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Data Visualisation Using Tableau

What is Data Visualisation?

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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

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Visualizations help us understand complex data

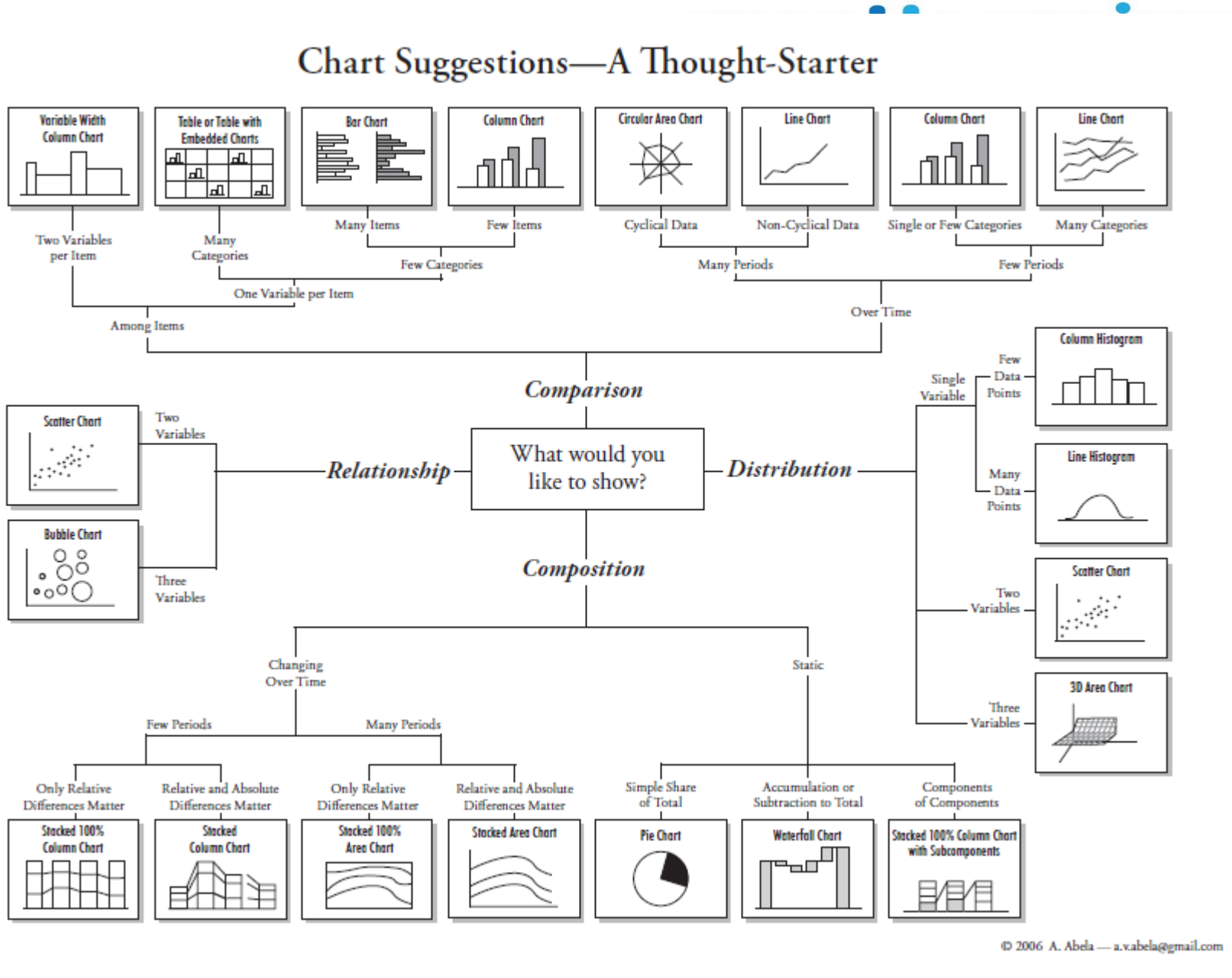
The best reason to use a visualization to understand your data is that most data sets are far too large to consume in their raw format. Humans are limited in what information we can process and compare in our heads, especially if that information resides in a million row data set, but we are good at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

Source: Tableau

Charts

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



What is Tableau?

