build a Bar Chart - Tableau)】. In many cases, Tableau uses a **Line** mark type because it detects a continuous date on Column (Build a Bar Chart - Tableau)】. You should see a line chart with points for each year's sales. If you got bars instead (because Order Date was treated as discrete year),

you can change it to a continuous date: click the Order Date field on Columns and choose **Month** or **Continuous Year** from the dropdown. This will turn the axis green (continuous) and draw a line.

4. **Optional – Increase Date Detail:** For a finer time grain, you can drill down in the date. For example, click the **+** on the YEAR(Order Date) pill to expand to quarter or month. Or right-click the pill and choose **Exact Date** and convert to continuous if you want a full timeline. The more points in time, the more detailed your line will be (e.g., a monthly sales line shows seasonal patterns).
5. **Inspect the Trend:** Now you have a line chart showing how sales changed over the years (or months). The x-axis is time and the y-axis is sales. Hovering over any point on the line will show the specific value for that time period.

If you followed these steps with Superstore, you might notice Tableau initially plotted a line for **each year** of dat (Build a Bar Chart - Tableau)】. In our Superstore example, Order Date covers four years, so the line connects those yearly totals. If instead we drilled down to Month, we'd see a more jagged line with seasonal fluctuations. Tableau's flexibility with date hierarchies means you can easily switch between yearly, quarterly, monthly, etc., to explore trends.

Real-World Example – Line Chart: Imagine you have website traffic data by day. You could drag "Date" to Columns and "Visitors" to Rows to create a line chart of daily website visitors. The line might be too granular day-by-day, so you could change the date to month or week to see higher-level trends. Another example: plotting stock prices over time – date on Columns and stock price on Rows will give you a line chart of the price history. The key is that one field defines a continuous scale (often time) and the other is a value, producing a trend line.

*(Note: Tableau also supports other chart types like pie charts, maps, scatter plots, etc. The **Show Me** panel can suggest chart types based on the fields you select. As a beginner, mastering bar and line charts is a solid foundation, and you can explore more chart types as needed.)*

Filtering and Sorting Data

As your chart gets more complex, you often need to focus on specific subsets of data or order the data meaningfully. **Filtering** allows you to include or exclude data points based on criteria (e.g., view sales for a single region or a specific year), and **sorting** lets you reorder data (e.g., highest to lowest sales). Tableau provides intuitive ways to filter and sort without writing any code.

Filtering Data: There are several ways to filter in Tableau – by adding fields to the Filters shelf, using quick filter controls, or directly selecting marks in the view to keep/exclude. We'll start with the common approach of using the Filters shelf.

- *Example Scenario:* Let's continue with our bar chart of Sales by Category. Suppose we want to focus only on the **Technology** category, or alternatively, to exclude one category. We can apply a filter on Category to do this.

Steps to Filter Data:

1. **Add a Field to Filters:** Decide which field you want to filter by. For example, to filter by Region, drag the **Region** field from the Data pane to the **Filters** shelf on the left of the canvas. (If the Filters shelf isn't visible, you can drop it where it says "Filters" on the sidebar). Tableau will open a Filter dialog for that field. For a dimension like Region, you'll see a list of all values (Central, East, South, West in Superstore) with check boxes.
2. **Choose Filter Criteria:** In the Filter dialog, you can check or uncheck the values you want to include. If we only want "West" region, you would uncheck all others and leave "West" checked, then click **OK* (Build a Bar Chart - Tableau)】. The view will update to show only data from the West region. (If you dragged Category instead, you could select just "Technology", etc.)
    - *Note:* The Filter dialog for dimensions also has tabs for Wildcard, Condition, and Top – these allow advanced filtering (like "Top 10 by sales" or filtering by a name pattern). For now, stick to the **General** tab where you simply pick values to include/exclude.
3. **Show Filter Control (Optional):** You can make filters interactive for the user by showing them on the visualization. Right-click the field on the

Filters shelf (e.g., Region) and choose **Show Filter**. A filter card will appear on the right side of your worksheet, allowing you (or your dashboard viewer) to toggle values (like a checkbox list or dropdown of regions (Filter Data from Your Views - Tableau) (Filter Data from Your Views - Tableau)】. This is very handy for dashboards, as viewers can filter data themselves.

