**Homework-8**

**Out Date:** 11/04/2019 (Monday)

**Due Date:** 11/16/2019 (Saturday) 11:59PM

Team#: 17\_

Team Member-1:\_\_\_\_ Ying-Yu Huang \_\_\_\_\_\_\_\_\_\_Member’s Contribution (in %) \_50%\_

Team Member-2:\_\_\_\_\_\_ Chao Zhang \_\_\_\_\_\_\_\_\_\_Member’s Contribution (in %) \_50%\_

You are hired by City of Houston to analyze presence of E.coli bacteria in the city’s waterways. You are asked to preform data analysis to accomplish three specific goals:

1. Compute average amount of E.coli per year in Houston waterways. Plot a bar graph in which x-axis is years (2013-2016) and y-axis is E.coli amount. **[25 points]**
2. Compute average amount of E.coli per month in Houston waterways. Plot a bar graph in which x-axis is months (Jan-Dec) and y-axis is E.coli amount. Each month is aggregated over the years. **[25 points]**
3. Show correlations between E.coli and chemical factors such as water PH level, dissolved oxygen, specific conductance, etc. **[50 points]**

The dataset and the feature description are available in the homework folder.

Write Python script and submit it on blackboard. The script should be self-contained, meaning it should read the data file (Ecoli Data.xlsx) from the folder where the script resides and display the outputs.