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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

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- 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

Source: Tableau

Data granularity

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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.

Source: Tableau

Data Representation in Tableau

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Text or string values. 

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

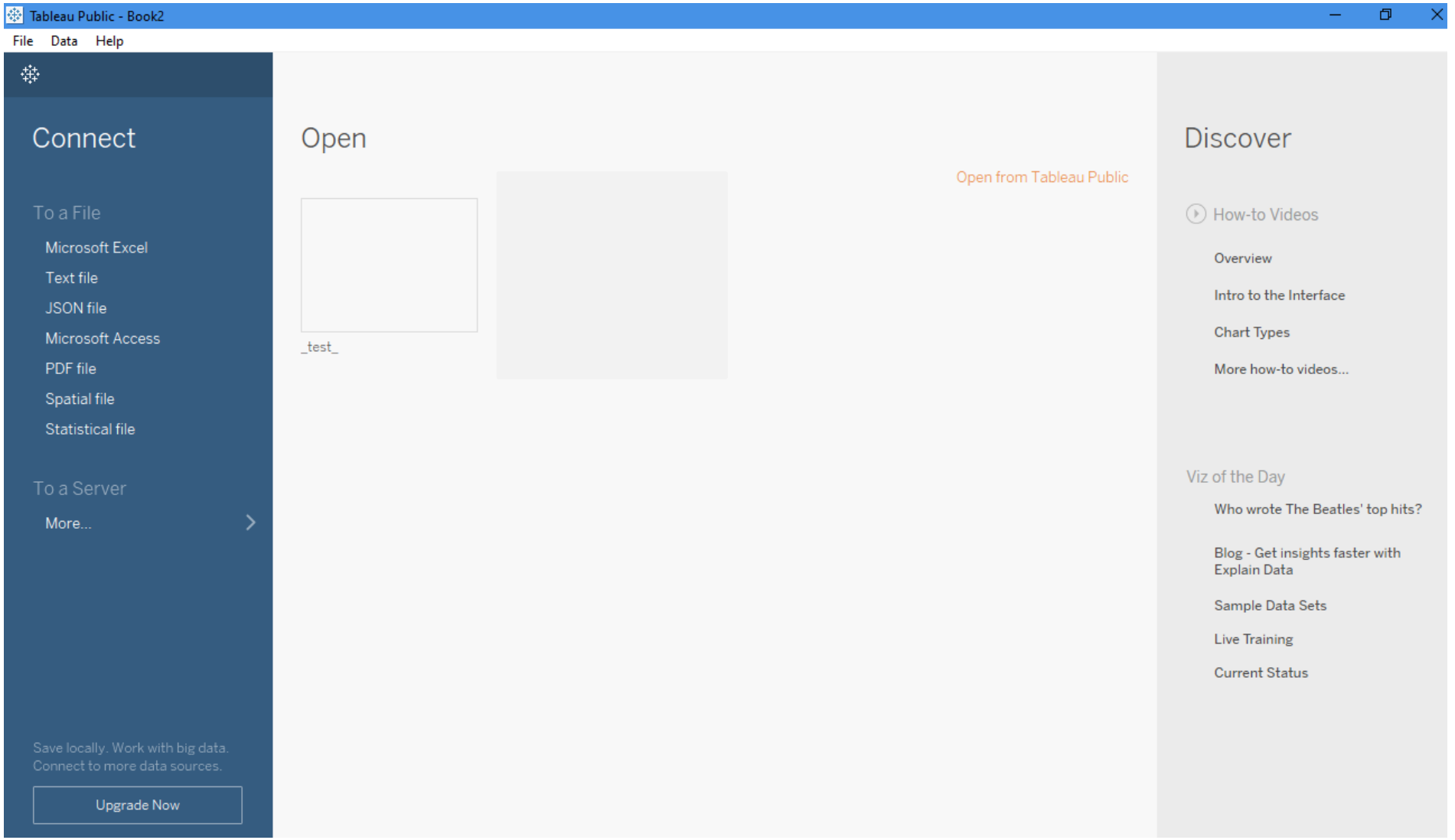

Tableau Public

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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)

