CSC 223, Spring 2020, Assignment 7

Purpose: Data Visualization

Due: 11:59pm, Friday, April 10, 2020

Get the assignment code

These instructions assume that your course git repository is set up. Change into your course repository directory and enter the following commands.

```
git fetch assignments
git checkout assignments/master -- assignment7
git commit -a
```

This will copy the `assignment7` directory into your working directory, start tracking the files in the `assignment7` directory, and commit those files to your local git repository.

Assignment Description

Complete the Jupyter Notebook named `assignment7.ipynb`. The goal is to visualize final grade data from the provided `grades.csv` file. You are to replicate the following two figures using the Matplotlib library. Note that your figures do not need to match superficial details like color choice.
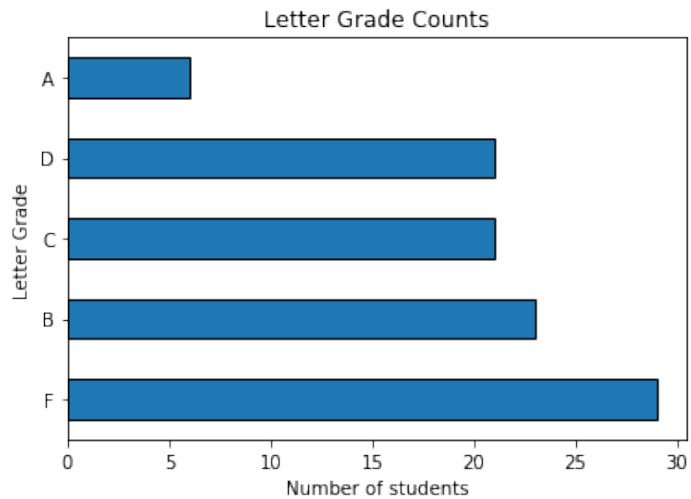
Figure 1
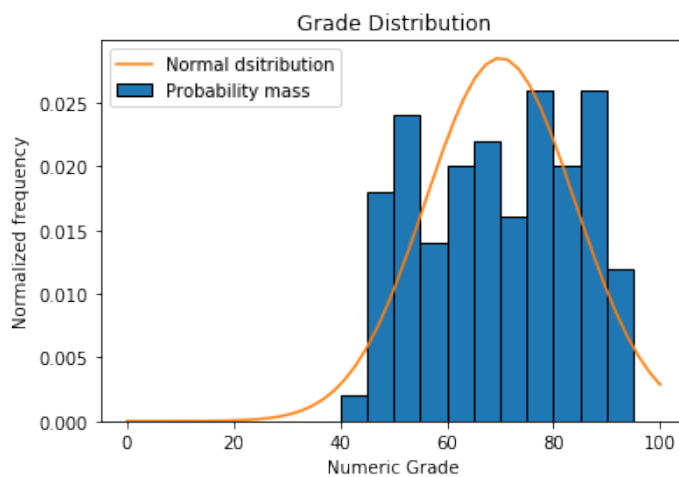
This figure has two components: a normalized histogram with twenty bins on the range $0 - 100$, and a plot of the data fit to a normal distribution. The formula for the normal distribution function is:

$$f(x \mid \mu, \sigma) = \frac{1}{\sigma\sqrt{2\pi}} \exp\left(\frac{-(x - \mu)^2}{2\sigma^2}\right)$$

where μ is the mean and σ is the standard deviation. This function is provided for you in the Jupyter Notebook.

Figure 2

This figure is a horizontal bar plot that shows the number of students that received each letter grade. The letter grade scale is:

A   90 - 100
B   80 - 89
C   70 - 79
D   60 - 69
F   0 - 59

Turning in the Assignment

To turn in the assignment execute the following git commands:

```
git commit -a
git push origin master
```

Note: the most recent commit before the due date will be considered your official submission.

Grading Criteria

- Concise, accurate documentation following the CSC Department documentation guidelines

- Correct implementation of the specification

Note: If your code does not run on the Python 3 interpreter, then you will receive a failing grade for this assignment.