UCF Physics PHZ 3150: Introduction to Numerical Computing
Fall 2021 - Homework 3
Due September 9 2021 12pm.

Problem 1 (**5 points**). Make a new folder named `hw3_<yourname>` under you `handin` folder. For this assignment, your log is (still) the "main homework file". In one of the entries, it should identify the start and end of HW3 and list the problem numbers in order. After each problem number, give your answer and the names of any files you are handing in for each problem. If you made a HW3 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.

Problem 2. (**10 points total**) Either in your terminal or the simulator (https://copy.sh/v86/) do the following to practice using the Unix command line. For each question write in your log the command you used to do this.

a) (**2 points**) Make a directory called hw3_<username>. Make this directory your current directory. List it (it should be empty). Write in your log the commands you used to do all these.

b) (**2 points**) Ask the shell for the date and time in one command (note that in the simulator it may return the wrong date/time). Write in your log what you did to do this.

c) (**2 points**) Change your current directory to one level up (e.g., if you are in `handin/hw3_tkaralidi/` go to `handin/`). Write in your log how you did this.

d) (**2 points**) List the current directory. Then remove the hw3_<username> directory using an option that asks you for confirmation for the file deletion. In your log write how you did this.

e) (**2 points**) List the current directory showing the long output format (permissions, groups, time etc). List the current directory showing it in reverse time order and with human friendly file size units. Write in your log how you did this.

Problem 3. (**30 points total**) We will continue our practice using Git. You will add your course directory (`phz3150/`) to a new repository. Note that to add a new repo from the GitHub Desktop app, you can go to File → New Repository → then, in the pop up window name your repository and determine its local path (e.g., where `phz3150/` is in your laptop). Then you can publish your repository to your personal GitHub account

(chose “organization: None” option). If you now go to the GitHub webpage, it will appear under your repositories.

a) (**3 points**) If you haven’t done so yet, set up the repository (including setting your name and email for the Git log). Explain how you did it in your log (use past notes, or from memory if you have already done it).

b) (**10 points**) Put your log under revision control. In your log explain how you did this in detail. Your log should contain information about how you added the file to the list of files Git keeps a track of, how you committed the file (including the commit message) and how you made sure there is a backup on GitHub.

c) (**5 points**) Put your `handin` folder and its contents under revision control. Explain how you did this in your log.

d) (**5 points**) If you don’t have it already, get test.dat from Webcourses. Move it to your `hw3_<yourname>`. Then, print the status of the repository or get a screenshot that shows the status of the repository on the GitHub Desktop app (i.e., that something was added). Commit the change with an informative comment. Once done, remove the test.dat file from the `hw3_<yourname>` directory.

e) (**5 points**) Make two more changes to the content of your `handin` folder, such as the edits for this homework assignment to your log. Commit each of them with an informative log message summarizing what you did.

f) (**2 points**) Print the commit history for your log (showing all the commit messages, when they were made, and by whom).

Problem 4 (**10 points**). Prepare and submit your homework. Write what you will do to make and submit the zip file into your log. Don’t forget to also commit your finalized log and push it to GitHub. When satisfied, close the log, copy it to your homework directory, and run the commands to make and submit the zip file. Turn the file in on WebCourses.