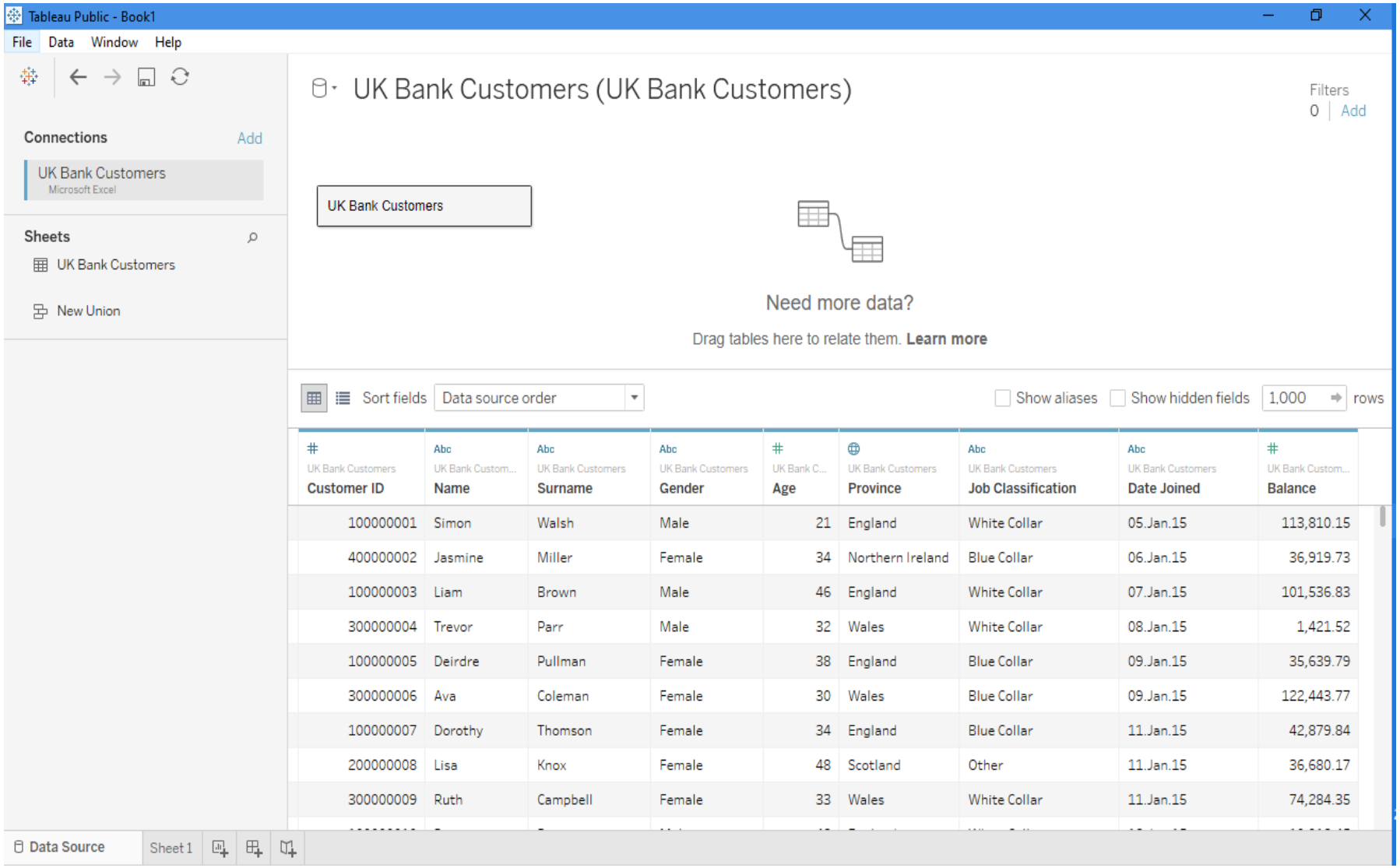

Tableau Public

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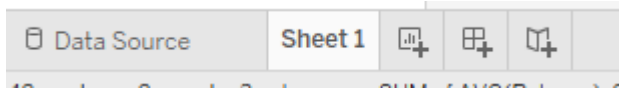
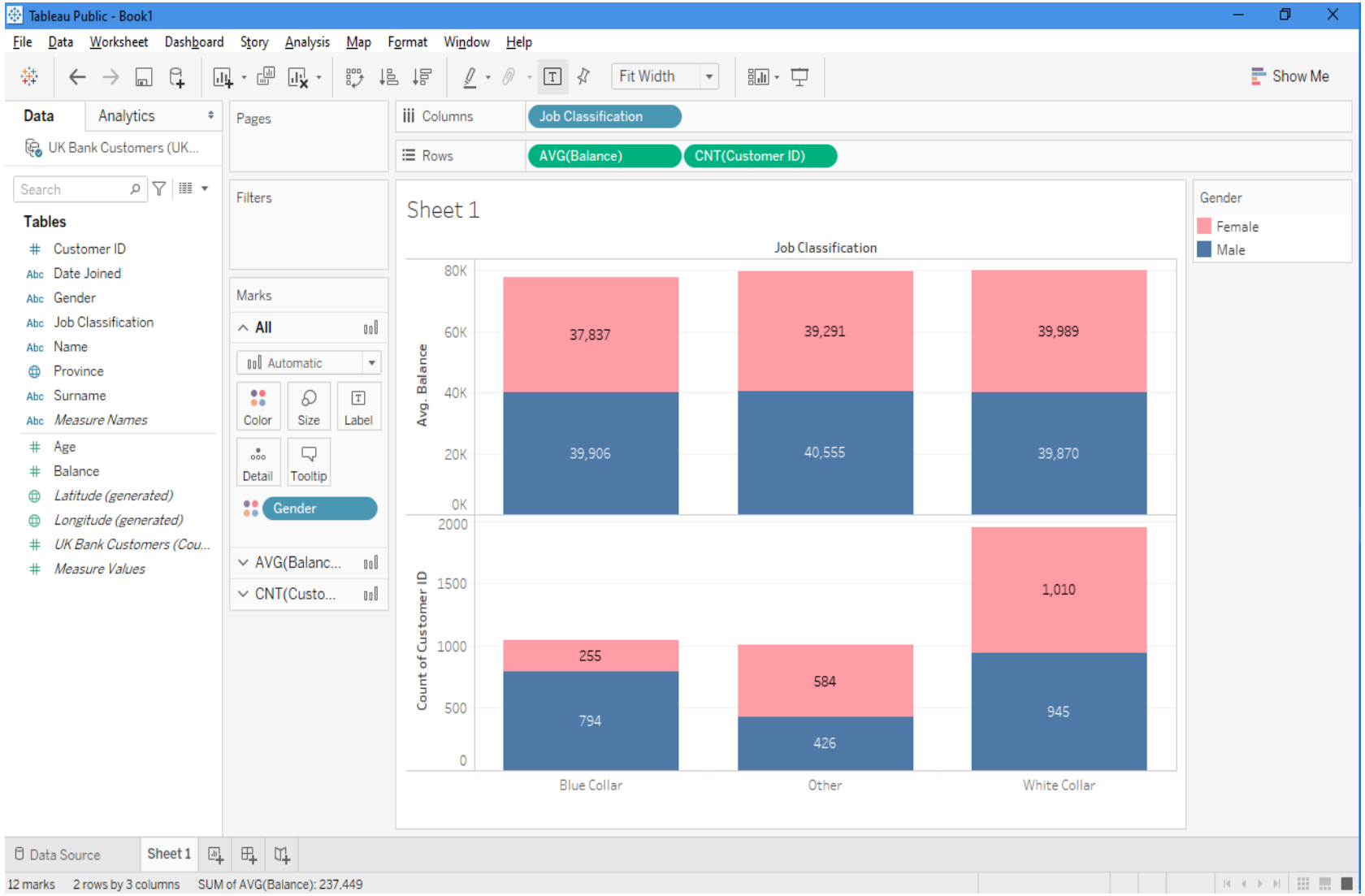
Measures & Dimensions (Extreme Left Vertical Pane)
Filters: Drag dimensions to a filter pane to add filters
Marks: Used for Colour, Size, Labels, Tooltip etc.
Rows & Columns
Show me: Gives list of probable chart types applicable to selected columns



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



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Happy Learning!