

Data Visualisation Using Tableau



What is Data Visualisation?

Data visualization is the graphical representation of data. By using visualizing means like charts, graphs, & maps, data visualization tools offer an accessible way to comprehend patterns and trends, & outliers in data

Common general types of data visualization:

- ✓ Charts
- ✓ Tables
- ✓ Graphs
- ✓ Maps
- ✓ Infographics
- ✓ Dashboards

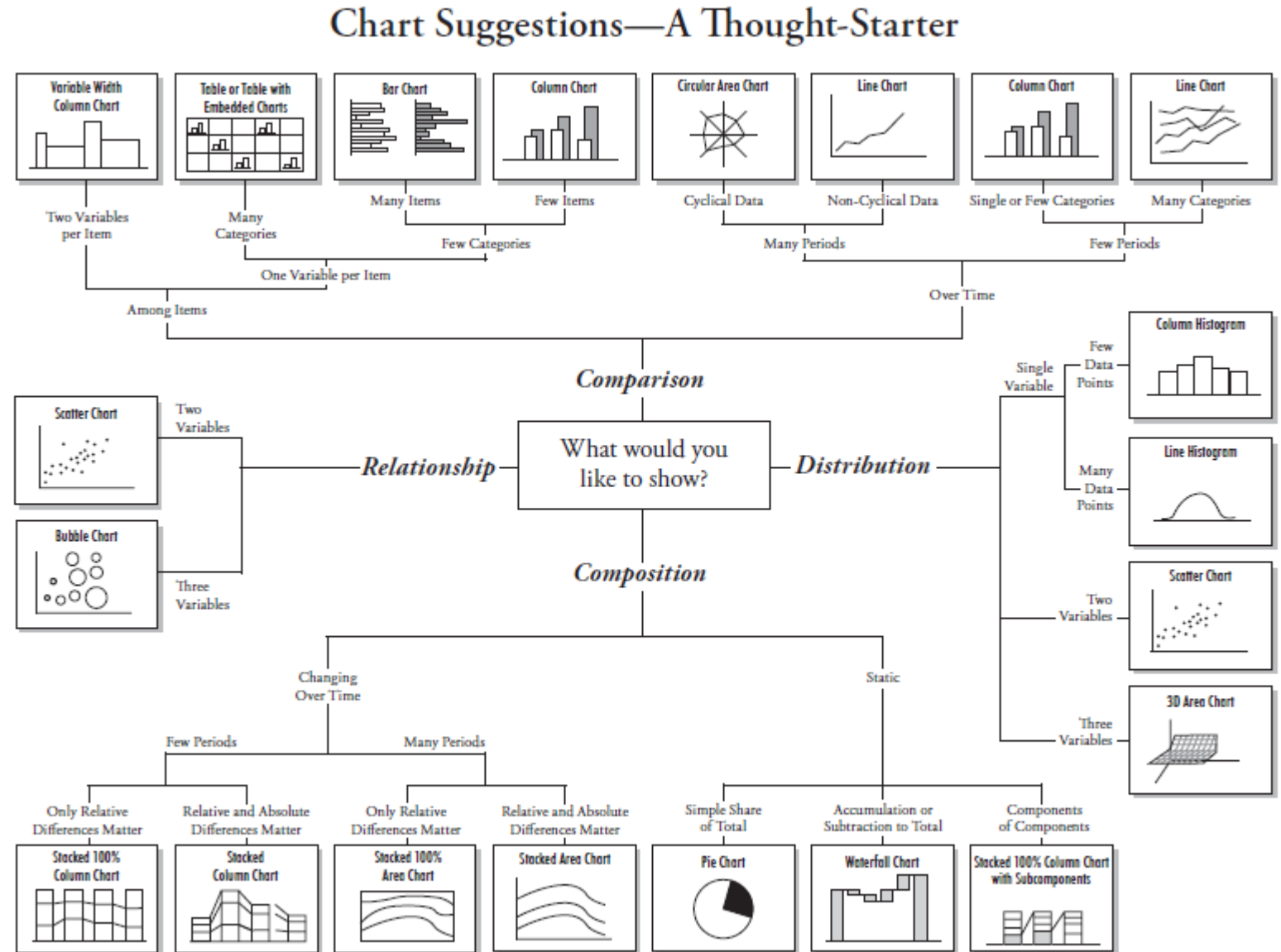
Visualizations help us understand complex data

The best reason to use a visualization to understand your data is that most data sets are far too large to consume in their raw format. Humans are limited in what information we can process and compare in our heads, especially if that information resides in a million row data set, but we are good at quickly processing visual information.

