IntelliPaat

Tableau

Module 5

Dashboards & Stories

Agenda

Dashboards & Stories

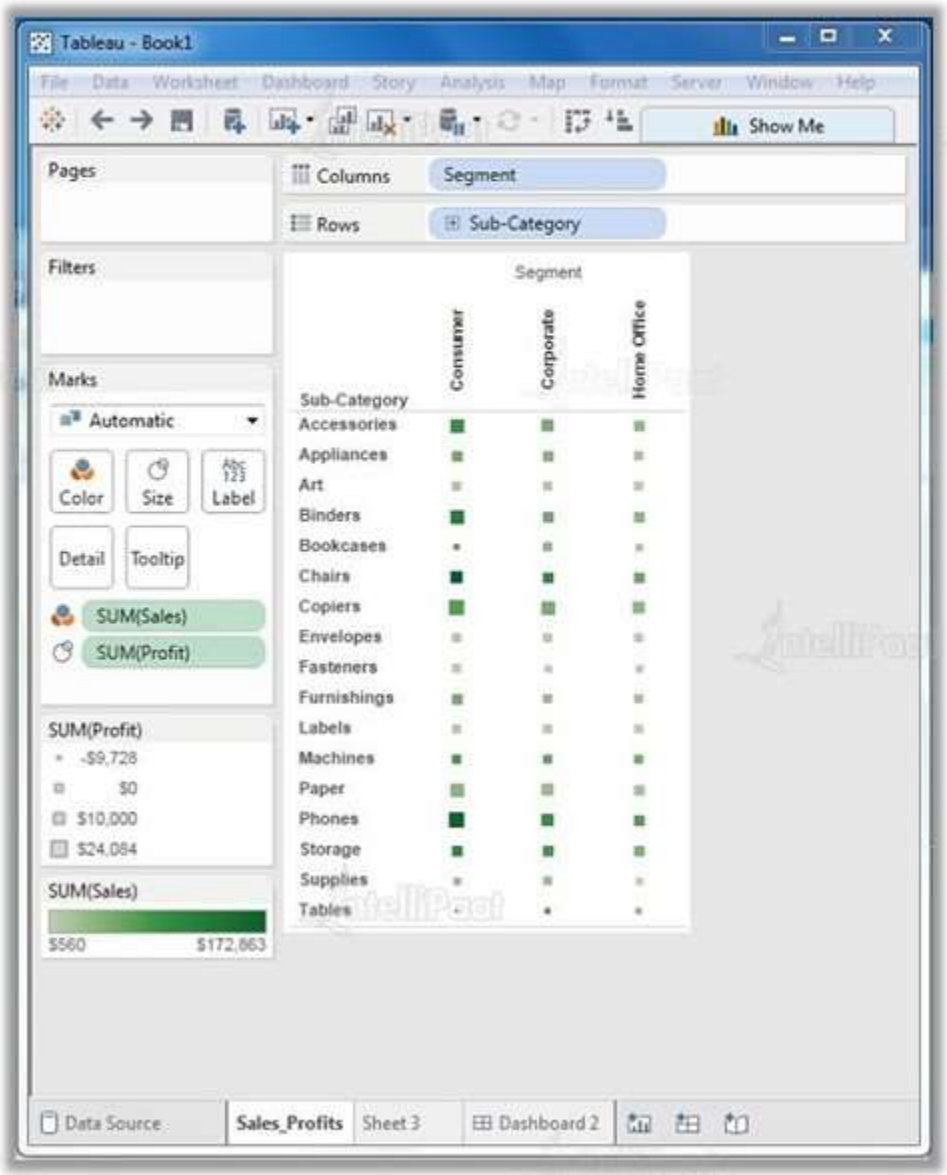
- Build and Format a Dashboard
- Best Practices for Creative and Interactive Dashboards
- Create Stories
- Dashboards & Stories
- What is a Dashboard?
- Filter Actions
- Highlight Actions
- URL Actions
- Selecting and Clearing Values
- Dashboard Examples
- Tableau Workspace
- Tableau Interface
- Tableau Joins
- Types of Joins
- Live vs. Extract Connection
- Tableau Field Types
- Saving and Publishing Data Source
- File Types

Dashboards & Stories

Dashboards

- A dashboard is a consolidated display of various worksheets and related information in a single place.
- This is mainly used to compare and monitor the data simultaneously.
- Data views will be present at the bottom of the workbook and automatically get updated with the recent data from the data source.

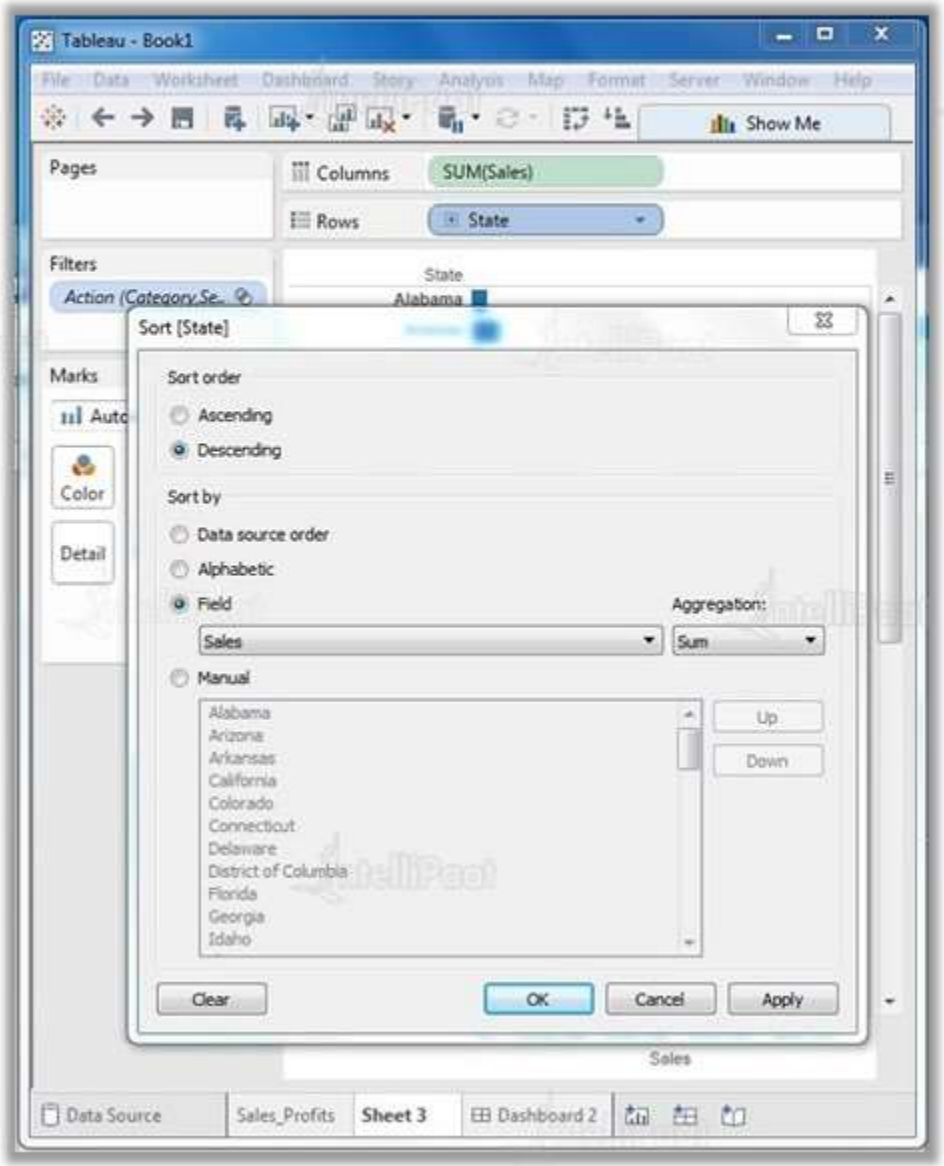
Dashboard Creation



Step 1: Use Add Worksheet icon and create a blank worksheet. Drag the dimension Segment to the Columns shelf and the dimension Sub-Category to the Rows Shelf.

Then, drag and drop the measure Sales to the Color shelf and the measure Profit to the Size shelf. Right-click and rename this worksheet as **Sales_Profits**. The given chart appears.

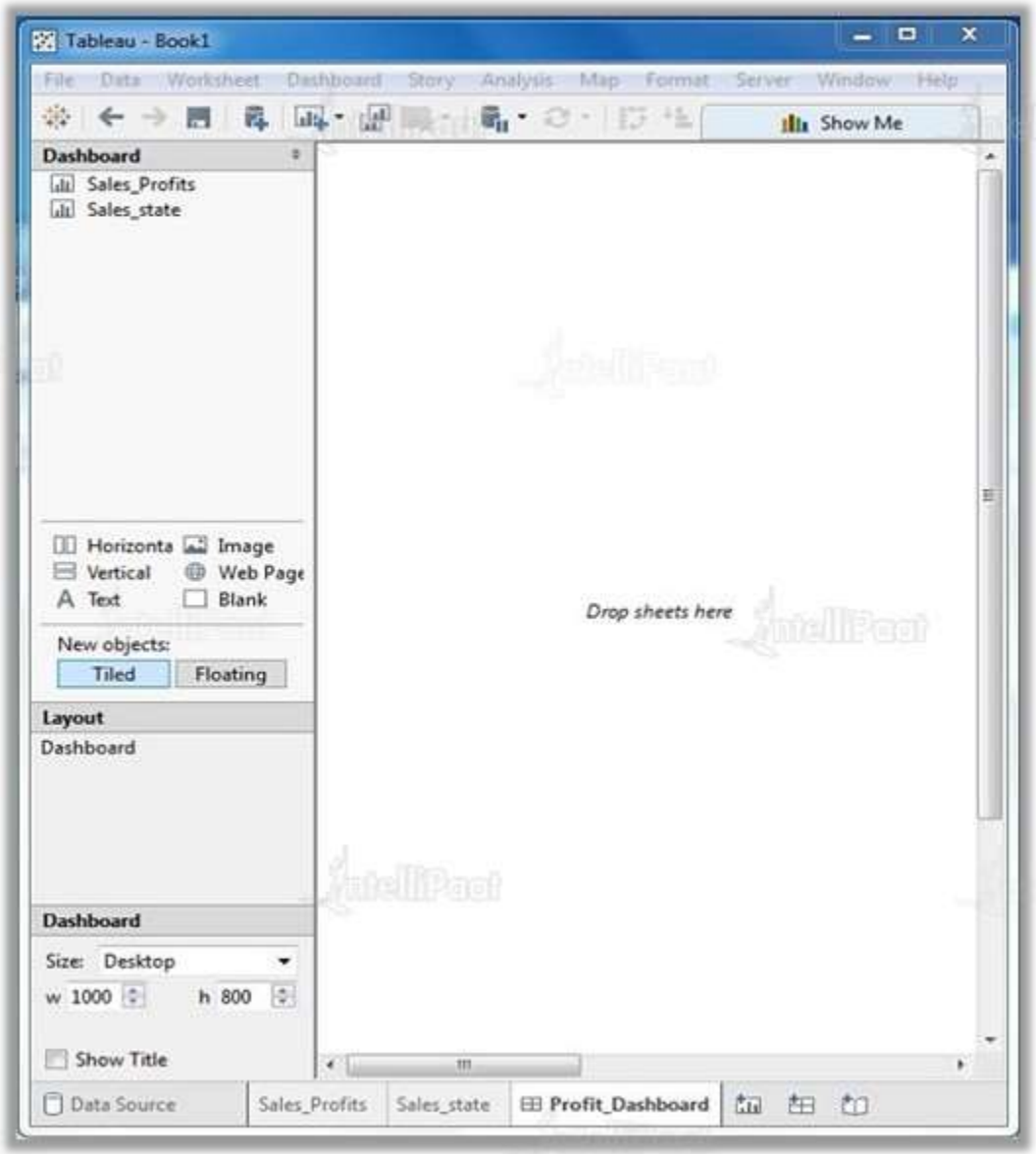
Dashboard Creation



Step 2: Create another sheet to hold the details of the sales across the states. To do this, drag the dimension State to the Rows shelf and the measure Sales to the Columns shelf as shown in the screenshot.

