uOttawa General Engineering (GNG)

GNG1106 - Lab 2

Objectives

1. Become fluent with the process of creating, revising, compiling and running a C program.
2. Learn to use stdio (standard input/output) functions, printf() and scanf().
3. Learn to use variable declaration and assignment and understand three types: int, float, and double.
4. Create informative variable names and file names, and use indentation.
5. Experiment with programming arithmetics.

Instructions

1. (20%) You must have submitted your pre-lab before you come to the lab.
2. (Deliverable 1: 20%) Create the C code of the following program. The program first prompts the user to enter an integer length of a rectangle, and then prompts the user to enter an integer width of the rectangle, and finally prints the length and width that the user has entered. Build and run the program. The execution of the program may look like below, Run the program twice with different user inputs, take screen shots of your program's execution results and save them together with the C code in a PDF file.

```
Please enter the length of the rectangle in centimeter (integer only)
25
Please enter the width of the rectangle in centimeter (integer only)
4
Ah, the length and width of the rectangle are respectively 25 cm and 4 cm
```

3. (Deliverable 2:10%) Copy your C code in Step 2 to a new file and then modify the new file so that the program only prompts the user once, asking for both length and width (both integers) in centimetre, and then prints the length and width that the user has entered. Build the program. Run the program twice with different user inputs, take screen shots of your program's execution results and save them together with the C code in a PDF file. Submit the PDF file.
4. (Deliverable 3: 20%) Create the C code of a program that performs the same task as that in Step 3 except that the variables representing length and width must have type float. Build the program. Run the program twice with different user inputs, take screen shots of your

program's execution results and save them together with the C code in a PDF file. Submit the PDF file.

5. (Deliverable 4: 20%) Revise the code in Step 4 by making the variables representing length and width have type double. Build the program. Run the program twice with different user inputs, take screen shots of your program's execution results and save them together with the C code in a PDF file. Submit the PDF file.
6. (Deliverable 5: 10%) Revise the code in Step 5 so that the program prints one extra line at the end, indicating the area of the rectangle. Run the program twice with different user inputs, take screen shots of your program's execution results and save them together with the C code in a PDF file. Submit the PDF file.

Check out and Submission

You must check out with your TA before submitting the deliverables. During the check out, your TA may inspect your work and to-be-submitted deliverables, and ask you questions to further check your understanding. At the end of the check out, your TA will give you an initial mark for the in-lab component of this lab and let you know. You must then submit the deliverables before the due time of this lab. While this initial mark is likely to be the final, your TA reserves the right to reduce this initial mark after checking more carefully the deliverables you submit.

Grading Criterion for Each Programming Exercise

- Correctness (80%)
- Variable and file naming (10%)
- Indentation (10%)