

In the name of God

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COMPUTATIONAL PHYSICS

Exercise Set 1

(Due Date: 1401/12/02)

1. Shell script experiences: write proper shell scripts to do following tasks:
 - A** : Make a directory for every given python file with its name, and move the file into associated directory. Then run mentioned python file and save the elapsed running time into a file named "time+index" (e.g. for "file2.py" it should be "time2") inside that directory. Then make a list of all times written in a separate file in the given root directory.
 - B** : Write a proper shell script to print the content of each file inside each directory in order, to clarify the corresponding sentence. Then write the sentences with order same as for directory to a file named "sentence.txt".
 - C** : Loops.
 - D** : Making directory and file.
 - E** : Reading from file and writing in another file.
 - F** : Run a simple program.
2. Rounding error in computer: Suppose to have single precision for floating point representation. In this case compute $5.5+10^{-8}=?$ (Hint: to this end use floating point representation and then add two representations).
3. Floating point representation:
 - A** : For Single precision paradigm, compute minimum and maximum values of a positive number (except to "0" and "+∞")
 - B** : For Double precision paradigm, compute minimum and maximum values of a positive number (except to "0" and "+∞")

Good luck, Movahed
