Read the csv file (iris.csv in Canvas) into Python as a pandas DataFrame. Note that the CSV file includes column headers.

1. How many data points are there in this data set?

2. What are the data types of the columns and what are the column names?

3. The column names correspond to flower species names, as well as four basic measurements one can make of a flower: the width and length of its petals and the width and length How many species of flower are included in the data?

4. Use a pandas aggregate operation to determine the mean, median, minimum, maximum and standard deviation of the petal and sepal ratio for each of the three species in the data set

5. Use the built-in pandas plotting tools to make a box-and-whisker plot showing the distribution of petal ratio and sepal ratio for each of the three species. Please include labels on your x- and y-axes and give an appropriate title to your plot.

6. Make a scatter matrix plot for the four original features (petal width, petal length, sepal width and sepal length). Each point in the scatter plot should be colored according to its species.

7. What kind of correlation exists in these variables? Describe your result based on the value of r and shape of the scatter plot.

8. Generate histograms for the ‘sepal.length’ column. What can you interpret from the generated histogram?

9. Show the range of values (low and high) which covers the 95% and 99.7% of the area of data points of sepal.length’ column.

10. Find the mean and standard deviation of sepal.length and sepal.width for each flower type

Question 2

. Read the csv file (weather.csv in Canvas) and provide summary of the DataFrame by printing   
the object.   
  
2. How would we get the second to last date (EDT) in the dataset?   
  
3. What is the range of temperatures in the dataset?   
  
4. Group the DataFrame by the "cloud\_cover" column (a value ranging from 0 to 8) and show the   
mean temperature of each group.   
  
5. Use apply() to find the difference between Max Wind SpeedMPH and Mean Wind SpeedMPH