4. **Filter by Selecting Marks (Alternate method):** You can also filter directly from the chart. For example, on a bar chart, click a bar (or drag to select multiple bars). A tooltip will pop up with options **Keep Only** or **Exclude* (Filter Data from Your Views - Tableau)】. Clicking **Keep Only** will filter the view to just the selected data point(s), and **Exclude** will remove them. Tableau adds these as filters in the Filters shelf behind the scenes. This method is quick for on-the-fly filtering during analysis.

After filtering, your chart will update to reflect the chosen subset. For instance, if we filtered our Superstore bar chart to Region = West, we'd see the sales bars for categories *only in the West region*. If we also filtered Category = Technology, we might end up with just a single bar (West-Tech sales). (Build a Bar Chart - Tableau)】 *After applying a filter for Region = "West", the Superstore chart now only shows data for the West region (here, Sales broken down by Ship Mode for West). The Filters shelf (left) indicates _Region: West* as an active filte (Build a Bar Chart - Tableau)】. Filter cards on the right (if shown) let the user toggle values._

Sorting Data: Tableau makes sorting as easy as one click in most cases. When you have a chart, you can sort categories or axis values to better interpret the results. For example, it's often useful to sort bars from highest value to lowest.

- **One-Click Sort:** The simplest way to sort is to use the sort icon that appears on axes or headers. Hover over the axis or category labels until you see a sort icon (it looks like stacked bars with an arrow). Click it once to sort descending (high to low), click again for ascending, and click a third time to clear the sor (Sort Data in a Visualization - Tableau) (Sort Data in a Visualization - Tableau)】. In a bar chart, you can usually hover near the axis or on the category name header to find this icon. For our Sales by

Category example, hovering near “Category” or the Sales axis will let you sort the categories by their sales values.

- **Toolbar Sort Buttons:** Tableau’s toolbar (at top) also has global sort buttons (the A→Z and Z→A icons). Selecting a field or clicking on the view and then clicking those buttons will attempt to sort the visualization.
- **Sort Dialog (Advanced):** For more control, you can right-click on a discrete field (e.g., Category pill) and choose **Sort…**. This opens a dialog where you can specify sorting by a particular field, aggregation, and order (useful if the automatic sort doesn’t do exactly what you need). For instance, if you had a text table, you might sort one column by another column’s values explicitly here.
- **Natural Sorting:** If no sort is applied, Tableau will show data in its natural order (e.g., alphabetical for text, chronological for dates, or as defined in the data source).

After sorting, your bars or other marks will reorder accordingly. A quick descending sort on our bar chart would arrange the Category bars from highest Sales to lowest Sales, making it easy to see which category is performing best.

Real-World Example – Filter & Sort: Imagine you have a sales dashboard for multiple products and regions. You could add filters for Region and Year, allowing the viewer to select a specific region and year to focus on. You might also sort a table of salespeople by their total sales to quickly identify the top performers. In Tableau, filtering and sorting are interactive and can be changed on the fly, which is far more convenient than manually editing queries or data in a spreadsheet.

Adding Titles, Labels, and Descriptions

Creating a chart is only part of the task – making sure your audience can understand it is equally important. This means adding clear **titles**, data **labels**, and possibly descriptive text or **captions** to explain what the viewer is looking at. By default, Tableau will name a new worksheet “Sheet 1” and might not show data labels or descriptions unless you add them. Let’s cover how to customize these elements:

Chart Title: A good title helps the viewer grasp the chart's purpose immediately. In Tableau, each worksheet can have its own title (usually the sheet name). For dashboards, you can also have an overall title.

- By default, a new worksheet's title might be hidden (depending on your settings). To show the title, go to the menu and select **Worksheet > Show Title** (for dashboards, it's **Dashboard > Show Title** (Format Individual Parts of the View - Tableau)】. This will display the title area at the top of the view. Initially, it will probably say the sheet's name, like "Sheet 1" or a generic title.
- To edit the title, double-click directly on it (or click the drop-down arrow on the title and choose **Edit Title** (Format Individual Parts of the View - Tableau)】. An **Edit Title** dialog will pop up where you can type a new title and format it (font size, bold, color, alignment, etc. (Format Individual Parts of the View - Tableau)】. For example, you might type "**Total Sales by Category (2019-2022)**" as a descriptive title instead of just "Sales". You can also insert dynamic text like the data source name or filter values using the Insert dropdown in this dialog, but that's optional.
- After editing, click **OK**, and your new title will appear. A well-chosen title means anyone viewing the chart knows immediately what they're looking at.