“Visual analytics leverages our *pre-attentive attributes* – visual cues humans process automatically with sensory memory. We can notice and interpret these kinds of attributes quickly and without special effort.”

Charts

A well-designed chart should be easy to read and understand, and should not mislead.



What is Tableau?



Tableau is a visual analytics platform transforming the way we use data to solve problems—empowering people and organizations to make the most of their data. *More info [here](#)*

Fields in Tableau

- When Tableau connected to a data set, it assigns the fields to either Dimensions or Measures.
- The qualitative fields that describe categories of data are in the top part of the pane, under **Dimensions**.
 - Describes or categorizes data
 - Tells you what, when, or who
 - Slices the quantitative data
- The quantitative fields that measure categories of data are in the bottom part of the pane, under **Measures**.
 - Numerical data
 - Provides the measurement for qualitative category
 - Can be used in calculations

Data granularity


Data granularity refers to the level of detail for a piece of data, wherever you are looking. As data becomes less granular, we might describe it as an *aggregation*, or as *aggregated data*. Aggregation refers to how data is combined. The level of granularity or aggregation in a row or chart affects the questions we can ask of the data, and the discoveries we can make.


- By default, measures placed in a view are aggregated by SUM, which means that the data for that field in all of the rows is combined.
- Measures can also be aggregated as average, median, count, or count distinct.
- Dimensions break down the aggregated total into smaller totals by category.

Data Representation in Tableau


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Text or string values. **Abc**

Discrete date and time field. 

Discrete date field. 

Geographic field, such as State or Zip Code. 

Continuous numeric value. 

The equal sign indicates this is a calculated field. 

Source: Tableau

Tableau Public

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This is the first page of Tableau Public. Click “Microsoft Excel” to connect to XLS or XSLX file or Click on “Text File” to CSV files