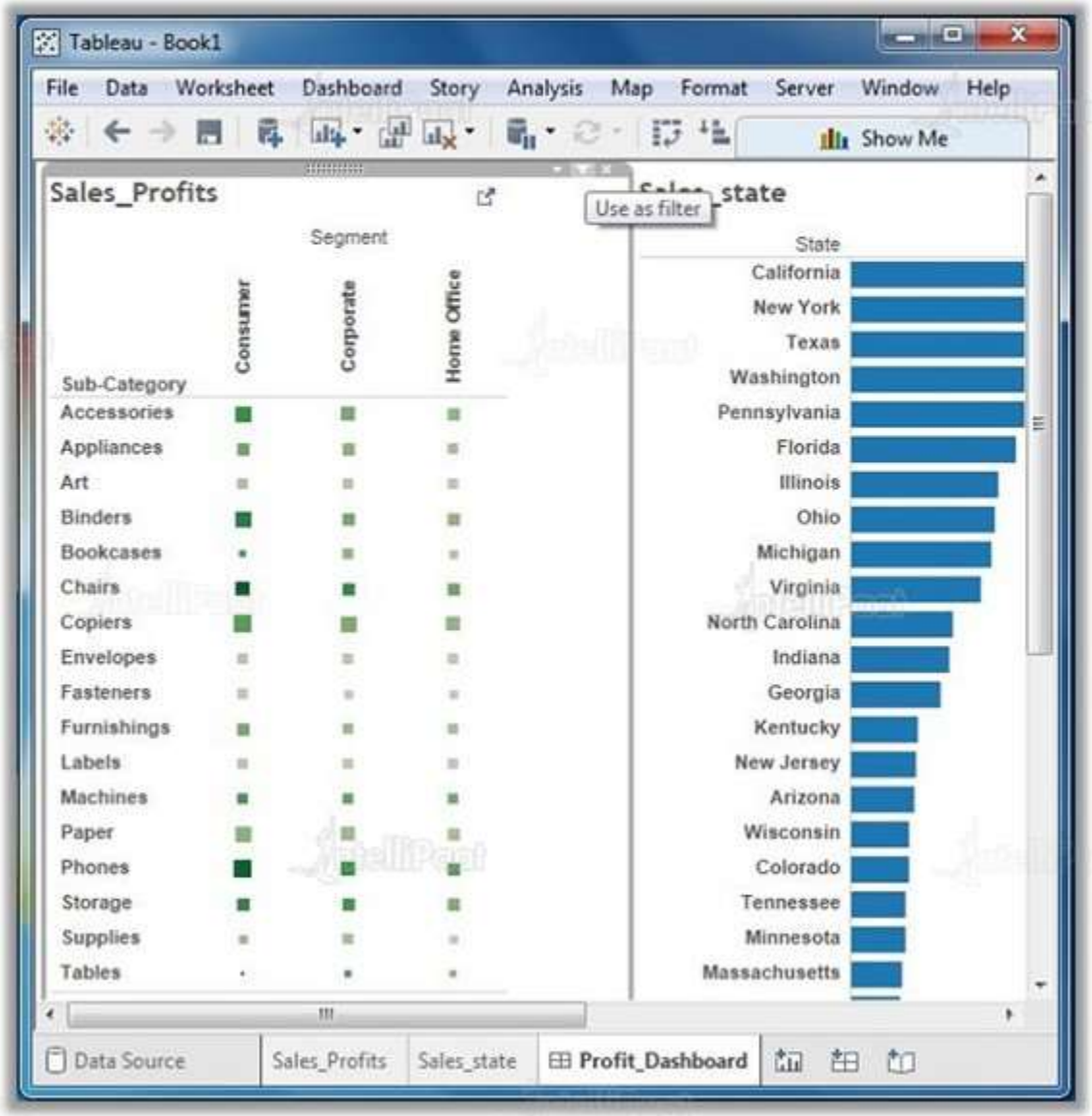
Then, apply a filter to the State field to arrange the Sales in a descending order. Right-click and rename this worksheet as **Sales_state**.

Dashboard Creation



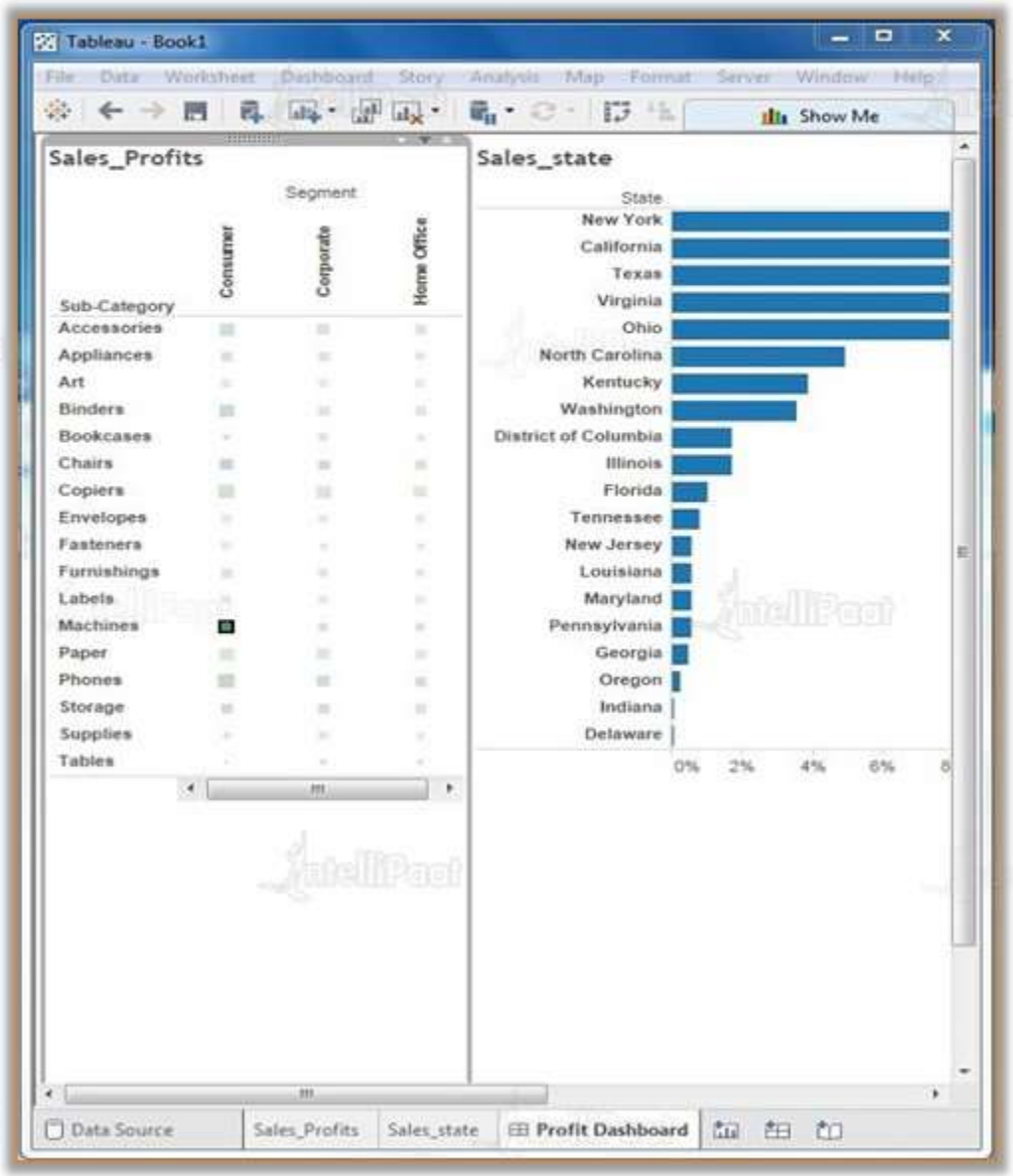
Step 3: Create a blank dashboard by clicking the "Create New Dashboard" link at the bottom of the workbook. Right-click and rename the dashboard as **Profit_Dashboard**.

Dashboard Creation



Step 4: Drag the two worksheets to the dashboard. Near the top border line of the Sales_Profit worksheet, you can see three small icons. Click on the middle one, which shows the prompt “Use as Filter” on hovering the mouse over it.

Dashboard Creation

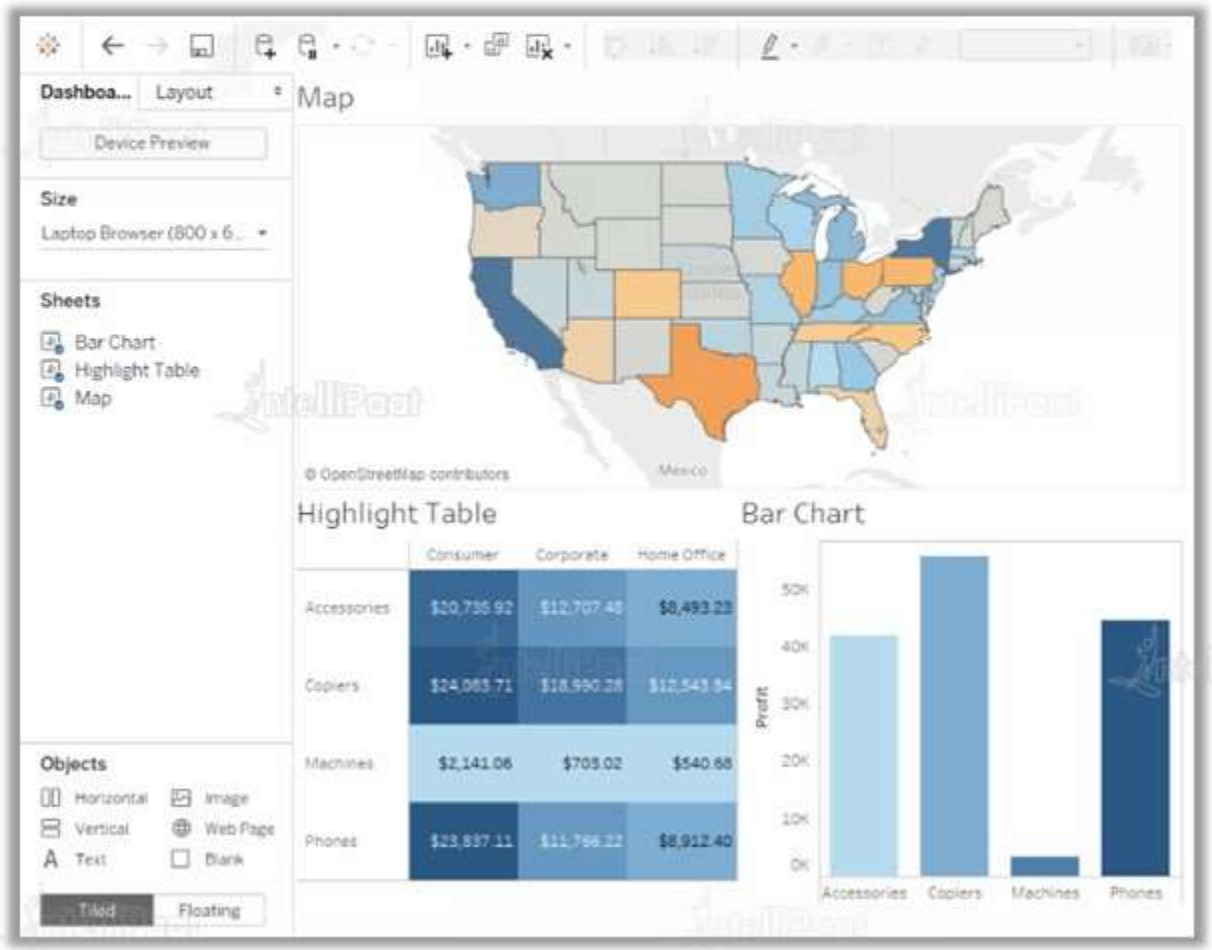


Step 5: Click the box representing Sub-Category named Machines and Segment named Consumer.

