Assignment 2 – Introduction to Tableau

Professor John Sokol | Due 10/01

Background Information:

Please watch the 'Tableau Desktop Tour', 'IT Tickets Tutorial', and 'Changing Data Sources' videos that are available on Blackboard. Then read the following material that supplements the videos:

Tableau Software Introduction:

What will be covered in this written tutorial:

- Pros/Cons of Tableau
- Key Terminology
- Tableau Data Types

Pros:

- Amazing interactivity
  - Tell a story with your data that other people can interact with.
  - Ability to "drill down", which is the ability to filter from summary to detail level data in real time. You will hear this term frequency when talking about Tableau.
- High Performance
  - Fast and efficient querying (accessing data from the datasource), especially from "flat files" such as Excel spreadsheets and csv files.
- Rich online community support
  - If you are stumped on how to do something, Google the issue. More than likely the Tableau community has solved it or explained how to do it.
- Easy to share
  - Save as a Tableau workbook or Tableau packaged workbook
  - Upload your dashboard to your Tableau Public profile

Cons/Limitations:

- Tableau is not meant for operational reporting
  - Text boxes are not visualizations; but are commonly found in many dashboards. I have found that business administration likes to see the raw data that comprises the visualization.

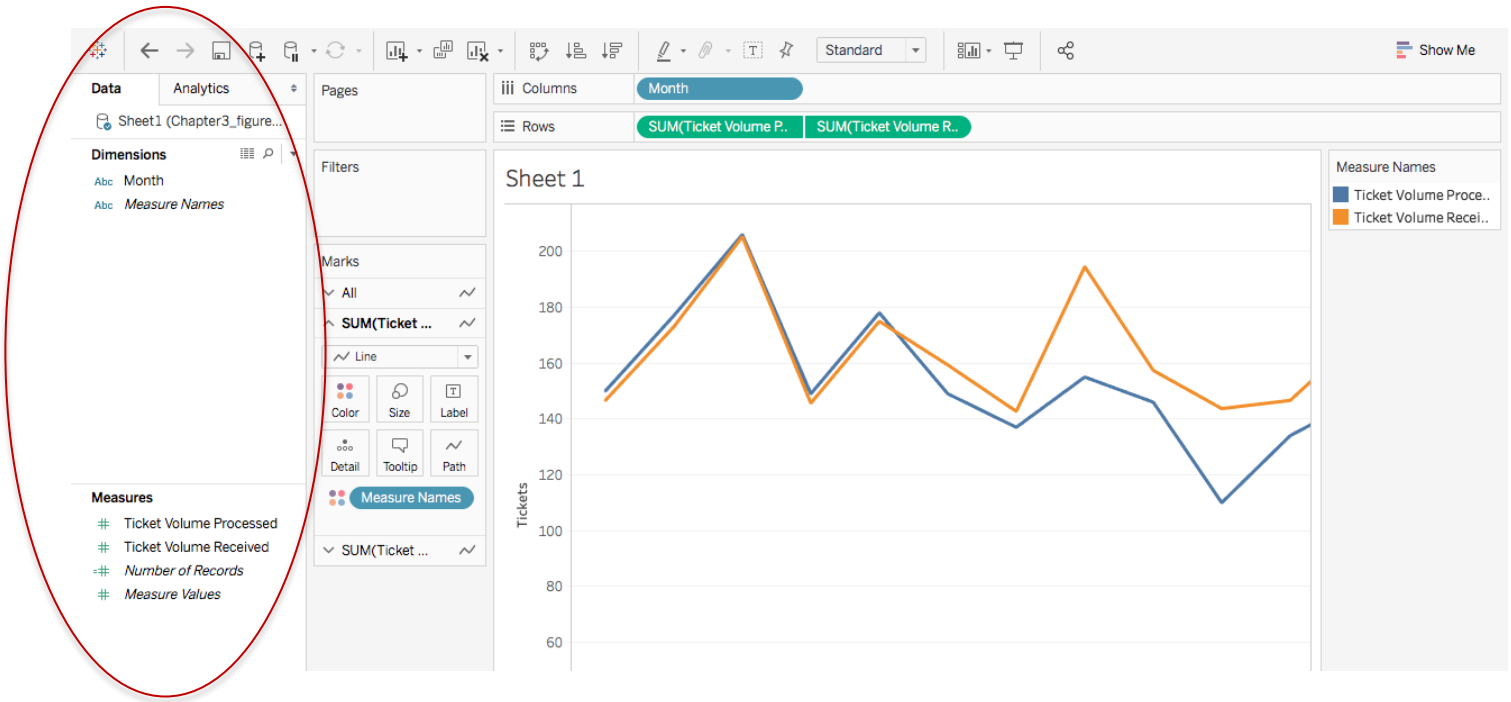
- On the expensive side
  - ($35/month per user, but only able to connect to Google sheets and Excel. To connect to all data sources, such as SQL databases, $70/month per user). Several users can add huge overhead for a business.

