**Lab 7 Guide**

**Directions**:

**[PreLab]** - The leader of the group will collect the insights and reflections of each member and put them in one MS Word document. You can come with your own document format (cover page, etc.). You can refer to the below websites:

* METIS Book: Lambert, K. A. (2023). Fundamentals Of Python: First Programs (3rd ed.). Cengage Learning US. <https://bookshelf.vitalsource.com/books/9780357881132>
* [Getting started — Matplotlib 3.8.0 documentation](https://matplotlib.org/stable/users/getting_started/)
* [Beautiful Soup: Build a Web Scraper With Python – Real Python](https://realpython.com/beautiful-soup-web-scraper-python/)
* Lab 7 Pertinent Files >> [Lab7](https://mymailmapuaedu-my.sharepoint.com/:f:/g/personal/dapadilla_mapua_edu_ph/EkKxUqF5L2VFq2wGeDssVMsByKSlv0_Z3_TchXQfeOtz7w?e=Vo2RRe)

[InLab] - Perform the exercises using this [Chapter 11 Data files](https://mymailmapuaedu-my.sharepoint.com/:u:/g/personal/dapadilla_mapua_edu_ph/EYcNzQHap0JItbx--JH9Zk0Bpj8e19KEyRmYm2ZwhBX4vA?e=EimXSz) and Lab 7 Pertinent File Using API and Web Scraping >> [Lab7](https://mymailmapuaedu-my.sharepoint.com/:f:/g/personal/dapadilla_mapua_edu_ph/EkKxUqF5L2VFq2wGeDssVMsByKSlv0_Z3_TchXQfeOtz7w?e=Vo2RRe)

**[PostLab]** - Perform the following Chapter 11 Programming Exercises PE # 5 and #6 (Page 356)

* **PE #5:** Visit the website of the U.S. Bureau of Labor Statistics at <https://www.bls.gov/data/home.htm> and download the data for the average price of bread, as shown earlier in this chapter (there will be data for more recent years added since these words were written). You can also use the breadprice.csv file here >> [Chapter 11 Data files](https://mymailmapuaedu-my.sharepoint.com/:u:/g/personal/dapadilla_mapua_edu_ph/EYcNzQHap0JItbx--JH9Zk0Bpj8e19KEyRmYm2ZwhBX4vA?e=EimXSz). Write a program in a file named **breadprice.py** that loads the data set and cleans it as you did earlier in this chapter. Then include code to display a line plot of the average price for each year in the table.
* **PE #6:** The columns labeled FG, 3PT, and FT of the data set in the Analyzing Basketball Statistics case study (Download the files here >> [CaseStudy2](https://mymailmapuaedu-my.sharepoint.com/:f:/g/personal/dapadilla_mapua_edu_ph/EiUltp_dCLZDgIYeSE_VCaoB0MJe777KpWG5E1DnODt1eg?e=5MXDvT)) do not show a single integer value but instead show values with the format <makes-attempts>, which is not suitable for the kind of data analysis performed on the other columns. For example, analysts might like to view the mean of free throws attempted as well as mean of the free throw percentage. You can correct this problem with a cleaning step that, for each such column:
  + removes it from the data frame
  + creates two new columns from this series, where the first column includes the numbers of makes and the second column includes the number of attempts
  + inserts the new pairs of columns into the data frame at the appropriate positions, with the appropriate column headings (for example, FTM and FTA)

Define a function named **cleanStats** in the file hoopstatsapp.py. This function expects a data frame as an argument and returns the frame cleaned according to the steps listed previously. You should call this function after the frame is loaded from the CSV file and before it is passed to the **HoopStatsView** constructor.