EECS 338 Homework 1: Using Linux and C

General requirements:

- Due at 11 PM on the posted due date.
- Create a typed document (.txt or .pdf) with answers to the questions.
- Upload your document to Blackboard.
- *Don't upload the program files this time, because I provided them. You do not need to modify them.*
- All work should be your own, as explained in the Academic Integrity policy from the syllabus.

Instructions: The purpose of this assignment is to become familiar with compiling and running C programs, as well as using a process monitor like "top". The four programs below are provided for you. Answer the questions that follow. Note that the "top" command may not work on your particular Linux environment. You are encouraged to use eecslinab3.case.edu as described in Tutorial #1. The programs are:

- sleep.c
- input.c
- for.c
- while.c

Questions:

1. Run all four programs simultaneously (use *./program* &). Describe what you see with regard to CPU usage. Copy and paste the text from "top" to show what you saw.

2. Run multiple instances of "for.c" and "while.c". Describe what you see with regard to CPU usage. Copy and paste the text from "top" to show what you saw.

3. Close all of your terminal window(s) without terminating the programs. Are they still running when you login again? Provide a possible explanation for what you find. Copy and paste the text from "top" to show what you saw.

Tips:

- When using "top", the "-u <username>" option filters out processes from other users. However, other users' programs may affect what you see for your own programs.
- Most terminal windows have a way to highlight and copy the text. Learn how to copy/paste this text without copying the screen as an image. It's a useful technique.
- Remember to terminate (pkill or CTRL-C) instances of "input.c" and "while.c" when you are done. You may need to use "sudo pkill" as explained in class.
- For #3, you may may get different results depending on which OS you use for your terminal window (Mac vs. Windows vs. Linux). That's OK!
- Sort by PID (SHIFT-F for sort options, "a" to select PID for sort key).

Grading Rubric:

Item	**Points**
1. Results included for all four programs	40
1. Written description of results stating percentages	10
2. Results included	10
2. Written description of results stating percentages	10
3. Answer: running or not running	10
3. Explanation	10
3. Results from "top"	10
Total	100

Note: Reasonable responses will receive full credit.