CS 4 Computer Science Bootcamp
Summer B 2019

Lab 1: Introduction

The purpose of the lab is to obtain your COE account and to locate and experiment with some applications that we will need in the subsequent labs. The computer lab is located in Phelps 3525. We will help you to create your account and experiment with Linux, Python, and Mathematica.

1. COE Account Creation
    a. Open your browser and click on this link: https://accounts.engr.ucsb.edu/create
    b. Enter your UCSBNetId and Password
    c. Follow the steps to set your account

2. Once you have COE account, run and experiment with
    a. Basic UNIX commands
    b. A text editor, such as vi, vim or emacs
    c. A hex editor, okteta
    d. Python IDLE programming platform
    e. Mathematica

3. Basic Unix commands to learn: `ls` (options `–l –F`), `pwd, cd, grep`

4. Run the text editor; create and save text files; check the size in bytes using `ls -l`

5. Run the hex-editor; create and save text files; check the size in bytes using `ls -l`

6. Run Python IDLE and learn the following operations and functions:
    a. Arithmetic with integers `(+, -, *, /, //, %, **)`
    b. Functions: `print()`
    c. Simple for loops: `for i in range(10):`
    d. Creating variables to store integers, and performing arithmetic
    e. Functions: `bin(), hex()`
    f. Entering binary and hex numbers
    g. Creating variables to store characters or string
    h. Functions: `len(), chr(), ord()`

7. Run Mathematica and learn the following operations and functions:
    a. Arithmetic with integers `(+, -, *, /, ^)`
    b. Creating variables to store integers, and performing arithmetic
    c. Functions: `Prime[], PrimeQ[], FactorInteger[]`
    d. Plotting: `Plot[x^2,{x,-1,1}]`
    e. Plotting: `ListPlot[Table[Prime[i],{i,1,20}]]`

This lab does not require a report. Participation is necessary and sufficient.