Problem Set 1.2: Uni-Variate Data Analysis
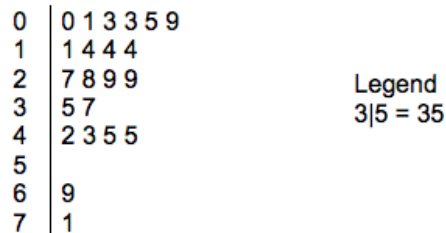
Mark Twain – "Get your facts first, and then you can distort them as much as you please."
http://www.quotationpage.com/quote/286.html, 12/27/11

Important Technical Note:
You should note that a number of problems have a ▪ icon in front of the problem. For all of these problems you are expected to solve the problem with a computer and save a file you can access in class that represents the solution. You should also transcribe your results into your notebook unless explicitly stated that you do not need to.

1. A family got together for Thanksgiving and the ages of everyone present are given in the stemplot below.

```
0 | 0 1 3 3 5 9
1 | 1 4 4 4
2 | 7 8 9 9            Legend
3 | 5 7                3|5 = 35
4 | 2 3 5 5
5 |
6 | 9
7 | 1
```

a. How many people came for Thanksgiving?

b. What is the maximum and what does it mean within the context of this data set?

c. What does 6|9 represent?

d. What does 5 7 (found in the middle of the stemplot) represent?

e. Which age occurs most frequently?

f. Describe the shape of the distribution and what information does this provide within the context?

2. Consider the ages of Porter-Gaud Upper School students. Would a stem and leaf diagram be appropriate for this data set? Explain.

· 3. A company with 278 employees was concerned that there was a problem with their employees showing up late to work so management recorded how many minutes each person was late. If they showed up early or on time no information was collected for that employee. Open the Codap file called "**Late to Work**" to see the data.

a. Create a dotplot (you do **not** need to copy the dot plot to your notebook. However, if you would like to take a screen shot and print it to keep in your notebook that would be helpful).

b. Six people were late the same number of minutes. How many minutes late were these six people?

c. Let's say that the next day the lateness data is the same with one exception, the person was the latest (180 minutes late) arrived at work on time. What would the graph look like under these circumstances?

d. Using what you learned in (c), under what circumstances is a dotplot an inappropriate graph?

▪ 4. Two schools reported the Math SAT-1 scores of their seniors. Open the CODAP file called "**SAT Scores**" to see the data.

a. How many seniors were in each school?

b. Create a dotplot for each school (you do **not** need to copy the dot plot to your notebook. However, if you would like to take a screen shot and print it to keep in your notebook that would be helpful). What was the range of SAT scores for each school?

c. Describe the shape of the distribution for each school?

d. Which school's seniors did better on the SAT? Support your answer using complete sentences.

e. You explained why one school did better on the SATs in (c). Now suppose you were the headmaster of the other school. Write a few sentences trying to convince someone that your SAT scores are better than the school you chose in (c).