**Term Project Stage 4**  
Math 104  
Fall 2015  
Myers

**Stage 4: Present Data.**  
Find the best way to summarize and display each of the variables corresponding to your survey questions. Which graph displays the data in the most meaningful way? Which numerical summaries are appropriate? Explore relationships among the variables. Which are related? Which are not related? How strong are the relationships?

**Assignment:**  
Decide whether each of your variables type N (numerical/quantitative) or type C (categorical/qualitative). Fill in the blanks in the array below with the type of graph or table appropriate to display a variable, or pair of variables, of each type. Also list the appropriate numerical summaries.

<table>
<thead>
<tr>
<th>one variable type N</th>
<th>one variable type C</th>
<th>two variables types N, N</th>
<th>two variables types C, C</th>
<th>two variables types C, N</th>
</tr>
</thead>
<tbody>
<tr>
<td>graph/table</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**numerical summaries**

For your term project you should demonstrate that you know how to make and interpret each of the graphs, charts, and numerical summaries included above. The following exercises lead you through this process. If necessary, you can use the class data rather that your own.
Choose one quantitative variable (call it $x$) and compute each of the numerical summaries listed in the array below for that particular variable. Explain what these numbers tell you about students in our class.

$x =$

<table>
<thead>
<tr>
<th>statistic</th>
<th>value</th>
<th>explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>average</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>median</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$Q_1$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$Q_3$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>max</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Choose a pair of quantitative variables (call them $x$ and $y$). Compute $r$ for this pair. What does this number tell you about students in our class?

$x =$

$y =$

$r =$

Explanation:

Choose a pair of categorical variables (call them $x$ and $y$). Compute $\chi^2$ (the chi-square statistic) for this pair. What does this number tell you about students in our class?

$x =$

$y =$

$\chi^2 =$

Explanation:
Choose one categorical variable (call it $x$) and one quantitative variable (call it $y$). Compute the five-number summary of $y$ for each category in $x$. What do these numbers tell you about students in our class?

$x =$

$y =$

five-number summaries:

Explanation:

Choose a variable, or a pair of variables, for which each of the following types of graphs or charts is appropriate. Create a meaningful graph of the variable(s) and explain what it tells you about students in our class. Attach a printout of your graph to this assignment for credit.

Graph: Histogram

Variable:

Explanation:
Graph: Bar Chart

Variable:

Explanation:

Graph: Scatterplot

Variables:

Explanation:
Graph: Frequency Table

Variables:

Explanation:

Graph: Comparative Boxplots

Variables:

Explanation: