

# CS 4400: Computer Systems

## Lecture 1 Problems

*Reminder:* The solutions to these problems, along with the solutions to the problem set for Lecture 2 (see class website), are due at 1:25p on Monday, August 27. Submit using the `handin` program on a CADE machine (see below).

1. (a) *Subscribe to the CS 4400 class mailing list.* This mailing list will be used by the course staff to inform the entire class of any clarifications to assignment specifications, as well as, to send useful hints. Students may not send mail to the list. Go to <https://sympa.eng.utah.edu/sympa/info/cs4400> and subscribe using an email address that you check regularly.

**Question:** What is the email address that you used to subscribe? (This will be used to verify your subscription.)

- (b) *Become familiar with the `handin` program on the CADE machines,* which will be used to submit all CS 4400 work. Execute `man handin` to read the on-line manual page explaining `handin`. In particular, read about submitting files, recounting submissions, and listing existing subdirectories (i.e., assignments for which you may submit).

**Question:** What does the comment for `lab1` say?

Answer the questions in 1(a) and (b). Save your answers to a file in PDF format and submit to the `ps1` subdirectory using `handin`.

2. *Become familiar with how to edit, compile, and execute C programs.* Write a C function `string_length` that takes as input a string and returns as output the number of characters in the string. The input parameter must be of type `char*`, and you may assume that the string is terminated by the null character.

Place your `string_length` in a C file that includes a `main` method containing at least five tests of the function. For example, the call `string_length("hello world")` should return 11, and the call `string_length("5")` should return 1. (Of course, you should think of five additional tests.)

If you are not already familiar with C, plan to make use of a C-language reference (such as the recommended CS 4400 book) to help solve this problem. On a CADE machine, `emacs` is an easy-to-use editor, and `gcc` is the go-to C compiler. Use the on-line manual pages and web searches to learn more about both.

Suppose that your C file is called `lec1_ps.c`. Type `gcc lec1_ps.c` to compile the program, which produces an executable file called `a.out`. To run the executable, simply type `./a.out`. Submit your C file to the `ps1` subdirectory using `handin`.