You can also see that only the states where the sales happened for this amount of profit are filtered out in the right pane named Sales_state. This illustrates how the sheets are linked in a dashboard.

Editing Views in Dashboards

On the dashboard, click on views you built and drag them to your dashboard sheet on the right. The gray shaded area indicates where you can drop views.



Best Practices for Dashboards

What's your goal?

Design for the real world

Add interactivity to encourage exploration

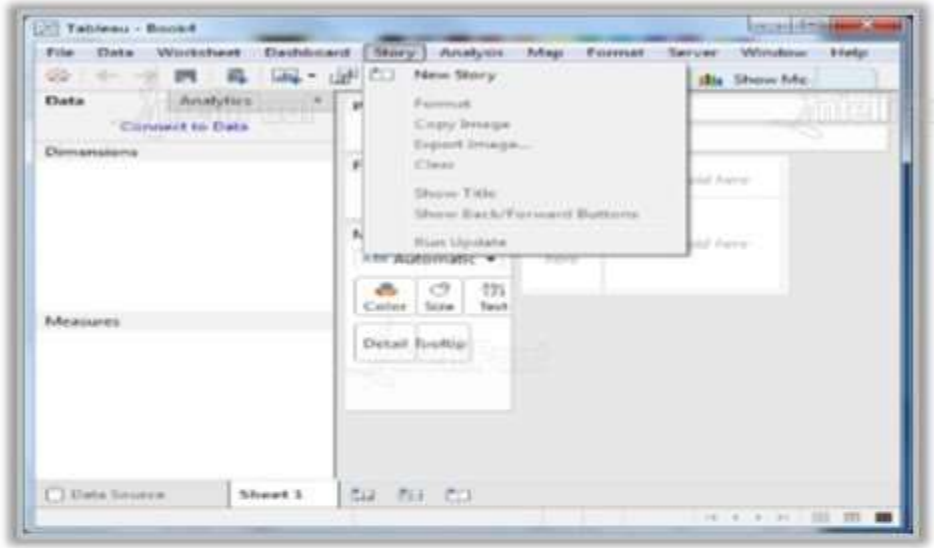
Save time

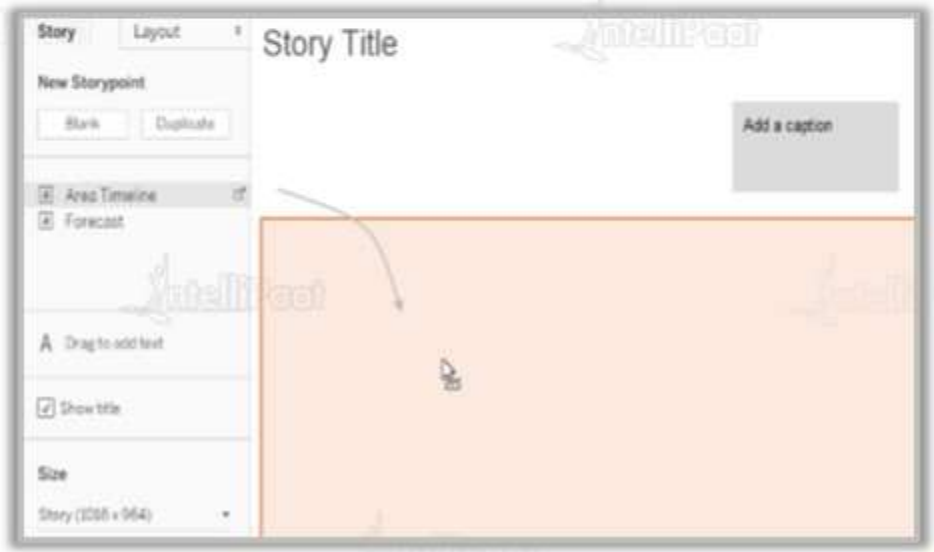
- Know your purpose and audience
- Leverage the most-viewed spot
- Show filters
- Enable highlighting
- Use the Go to Sheet command
- Hide sheets as you go
- Author at your final display size
- Be security-savvy
- Limit the number of views

Stories

- A **story** is a sequence of visualizations that work together to convey information.
- You can create **stories** to tell a data narrative, provide context, demonstrate how decisions relate to outcomes or simply make a compelling case.
- It is a sheet that contains a sequence of worksheets or dashboards that work together to convey information.
- All methods that are used for datasheets and dashboards apply to stories.
- it is a powerful navigation tool for presentations.

Creating a Story

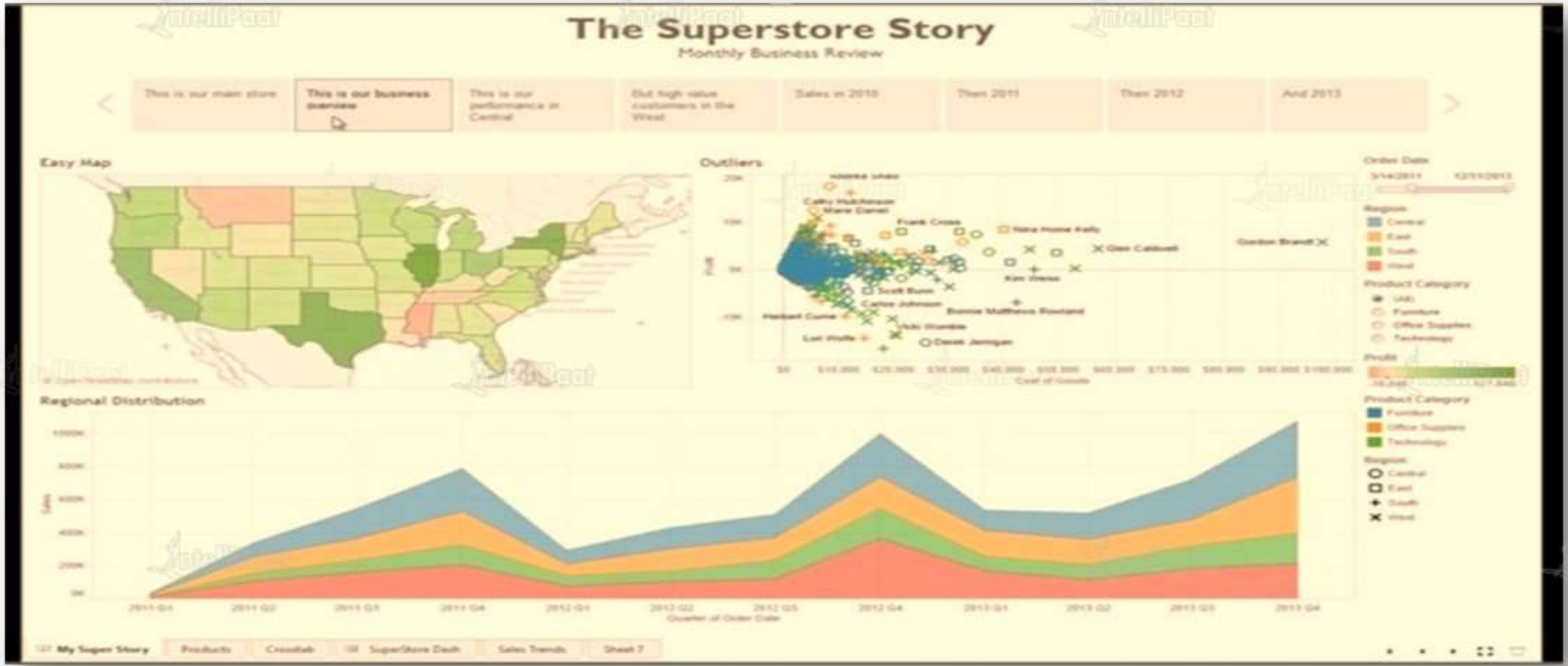




After creating reports and dashboards with your data, create a “new story” in Tableau.

You are presented with a very simple layout: Title, Navigator Box (Caption Box) and Sheet Area.

Story Example



Limitations of a Story

- Caption boxes can’t be resized or moved to the bottom or left/right side of the screen.
- Only 2–3 lines show up in the caption box. A user has to click on the text and scroll down to read the rest of the text.
- Besides Tableau reports and dashboards, you can’t embed other reports. You can take a screenshot of your non-Tableau report, create a viz with the image and then drag the viz into the sheet area.

Dashboards & Stories

- Once you create your data visualization, there are many ways to use it.
- For example, you might want to compare it with other visualizations of the same data to see how different conclusions jump out from different ways of looking at the data.
- Dashboards and stories are excellent tools for analyzing and presenting data.

A dashboard is a collection of several worksheets and supporting information shown in a single place so that you can compare and monitor a variety of data simultaneously.

A story is a sheet that contains a sequence of worksheets or dashboards that work together to convey information.

What is a Dashboard?

- A powerful tool for mixing multiple views in a unique one
- Allows us to create interactive and common filters for all the sheets grouped
- An excellent tool for generic views

Actions

Tableau allows you to add context and interactivity to your data using actions.

Link to web pages, files and other Tableau worksheets directly from your analytical results.

Use the data in one view to filter the data in another as you create guided analytical stories.

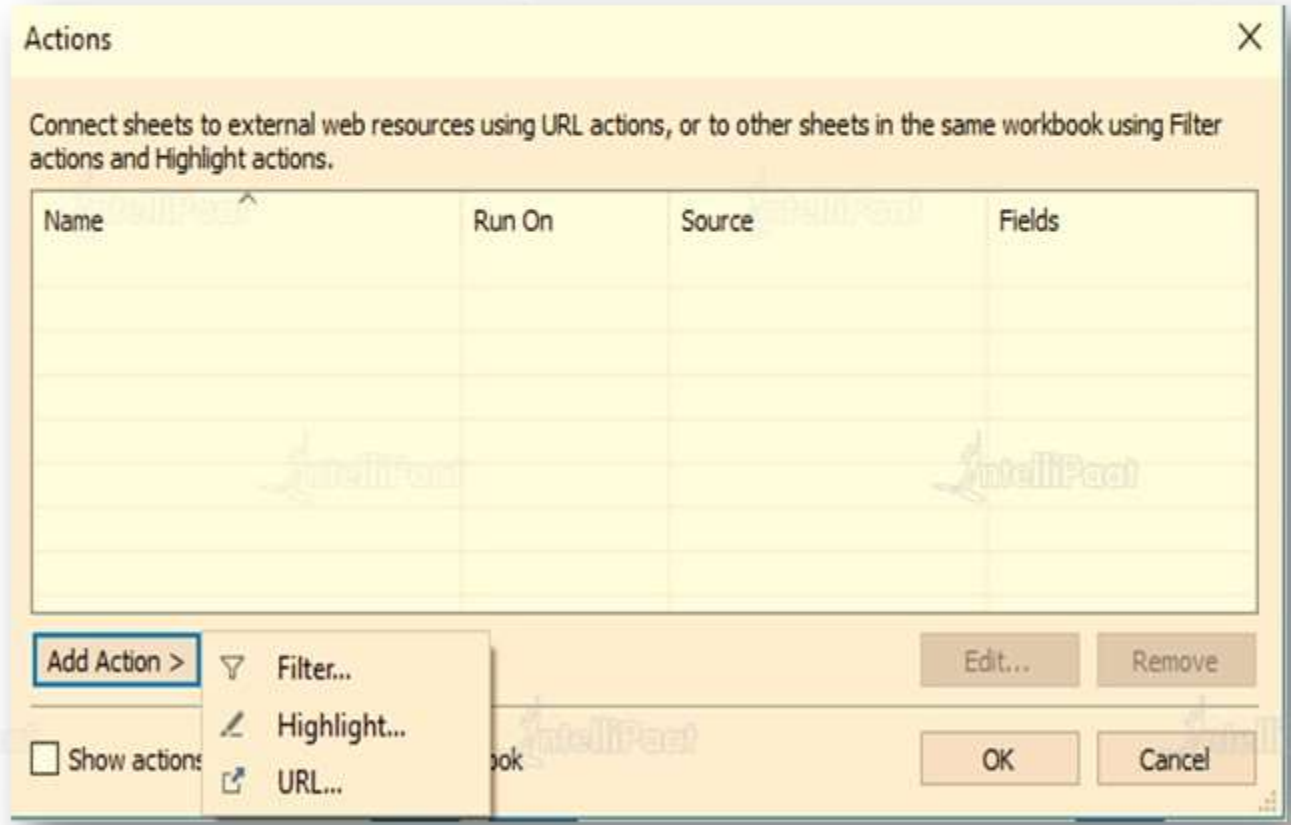
Finally, call attention to specific results using highlighting.

