**UCF Physics PHZ 3150: Introduction to Numerical Computing**
**Fall 2022 Homework 2**
**Due September 1 2022 - 12pm (start of class)**

Goals:
Obtain access to the Anaconda Python distribution, and the Git revision control system, on the computer you will use in class. Gain some background on our computational and numerical topics.

Reading: Read Chapter 1 of ThinkPython.

For this assignment, your log is the "main homework file". Remember that we keep on working on the same log file, which should now be in your phz3150/ folder. At the end of the homework make a copy of your most up to date log to the `hw2_<yourname>` folder.

For problem 1, give the date and time when you install that component, or otherwise recall what you can about the installation. If you made a HW2 entry in your log in a prior session and want to change it, just copy it to the current (last) session, and edit there. We will grade the last entry only. All text related to one assignment should be in one entry, with the problems done in order. We're doing it this way since you may install software in more than one session, and it is more important NEVER to edit a prior session than to have all the install notes under each problem number.

Start by making a `hw2_<yourname>` folder in the `phz3150/homework` folder and one in your `handin/` folder. Remember that you need to hand in all assignments as a single zip file. Also, remember to name the files, screenshots etc following the instructions on the 'homework_rules_overview.pdf'.

1. (**10 points total**) Follow the instructions in WebCourses (`Installation_instructions.pdf`) to install the software you'll need (Jupyter notebook or Spyder or Jupyter lab). Unlike all other assignments, feel free to get lots of assistance from others! The important thing here is to get the right software installed correctly on your computer. Ideally, you should be able to do it again on your own, of course. Log all your work, including installation choices like where to install things, what versions you installed, and where you got the software (exact, full URL).

(a) (**5 points**) Install the Anaconda Python distribution. If you install miniconda, install all necessary additional packages like numpy, scipy and Jupyter.
Start Jupyter -- or if you chose to use Spyder, start Spyder -- and take a screenshot. Rename the screenshot as instructed in the `handouts/homework_rules_overview.pdf` and add it to your `hw2_<yourname>` folder. Use the screenshot functionality of your operating system rather than taking a photograph, if you can. In any case, in your log explain how you took the screenshot.

What is your python version? Write it in your log.

(b) (**5 points**) Install the GitHub Desktop app. Make a screenshot of your GitHub Desktop. Name it appropriately. Add the screenshot to your `hw2_<yourname>` folder.

2. (**5 points**) Write an original English sentence that has correct syntax but incorrect tokens, and an original English sentence with incorrect syntax but correct tokens. What main "feature" of natural languages prevents their use (so far) as programming languages, and why? Answer clearly and in a few sentences, no more.

3. (**10 points**) Do the GitHub Hello World tutorial (https://guides.github.com/activities/hello-world/).

Then, go to the your phz3150/ folder. Move (drag and drop, or `mv` for Unix) folder `hw1_yourname/` from wherever you saved it last week into your homework/ folder. Take a screenshot of your GitHub Desktop app that shows the change made, and add it to your `hw2_<yourname>` folder. Commit the change with an appropriate message and push the change to GitHub ("push to origin"). Open a web browser, go to your GitHub account, phz3150/homework/ and make a screenshot that shows you added the file. Add the screenshot to your `hw2_<yourname>` folder.

4. (**10 points**) After closing your final entry in your log, and you are satisfied with everything, make a copy of all screenshots and the log into your `handin/hw2_yourname` folder. Zip the `handin/hw2_yourname` and turn the zip file in Webcourses.