**Lab 1**

**Introduction to Tableau**

In this lab, you will learn how to:

\*Create basic plots with Tableau – bar plot, dot chart, and scatterplot.

\*Import data from an Excel file.

\*Make simple adjustments to graphs – sorting, adding labels, displaying additional information.

The lab can be completed independently, using the techniques depicted in the video. Sections will also give an introduction to Tableau which will also allow completion of the lab.

**Data**

***USstates.xslx –*** This data file consists of physical and demographic data for the each US state. This includes population, total area in square miles, Gross Domestic Product (GDP), number of Electoral College votes, etc.

**Video**

*Getting started with Tableau – Connecting to data, making basic graphs, modifying plots*

<http://www.tableausoftware.com/learn/tutorials/on-demand/getting-started-8>

**Practice**

* Install and open Tableau (If using personal laptop, see syllabus for details.)
* Import data from Excel file (USstates.xlsx)
* Practice creating a variety of common plots.
  + Bar plot – Create a bar plot of the number of electoral votes in 2010 by state in **increasing** order.
  + Dot plot – Create a dot plot of 2010 GDP by state in **decreasing** order
  + Scatterplot – Create a scatterplot of population in 2010 vs. number of Electoral College votes by state in 2010.
* Modifying graphs – Modify the scatterplot in a variety of different ways.
  + Color – Make each dot a different color according to the region of each state.
  + Tooltip – Add the number of house seats by state in 2010 to the tooltip.
  + Labels – Add a label for the state name for California, New York, and Texas.
  + Size – Set the dot size according to state GDP in 2010.
  + Scale – Change axis corresponding to population in 2010 to a logarithmic scale.
  + Range – Adjust the minimum and maximum values on each axis to best fit the plot.
* Create and rename a new dashboard to ‘Practice’ and place the three plots within.
* Add annotations to the dashboard.

**Assignment**

**Due Date: January 19, 2018, 6:00 pm. Value: 10 points**

1. Connect the US state dataset (usstates.xlsx) to Tableau.
2. Create the following two graphs:
   1. A bar plot of the total area of each state in which states are sorted in **increasing** total area order.
   2. A dot chart of the state population in 2010 with states sorted in **decreasing** population order.
3. Place the bar plot and the dot chart in a new dashboard and rename it to “Exercise 1”
4. Use the following steps to create a detailed scatterplot:
   1. Create a scatterplot of state population in 2010 vs. total area of the state.
   2. Color the dots of each state according to the variable “Region”.
   3. Add the land area and water area to the tool tip, so you can read these values when you scroll over the dots.
   4. Add a label with the state name for the following states: California, Texas, New York, Nevada, Florida, Wyoming, and Rhode Island.
   5. Adjust the size of the dots according the state GDP in 2010.
   6. Change both axes to a logarithmic scale.
   7. Change the minimum and maximum values of the axis in order to minimize the empty space in the graph.
5. Place the scatterplot in a new dashboard and rename it to “Exercise 2”. **Add annotations to the dashboard**. What insight does this visualization give you? How might it be improved?