Axis Labels and Legends: Tableau automatically adds axis titles (usually the field name, like "Sales" on the vertical axis, "Category" on the horizontal) and legend titles (like "Region" if color is used). If you want to edit an axis title, double-click it or right-click and choose **Edit Axis** – there you can change the axis title text. For legends, you can click the drop-down on a legend and edit the title as well. For a beginner, it's usually fine to rely on Tableau's defaults, but know that you have control if the labels need clarification.

Data Labels (Mark Labels): These are the numbers or text directly on the marks (for example, showing the exact sales value on top of each bar). Adding data labels can make a chart easier to read without hovering.

- To show mark labels quickly, click the **Label** button on the Marks card and check **Show Mark Labels**. Or use the toolbar: there is a `Show Mark`

`Labels` icon (looks like “AB” or a label symbol) that toggles labels on/of (Build a Bar Chart - Tableau)】.

- By default, Tableau will label marks in a smart way to avoid overlap (sparse charts will show all labels; crowded charts might show few or none). You can adjust this by clicking **Label** on the Marks card and exploring options. For instance, you can choose to label “All” marks or maybe just the “Min/Max” value (Show, Hide, and Format Mark Labels - Tableau)】. But for beginners, simply toggling them on is usually enough.
- You can also format labels: in the Label dialog, you can change the font, color, and the content of the labels. By default, it uses the measure’s value. If you want to customize what it says (e.g., add a currency symbol or combine fields), you can click the **Text** button in the Label options to edit the text templat (Show, Hide, and Format Mark Labels - Tableau)】. For example, you could make a label say “Sales: $” by editing the text.
- In our bar chart example, enabling mark labels would put the sales totals on top of each bar. In a line chart, labels might appear at each point or only at the end points depending on the settings.

According to Tableau experts, the Label shelf provides a lot of flexibility: *“There is a Label shelf which allows you to show mark labels, edit the text of the label, adjust the font, set the alignment of the label and dictate which marks you want to label” (How to label bar charts in Tableau | Biztory)】. This means you can decide exactly how you want those data labels to look and behave.

Descriptions and Captions: Sometimes you may want to add a longer description or explanatory text for context. There are a couple of ways to do this:

- **Caption:** Each worksheet has a caption feature which, when turned on (Worksheet > Show Caption), displays a box of text below the view. By default, Tableau auto-populates it with a sentence describing the chart (e.g., “Figure 1: Sum of Sales by Category. Filtered by Region = West.”). You can edit this text to say whatever you want after toggling it on. This is useful for providing additional notes or source information for a chart.
- **Text Box on Dashboard:** If you’re assembling a dashboard (which we’ll do soon), you can drag a **Text** object onto the dashboard to add a chunk

of text. This is great for adding an introduction, instructions, or commentary next to your charts. You have rich text editing for that text box (fonts, colors, etc.).
- **Tooltips as descriptions:** (This is actually a different approach – tooltips are pop-up descriptions when you hover on data, and we'll cover customizing them in the next section.)

Use these description techniques as needed. For a simple chart, a good title and clear labels might be enough. For a more complex dashboard or when sharing with others who aren't familiar with the data, a short description or footnote can be very helpful.

Real-World Example – Titles and Labels: If you were presenting a chart of quarterly revenue to a business team, you'd give it a title like "Quarterly Revenue 2021 (in USD)" rather than leaving it as "Sheet 5". You might label each bar with the revenue figure so that exact values are visible. And you could add a note below: "Data as of Dec 2021, source: Finance DB" to provide context. These elements turn a raw chart into an effective communication tool.

Publishing Work to Tableau Cloud

After you've created some insightful charts or a dashboard in Tableau Desktop, you'll likely want to share it with others. Tableau Cloud (previously called Tableau Online) is the cloud-hosted platform to publish your work so others can view and interact with it via a web browser. (If your organization uses Tableau Server instead, the steps are similar; you would publish to the server. For this guide, we'll assume Tableau Cloud which is common for many users without their own server.) Publishing to Tableau Cloud means you don't have to send Tableau files around – colleagues can simply log in to a website to see your dashboards, even on their tablets or phones.

Before publishing, ensure you have an account on Tableau Cloud and are logged in through Tableau Desktop. Also, it's good practice to save your workbook locally.

