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A Primer in Data Visualization using Tableau

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If you did not have an opportunity to download Tableau Desktop, please download the 14-day free trial at:

<https://www.tableau.com/products/trial>

Access the Shared Google Drive folder at:

https://drive.google.com/drive/folders/1QE2vjggOKy9nOHk9annOu3k6J_AKbaLO?usp=sharing

Download the “Sample-Superstore_Orders.xlsx” to your local machine.

A Primer in Data Visualization using Tableau

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Tableau facilitates the data discovery process (finding insights in data) as well as the data communication process (creating explanatory graphics, exploratory dashboards, and data storytelling) with no programming required.



“We help people see and understand data.”
—Tableau Software mission statement

Featured Visualization

- <https://public.tableau.com/en-us/gallery/?tab=viz-of-the-day&type=viz-of-the-day>

Agenda

- Tableau Explained
- Getting Started with Tableau
 - Connect to Data
 - Understand the Workspace
 - Design simple visualizations
 - Combine visualizations into a dashboard
 - Share your visualizations
- Additional Resources

Products

- Public:

<https://public.tableau.com/en-us/s/download>

- Desktop (Student edition):

<https://www.tableau.com/academic/students>

- Desktop (Instructor edition):

<https://www.tableau.com/academic/teaching>

- Additional Products, including Tableau Online, Server, and [Reader](#)

Tableau Public

- Cannot save data and visualizations to your local system
 - Saves to Tableau Public Server
 - In other words, “you pay for the right to produce private content and share it with a selected audience, rather than publish to the Tableau Public website where anyone can view your analysis (and underlying data).”
- Cloud-based
- Limitations on the amount of data

Know Your Data

- Know your data.
- What data do you need? Edit out the irrelevant data, i.e. original versus cleaned data. Label and save!
- Organize, organize, organize! Tabulate, highlight, color code, sort, filter, etc. Doing this makes it much easier to manipulate your data later on!

Getting Started with Tableau

Dimensions & Measures

Dimensions are usually those fields that cannot be aggregated.

- Dimensions contain qualitative values (such as names, dates, or geographical data).

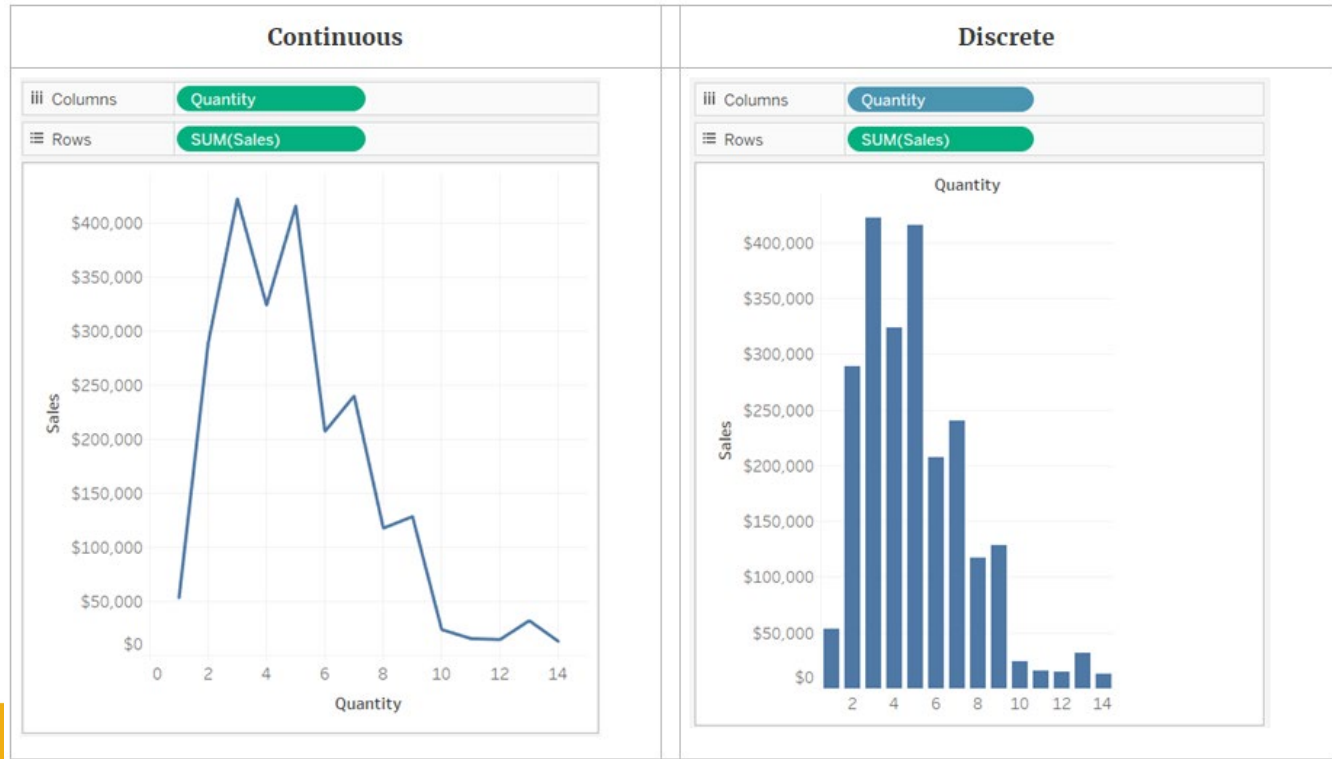
Measures, as its name suggests, are those fields that can be measured, aggregated, or used for mathematical operations.





