DSC 430: Python Programming
Assignment 1002: Crymland Analysis

Present your Crymland simulation in a written report (**PDF**) that includes **six clearly marked sections:**

1) A well-documented top-down structure chart.
   a) Include any assumptions you made about your design.
2) Describe the classes you designed and how you integrated them.
   a) Did you use inheritance? Where?
   b) Did you use composition? Where?
3) Using the data file generated in Assignment 1001: Battle for Crymland, analyze the results using Pandas and Matplotlib.
   a) Create a time series chart for 1) The total size of Mr. Bigg's criminal syndicate, excluding those jailed, 2) the total number of thieves/lieutenants jailed, 3) the personal wealth of Mr. Bigg, and 4) the total amount of bribes given to detectives.
      i) Discuss the charts and highlight any significant findings.
   b) Run the simulation several times.
      i) How often is Mr. Bigg arrested?
      ii) How much wealth does he accumulate?
   c) Design a scenario (i.e. change the parameter file) in which the detectives almost always arrest Mr. Bigg. What did you change?
   d) Design a scenario in which Mr. Bigg almost always goes free. What did you change?
4) Describe three ways you could extend the simulation.
5) Include the code of your analysis in an appendix to your report.
6) Include the contents of your parameter files in an appendix to your report.

Record a three-minute video in which you run the Pandas and Matplotlib code used to present the analysis of the Crymland simulation. Then, present your code. Finally, discuss the time series plots and describe the success or failure of Mr. Biggs criminal syndicate.

Submission: Submit a single **.pdf** file containing all the code to the D2L. Do not zip or archive the file. Your code must include comments at the top including your name, date, video link, and the honor statement, "I have not given or received any unauthorized assistance on this assignment." Each function must include a docstring and be commented appropriately.