Steps to Publish a Workbook to Tableau Cloud:

1. **Initiate Publish:** In Tableau Desktop with your workbook open, go to the top menu and click **Server > Publish Workbook…* (Connect Tableau and Databricks | Databricks Documentation)】. (If you haven't signed in to Tableau Cloud yet, a login dialog will appear – enter your Tableau Cloud credentials and sign in. Tableau Desktop will then know where to publish.)
2. **Publish Workbook Dialog:** A dialog box titled "Publish Workbook to Tableau Cloud" will appear. Here you can specify how the workbook will be published. Choose the **Project** on the server (by default, likely "Default" project unless you have organized projects) and give the workbook a name (it may pre-fill with your workbook's name). You can also decide on permissions (who can see it), set an image for thumbnail, and whether to show sheets as tabs. For now, the defaults are fine – your goal is just to get it online.
3. **Data Source Settings:** If your workbook uses an extract or live connection that requires credentials, Tableau will prompt you about how to handle them. For example, if you connected to a local Excel file, it will embed that data in the workbook by default. If you connected live to a database, you might have to embed or provide credentials for the cloud to refresh data. In our Superstore case, it's all embedded data, so no issues.
4. **Publish:** Click the **Publish** button to send the workbook to Tableau Cloud. Tableau will upload the workbook. After a moment, you should get a confirmation that it's published (sometimes Tableau Desktop even opens your browser to the newly published workbook online). According to documentation, once you confirm details in the dialog, simply *"click Publish. The workbook displays in Tableau Cloud." (Connect Tableau and Databricks | Databricks Documentation)】.
5. **Verify on Tableau Cloud:** Log in to your Tableau Cloud site using a web browser. You should see your workbook listed (in the project you chose). Click it, and you'll be able to view your worksheets and dashboards on the web. You can interact with filters and tooltips just like in Desktop (though you can't edit unless you have web editing rights). You can also share the link with colleagues (ensure they have at least viewer access on your site).

Your visualization is now live on Tableau Cloud! You can update it by republishing if you make changes in Tableau Desktop, or set up a data refresh

schedule if applicable (for extract data sources).

Real-World Example – Publishing: Let's say you built a sales dashboard for your team. By publishing it to Tableau Cloud, every team member can access the latest version just by visiting the URL. They don't need Tableau Desktop installed. Tableau Cloud will also let you set up things like scheduled email snapshots or alerts. Essentially, publishing makes your static workbook a shared, interactive web resource. As another scenario, if you are sharing a public-facing viz and don't mind it being open, you could use **Tableau Public** (free platform) instead – the process is similar but it's open to everyone. For internal or private data, Tableau Cloud is the way to go, as it requires login to view. As Tableau's documentation notes, *develop on Tableau Desktop and upload to Tableau Online (now Cloud); then colleagues can view the dashboard via a web link or mobile app (Tableau for Beginners | Guide To Tableau For Data Visualization)】.

Interactivity with Text and Visual Tooltips

One of Tableau's strengths is the interactivity it offers to the end-user. **Tooltips** are a prime example: these are the little pop-up boxes that appear when you hover over a data point (mark) on a chart, showing details about that mark. By default, Tableau generates a basic tooltip (e.g., "Category: Furniture\nSales: $30,000") for each mark. However, you can enhance tooltips by customizing the text, adding context, and even inserting mini visualizations inside the tooltip (a feature called "Viz in Tooltip"). This section covers how to make tooltips informative and interactive.

Understanding Tooltips: By default, *"tooltips are details that appear when you rest the pointer over one or more marks in the view" (Format Individual Parts of the View - Tableau)】. They provide details-on-demand without cluttering the chart. Additionally, Tableau tooltips have interactive commands – for example, the tooltip that appears on hover often includes **Keep Only** and **Exclude** buttons and a **View Data** option. These are called *command buttons*, and they let users interact (filter or see underlying data) directly from the toolti (Format Individual Parts of the View - Tableau)】. You can choose to include or remove these, but by default they're present and add useful interactivity.

Customizing Tooltip Text

Sometimes the default tooltip isn't sufficient. You might want to rephrase it, add explanatory text, or include additional fields that aren't directly in the viz. For instance, on a map of sales by state, you might want the tooltip to also show the region or profit, even if those aren't encoded as color/size on the viz.