- Measures contain numeric, quantitative values that you can measure.

Discrete or Continuous

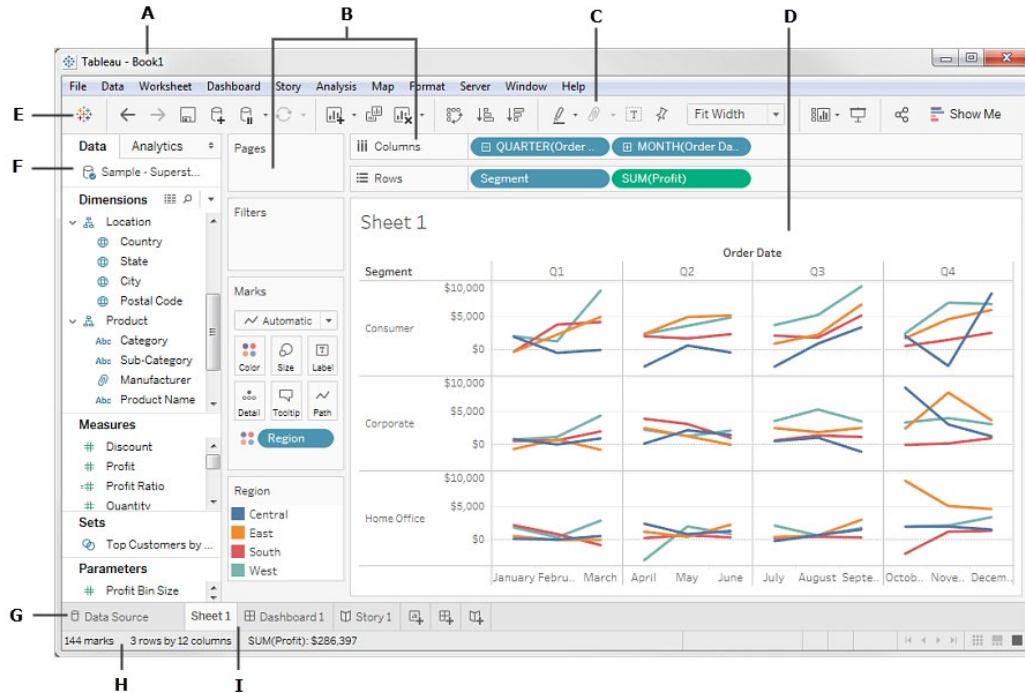
- Tableau represents data differently in the view depending on whether the field is **discrete** (blue), or **continuous** (green).
 - Continuous means "forming an unbroken whole, without interruption."
 - Discrete means "individually separate and distinct."
- Each field is automatically assigned a data type (such as integer, string, date, etc.), and a role (typically *Discrete Dimension* or *Continuous Measure*)

Discrete or Continuous



Icon	Data type
Abc	<i>Text (string) values</i>
	<i>Date values</i>
	<i>Date & Time values</i>
	<i>Numerical values</i>
T F	<i>Boolean values (relational only)</i>
	<i>Geographic values (used with maps)</i>

Workspace area



- A. Workbook name
- B. Cards and shelves
- C. Toolbar
- D. View
- E. Start page
- F. Side Bar
- G. Data Source page
- H. Status bar
- I. Sheet tabs

Types of Charts & Graphs

- <https://www.tableau.com/learn/whitepapers/which-chart-or-graph-is-right-for-you>

