Homework 2
DATA 440

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Assigned: Jan/13/19;   Due: Mar/6/19;   Points: 48

1   Instructions

This assignment could be written in LaTeX, just as the last homework assignment could have been. Write in understandable, easy to follow English. Make sure you provide good illustrations and figures. Remember to include your Python programs in your assignment.

Your assignment should be submitted in two ways: through GitHub, and in hardcopy (in class). Use the **same** repository you have been using and submit your work in a folder named "`lastname-xx`", where lastname is your last name xx is the number of the assignment.

2   Problem Set

The following is a list of problems you will solve. These are from your textbook. When providing your solutions (hopefully using LaTeX), do not simply give the final answer, show how you arrived to the solution, justify your assumptions, and explain your results clearly.

- **Problem 2.1**. *Hint:* it suffices to make $\epsilon(M, N, \delta) = \sqrt{\frac{1}{2N} \ln \frac{2M}{\delta}} \leq \epsilon$ and solve for N.

- **Problem 2.11**. *Hint:* you should use Equation (2.12) and remember that a confidence of 90% means a $\delta = 0.1$.

- **Problem 2.12**. *Hint:* use Equation (2.13).

  For the following two problems you may use the dataset generator downloadable on iLearn:

  `Resources/Homework/2/makeSemiCircles.py`

- **Problem 3.1**

- (extra credit) **Problem 3.2**