There are three kinds of actions in Tableau:

Filter, Highlight and URL actions

Filter Actions

- Filter actions are ways to send information between worksheets.
- Typically, filter actions are used to send information from a selected mark to another sheet showing related information.
- Filter actions work by sending the data values of the relevant source fields as filters to the destination sheet.



Filter Actions

Hover

- Rest the pointer over a mark in the view to run the action. This option works well for highlight and filter actions within a dashboard.

Select

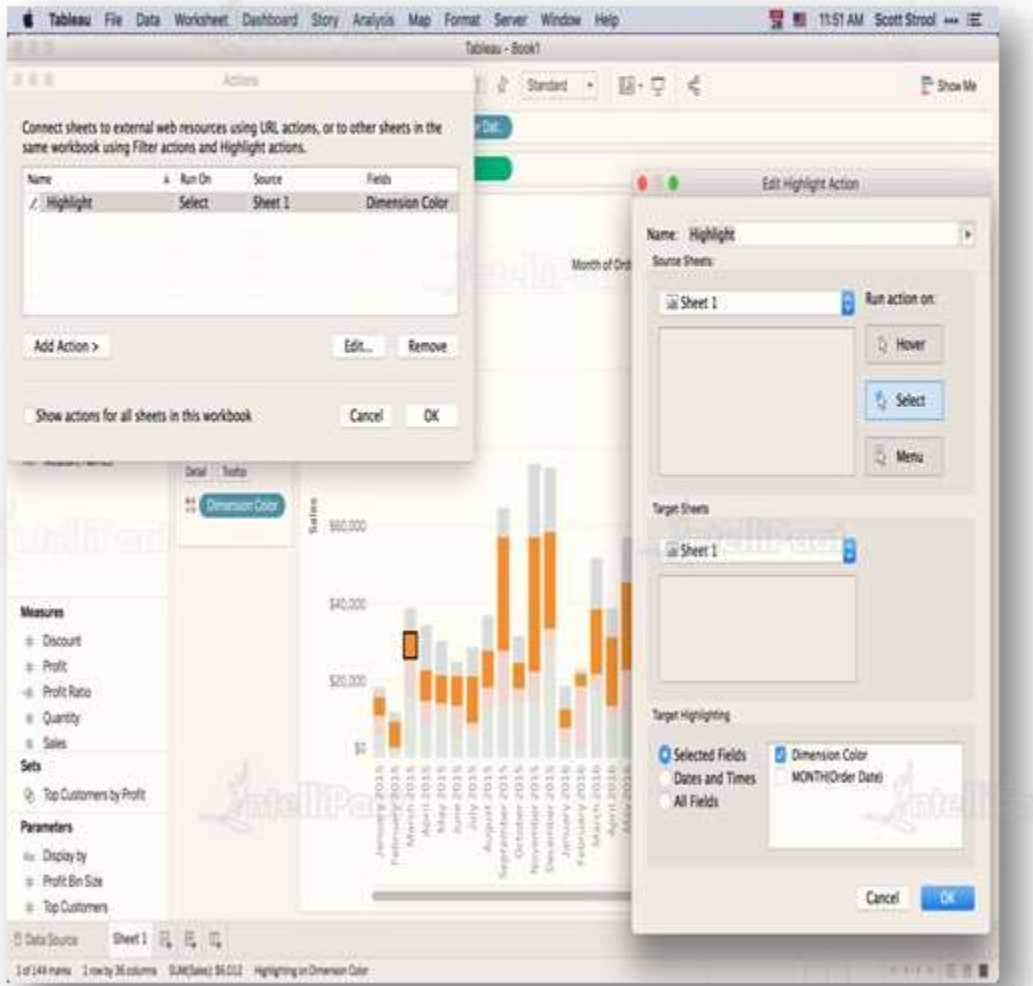
- Click on a mark in the view to run the action. This option works well for all types of actions.

Menu

- Right-click on a selected mark in the view and then select an option from the context menu. This option works well for filter and URL actions.

Highlight Action

- Sometimes when we have too many data points in a visualization, It becomes difficult to analyze them. Here, Tableau presents a highlight feature. By using this, a user can highlight the data points related to one categorization.
- Example: A user wants to view Profit and Sales by Customer, Region and Category in a shape chart. There will be too much data points which will be hard to analyze.
- By a simple click on a data point in the graph, Tableau will highlight all data points for that categorization like it has highlighted “furniture” in the central region in this graph.

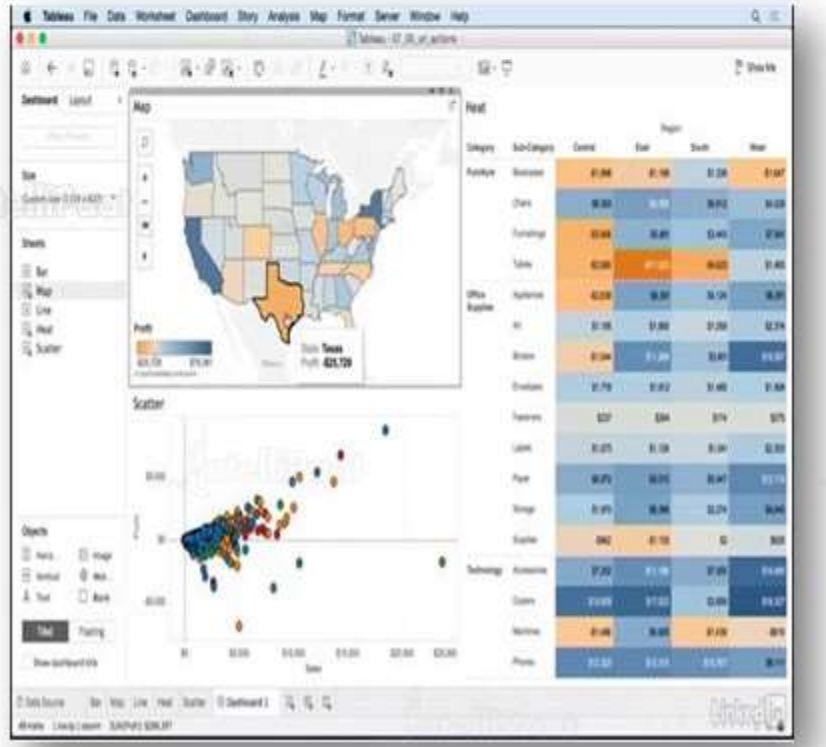


URL Action

- By using this feature, a user can integrate the Tableau report to external web applications like Google maps, salesforce.com, OBIEE or any home grown application.
- The user need to know the target URL for this. For example, the target URL for showing location for a zip code is: http://maps.google.com/maps?f=q&source=s_q&hl=en&near=72712&z=12
- Let's say, a user want to link the zip code in his report to Google maps. Whenever the user clicks on the zip code, Google map for that zip code should be displayed.

URL Action

- Create a dashboard with report having zip code information in it. Go to Edit menu → Dashboard → Actions → Action pop will appear → Add Action → Click URL
- In the URL section, type in the aforementioned URL and replace 72712 with <Zip Code> column of your report.



Selecting & Clearing Values

Leave the filter

Leaves the last dashboard action that happened in place. If you filtered Sheet 2 by something clicked on Sheet 1, the filter on Sheet 2 will stick.

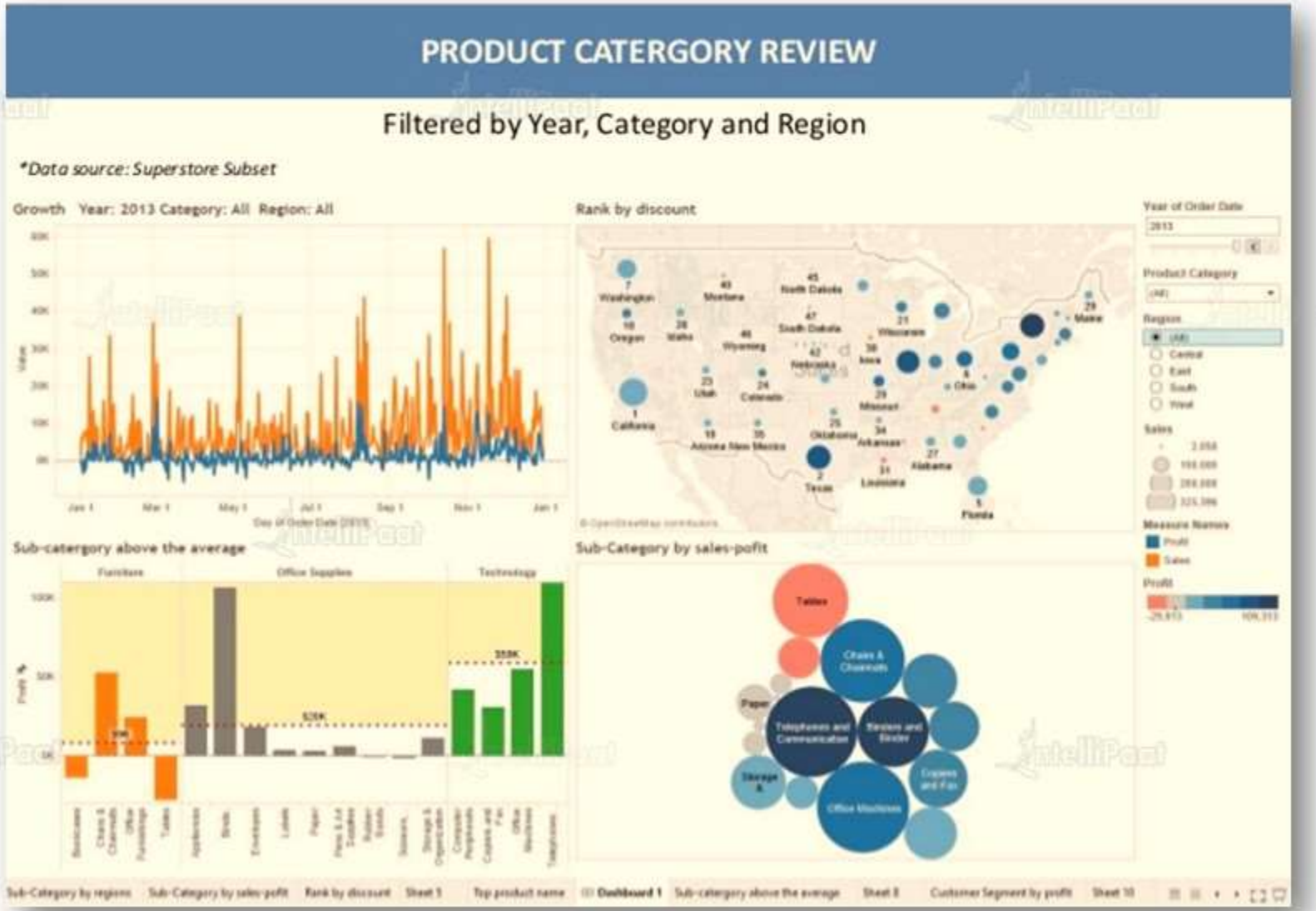
Show all values

Reverts back to the original view as if no dashboard action took place.

