Lab3-Statistics and Probability Distribution

Make a copy of Lab-`3-Statistics and Probability Distributions.ipynb` python notebook and rename it to `Lab-3-<YOUR_NAME>.ipynb`. Read the exercises provided in the given python notebook. Write and execute your solution in the respective code shell. Submit your python notebook after completing all the exercises.

Total Marks: **8 marks + 2 marks (individual assessment)=10**

HINT

- Use `numpy` python library to find mean, median and standard deviation for the given sequence of numbers
- Use `matplotlib` python library to plot the histogram

Excercise-1 (1 Mark)

John tracked his lunch bills for the past 5 days. He paid `$15.10, $12.05, $20.05, $17.75 and $16.25`. What was the average amount John paid per meal? Print the result with 2 decimal places.

Excercise-2 (1 Mark)

Mark received the following scores in his `Graphic Design` tests. His final grade is based on the mean of those scores. What will be John's final grade in that course? Print the result with 0 decimal places.

77, 84, 89, 78, 92

Excercise-3 (1 Mark)

Find the median and standard deviation for the set of numbers given in Excercise 1 and 2

Excercise-4 (3 Marks)

4.1) Plot a histogram for the given below age of population with respect to bin.

Population Age	**22,55,62,45,18,21,22,16,34,42,42,4,2,102,42,95,85,55,110,14,50,120,70,65,55,111,115,80,75,65,54,44,43,42,48**
Bin	0-10 10-20 30-40 40-50 50-60 60-70 70-80 80-90 90-100 100-110

4.2) Change the bin interval to 50 and replot the histogram

4.3) Which age group has more number of people?

Excercise-5 (1 Mark)

Plot a cumulative distributive function (CDF) for the data given in excercise-4.1

Excercise-6 (1 Mark)

Using `linespace` method from `numpy` library create *200* sample data between the interval *1 and 50*.
Plot the **normal distribution** using `matplotlib` library for the sample data.