Homework Guidelines

Physics 129 Spring 2022

To turn in your homework, you will email a single archive file to `129tas@elo.physics.ucsb.edu` . Here is how that should be done:

1. Create a directory for your homework. The directory name should be your last name followed by an underscore, followed by the word "homework", all in lower case. For instance, if your name is Enrico Fermi,

   ```
   cd
   mkdir fermi_homework
   ```

2. For each problem set, you will create a subdirectory:

   ```
   cd ~/fermi_homework
   mkdir fermi_hw1
   mkdir fermi_hw2
   ```

   be sure the subdirectory names also include your last name.

3. For each numbered problem in the set, you will create a corresponding text file, which should contain answers to everything you are asked in that particular problem. The name of the file should be the problem number preceded by the letter `p`, followed by an underscore and the name of the set. If you are asked for a program or other type of answer, create the appropriate file (for example, `p2_hw6.py` for a Python program).

   ```
   cd ~/fermi_homework/fermi_hw1
   vi p1_hw1.txt   (do some text editing)
   ```

4. When you are ready to turn in your homework, create a .tar archive file, the name of which includes your last name:

   ```
   cd ~/fermi_homework
   tar -zcf fermi_hw1.tar.gz fermi_hw1
   ```

5. Check to make sure the tar file has all of your work:

   ```
   cd ~/fermi_homework
   tar -ztf fermi_hw1.tar.gz
   ```

6. Compute a checksum for the tar file:

   ```
   cd ~/fermi_homework
   md5sum fermi_hw1.tar.gz
   ```

7. The output will look something like this:

   ```
   f4468281ff4beeb20de8c58dce0b6bee  fermi_hw1.tar.gz
   ```

   Email the tar file to `129tas@elo.physics.ucsb.edu` before the deadline and include the checksum in the body of your message.

8. Back up your homework submissions:

   ```
   cd
   mkdir oldhw
   mv fermi_homework/fermi_hw1.tar.gz oldhw
   ```

You must turn in a plain-text answer file for each problem, containing at a minimum the output of any program you are asked to write, or if the problem does not involve writing a program, an explanation of how you got your answer. This will be graded.

Unless otherwise specified, all programs must be written in Python, version 3, and all plots and images must be turned in as Encapsulated PostScript (EPS) files. **You must be the sole author of any code you turn in for this class.** The only exception is that you may use code from the example programs in the course Python directory on your Raspberry Pi.

If a program's output is not text, then typically you will be asked to turn in a separate file containing the output. In that case, your text file should include a description of how your program was designed, and how it works. The text file is also a good place to describe aspects of your code that may not be obvious, for instance how you optimized it by flattening loops, and how much better the performance then was. You can also describe problems you are aware of but were not able to fix, or ideas you were unable to implement.

If your output is in a separate file and your program for the problem contains detailed comments, you can note this in the text file and include only a brief overview. You must turn in both your program code and an answer file for any problem that asks you to write a program.

All code you turn in must run from the command line on a Raspberry Pi 4 set up for Physics 129. Please use only 7-bit ASCII text in the files you turn in (only English characters). Better answers and code will get better grades.

It will often happen in the homework for this class that you will run across shell commands or Python statements, functions, and methods that have not been mentioned in lecture, nor in the reading assignments. You will then need to look these up and figure out how they work. Use the `man` command, your textbooks, and web searches. For commands such as `alias`, which are built into `bash`, you can use the `help` command.

In the case of Python, the official documentation is very helpful. If you encounter a new statement, try here:

https://docs.python.org/3.9/genindex.html

For more general questions, here:

https://docs.python.org/3.9/ .