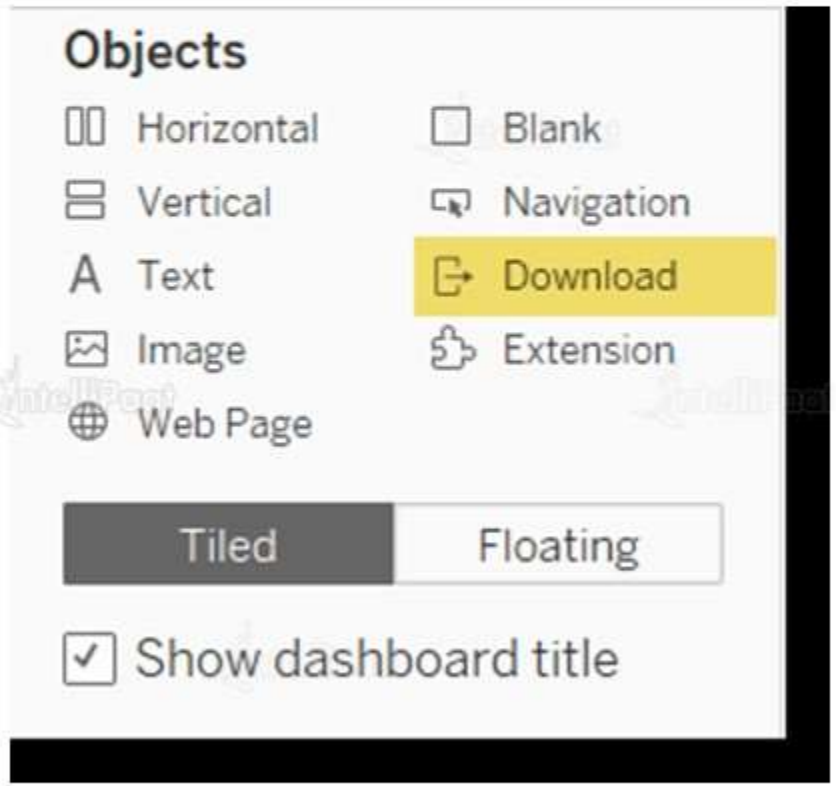
Exclude all values

Clears everything off of the target sheet, meaning that the target sheet will not show unless a dashboard action is executed.

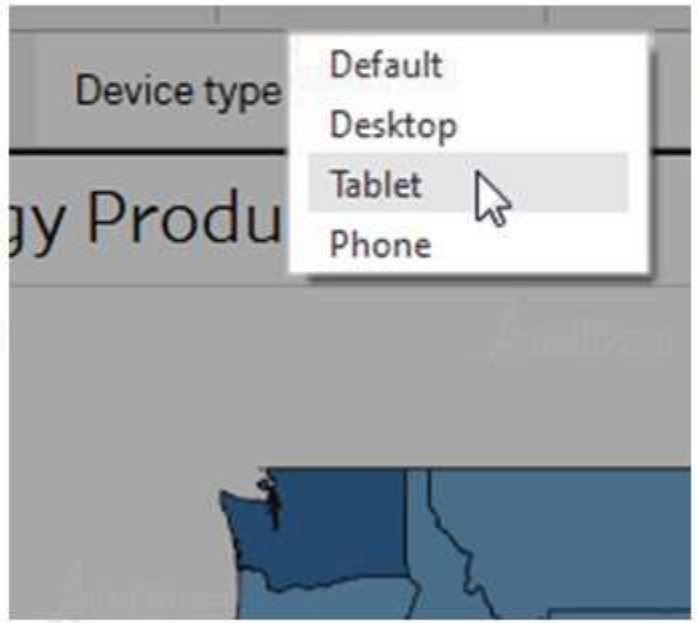
Dashboard Example



Objects in Dashboard



Device layouts in Dashboard



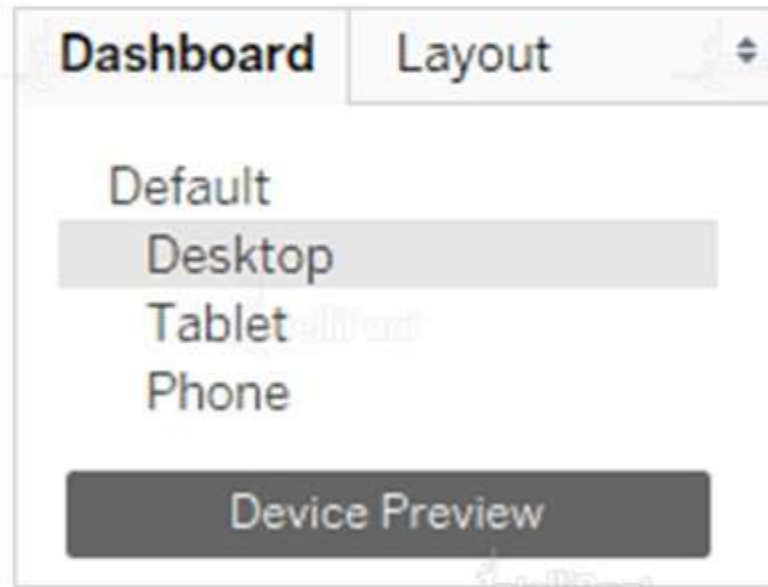


Tableau Workspace

- The Tableau workspace consists of menus, toolbar, data pane, cards and shelves and one or more sheets. Sheets can be worksheets, dashboards or stories.

- Worksheets contain shelves and cards to which you can drag and drop data fields to build views.