- Occasionally crashes abruptly
    - **Save your workbooks often**

Key Terminology:

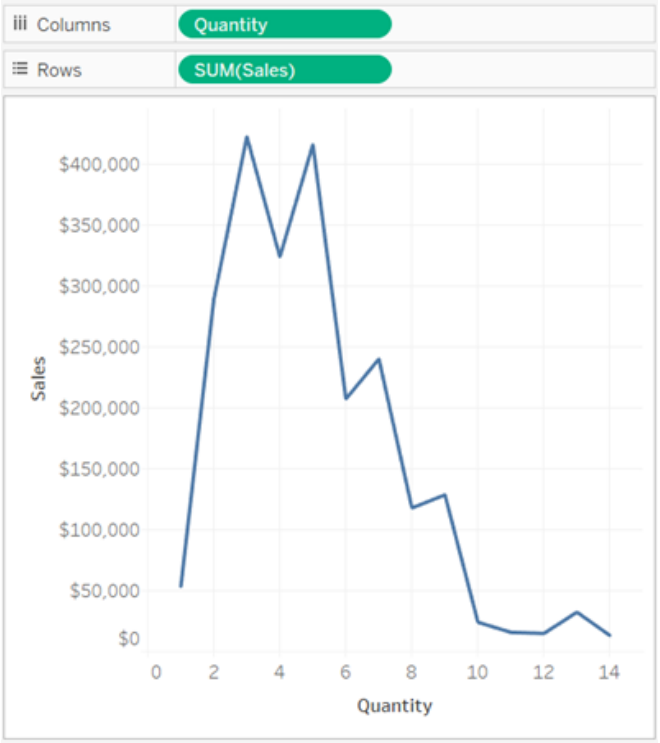
- How to save your workbook:
    - Tableau regular workbook
        - Contains all visualizations, data connection information, but no actual data is stored
    - Tableau *packaged* workbook
        - Contains all visualizations, data connection information, and data
- Measures
    - Quantitative (numbers) values that math functions work with
        - Sales, miles
    - Measure CAN be aggregated
        - Aggregate function is a function where the values of multiple rows are grouped together to form a single value of more significant meaning
        - Aggregate functions are common math functions such as sum, median, average, maximum, minimum, etc. For example, the average of 10, 20, and 30 is 20. Therefore, 20 is an aggregate of the 3 listed values.

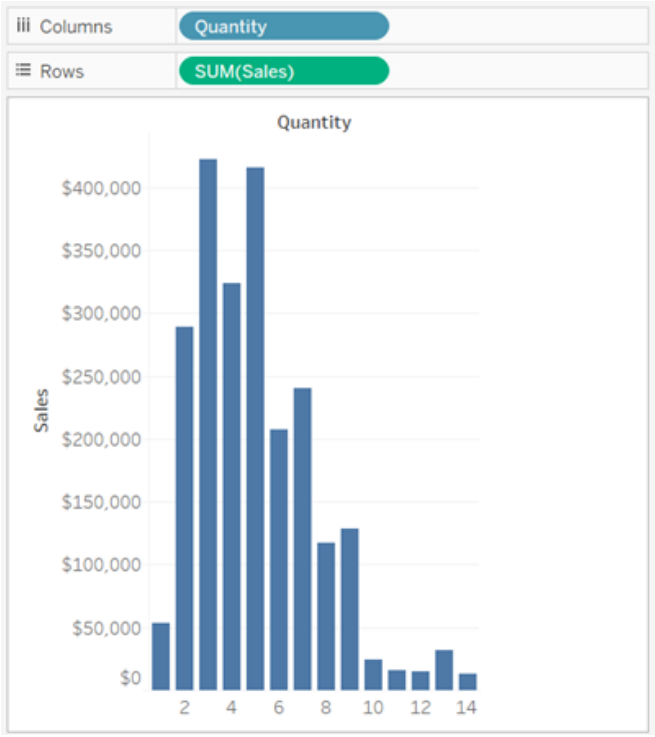
- Dimensions
    - Qualitative (not numbers) values
        - Region, employee name, locations, dates, etc
        - Dimensions can NOT be aggregated



