CS 105 TA Lecture Notes
December 8, 2014

Please refer to the code available on the CS 105 schedule page.

How do we best represent data using the d3.js library?

1. We clearly need an axis to understand this data.
   - This is fixed by shifting the viewing area 40 pixels down and the 20 pixels to the right.
2. How would we invert the graph so as to see the A's first?
   - Fixed by changing the return value of the "Draw bar graph portion of the code" to the following: `w - i * (w / data.length) + 20`
3. We gain a lot more information from the graph if we plot values along the x-axis that correspond to the total number of students who have scored better than an A, B, C, etc.
   - This is accomplished by creating a for loop that will track the number of students who received each grade by incrementing the corresponding cell an array called `tickValues`
   - This information will then be used to control the axis labels that must be displayed
4. How do we get text to display on the graph in a more helpful manner, such as placing text indicating the grade over the region covering all such grades?
   - This is accomplished by appending a new text element to `svg`
   - The position of the text element is determined by using the limiting values of the range containing the grade that is to be displayed over that region
   - The attributes of the text element such as its "`cx`" value, "`cy`" value, "`font-family`", etc. are set by chaining `.attri()` functions.

What did we achieve?

The graph now tells us a whole lot of information:

- Tells us how many students received each grade
- Tells us how the grades were curved

d3.js is a very useful tool to represent your data. The best advantage over Excel is that you can use the same code to visualize any data set by simply replacing the old data with the new data.