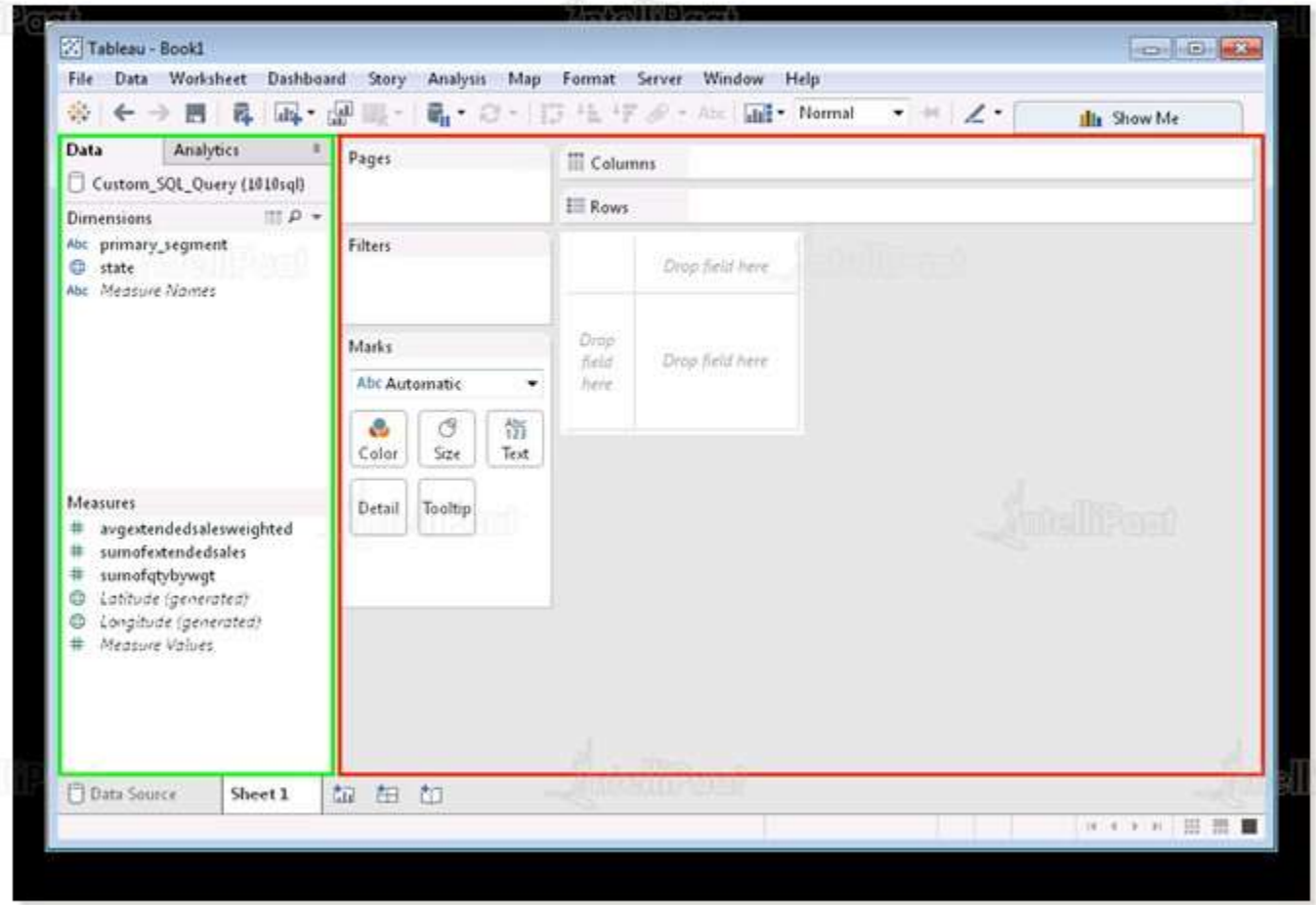


Tableau Workspace

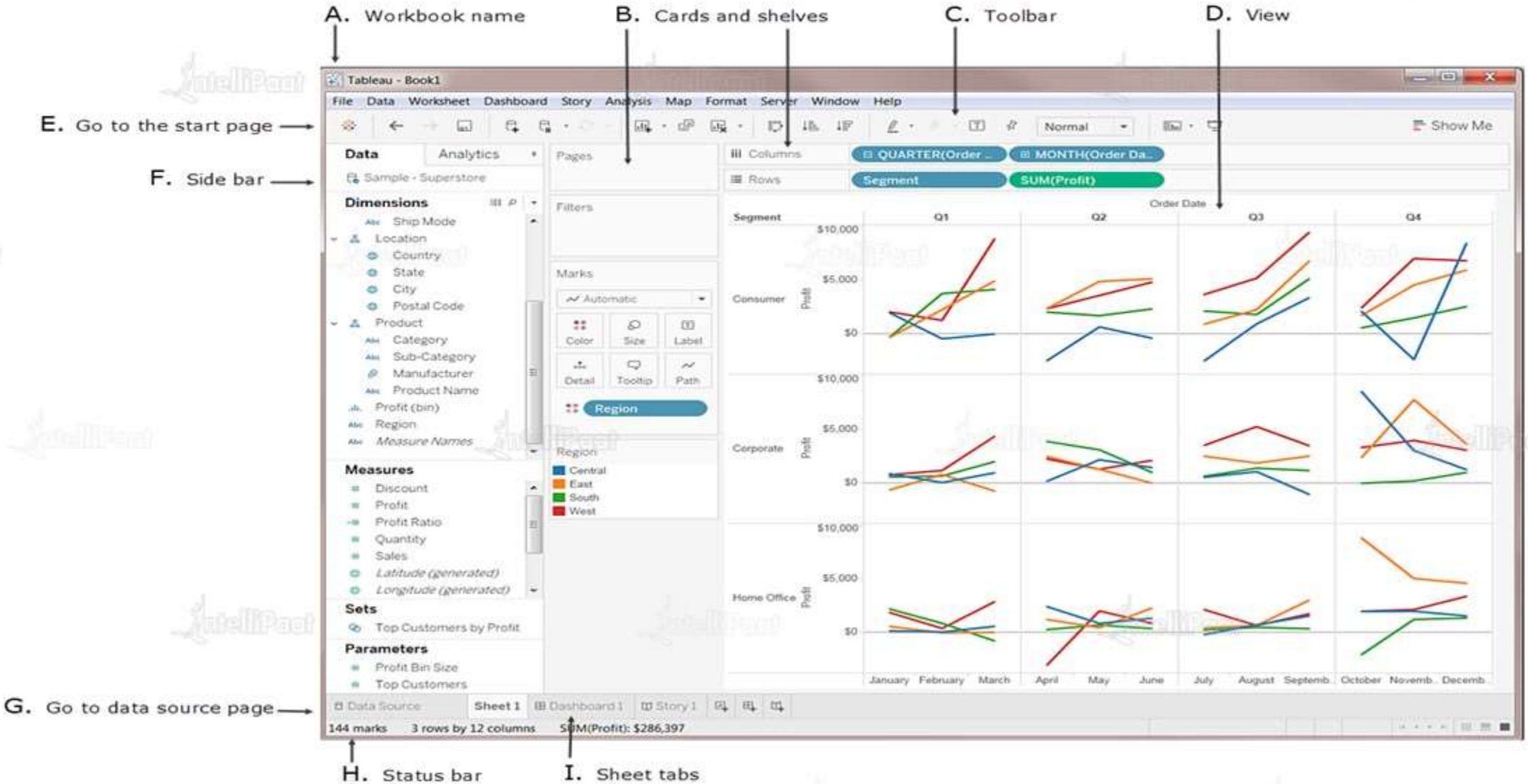


Tableau Workspace

A. Workbook name

B. Cards and shelves: Drag fields to the cards and shelves in the workspace to add data to your view.

C. Toolbar: Use the toolbar to access commands and analysis and navigation tools.

D. View: This is the workspace where you create your data visualizations.

E. Go to the start page

F. Side Bar: This provides two panes: the Data pane and the Analytics pane.

G. Go to the data source page

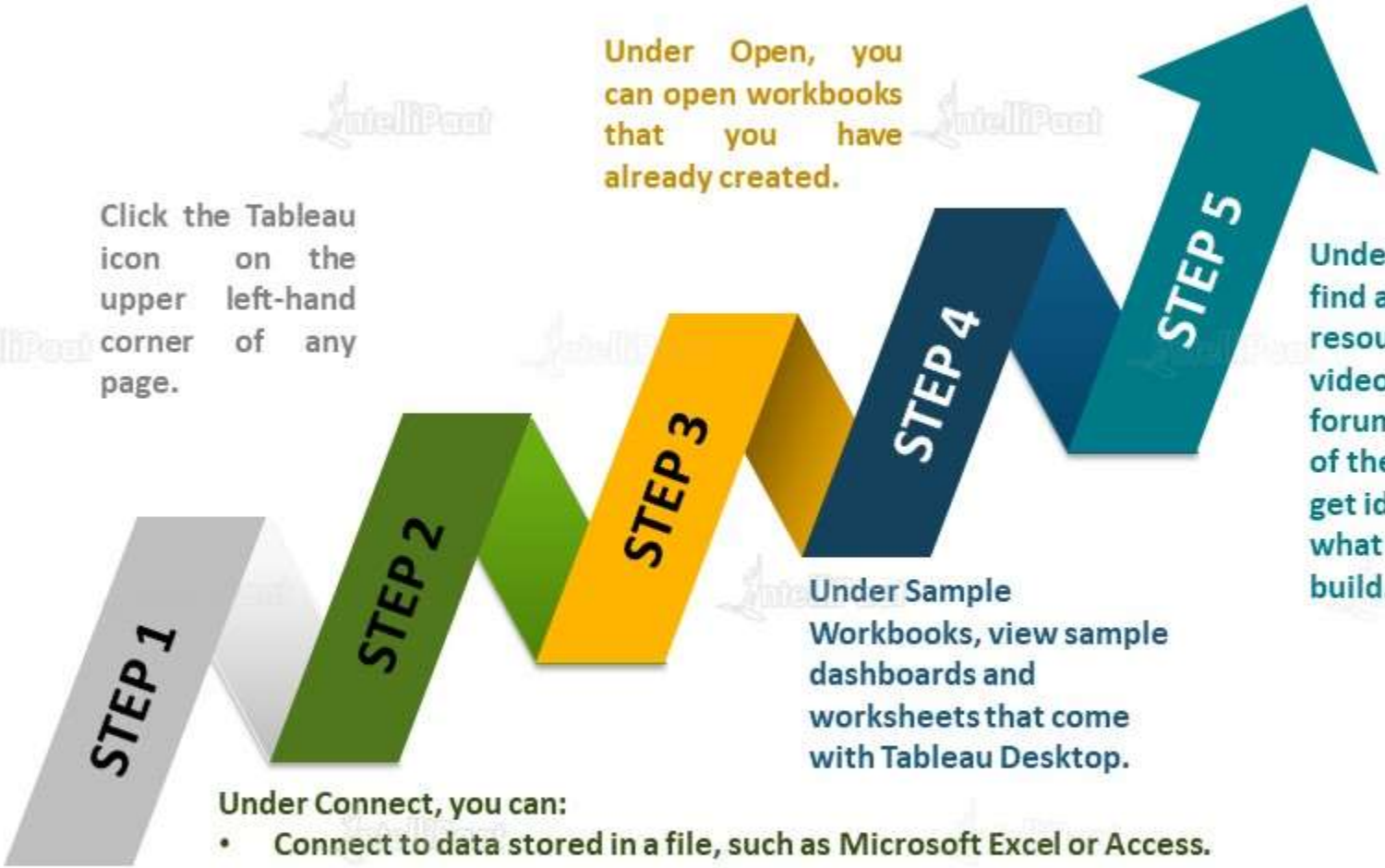
H. Status bar: This displays information about the current view.

I. Sheet tabs: Tabs represent each sheet in your workbook. They include worksheets, dashboards and stories

Connecting to Data

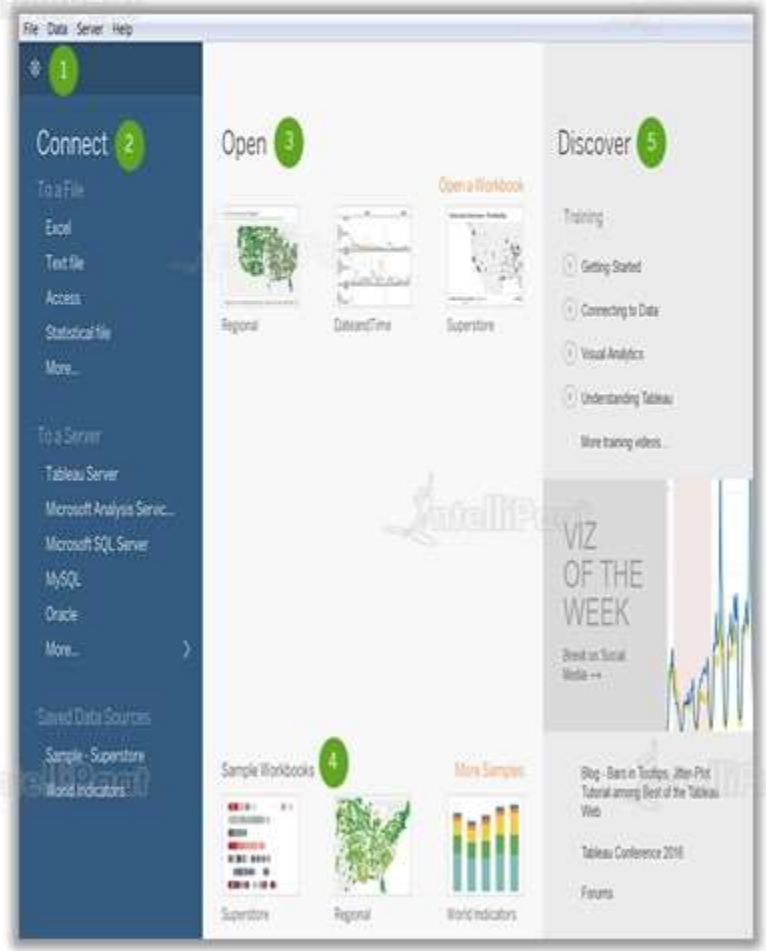
Click the Tableau icon on the upper left-hand corner of any page.

Under Open, you can open workbooks that you have already created.



Under Sample Workbooks, view sample dashboards and worksheets that come with Tableau Desktop.

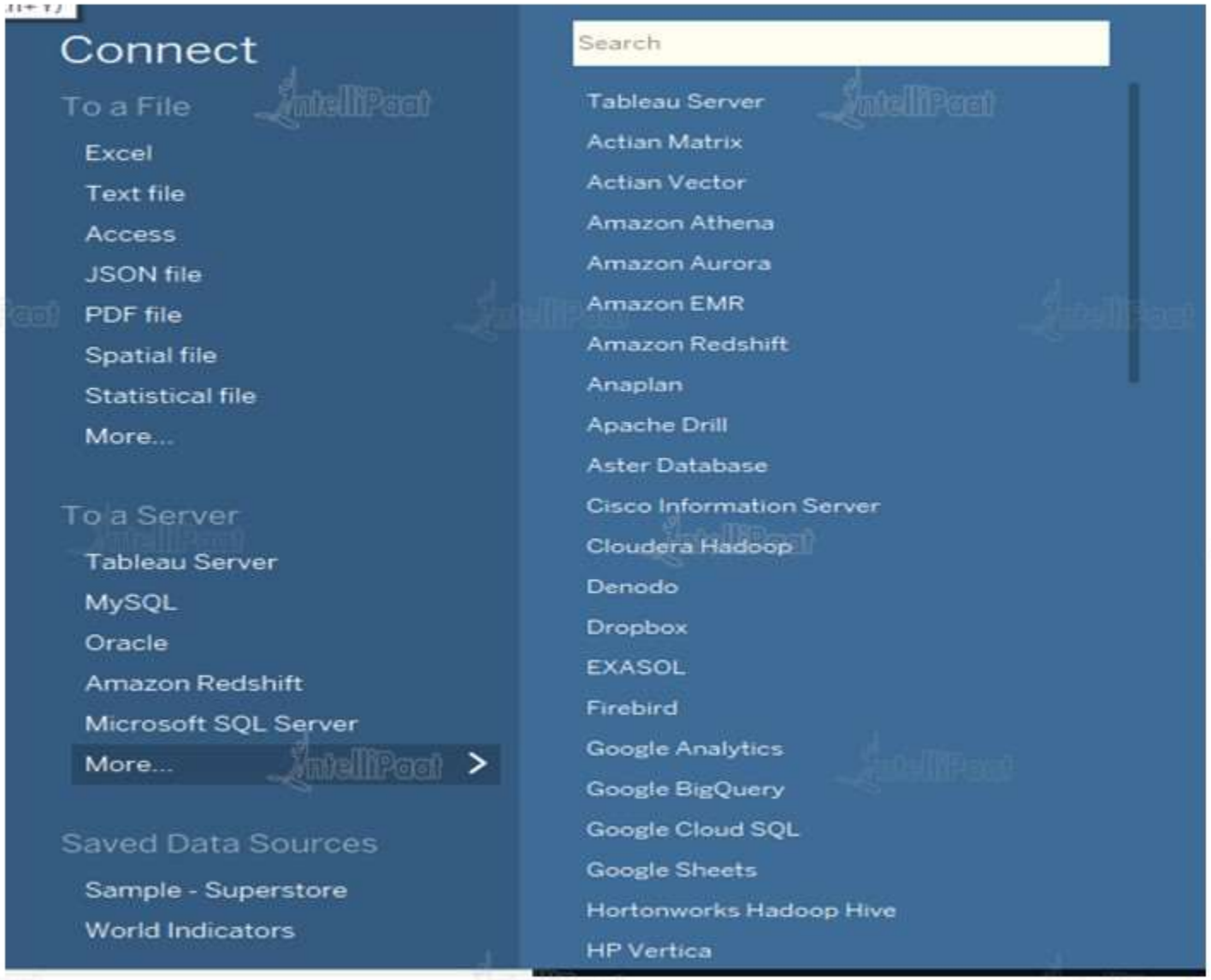
Under Discover, find additional resources, such as video tutorials, forums or the "Viz of the week" to get ideas about what you can build.

