Assignment 13: Tableau Visualizations

You are to make a number of small visualizations using Tableau that will give you an idea of what the capabilities of a professional information visualization package are. The focus of this assignment is the creation of visualization, however, not becoming an expert at Tableau. See our resources page for suggested links to Tableau documentation on how to use Tableau's main features.   Also explore their website for instructional videos and demonstrations. I strongly suggest you begin work on this assignment earlier than usual as it requires gaining expertise with Tableau as well as making the visualizations. This way you can be sure to ask and have answered any questions you may have in doing the assignment. I will usually spend part of one class period helping you work with Tableau.

When you make your visualizations be sure to add the necessary elements to make them nicely finished presentations (i.e., include title, annotations, sorting, coloring/highlighting, etc. as you see fit to best communicate your message).

For your output, please post your resulting worksheets and dashboards to Tableau Public web space. You'll need to make a tableau public login. Once you have saved them, you just need to post the URL for your work on the Tableau Public webspace on your assignment wiki page. For example see some of the examples in the Tableau Public gallery, for instance
   http://www.tableausoftware.com/public/gallery/gannett-award
   http://www.tableausoftware.com/public/gallery/are-you-ready-some-football

A couple hints before you begin:
HINT #1: The measure #calls equals volume of calls. Note the Tableau default is to sum measures.
HINT #2: In order to visualize data, you will need at least one measure (a dimension by itself will give you an empty table).

If you get stuck, consult Tableau's training resources http://www.tableausoftware.com/learning/training

VISUALIZATION TASKS

1. Sales Representative and Calls Performance
a) Make a visualization showing the total number of calls, separated by incoming and outgoing, for each sales representative (rep id).
b) Make a visualization showing which sales reps have the largest number of outgoing calls.
c) Make a visualization showing which sales reps handled the most calls (incoming and outgoing) at the time block starting at 2pm.
Make a dash board (**DASHBOARD A**) containing all three of these visualizations.

2. Company Sales Branches Comparison

Your CEO wants to have one chart that allows her to easily comprehend how many calls each branch of the company has, broken out by the type of call (call purpose). You are to make four visualizations to put in a dashboard (**DASHBOARD B**) to show your manager (one of which you'll end up showing the CEO). Describe which of the four you think is best and why and include it as an annotation on that visualization.

      a) One focused on call purpose (Bar Chart, 3 groups: complaint, product support, sales support)

      b) One organized by Branch (Bar Chart, 2 groups: north, south)

      c) Call purpose Stacked Bar Chart (combining two branches into same stacked bar)

      d) Branch focused Stacked Bar Chart (combining three call purposes into same stacked bar)

3. Call Time Analysis

Make **DASHBOARD C** for the answers to (a)-(d).

a) Make a visualization showing the average wait time (combination of incoming wait and during call wait) for each of the two branches.

b) Make a visualization showing the average wait time (combination of incoming wait and during call wait) for each of the three call purposes.

c) Make a visualization (graph or chart) showing call volume over each of the time periods (hours) show volume over the time periods during the day. Break out by branch, and show two lines, one for each of north and south branches.

d) Using a scatter view, show the relationship between incoming wait time and during call wait time, with time blocks as the individual data points.

4. Call Time and Sales Rep Filtering

 Display the number of calls each sales rep makes. Build a quick filter that controls which of these results are displayed based on the value of SUM(During Call Wait Time). Make the filter 10 (minutes) wide (you can set exact values by clicking on numbers). Now drag the filter (via mouse down in middle of bar) through the range of waiting minute values. Create a dashboard **(DASHBOARD D)** to record all the times that you can find where there are ONLY TWO sales reps matching the filter condition and shown in the visualization (e.g. Cam and Xander both have 24 calls when During Call Wait Time minutes is between 65 and 75).

5. Sales Representative Groups

Use the grouping function to put the sales representatives into "shift" sections (subgroup under Branch). The groupings are shown below

Branch	Shift	Rep ID (group)
South	morning	Alice, Randy, Sandy
North	morning	Amanda, Andy, Brent,
South	afternoon	Eric, George, Helga
North	afternoon	Joe, Lilly, Todd, Xander
South	evening	Josh, Karl, Kate, Sharon, Susan

North   evening   Cam, Duke
For more information on how to do groupings see our resources pages under Tableau sections (https://sites.google.com/site/infovisinls541resources/tableau/helpful). Basically, to do groupings, you add sales people "rep id" to visualization. Then click on them to make group (^click to add additional members after first one).   Note it would be nice to properly label your groups as "South Morning" shift, etc. You can do this under the last menu selection item (alias) on the menu when making groups.

    a) Make a visualization that shows the number of calls for each group (branch/shift)

    b) Make a visualization that shows the average call wait, incoming wait, and busy times for each of these six groups (2 branches by 3 shifts). Use color to distinguish shifts from each other.
    Put your answers to these in **Dashboard E**.

6. Performance Evaluation
a) Review the data and make visualization(s) that supports downsizing the company by laying off one branch.
b) Review the data and make a visualization(s) that supports recommending one employee for employee of the month honors.

This is your chance to get creative and explore additional Tableau features if you'd like. Put these in a single dashboard (**DASHBOARD F)**, and be sure to include explanations for both of these in brief annotation boxes.