Physics 91SI Spring 2017

Milestone 1

Due Wednesday, April 19 at 11:59 p.m.

Learning Objectives:

I. **What characters do I type next?** *How do I pick the functionality I need for open-ended projects?* While in labs we have prepared you with most of what you'll need, in the final project you'll need to do a significant amount of thinking on your own. This is your opportunity to get a feel for how long that will take, so that you can pick a reasonable-sized project.

II. **How do I plan a project and execute my plan?** *How do I set up a workflow?* While you work on your project, you'll need some ways to keep track of your work and to do new work.

Part 0: Read the Handout

This class is designed around your work on the final project. It's intended to provide a way to practice, integrate, and apply all the skills we're teaching you in class. Once you get a sense for what the final project entails and how it relates to what we're doing in class, everything else should become a lot more relevant. So read it!

We will not describe the final project to you in class. Read it before Tuesday and then come to class with any questions you have about it.

Part 1: Take a First Crack at a Final Project Idea

Pick a potential project idea—it won't be permanent—and spend 1–2 hours implementing (i.e. coding) the very basics of that project. Take careful note of how long it's taking: this will help you judge a reasonable-sized project once you finalize your project idea in a couple of weeks.

You should work in an IPython notebook in your AFS space. Have it done before class on Tuesday, as we'll teach you how to submit it then.

Part 2: Create a Final Project Repository

Start by creating a final project repository, using something like `git init Project`.This could be on your own machine or on Corn, as long as you can use Git for version control. This is where you'll do your work on the final project, including all the milestones.

Within your final project repository, create a directory called `milestone2`, then `cd` into it. Do your work for this assignment in that directory. For each future milestone, we'll ask you to work within a new directory.

Part 3: Learn a Text Editor

Pick Vim, Emacs, IPython notebook, or another interface in which to code your project. Then spend an hour or less using cheat sheets and the Internet to learn some more advanced features of your chosen editor/environment. For example, you could find a keyboard shortcut for deleting a cell in IPython. Find at least five advanced features.

Once you've found your five features, report to us on what you've found. Working within the `milestone2` directory, create a text file like `vim-commands.txt` or `emacs-commands.txt`, and in it write an entry for each feature you found, as follows:

```
Name of feature: key combination or instructions for use
```

Then save the file.

Part 4: Create and push your final project repository

Once you've finished writing your text file, it's time to commit your changes. During this assignment you've added not just the text file but also the directory that contains it, so the procedure will be a little different from what we discussed in class.

1. Start by exiting the `milestone2` directory (using `cd ..`). This should bring you to `Project`.
2. Then use `git add milestone2` to add the entire directory to the final project repository.
3. Now commit your changes, with something like `git commit -m "Added milestone2"`.
4. You've done something like this step before. Tell Git the location of the remote repository using `git remote add origin https://github.com/physics91si/username-Project.git`.
5. Now you can push your changes!
6. **As a very very last step, run the command** `git push --set-upstream origin master`