PHPM 631 Lab 6: Data to Decision
Due date: Submit on E-Campus by 11:59pm Sunday 3/26

Submission. Submit on E-campus. See Requirements Section below for details
- Submit in one week with Assignment 6 Progress Report

Guideline for assignment grading
- This is a 0/1 grading based on timely submission. What follows is an exercise to introduce you to using both Tableau and Excel (different aspects).

Objective
By the end of this lab, you should be able to:
- In Tableau
    - Upload Excel data
    - Create figures & graphs
    - Create a dashboard
- In Excel
    - Calculate new columns
    - Calculate summary rows
    - Understand how to use absolute and relative reference
    - Generate graphs

Lab 6: Data to decision
Follow the step by step directions below and submit the Excel file when you are done.

1. Download the data from the class website
2. Do the Tableau exercise and publish online
3. Do the Excel exercise and submit the file

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Tableau

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Install and start Tableau
1. Search for "Tableau Public"
2. [Not necessary in the lab] Download and install "Tableau Public"
3. Start Tableau Public
4. Watch tutorials: http://www.tableau.com/public/training
    a. In particular watch 1. Tableau Public Overview
    b. Watch what interest you, and follow along as you go

Create a map
Now, let's try doing one thing:
1. Upload the Excel file (click "Excel" on the left)
2. Select "aha_basic" from your computer (you can download this from the class website)
3. Double click on aha_basic (first item just below the "enter sheet name" with table next to it.
4. Click on "Sheet 1" on the bottom
5. Grab "County" (top left list under dimensions) and drop into the main table area that states "Drop field here" (not column or rows)
6. Click on grey button that says "76 unknowns" (bottom right)
7. Select "Edit Locations"
8. Select the state: under fixed – Texas, then click "OK"
9. Select "totbeds" (from bottom left menu under Measures), and drop it on "color" (in the Marks tab)
10. Select "Labels" in the Marks tab, then click on "Show mark labels"

11. Now select "Number of Records" (lower left Measures Menu), and drop this on top of "SUM(Totbeds)" in the Marks Menu under County, and select "Label" at the front of the "Sum (Number of Records)". This will change the numbers on the map to the number of hospitals (= number of records) per county
12. Left click on Year (top left under dimension), click on "duplicate"
13. Then click on "rename", and name the copied variable "cyear" (for categorical year)
14. Now, left click on the new variable and click on "convert to discrete"
15. Then click on "Show Filter"
16. Grab the "Show Me" tab (top right) and move it down (the filter shows up here)
17. See if you can make the filter a "Single Value (List)" (put your mouse next to cyear in the filter, which will display sort/find/menu icons. The menu icon (upside down triangle) has the option.
18. If you select a year, now you can see how many hospitals there are in each county for the given year
19. Rename the sheet "map"

Create a line graph
1. Click on the icon for new sheet ("plus/bar chart")
2. Select Year from upper left under Dimensions and drop it on Columns (at top)
3. Select Number of records from lower left under Measures and drop it on Rows (at top)
4. Select Htype from upper left under Dimensions and drop it on color in Marks
5. Select 'Line' in Marks
6. Rename the sheet "nhosp"

Create a bar chart
7. Left click on the nhosp sheet, and "duplicate sheet"
8. Select cyear from upper left under Dimensions and drop it on columns (at top)
9. Delete year from columns (at top)
10. Rename the sheet "nhosp_bar"

Create a box-and-whisker plot
1. Click on the icon for new sheet ("plus/bar chart")
2. Select Htype from upper left under Dimensions and drop it on columns (at top)
3. Select Number of records from lower left under Measures and drop it on Rows (at top)
4. Select Year from upper left under Dimensions and drop it on the Detail box in Marks
5. The default graph should be the box-and-whisker chart. It depicts the spread of each type of hospital (not-for-profit, private, and public) over the different years
   (The show may indicate this is a Gantt view)
6. Rename the sheet "nhosp_bw"

Create a dashboard
1. Click on the icon for new dashboard ("plus/square")
2. Select "Letter Portrait" under Dashboard/Size (bottom left)
3. Select nhosp sheet from top left, and drop it on the dashboard
4. Select map sheet and drop it on the dashboard (under nhosp)
5. Select nhosp_bw sheet from top left, and drop it on the dashboard (right of nhosp, on top of map)
6. Select nhosp_bar sheet from top left, and drop it on the dashboard (right of nhosp_bw, on top of map)
7. Now select "Dashboard/Actions" from the top menu
8. Click on "Add Action/Highlight"
9. Deselect the "map" sheet
10. Try clicking on different things on the figures on top (these are not connected)
11. Take a screen shot of the dashboard you made and submit

Excel File

1. Copy the first 50 rows into a new sheet (named "sample")
2. Insert 3 columns between column L and column M
3. [calculate new columns]
   a. name the new M column "*subtot*" and sum the three columns *general, peds*, and *ob* in row 2
   b. name the new N column "*total*" and add columns *subtot* and *other* (new column U) in row 2
   c. name the new O column "*check*" and type in the following =*IF(N2-L2=0, "same", "diff")* in row 2
   d. Now select the three cells in row 2, and pull down to row 50 to populate the three columns
4. [calculate summary rows] In row 51
   a. sum columns *general* (columns I)
   b. copy the new cell and paste to columns J to N
   c. insert a new column between column I and J
   d. in cell (2, J) type =*I2/I51*
   e. insert a *$* in the cell (2, J), before 51 (so it should be =*I2/I$51*). $ is used for absolute reference in Excel, so row 51 will not change when you copy and paste this cell into other cells
   f. format the cell as percentage with 1 digit decimal
   g. Now copy the cell (2, J) down the column J to row 51
   h. Notice the changes to columns N to P. Fix this problem by cutting column J and insert it BEFORE column I.
5. [generate a graph] Create a bar chart on the sheet
   a. create a simple bar chart using row 51, cells J, K, and L.
   b. click on the chart using the left button, and select "Select Data Source"
   c. click on the "Edit" button on the Horizontal Axis Labels
   d. Then select row 1, cells J, K, and L to use as labels
   e. Click OK
6. submit this excel sheet