Assignment 1

Objective

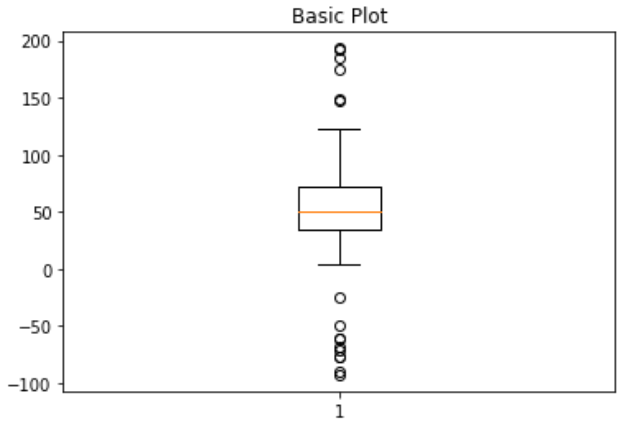
You are required to demonstrate your understanding of a python package called **pandas**. You will demonstrate your knowledge by making use of an **ipynb** file.

Provide any references where applicable (such as websites, books, etc) that were used during the completion of this assignment

Task: (**100 points**)

1. Describe what is the use of pandas/data-frame? Keep your explanation short and to the point. You may use text, and images to describe what is the information need for pandas and why it is useful. **(10 Points)**
2. List down methods discussed in class with regards to pandas/data-frame. This will demonstrate that you have understood what was taught in class. Describe each method in simple language, i.e., the purpose of the method and provide a snippet of code that shows how the method is used. For example, if you were asked to list down some basic commands in python, you can say **(50 Points)**:
    - **print**: is a function which used to display the given object to the standard output device or to the text stream file. Following snippet of code shows how print can be used to display a string.
      Functioning Code:
      >> print('hello world")
      Out: hello world
3. List down some method (4 or 5 is enough) with regards to pandas/data-frame that were not discussed in class. This will demonstrate that you have learned something new by browsing the internet, reading books, etc. The purpose is to ensure that you can learn new stuff independently. Describe each new method in simple language, i.e., the purpose of the method and provide a snippet of code that shows how the method is used. This time you will also share the reference from where you learn this new method. For example, if you were asked to describe a new method that you are not taught using matlibplot, you can say: **(40 Points)**
    - **Boxplot**: is used to make a box and whisker plot. The plot graphically depicts groups of numerical data through their quartiles. It is a useful new type of plot that I learned to further my understanding of the descriptive statistics.
    - **Reference**: I learned about from online resources https://matplotlib.org/3.1.1/api/_as_gen/matplotlib.pyplot.boxplot.html and https://en.wikipedia.org/wiki/Box_plot
    - **Functioning Code**
      import numpy as np
      import matplotlib.pyplot as plt

```
# Fixing random state for reproducibility
np.random.seed(19680801)
# fake up some data
spread = np.random.rand(50) * 100
center = np.ones(25) * 50
flier_high = np.random.rand(10) * 100 + 100
flier_low = np.random.rand(10) * -100
data = np.concatenate((spread, center, flier_high, flier_low))
fig1, ax1 = plt.subplots()
ax1.set_title('Basic Plot')
ax1.boxplot(data)
```



Out:

- Note: The above code has many lines, you don't need many lines of code, just a functioning code is enough.