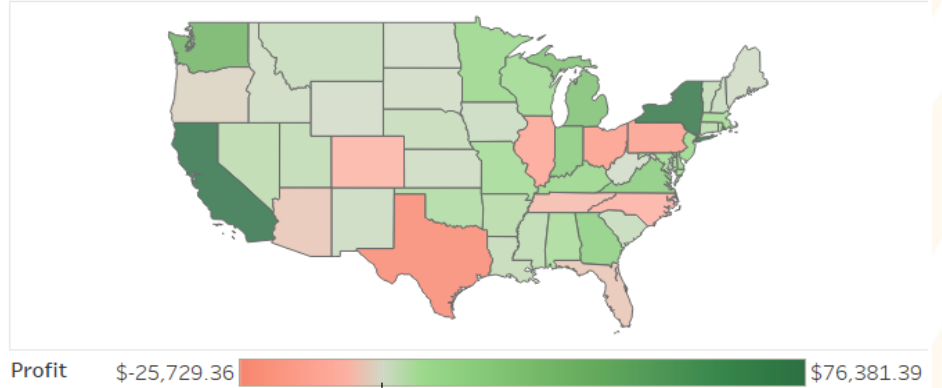


The image shows a screenshot of the Tableau 'Show Me' interface. At the top right, there is a 'Show Me' button with a hamburger menu icon. Below it is a grid of 27 chart icons arranged in 9 rows and 3 columns. The icons represent various chart types: a table, a heatmap, a grid, a world map, a pie chart, a horizontal bar chart, a vertical bar chart, a grouped bar chart, a treemap, a bubble chart, a line chart, a stacked area chart, a stacked bar chart, a scatter plot (highlighted with a red border), a histogram, a box plot, a horizontal bar chart, a vertical bar chart, and a bubble chart. Below the grid, there is a text prompt: 'For scatter plots try'. Underneath this prompt are two buttons: a blue button labeled '0 or more Dimensions' and a green button labeled '2 to 4 Measures'.

U.S. Superstore Performance (2017 - 2020)

Filter by individual state for local sales, average discount, and profit.

Profit by State (Select a state to filter data)



Performance by Category

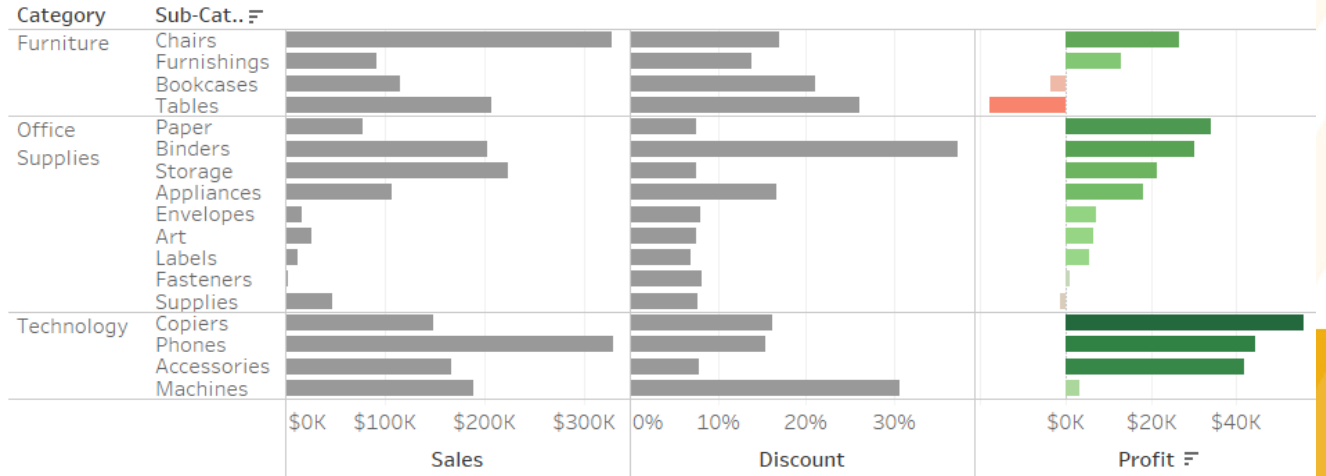


Tableau Demo

Workshop Assessment:

https://wvu.qualtrics.com/jfe/form/SV_9Ssajj2fWXaeSON

Resources

- Acharya, S., & Chellappan, S. (2017). *Pro tableau : A step-by-step guide*. New York: Apress.
 - eBook: <https://libwvu.on.worldcat.org/oclc/967265149>
- Jones, B. (2014). *Communicating data with tableau*. Sebastopol, CA: O'Reilly Media.
 - eBook: <https://libwvu.on.worldcat.org/oclc/882402991>

Free Learning Resources through Tableau

- [Tutorial: Get Started with Tableau Desktop](#)
- [Tableau Desktop Starter Kit](#)
- [On-demand training videos](#)
- [Live online training](#)
- [Whitepapers](#)
- [Webinars](#)