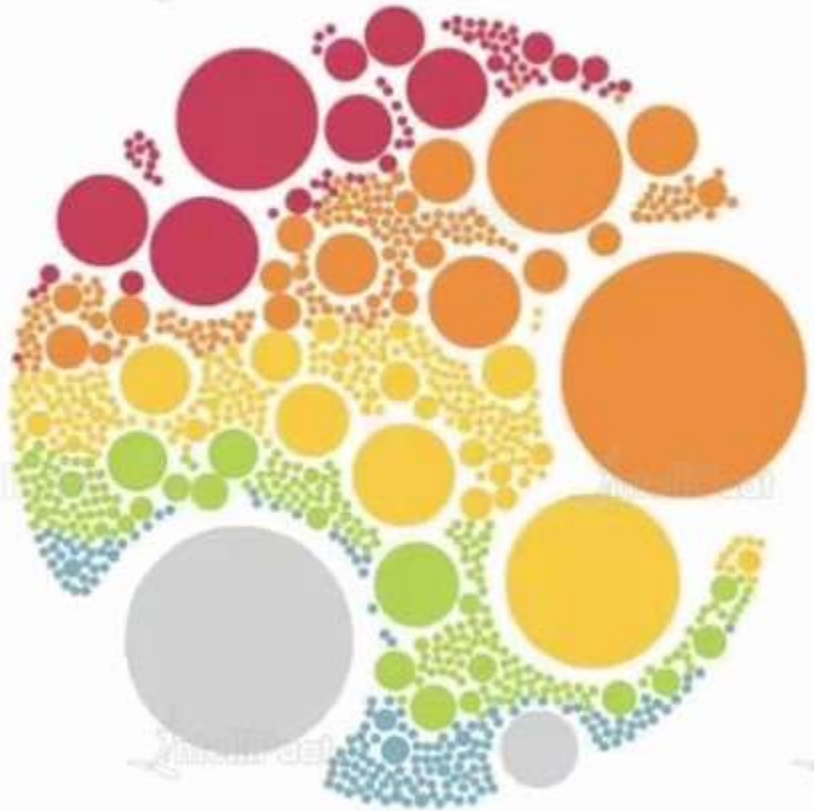


Under Connect, you can:

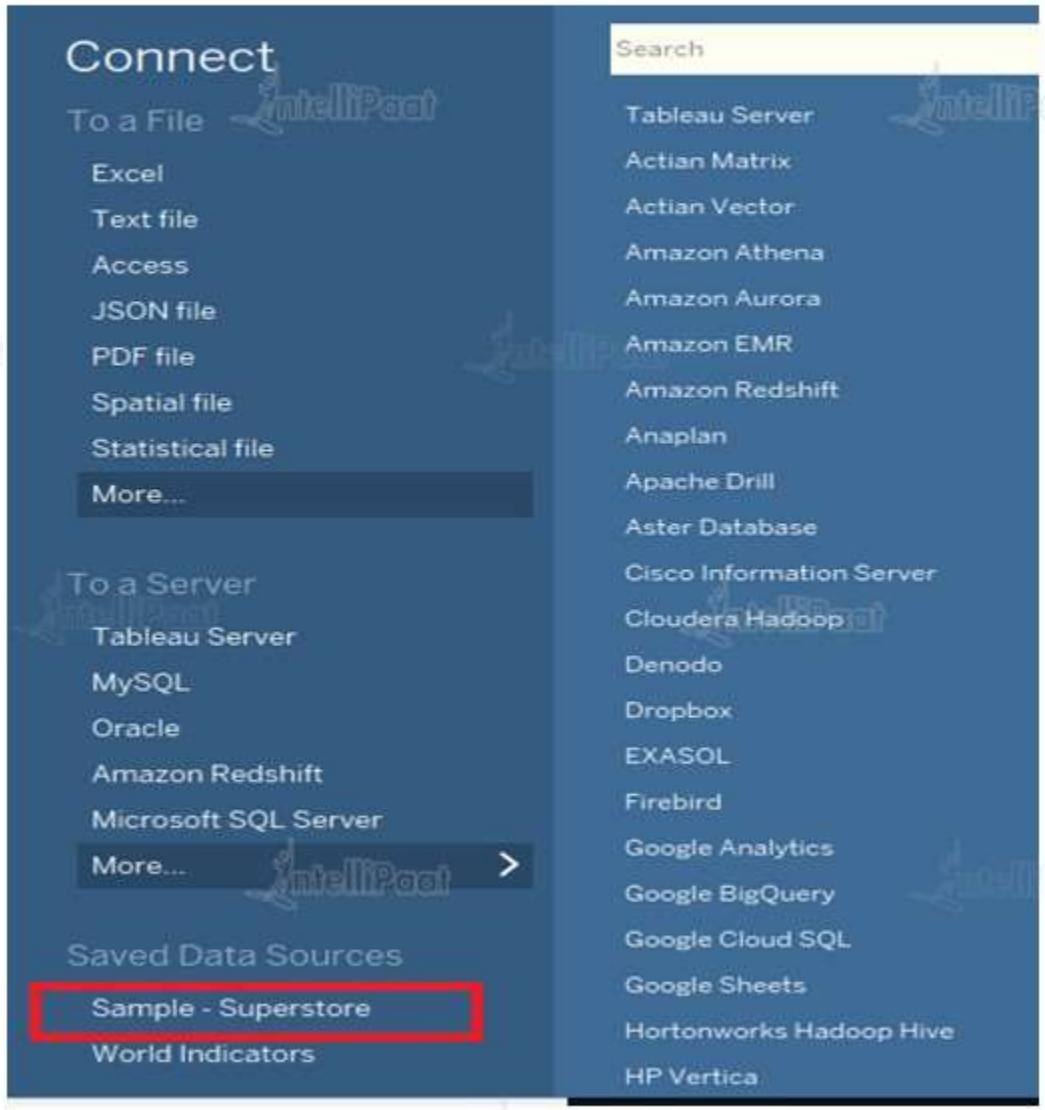
- Connect to data stored in a file, such as Microsoft Excel or Access.
- Connect to data that is stored on a server, such as Tableau Server, Microsoft SQL Server or Google Analytics.
- Connect to a data source that you've connected to before.
- Tableau supports the ability to connect to a wide ranging data stored in a wide variety of places.

Connecting to Data

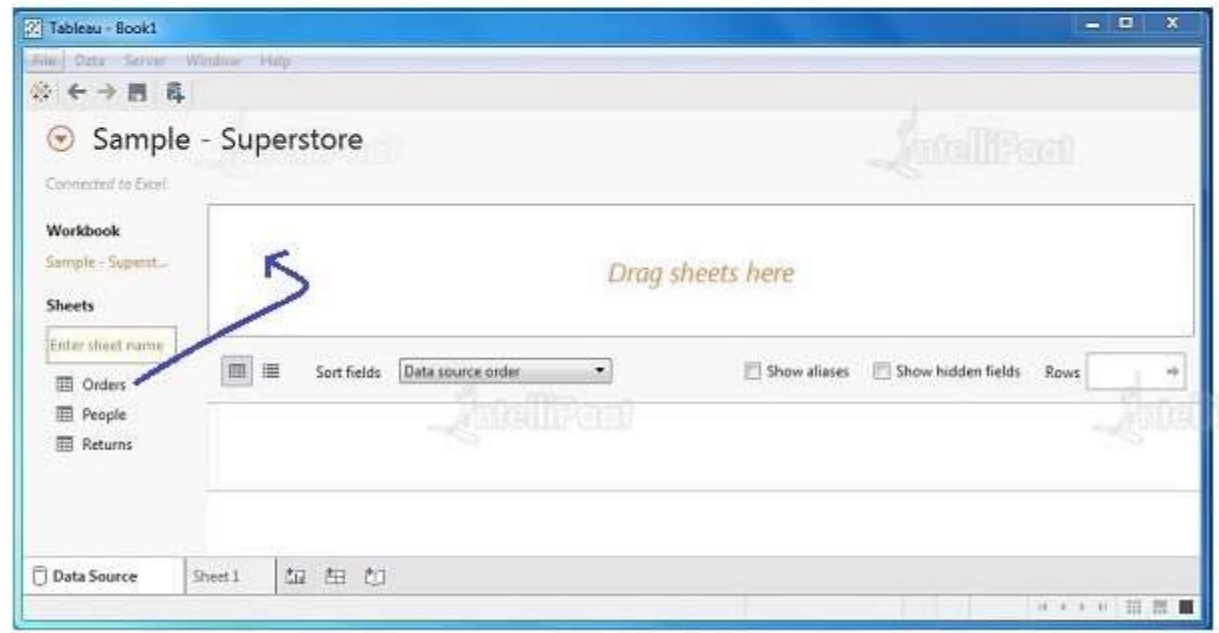




About the Dataset



- The Sample - Superstore dataset that comes with every download of Tableau is used to explain the basic concepts in Tableau.



