CS201 Spring 2019 (Karavanic)
Homework #4 Due: Wednesday May 8 AOE

Part A: C Programming exercises

1. This problem refers to the code "WhatIf" from lecture May 2. Each question assumes you are starting with the original version of the code. You need only submit your answers to the questions.

(a) Remove the final "else", compile and run. Does the output change when you run with the correct number of arguments? Does the output change when you run with too many arguments?

(b) What is the result of removing the parentheses in line 9?

c) What is the result of removing the { in line 7 and the first } in line 9? What is the result of removing the { in line 9 and the } in line 16?

2. This problem refers to the code "SwitchItUp" from lecture May 2. Each questions assumes you are starting with the original version of the code.

(a) Remove line 19 (the break). What is the result of running with input "a"? What is the result of running with input "I"?

(b) Write a new program, "SwitchItDown" as follows. Write a new function "tolower" that takes one argument, a char, and returns a char. Given an input of an uppercase letter, it should convert it to lowercase. Given an input of lowercase, it should simply return the value unchanged. Submit your source code. [Hint: Remember that the alphabet is represented with ASCII]

Part B: Problems from B&O:

3.58, 3.60*, 3.63, 3.65

*NOTE: The book has an error for problem 3.60. In function loop, argument n should be declared as being of type int. (line 1 should read "long loop (long x, int n)"

Turning in Homework

You will turn in your assignment ONLY electronically, following the instructions below. Submission is due at the beginning of class on the day the assignment is due.

- **Electronic submission:**
- **Email address:** Electronic submissions should be sent to karavan at pdx.edu.
- **Subject line:** Use the subject line with three words in the following format (without the angle brackets): ***dueA<n>, <Your CS login name>, <Your last name>*** where <n> is the assignment number (1, 2, 3, etc.). For example, Subject: dueA1, wuchang, Feng. where dueA1 indicates this is for assignment 1, wuchang is my CS login name, and Feng is my last name.

- **The tar file:** Your electronic submission will be packaged as a tar file with your CS login name. For example, suppose your CS login name is "john". Your tar file will be called "john.tar". Once the TA untars the file, a directory "john/" will be created and your submitted material will be extracted to the directory "john". To create the tar file for each assignment, first you need to create a directory with your name and put your submission in that directory. See instruction for making the tar file. **Note if the TA cannot recover the directory with your login name or cannot compile your program, you are not considered to have turned in your project.**

• **Directory content organization:** Once you've created the directory with your name described above, you will organize your files in the directory as follows:

Your answers for all non-programming problems should be in a single plain text file. Clearly label the problem number in your file.

Each programming problem will have its own directory. Name each directory such that it's easy to know which problem it is for (e.g., P2 for problem 2). Place source code files, header files (if any), Makefile, and typescript in the directory.

Do not include any binaries or unnecessary files with your submissions.

• **Email attachment:** Send only your tar file in the *attachment* of the email. Note that you may submit your assignment multiple times if ncessary before it's due, although this is not encouraged. In the case of multiple submissions, we'll just use your last submission for grading.