WEEK -1

1. Find the mean, median, mode, variance, and standard deviation of a list. (import statistics)
2. Create a list of numbers and use list comprehension to generate a new list with the squares of each number.
3. Write a function that takes a tuple of numbers and returns the product of all the elements.
4. Write a program that counts the frequency of each letter in each string and stores the results in a dictionary.
5. Explore two different datasets provided in the shared folders with the following steps:
    a. Import the required libraries.
    b. Load the dataset.
    c. Examine data information.
    d. Identify and analyze null values using df. isnull().
    e. Conduct statistical analysis. (count, mean, SD, min, max, Quartile)
    f. Generate boxplots for each column to detect outliers.
    g. Determine quartiles and remove outliers.
    h. Calculate correlations and visualize them with a heatmap.
    i. Normalize the various features of the given datasets. (MinMaxScaler)
    j. Arrange correlation values for each attribute in ascending order.
6. Conduct a visual exploration of the given dataset by employing four distinct Python plotting libraries: Matplotlib, Seaborn, Bokeh, and Plotly. Perform the following visualizations:
    a. Scatter plots with coloured points and adjustable sizes using columns (1) col1, col2 and (2) col3, col4 (3) col5, col6.
    b. Line charts for columns (1) col1, col2 (2) col3, col4 (3) col5, col6.
    c. Bar charts representing columns (1) col1, col2 (2) col3, col4 (3) col5, col6.
    d. Histograms to depict the dataset's distribution.
    e. Employ Bokeh for interactive data visualization.
    f. Utilize Bokeh's GUI features, including buttons, sliders, checkboxes, and radio buttons.
    g. Employ Plotly to create a dropdown menu.
    h. Develop custom action buttons using Plotly.