- **Open the Tooltip Editor:** On your worksheet, go to the Marks card and click the **Tooltip** button. This opens the Tooltip Editor window, which shows the text that will appear in the tooltip. Initially, it's an auto-generated template with the fields used in the view. It might look something like `<b>Category: </b><%Category%><br/><b>SUM(Sales): </b> <%SUM(Sales)%>` which produces a bold "Category:" label and the actual category, line break, then "SUM(Sales): " and the value.
- **Edit Text:** You can click into this editor and start typing or deleting like a word processor. Change the phrasing as needed. For example, you could write a sentence: "Category had total sales of <SUM(Sales)>." The placeholders like `<Category>` and `<SUM(Sales)>` (in the editor they appear as special tokens) will be replaced with the actual values when you hover. You can use the formatting toolbar in this editor to bold or italicize text, change font color, etc. If you want to add a field that's not listed, use the **Insert** dropdown in the editor – it lists all available fields in your data, so you can insert additional ones (they will only show values relevant to that mark).
- **Include/Exclude Command Buttons:** At the bottom of the Tooltip Editor, there is a checkbox for **"Include command buttons"**. If you uncheck this, the tooltip will no longer show the Keep Only/Exclude and View Data options. Usually for published dashboards you leave them in, as they allow user interactivity. But if you want a cleaner tooltip or plan to design your own filtering UI, you might remove them.
- **Press OK:** Once you're happy with the tooltip text, click **OK** to close the editor. Now hover on your marks again – you'll see the newly formatted tooltip. It might be more narrative or more detailed than before, according to your changes.

Tip: Keep tooltips concise – don't overwhelm the user with a paragraph on hover. But do include any critical context that isn't obvious from the chart

itself. For example, if a bar represents “Profit”, the tooltip might clarify “Profit in USD for 2022 was $X”. Also, if you have multiple measures on tooltips, align them or use bullet points for readability.

Visual Tooltips (Viz in Tooltip)

Tableau allows you to embed an actual visualization inside a tooltip – this is often called *“Viz in Tooltip.”* It means when a user hovers over a mark, not only text appears, but maybe a mini chart pops up as part of the tooltip, providing deeper insight. For example, in a sales-by-state map, hovering over a state could show a tiny bar chart of that state’s sales by category within the tooltip. This feature helps you pack more information in a dashboard without overcrowding the main view.

Here’s how to set up a Viz in Tooltip (overview of steps (Create Views for Tooltips (Viz in Tooltip) - Tableau)】:

1. **Create the Target Visualization:** First, build the chart that you want to appear in the tooltip, on a separate worksheet. This could be a detailed view related to the main view. For instance, if your main view is a map by state, your tooltip detail viz might be a bar chart of Sales by Category *for that state*. Design this worksheet just as you would any chart, but keep in mind it will be small when shown as a tooltip (so maybe simpler is better: fewer labels, shorter axes, etc.). Give this worksheet a meaningful name, like “Tooltip – Sales by Category”.
2. **Insert the Viz into Tooltip of Main View:** Go back to your main view worksheet. Open its Tooltip Editor (Marks card > Tooltip). Now, in the Insert menu at the top of the editor, you should see an option for **Sheets** and then your created sheet (e.g., “Tooltip – Sales by Category”). Click that. Tableau will insert a special code into the tooltip text, something like `<sheet name="Tooltip – Sales by Category" maxwidth="300" maxheight="300">`. This is an instruction to embed that sheet’s visualization when the tooltip is shown, with a maximum width/height you can specify. You can integrate it into the text as you like (or simply on its own line). For example, your tooltip could have a title like “Sales Breakdown:” then the viz code on the next line.

3. **Test the Tooltip:** Click OK and then try hovering on the main view. After a brief moment (sometimes there's a slight load time), a tooltip should appear that includes the rendered chart from the other sheet, filtered to the context of the hovered mark. In our example, hovering on "California" on the map would show a bar chart of category sales *for California only (Create Views for Tooltips (Viz in Tooltip) - Tableau)】. This happens because by default Tableau filters the tooltip viz to the mark's data (you can adjust what filters pass through via the Options in the inserted code, but default is all relevant fields).
4. **Adjust Sizing if Needed:** If the tooltip viz is too large or small, you can edit the tooltip code's `maxwidth` and `maxheight` values. Maybe set maxwidth="400" if you want it a bit wider, etc. Keep in mind the tooltip has to fit on the screen.
5. **Hide the Tooltip Sheet:** If you don't want the extra sheet visible as a separate tab in your workbook (to avoid confusion for viewers), you can hide it. Right-click the sheet tab of "Tooltip – Sales by Category" and choose Hide Sheet. It won't show up in presentations or published as a visible sheet, but it will still function inside the tooltip.

