Week 3 Homework

1. Write a code that behaves as one of the native list methods. You may find the Python documentation is helpful. https://www.programiz.com/python-programming/methods/list
2. Mean and standard deviation are the 2 important features in describing statistics. There are different types of measuring the centre of data. These include median and mode.

   The median is the 50^{th} data when all data points are ordered. For example, wealth can be ordered and often we look at median income to see how many does an average person earn. The mode represents the most popular result from the data. For example, most people got 11 marks in the quiz is the mode.

   In the following, let us think about what would be the best to describe the centre of data for each scenario:
   a. Population growth of a city.
   b. A class of students joined a 100m competition, and obtained their results afterwards.
   c. Time spent on using internet, sampled from 100 internet users in Australia.
   d. Election poll results.
   e. How many people retweeted the specific tweet.

   More information:
   https://www.edureka.co/blog/math-and-statistics-for-data-science/#Categories%20In%20Statistics
3. Random variables is the quantity where we measure their frequency, or the probability to appear the random variable. It can be either categorical (nominal/ ordinal) or numerical (continuous/ discrete). In the following, let us think about what would be the type of random variables for each scenario: Note: If it is not a random variable, how can we interpret that so to obtain a random variable?
   a. Population growth of a city.
   b. A class of students joined a 100m competition, and obtained their results afterwards.
   c. People sampling one type of food.

    d. Time spent on using internet, sampled from 100 internet users in Australia.
    e. How many people used the word of interest on Facebook or Twitter.
    f. Federal election poll results.
    g. How many people retweeted the specific tweet.
4. In data analytics, filling missing data is one of the important parts of data analytics. Think of 3 ways (you can be creative) that you can fill in missing data.