The Final Project

Your task will be to plan, implement, debug, and document a piece of software of a topic of interest and relevance to you. This project will be the exclusive homework for the class, and will require a time commitment of between 10 and 19 hours over the course of the quarter.

Most of the time you'll spend on the project will be spent coding. But since this is your first experience using Python for a project, we'll ask you to spend some portion of your time thinking about coding using the tools from this class. This will help you apply those tools to the project and to future projects, and it also provides an avenue through which we can assess your learning. Here's a preview of all the parts of the project:
I. SYNTAX AND FUNCTIONALITY: We'll be looking through the code you submit for evidence that you can select elements from the categories of syntax and functionality we'll discuss and apply them appropriately towards your programming task.
II. DATA FLOW & WORKFLOW and WRITE AND TEST: We'll inspect the way you have decomposed your code to look for transparency of data flow. We'll also ask for the repository in which you store your final project so that we can inspect the way you have stored your data, tracked your progress on the project, and tested functionality incrementally. There will be a short presentation on the last day of class during which we will assess your ability to navigate Unix and operate a text editor.
III. DEBUGGING: We can guarantee that you'll encounter bugs during the project. We'll ask you to approach them conscientiously, using the tools we'll discuss in class, and then to write briefly about how you used those tools to identify and solve one bug.
IV. PLOTTING & DOCUMENTATION: We will ask you to research and implement functionality from one module we do not discuss in class that helps you with your project, and then briefly explain how that piece of functionality works. This will require reading and interpreting other programmers' documentation. We will further ask you to document sparsely your own code, as well as one portion in depth. Finally, we will ask you to produce a plot showing the results that your project produced, and to explain it during the presentation.

How will you help us prepare to complete the final project?
One way that we'll help you complete your final project is by setting due dates for parts of the project. This encourages you to work on the project steadily throughout the quarter, rather than completingthe whole thing the weekend before it's due. Here's a preview of what will be due when:
Week 3 (Apr 19): Read this handout, take a crack at a tentative project idea and Set up the workflow for your project.
Week 4 (Apr 25): Take another crack. Write up the topic, scope, and data flow of your project.
Week 5 (May 2): Get a piece of code working and document it. Habit summary 1.
Week 6 (May 8): Write a piece of object-oriented or functional code. Habit summary 2.

Week 7 (May 15): Research and implement an online library. Habit summary 3.
Week 8 (May 22): Submit a plot of some preliminary results. Habit summary 4.
Week 9 (May 29): Submit working rough draft. Habit summary 5.
Week 10 (June 5): Submit final draft and present. Habit summary 6.