The result is a richer interactive experience: users can hover and see not just numbers but an actual graphic. As the Tableau Help describes, *"When a user hovers over a mark, the tooltip displays relevant data and details from another visualization filtered to that mark" (Create Views for Tooltips (Viz in Tooltip) - Tableau)】. This keeps them "in context" – they don't have to navigate to another dashboard or lose sight of the main view to get additional details.

Real-World Example – Viz in Tooltip: Consider a dashboard of a product catalog. You have a scatter plot of products (by price vs. rating). You could have a viz in tooltip that shows an image of the product and some stats when you hover over a point – effectively creating a rich tooltip. Or in a financial dashboard, hovering over a summary number could show a small trend chart of that metric over time. This feature should be used judiciously; it's powerful but can be overkill if a simple tooltip text would suffice. However, it truly shines for drilling into details without adding more charts on the dashboard.

Interactivity with Actions (Filter, Highlight, URL)

Beyond tooltips, Tableau Dashboards support **Actions** – interactive behaviors that occur when users click or hover on a chart. Actions can connect multiple charts together or integrate with external resources. There are several types of actions, but the most common ones for beginners are **Filter actions**, **Highlight actions**, and **URL actions* (Actions - Tableau)】. We'll explain each and how to set them up:

- **Filter Action:** Uses data from one view to filter one or more other views. For example, clicking a bar in Chart A filters Chart B to only show that category.
- **Highlight Action:** Emphasizes related data points across views by dimming the rest. For example, hovering over "Technology" in one chart could highlight Technology items in another chart, making them stand out.
- **URL Action:** Opens a web page (or other URL) when a user clicks something. For example, clicking a customer name could open that customer's page on an internal web portal.

These actions add a layer of guided analysis to dashboards. A simple use-case: you have a dashboard with a map and a bar chart. With a filter action, selecting a state on the map could filter the bar chart to that state's data. This way, a single dashboard can serve many purposes (you don't need separate dashboards for each state; one dashboard can show all states via interaction).

Setting Up an Action: Actions are configured at the workbook/dashboard level. You can add them via the top menu **Dashboard > Actions…** (or **Worksheet > Actions…** if you want it specifically for a single sheet context). In the Actions dialog, you'll see options to **Add Action** for Filter, Highlight, URL, etc. We'll outline an example for each basic type:

- **Filter Action Example:** Suppose we want a dashboard where clicking on a **Category** in one chart filters another chart to that category. Create your dashboard with the two charts. Then go to *Dashboard* > *Actions*, click **Add Action > Filter…**. In the dialog, give it a name like "Category Filter". Choose the source sheet (the one you click on, e.g., "Sales by Category"

chart) and the target sheet (the one to filter). You can specify run action on **Select** (when user clicks) or **Hover** or **Menu**. “Select” (click) is common. Then you can choose whether it’s all fields or specific fields that get passed – by default, Tableau will use all common fields to filter, which usually is fine. Hit OK. Now in use mode, clicking a category bar in the first chart will filter the second chart. Tableau essentially performs the same as a quick filter, but via the action triggered by your clic (Create a Dashboard - Tableau)】. You’ll notice that *Use as Filter* achieves a similar thing: you can also simply click the little filter icon on a worksheet in a dashboard (Tableau gives an option “Use as Filter”) to toggle a filter action quickl (Create a Dashboard - Tableau)】. This is a shortcut to creating a filter action for that sheet.

- **Highlight Action Example:** Let’s say you have two charts and you want hovering on one to highlight related marks on the other without filtering out others. In the Actions dialog, choose **Add Action > Highlight…**. For source and target, you might select both charts for both (so that they highlight each other). You can set it to run on Hover (common for highlight). You might also specify if it should highlight by a certain field (for instance, highlight by “Category” so that hovering over Technology in one chart will highlight Technology marks in the other). Once set, when you hover, Tableau will dim all other data and only the matching ones stay colore (Actions - Tableau) (Actions - Tableau)】. This is great for seeing correspondence without losing context. Users can also do some highlighting by legend (clicking items in legends), but action gives more control.
- **URL Action Example:** If your data references something that has a URL, you can make it clickable. For instance, in a table of products, clicking a product name could open its webpage. To set this up, add a **URL action**. In the dialog, you specify the URL – it can be static or dynamic. You can insert field values into the URL (e.g., `https://www.example.com/products/<Product ID>` where will be replaced with the actual ID from the data when clicked). Then choose what triggers it (probably on Menu or Select). When the user triggers it, their browser opens that UR (Actions - Tableau)】. It’s a seamless way to integrate external info. Do note that in Tableau Cloud, the URL will open in a new browser tab or in a web object if you use one.