Above: Dimensions and Measure are listed to the left in Tableau (red circle)

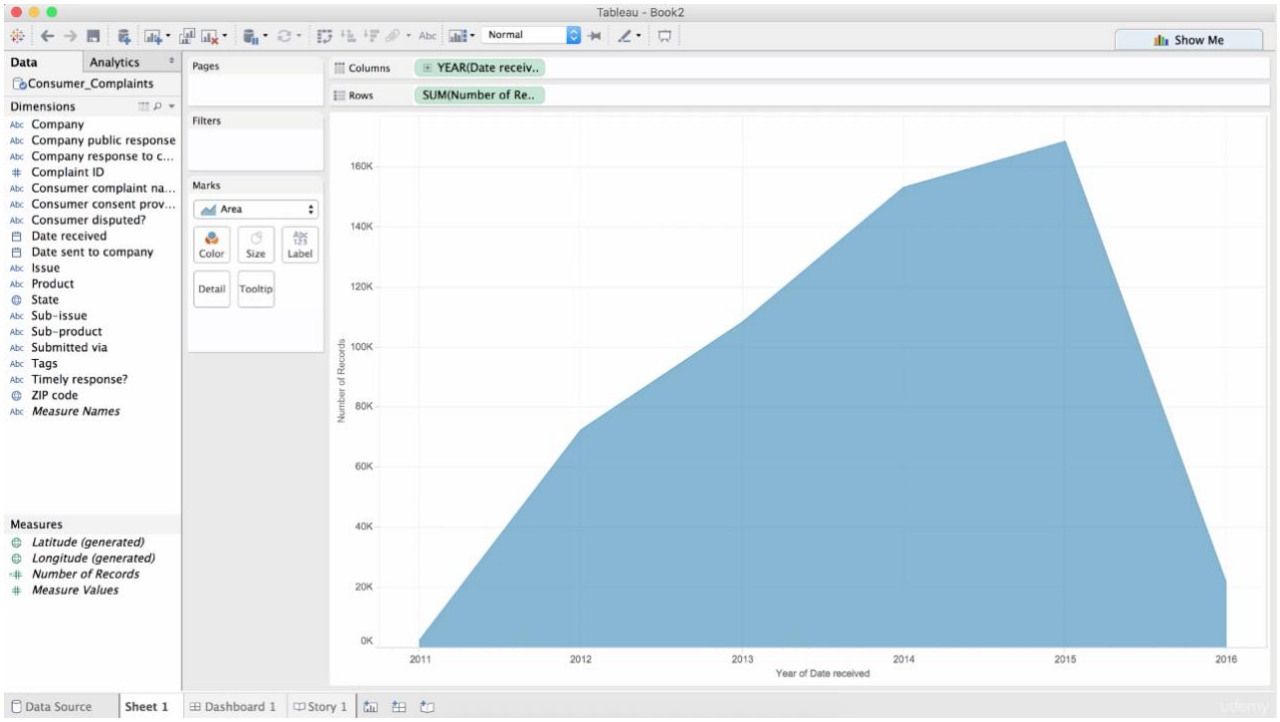
- Blue vs. Green fields
  - Tableau represents data differently in the view depending on whether the field is discrete (blue), or continuous (green). *Continuous* and *discrete* are mathematical terms. Continuous means "forming an unbroken whole, without interruption"; discrete means "individually separate and distinct."
  - Green measures SUM(Profit) and dimensions YEAR(Order Date) are continuous. Continuous field values are treated as an infinite range. Generally, continuous fields add axes to the view.
  - Blue measures SUM(Profit) and dimensions Product Name are discrete. Discrete values are treated as finite. Generally, discrete fields add headers to the view.
- Notice how Tableau automatically changes the line graph to a bar graph when the “quantity” value is changed from a continuous (green) to discrete (blue) value.





Worksheet

- A space to create a single visualization, or “Viz” in Tableau parlance (see below).



