

Technical Homework 3

PHY410: Do problems 1 and 2

PHY 505: Do all three problems.

Accept the assignment from github classroom: <https://classroom.github.com/a/ynitFqge> . You will then get a link to your own github area.

You should submit your code through github classroom. Submit your writeup, and a link to your github classroom area where your code is, on UBLearns.

Be sure to have a github account and link it to your assignment.

To submit your code:

```
git clone <insert the link to your code here>
mkdir Assignment3
cd Assignment3
<do your coding>
git add <insert filename here>
git commit -m"<Add a descriptive message here>"
git push origin master
```

Note: do not directly cut and paste the text in angled brackets above, you must insert your actual filenames and other relevant information.

My example is (and yours will be different):

```
git clone https://github.com/ubsuny/technical-assignment-3-rappoccio
cd technical-assignment-3-rappoccio
mkdir Assignment3
cd Assignment3
git add Problem1.cpp Problem2.cpp Problem3.cpp
git commit -m"I hope I passed"
git push origin master
```

Please name your files after the problem number like "Problem1.cpp", "Problem2.cpp", etc. If you are using the same code for multiple problems that's fine, just pick one name.

Problem 1:

Suppose you have a set of 2-d input vectors . Write a program that loops over the input vectors and finds the pair with the minimum pairwise distance. Print it to the screen. The list of vectors should be input from the command line like this:

.myexe 0 0 1 2 3 4 0 1

Problem 2:

Create a program that calculates the factorial of an unsigned integer, if the integer is less than 20. This should use a function called "factorial" that computes the factorial.

Problem 3 (PHY505 only):

Repeat Problem 2, but if the input is larger than 20, create a function called "Stirling" that will use Stirling's approximation to compute its logarithm instead.