You cannot open External TWBX files using Tableau Public

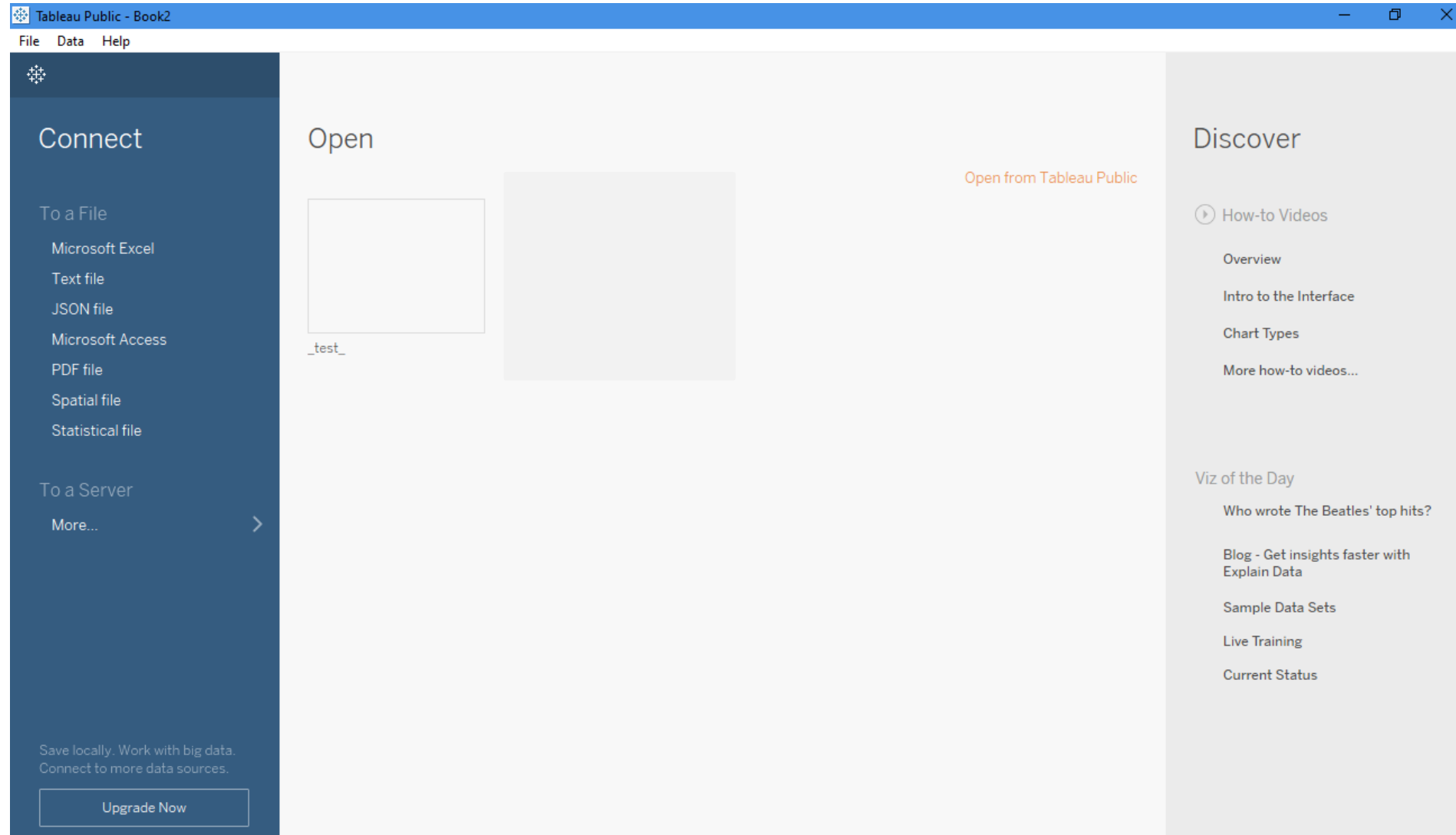


Tableau Public

Connections: Dataset connection and more can be using “Add” button

Sheets: It shows the list sheets within an MS Excel or Google Spreadsheet or in case of csv, it shows all CSVs for a particular directory

Data Pane (Drag): It shows the opened “Sheet”

Data Preview: Shows 1000 Rows for preview

Filters: You can add filters on this screen too (see upper right corner)

The screenshot displays the Tableau Public interface. On the left, the 'Connections' pane shows 'UK Bank Customers' (Microsoft Excel) under the 'Sheets' section. The main workspace shows a data source named 'UK Bank Customers (UK Bank Customers)' with a 'Data source order' dropdown set to 'Data source order'. Below this, a 'Data Preview' table is shown, displaying 1000 rows of data. The table has columns for Customer ID, Name, Surname, Gender, Age, Province, Job Classification, Date Joined, and Balance. The bottom status bar indicates 'Data Source' and 'Sheet 1'.

#	UK Bank Customers	UK Bank Customers	UK Bank Customers	UK Bank Customers	UK Bank Customers	UK Bank Customers	UK Bank Customers	UK Bank Customers	
	Customer ID	Name	Surname	Gender	Age	Province	Job Classification	Date Joined	Balance
1	100000001	Simon	Walsh	Male	21	England	White Collar	05.Jan.15	113,810.15
2	400000002	Jasmine	Miller	Female	34	Northern Ireland	Blue Collar	06.Jan.15	36,919.73
3	100000003	Liam	Brown	Male	46	England	White Collar	07.Jan.15	101,536.83
4	300000004	Trevor	Parr	Male	32	Wales	White Collar	08.Jan.15	1,421.52
5	100000005	Deirdre	Pullman	Female	38	England	Blue Collar	09.Jan.15	35,639.79
6	300000006	Ava	Coleman	Female	30	Wales	Blue Collar	09.Jan.15	122,443.77
7	100000007	Dorothy	Thomson	Female	34	England	Blue Collar	11.Jan.15	42,879.84
8	200000008	Lisa	Knox	Female	48	Scotland	Other	11.Jan.15	36,680.17
9	300000009	Ruth	Campbell	Female	33	Wales	White Collar	11.Jan.15	74,284.35

Tableau Public

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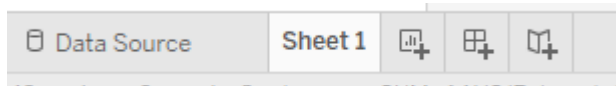
Measures & Dimensions (Extreme Left Vertical Pane)

Filters: Drag dimensions to a filter pane to add filters

Marks: Used for Colour, Size, Labels, Tooltip etc.

