1. **Loading in data:**
   1. Suppose you have a file **iris\_data.csv**. Write a Python command to load the file using the **pandas** library (https://archive.ics.uci.edu/dataset/53/iris)
   2. After loading the dataset, write a command to display the first 5 rows of the DataFrame.
   3. Set the dataframe column headers as detailed out in repo and make sure you do not lose any data
      1. Hint: pandas has a method called “headers”
   4. After loading the Iris dataset into a pandas DataFrame, how would you index and print the first 10 rows of the dataset?
2. **Data Extraction**
   1. Write a Python command to extract only the **sepal length** column from the Iris dataset using regular indexing.
   2. Suppose you want to retrieve rows 5 through 15 from the Iris dataset. How would you use **.iloc** indexing to achieve this?
   3. What does the following command return? Explain the meaning of the **:** in the code.
      1. df.iloc[5:10, :]
   4. Write a Python command to select the first two columns (sepal length and sepal width) and all rows from the Iris dataset
3. **Indexing data**
   1. Use boolean indexing to retrieve all rows from the Iris dataset where the **species** is equal to **'Iris-setosa'**.
   2. Write a Python command to find and print all rows where the **petal length** is greater than 4.0.
   3. Using boolean indexing, create a new DataFrame containing only the rows where the **sepal width** is less than 3.5.
4. **Incorporating NumPy**
   1. Convert the **sepal length** column from the Iris dataset into a NumPy array. Write a command to calculate the **mean** of this array
   2. Write a Python command to calculate the **median** of the **petal length** column using NumPy.
   3. How would you calculate the **standard deviation** of the **sepal width** column using NumPy?
   4. Write a Python command to calculate the mean and standard deviation for each numeric column in the dataset.
5. **More Numpy!!!!**
   1. Convert the entire Iris dataset (excluding the species column) into a NumPy multidimensional array. How would you verify the shape of this array?
   2. Create a 2D NumPy array that contains only the sepal length and sepal width columns. What is the shape of the resulting array?
   3. Write a Python command to calculate the **mean** of each column in the 2D NumPy array created in the previous question.
   4. Create a 3D NumPy array where each dimension corresponds to one of the species (Iris-setosa, Iris-versicolor, Iris-virginica). Each dimension should contain the sepal length and sepal width for that species.
   5. Calculate the mean and standard deviation of the petal length for each species in the dataset using pandas and NumPy.
      1. Hint: First, group the DataFrame by the species column, then apply the statistical functions
   6. How would you write a Python function that accepts a species name as an argument (e.g., 'Iris-setosa') and returns the mean sepal length for that species? Use both pandas and NumPy to accomplish this.