Dashboard

- Combining multiple worksheets into one singular view (see below)

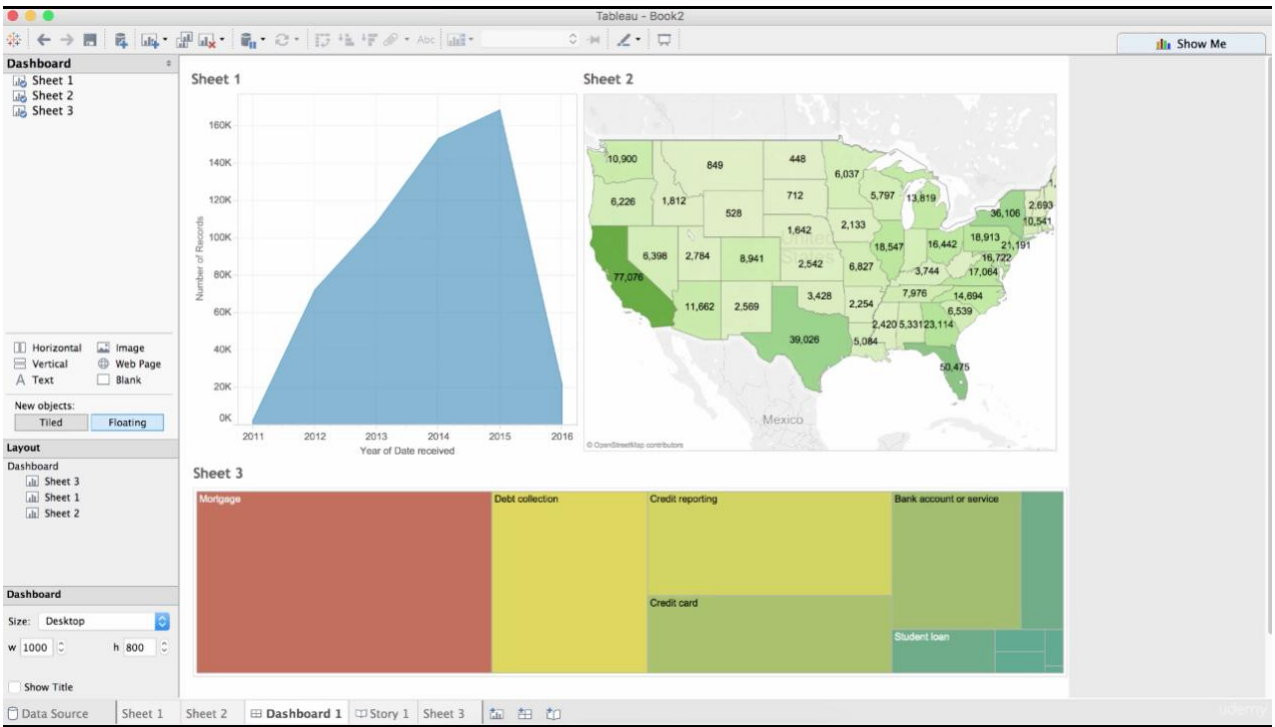


Tableau Data Types:

Data Type	Description	Example	Icon
String	Any sequence of zero or more characters. They are enclosed within single quotes.	'Hello' 'Quoted' 'quote'	
Number (integer or float)	Either integers or floating points. Floats are decimal, non-integer values.	Int – 3 Float – 142.58	
Date	Date value	9/10/2018	
Date/Time	Date and time value	9/10/2018 10:01:09 AM	
Geographic Values	Longitude and Latitude	39.6494670, 74.1772330	
Boolean	These are logical values	True/False	

Corresponding identification of data type:

String ⇓	Date ⇓	Integer ⇓	Integer ⇓	Boolean ⇓

Abc Sheet1 **Location**	 Sheet1 **Reporting Date**	# Sheet1 **Tickets Processed**	# Sheet1 **Tickets Received**	=T|F Calculation **TRUE/FALSE**
Manahawkin	1/31/2010	541	763	True
Egg Harbor Township	1/31/2010	314	498	False
Linwood	1/31/2010	393	690	False
Hammonton	1/31/2010	287	650	False
Ventor	1/31/2010	479	810	False
Cape May Court House	1/31/2010	232	545	False
Atlantic City	1/31/2010	834	1,453	False
Marlton	1/31/2010	134	231	False

Assignment Instructions:

- Import the IT tickets dataset into Tableau, and then replicate my worksheet that I created in my tutorial.
- In the same workbook, import the 'Life Expectancy Final' dataset. Create a line graph depicting the life expectancy of one country. Reference the 'Changing Data Sources' video to learn about changing data sources in one workbook.

Deliverables:

- Submit a Tableau *packaged* workbook consisting of:
  - Line graph worksheet of the IT tickets dataset.
  - A separate line graph worksheet of the Life Expectancy dataset
- Half a page write-up of your initial thoughts about Tableau. Consider (although these topics are optional):
  - Challenges faced while using the software?
  - Questions for me about Tableau, including anything you want to learn in particular and if Tableau is capable of a certain task.

Follow the video tutorial step by step for the IT tickets dataset worksheet. I hope this assignment allows you to become more comfortable with the Tableau interface.