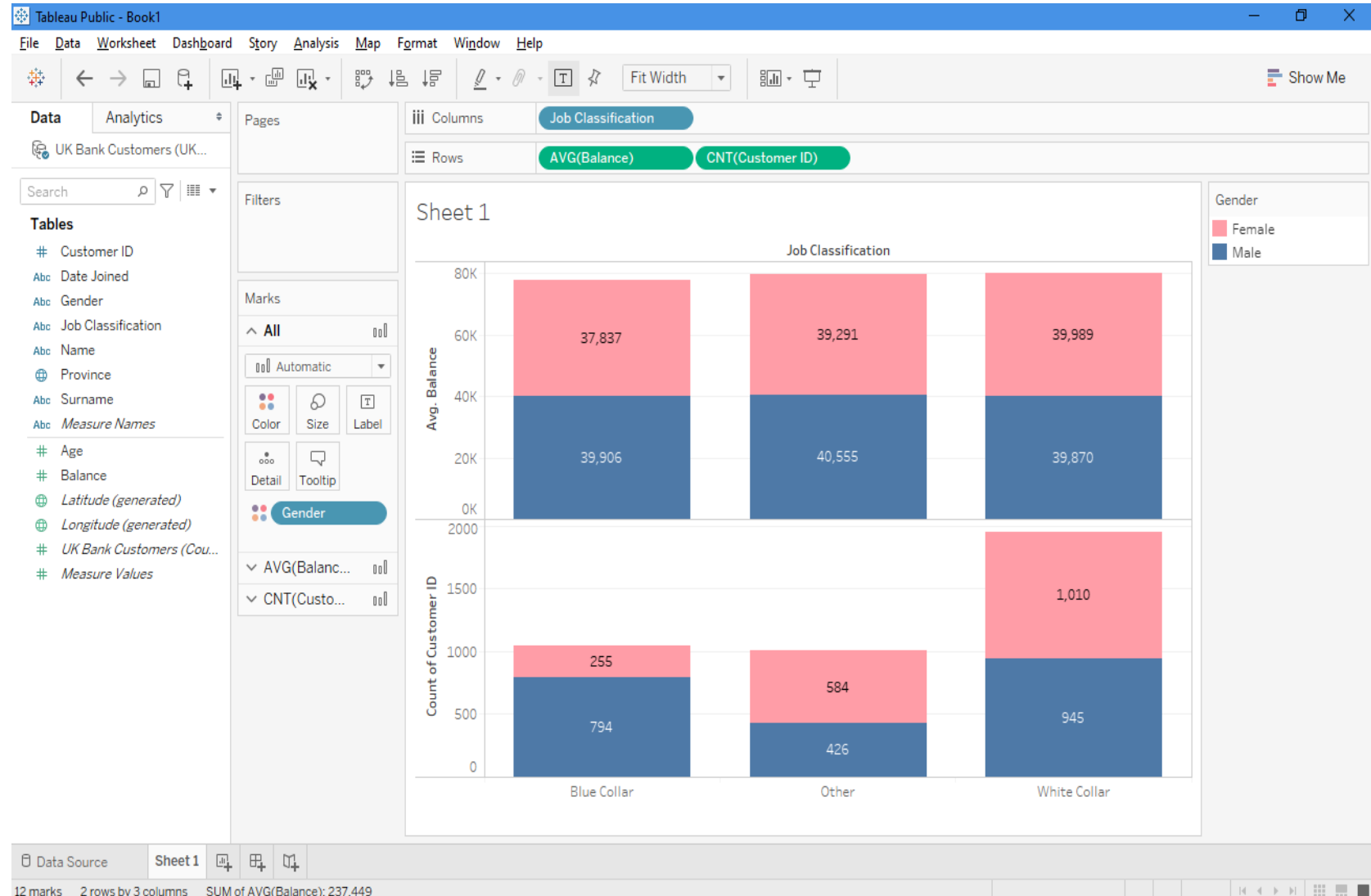
Rows & Columns

Show me: Gives list of probable chart types applicable to selected columns



Tabs:

First from Left is Data Source, Second is Sheet 1, Third is “add sheet”, Fourth is “add Dashboard”, Fifth is “add Storyboard”



Happy Learning!