Live Vs. Extract Connection

Live Connection:

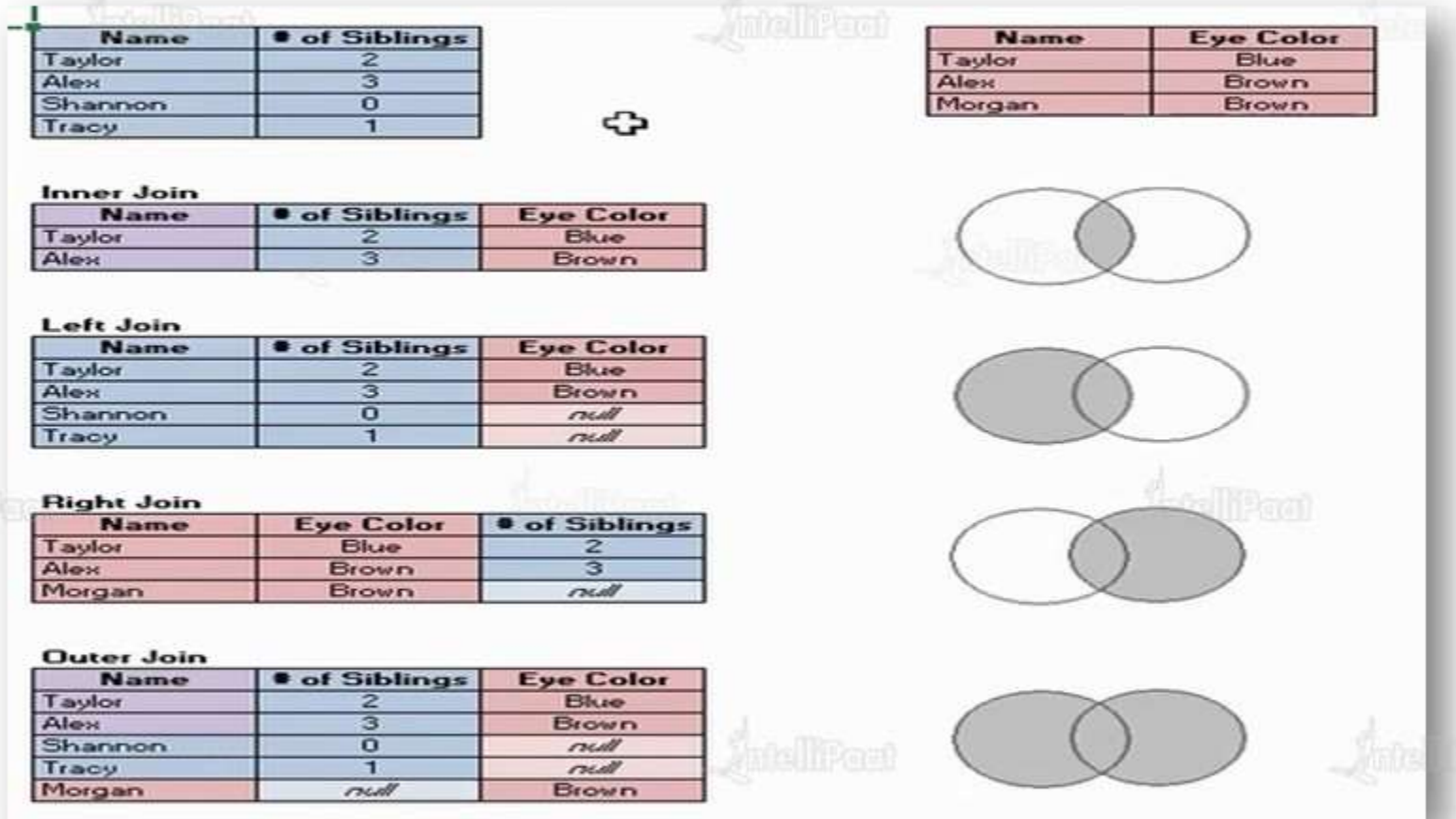
- Connects to your data live. Live is nothing but real-time extract.
- Offers the convenience of real-time updates, with any changes in the data source reflected in Tableau. However, live connections also rely on the database for all queries. Unlike extracts, databases are not always optimized for fast performance. With live connections, your data queries are only as fast as the database itself.

Extract (In-memory):

- Presents a fast, in-memory data engine to optimize for analytics. You can connect to your data, and after that, with one click, extract your data to get it in-memory in Tableau.
- Snapshots of data optimized for aggregation and loaded into the system memory to be quickly recalled for visualization. Extracts tend to be much faster than live connections, especially in more complex visualizations with large data sets, filters, calculations, etc.

Tableau Joins

- **Joining tables** is a way of combining information from multiple tables based on a field they share.
- **Joins** are always made on a specific field (or fields).



Name	# of Siblings
Taylor	2
Alex	3
Shannon	0
Tracy	1

Name	Eye Color
Taylor	Blue
Alex	Brown
Morgan	Brown

Inner Join

Name	# of Siblings	Eye Color
Taylor	2	Blue
Alex	3	Brown

Left Join

Name	# of Siblings	Eye Color
Taylor	2	Blue
Alex	3	Brown
Shannon	0	*null*
Tracy	1	*null*

Right Join

Name	Eye Color	# of Siblings
Taylor	Blue	2
Alex	Brown	3
Morgan	Brown	*null*

Outer Join

Name	# of Siblings	Eye Color
Taylor	2	Blue
Alex	3	Brown
Shannon	0	*null*
Tracy	1	*null*
Morgan	*null*	Brown

Tableau: Data types

- All fields in a data source have a data type. The data type reflects the kind of information stored in that field, for example, integers (410), dates (1/23/2015) and strings (“Wisconsin”). The data type of a field is identified in the Data pane by one of the icons shown in the image.

Icon	Data type
Abc	Text (string) values
	Date values
	Date & Time values
#	Numerical values
T|F	Boolean values (relational only)
	Geographic values (used with maps)

Data Prep with Text & Excel Files

With no columns names and a lot of nulls, **Data Interpreter** strips out them and the columns are properly identified.

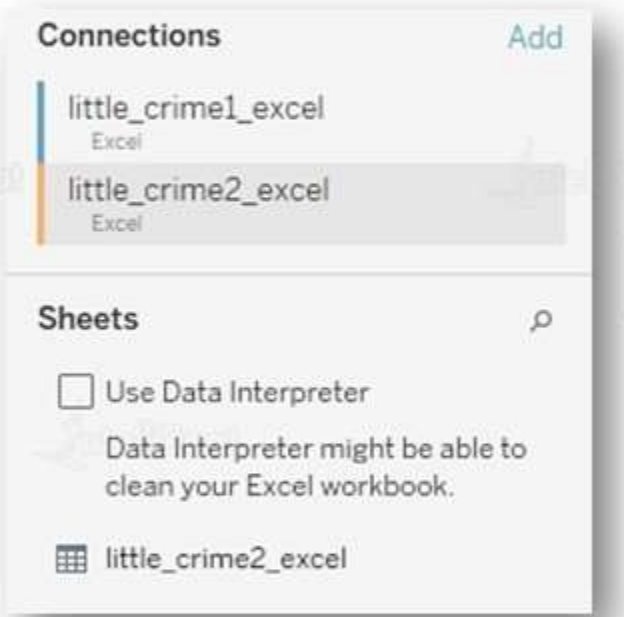
The **Pivot** merges the information from the original columns and rows into two new columns.

It can be a useful view with a large number of files and when tables have been joined.

You can **split** the columns based on the shared delimiter of that hyphen.

You can choose the delimiter and use a hyphen.

Using Data Interpreter



Click on
Review the results

An Excel file is **generated** with the interpreted null values.
Look at the 'A's!

	A	B	C	D	E	F	G
1	ID	Psa	Dc_Key	Location_	UCR_Gen	Text_Gen	Police_Di
2	0	1	2,02E+11	800 BLOC	600	Thefts	13
3	1	3	2,02E+11	1500 BLOC	600	Thefts	16
4	2	3	2,02E+11	1500 BLOC	600	Thefts	16
5	3	A	2,02E+11	GATE C-18	600	Thefts	
6	61	1	2,02E+11	900 BLOC	600	Thefts	3
7	62	1	2,02E+11	100 BLOC	600	Thefts	20
8	63	2	2,02E+11	5200 BLOC	600	Thefts	20
9	64	1	2,02E+11	N 17TH ST	800	Other Assaults	
10	65	A	2,02E+11	PIA GATE	800	Other Assaults	
11	66	1	2,02E+11	100 BLOC	600	Thefts	20
12	67	4	2,02E+11	1400 BLOC	600	Thefts	16
13	68	2	2,02E+11	5900 BLOC	2600	All Other	15
14	69	2	2,02E+11	1100 BLOC	600	Theft fron	11
15	70	A	2,02E+11	PIA GATE	600	Thefts	
16	71	A	2,02E+11	GATE E-8	600	Thefts	
17	72	A	2,02E+11	PIA TERMI	600	Thefts	
18	73	A	2,02E+11	98 PIA WA	600	Thefts	22
19	74	A	2,02E+11	GATE A-7	600	Thefts	
20	75	2	2,02E+11	400 BLOC	200	Rape	4
21	76	2	2,02E+11	1200 BLOC	200	Rape	5
22	77	2	2,02E+11	3200 BLOC	1100	Fraud	7
23	78	2	2,02E+11	2800 BLOC	600	Thefts	16
24	79	2	2,02E+11	5200 BLOC	800	Other Ass	20
25	80	1	2,02E+11	N 410 N 6	300	Robbery No Firearm	

Tableau: Field Types

- When you connect to a new data source, Tableau assigns each field in the data source to either the dimensions area or the measures area of the data pane, depending on the type of data the field contains.
- If a field contains categorical data (such as names, dates or geographical data), Tableau assigns it to the dimensions area.
- If a field contains numbers, Tableau assigns it to the measures area.

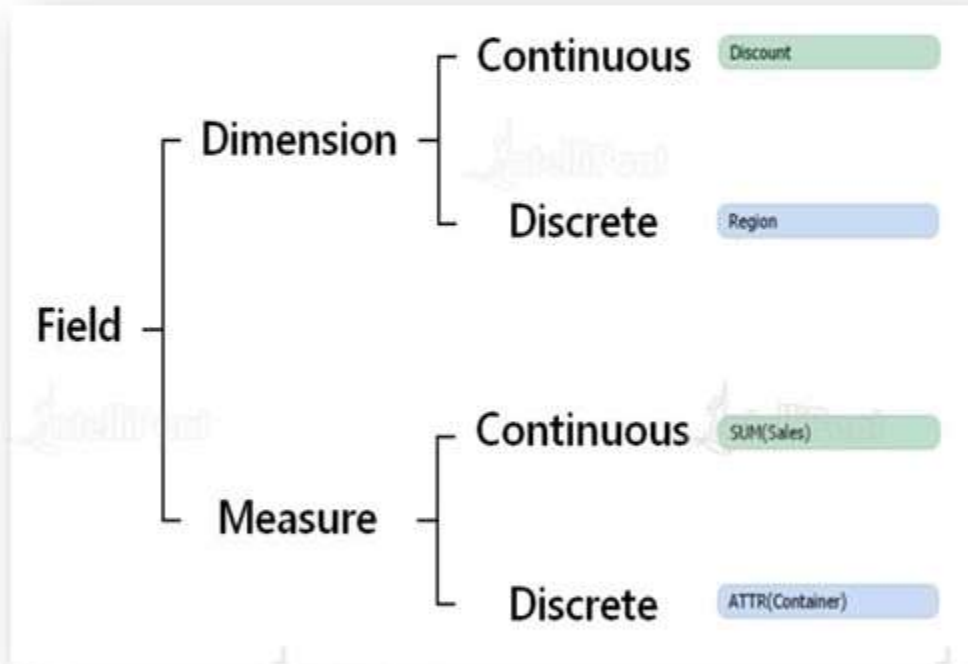


Tableau: Field Types

- By default, dimensions are discrete and measures are continuous. However, all four combinations are possible.
- If you are dragging a field from the dimensions area, the resulting field in the view will be discrete (with a blue background). If you are dragging a field from the measures area, the resulting field will be continuous (with a green background).

discrete dimensions	Product Name
continuous dimensions (possible only with Date dimensions)	⊞ QUARTER(Order Date)
discrete measures	SUM(Profit)
continuous measures	SUM(Profit)

Saving & Publishing Data Sources

Saving a data source makes it easily available in your copy of **Tableau Desktop**...

Saving data source as a **.tds**

...or it can be **published** to **Tableau Online** or **Tableau Server.**

This is not the data itself!

A Note on File Types

Workbook (.twb):	Workbooks hold worksheets, dashboards and stories.
Bookmark (.tbm)	Bookmarks contain a single sheet.
Packaged workbook (.twbx)	It is an archive containing a workbook, along with all data sources and files.
Data extract (.hyper)	It is the local copy of a subset or the entire data source to share and improve the performance.
Data source(.tds)	It is the shortcut to frequently-used data sources, containing information and modifications.
Packaged data source (.tdsx)	It is an archive containing a data source file, along with any related files.

Thank You