When designing a dashboard, you can mix and match these actions. It's often good to provide some visual cue or instruction (like a text tooltip or note: "Click a bar to filter the map") so users know the dashboard is interactive.

To illustrate, *"in a dashboard showing home sales by neighborhood, you could use actions to display relevant information for a selected neighborhood. Selecting a neighborhood in one view can trigger an action that highlights related houses in a map view, filters a list of houses sold, then opens an external web page with census data for that neighborhood" (Actions - Tableau)】. That scenario uses all three types: filter, highlight, and URL in tandem. While you might not start with something that complex, it shows the potential of actions to link disparate elements together.

Setting actions via "Use as Filter": The quickest way for beginners to implement a filter action is to build a dashboard, then click the little funnel icon in the top-right of a chart (when viewing the dashboard) – this toggles "Use as Filter". It instantly makes that chart filter the rest of the dashboard on selectio (Create a Dashboard - Tableau)】. It's basically a shortcut to creating a filter action targeting all other worksheets on the dashboard. Try it out: if you have a dashboard with two charts, clicking "Use as Filter" on one and then selecting a mark will filter the other chart without any further setup.

Real-World Example – Actions: Imagine a sales dashboard with three views: a map of countries, a bar chart of product categories, and a detailed table of transactions. You can add a filter action so that selecting a country on the map filters the other two views to that country. Another filter action could make selecting a product category bar filter the table to that category. Additionally, a highlight action could make hovering over a category bar highlight that category on the map (perhaps coloring only those countries where that category's sales are significant). Finally, you could add a URL action on the table so clicking a transaction ID opens the invoice page in your company's system. With these actions, the dashboard becomes interactive: users can drill into specific segments and get external information, all within one interface. This level of interactivity transforms static charts into an exploratory analytical app.

Assembling Dashboards from Multiple Charts

Up to now, we've mainly worked with individual worksheets (each containing a single chart or view). **Dashboards** in Tableau allow you to combine multiple worksheets (and other elements like text or images) into a single canvas, so you can present a comprehensive story or allow comparisons between different views. We've touched on dashboards when discussing actions; now let's go step-by-step in creating a simple dashboard. We will use the charts we made earlier (or you can use any worksheets you have).

Think of a dashboard as a collage or layout: you drag individual sheets onto it and arrange them. Tableau provides a flexible layout system with tiled or floating objects. As a beginner, you can stick to tiled layout, which is the default and ensures things snap into place. (Step 6: Build a dashboard to show your insights - Tableau)】 *An example dashboard combining multiple views. Here, a map ("Profit Map") and a bar chart ("Sales in the South") are displayed together, along with filter controls on the right. Dashboards let you see multiple insights at onc (Step 6: Build a dashboard to show your insights - Tableau) (Step 6: Build a dashboard to show your insights - Tableau)】.*

Steps to Create a Dashboard:

1. **Create New Dashboard:** Click the **New Dashboard** button, which looks like a window icon (typically found as the next tab after your worksheets, at the bottom). Alternatively, use the menu **Dashboard > New Dashboard**. A blank dashboard workspace will appea (Create a Dashboard - Tableau) (Step 6: Build a dashboard to show your insights - Tableau)】. On the left, you'll see the Dashboard pane where you can adjust size and see a list of your worksheets. By default, Tableau might set the dashboard to a fixed size (like Desktop browser size). You can adjust the size from the dropdown (e.g., to Automatic to let it resize, or a specific pixel dimension).
2. **Add Views (Sheets):** In the left Dashboard pane, under **Sheets**, you will see the names of all your worksheets. Now simply drag a sheet onto the blank dashboard on the righ (Create a Dashboard - Tableau)】. For example, drag your "Sales by Category" sheet in. It will appear as a tiled object. Next, drag another sheet (say, "Sales Trend" line chart) onto the dashboard. As you drag the second one in, Tableau will show shaded areas indicating where you can drop it (above, below, left, right of the

existing view, or as a floating layer). Drop it where you want – perhaps to the right of the first chart, to create a side-by-side layout, or below it for a top-and-bottom layou (Step 6: Build a dashboard to show your insights - Tableau)】. Once dropped, Tableau will place them accordingly. You can continue adding more worksheets if needed, and Tableau will keep arranging them.

