Tableau Notes

General Notes

Y refers to a generic variable, replace with actual name

Mark Types refers to the plotted objects Click on a plotted object to select it

1. Double-click on a plot to re-center and re-size to restore original perspective,
2. click on the Reset Axes pin [top center-right of window]
3. Double-click an axis to edit, e.g., range
4. Interactive drill-down to the next level of detail is a key Tableau concept
5. Initial results are typically aggregated, e.g., sums

Workbook, Sheet and Story

Tableau organizes visualizations into Workbooks, which similar to Excel and other such apps, contain Sheets. Tableau has several ways to view and organize the Sheets in a workbook.

Each sheet can be a Worksheet, a Dashboard, or a Story. A Worksheet contains a single visualization along with shelves, legends, and the Data pane. The shelf for the columns defines the x-axis and the shelf for the rows defines the y-axis.

Within a workbook, the user can create new sheets, clear an entire worksheet, duplicate sheets, hide or show a worksheet, and delete a sheet. From within a worksheet the user has direct access to the variables in the data.

Dashboard: collection of views from multiple worksheets. From a Dashboard can access a Worksheet, but cannot access the variables directly.

Story sequence of worksheets or dashboards that together present a narrative of visualizations. Dashboards are best presented as a story. From Story can access Dashboard and Worksheets, but not dimensions measures directly.

Get Data

Excel files, Statistical files (SAS, SPSS, R), Text files
Also connects directly to many data base servers (professional edition)

Uses a program you write called a Web Data Connector to do sophisticated reads of data from the web

What about a simple reading of a csv file? One solution:

`download.file(URL, name)` in R to get the file onto your computer

In an Excel worksheet, the data must be just that, data, with the first row the variable names

Tableau allows a named range of data in an Excel worksheet to exclude any extraneous information in the worksheet

Connect to Data by first choosing a file type, a wide range available Data Source [bottom left]: Go to Worksheet

Dimensions: Categorical variables Measures: Continuous variables

For each graph, create a New Worksheet and name via the tab at the bottom

1-D Bar Chart

1. Dimensions: drag Y to Columns shelf

2. Dimensions: drag Y to Rows shelf

3. In Rows, for drop-down for variable name Measure --> Count

Rows to Count gives vertical bars Columns to Count gives horizontal bars

Customize, Marks card [left of chart]: Color (fill and border), Size, Label

2-D Bar Chart

1. Construct 1-D bar chart

stacked bar chart

2. Dimensions: drag X to Color square in the Marks card, i.e., fill color

unstacked bar chart

3. Show Me: click unstacked icon [3rd col, 3rd row]

2-D Cross-Tabulation Table

Two-variables

1. Dimensions: drag Y to Columns shelf (1-D tabulation)

2. Dimensions: drag Y to Rows shelf
or,
Construct 2-D bar chart then Show Me: click table icon [1st col, 1st row]

of a third continuous variable at levels of the categorical variables
3. Measures: drag a variable over to the body of the created table

4. Show Me: Highlight Table [upper right] Remove labels with Label icon in Marks card

Histogram

Regular histogram

1. Measures: Y drop-down --> Create Bins...

respond to dialog box for setting bin width and other characteristics

Y (bin) added to Dimensions pane

2. Dimensions: drag Y (bins) to the Columns shelf

3. Measures: drag Salary to the Rows shelf
change from Sum to Count via drop-down --> Measure --> Count

4. Result has gaps between the bars (Excel style), which should be removed Marks card: Size to maximum

Customize, Marks card [left of chart]: Color (fill and border), Size, Label

Stacked histogram

5. Dimensions: drag a categorical variable over to Color or Label

on the Marks card

Scatter Plot

1. Measures: drag X to Columns shelf

2. Measures: drag Y to Rows shelf

3. By default the values of the variables are aggregated as sums
To disaggregate, go to the Analysis menu --> Aggregate measures

which deselects the option
Or, use the Dimension option in the drop-down from the variable name

Default is to provide each point with a border but no fill Customize, Marks card [left of chart]:

to get filled points [top of Marks card]: Object plotted --> Circle to get unfilled points [top of Marks card]: Object plotted --> Shape

by variable

drag a Dimension (categorical variable) or a Measure (continuous variable) to the

Color, Size or Label icon in the Marks card

Not on Homework

Trend line(s)

Provides a trend line with confidence interval for each group
1. Analytics tab [top left]: Model --> Trend Line

Drag to graph, in Add a Trend Line window select type of curve, e.g., linear

2. Edit a line by clicking on it it and select Edit tab e.g., un-click box: Show Confidence Bands

3. To view t-tests of individual slope coefficients and fit stats: right-click on the line --> Describe trend model...

Line or Area Chart

need a date field

1. Dimensions: drag the date field to the Columns shelf

2. Set the desired time interval, match the data if displaying raw data instead of aggregating, Columns drop-down: choose interval in the second set of time intervals to get complete coverage

2. Measures: drag the variable to be plotted to the Rows shelf

3. To dis-aggregate, go to the Analysis menu --> Aggregate measures

But if already displaying raw data, aggregation has no effect

4. Marks object drop-down: from Automatic to Line or Area

Multiple variables with vertical facets

5. Drag other measured variables over to the Rows shelf

6. By default, there is no common y-axis
Right-click on each y-axis and set a common scale (way to do all simultaneously, or even by default?)

Multiple variables on one graph

3. Measures: drag second variable to the space occupied by the y-axis until

two translucent green bars appear, then release, repeat for other measures

4. Stacked Area chart: Choose Area in Marks card or

Multiple Lines chart: Choose Lines in Marks card

Note: To change order of plots, Marks: Measure Names --> Sort...

Note: If chart grows too wide, replace default Normal with Fit width in drop-down menu at the top of the window