Summary on Assignment 1

This assignment essentially asks to calculate the total number of hours each of the 7 energy companies records within some period of time based on different calculation rules. The input consists of company name, peak type, and period. Company names contain eastern and western companies in the U.S. Because of different assumptions on weekdays, and different handling methods for day light savings, the companies use different calculation metrics. There are 5 peak types given along with their definition of the ranges of hours that belong to their specific peak names. Since some peak types account for hours on weekdays and are affected by holidays, the hour calculation will base on both companies and peak types. Another factor is the period of time that accounts for the number of days between the starting and ending times. The period can be a day, a month, a quarter, and a year.

My code first found out the starting dates and ending dates based on the input period. Then based on the range of dates, a Counter object was used to calculate the number of days passed for each of the 7 days in a week. My code also found the days in week NERC holidays take place within the range of dates so that the hours for peak types on/off weekday will be subtracted/added if the day is a holiday. Based on eastern and western calculation metrics and the peak type, the hours are summed. Then, if the company uses day light savings, my code checks whether day light savings happen within the range of dates and adjust the total hours by adding or subtracting 1 hour. One can refer to more detailed implementations in the Jupyter notebook.