3. **Adjust Layout:** If one view looks squished (common if you put two charts side by side and one has a lot of labels), you have a few options: You can grab the divider between the views and drag to resize (if the dashboard size is fixed). Or consider stacking vertically instead of horizontally. You might also use **containers** (Horizontal or Vertical layout containers from the Objects section) to group certain elements. For example, to make two charts always stick together, put them in a vertical container. As a beginner, an easier route is to experiment by dragging and dropping until it looks decent. In our example image above, the map was placed above the bar chart in a vertical arrangement.
4. **Add Titles, Text, or Images:** You can drag a **Text** object from the left pane's Objects section onto the dashboard if you want to add a title or description on the dashboard itself (separate from individual chart titles). For instance, you could drop a Text box at the top and type "Sales Dashboard – 2022". Format it to be large and centered. Tableau dashboards also allow image objects or web objects – you could insert a company logo, for example, by dragging Image and selecting a file.
5. **Legends and Filters on Dashboards:** When you added your sheets, Tableau usually brought along any legends or filters that were showing on those worksheets and placed them on the dashboard. You can arrange these as well. For example, if you have a color legend or a filter from a sheet, they will appear as floating boxes which you can drag to a side or top. You might want to consolidate if there are duplicates (often if two charts share a filter, you'll get two filter controls – you can remove one). In Tableau, you can make one filter control apply to multiple charts by using its menu (click the filter's dropdown -> Apply to Worksheets -> Selected/All using this data source). This way, a single filter widget can filter all relevant views on the dashboard.
6. **Finalize Dashboard:** Tweak the sizing of each element. You can select an item and use the layout pane to add padding or adjust position. If

something isn't fitting, consider increasing the dashboard size a bit. Hide any redundant titles (each view might have its own title – you might choose to hide those if you have an overall dashboard title or if they take space). For example, *"right-click the Profit Map title and select Hide Title" (Step 6: Build a dashboard to show your insights - Tableau)】 if the context is clear without it. The goal is a clean, understandable layout.

Now you have a dashboard that shows multiple pieces together. It's good to test it: use any filters or actions you set up to ensure it behaves as expected. For instance, if you enabled "Use as Filter" on a chart, try clicking that chart on the dashboard and see the others respond.

Dashboard in Presentation/Export: If you present directly from Tableau Desktop, you can activate **Presentation Mode** (F7 or the screen icon) to hide the Tableau interface and show just the dashboard full-screen, useful for meetings. If publishing to Tableau Cloud, you've already learned how to do that – the published dashboard will be interactive online. You can also export dashboards as images or PDFs for static sharing if needed.

Real-World Example – Dashboard Assembly: Think of a dashboard as a story page. For a business review, you might create a dashboard with a KPI summary at the top (maybe big numbers or indicators), a trend chart on the bottom left, and a breakdown bar chart on the bottom right. Using the steps above, you add each element, perhaps an explanatory text box at the top, and arrange it neatly. The interactive filters allow the viewer to say "show me the last quarter" or "focus on X region", and all the charts update. Dashboards let decision-makers see a broad picture and a detailed picture in one view, which is incredibly valuable. For example, a marketing dashboard could include a map of sales by region, a line chart of sales over time, and a bar chart of sales by product – all visible together to correlate geography, time, and product performance. By assembling them in one dashboard, the viewer can derive insights that wouldn't be evident looking at each chart in isolation.

You've now completed a step-by-step journey through Tableau Desktop's core features, from connecting data to publishing a dashboard. As a recap, we connected to the Superstore sample data and built a bar chart and a line

chart. We applied filters and sorting to answer specific questions, then added titles and labels to make the views self-explanatory. We then combined those pieces into a dashboard and added interactive elements like filter and highlight actions for a richer user experience. Finally, we published the result to Tableau Cloud, making it accessible from anywhere.

With these fundamentals, you can start exploring your own datasets. Practice with different chart types (try a pie chart or a map), use different filters (e.g., date ranges), and experiment with actions (maybe a highlight action to compare segments). Tableau's learning curve is gentle – many complex results can be achieved with the drag-and-drop and dialogs we used here. And remember, there are plenty of resources (including Tableau's online help and community) to go deeper. Happy visualizing and discovering insights with Tableau (Step 1: Connect to a sample data source - Tableau) (Actions - Tableau)❱