

# ECOR 1606 Problem Solving and Computer Programming

## Lab 4

### Objectives

Because the midterms are this week, the objective of the lab is to avoid any new material and provide opportunity for revision in the key areas of data types, data operations and if-conditional statements. The parts of the lab are intentionally chosen to reflect the variety of questions that you may see on a midterm or final exam: some questions are very specific and involve mostly syntax, and other questions are problem-centred and require you to decode the underlying logic or math **before** programming.



A discussion forum has been setup for the labs to help spread information about commonly encountered problems, both with Pelles and with the lab content itself. Please\

- Read this forum before asking for help
- Contribute to this forum by posting solutions to a problem that a friend or TA helped you fix.

### Lab Setup

- Submit files: **lab4a.c** and **lab4b.c**
- **Suggestion:** Practice submitting partial portions of the lab, in case you have to know how to do this in a lab exam. For instance, submit Part A's file before completing Part B's. The SUBMIT program will request multiple files and you will have to supply empty versions of the incomplete portions.

### Part A Programming Syntax (Submit lab4a.c)

Test your understanding of if-statements by actually running the code for some of the Quick-Check exercises given in Chapter 4 of the textbook (both Edition 6 and 7).

1. Prepare a new program that simply prints "hello". Copy-paste the **boiler-plate** code from some previous lab or assignment (#include, main, etc)
2. **On paper**, write down your answers for Exercise 12. If you skip this step, you are wasting an opportunity for testing yourself!
3. Add in the code for Exercise 12, first the code-version on the left, and second the code-version on the right.
4. Before each version, make sure to initialize the variable x to 1
5. After each version, print out the current value of the variable x (A great exercise in writing printf!)
6. Do the printed values match your answers?
7. Do the same sequence not for Exercise 13(a) – the first version should be **WITH** parentheses; the second version **WITHOUT**.
  - a. You are not responsible for Part c.

## **SUBMIT PART A**

### **Part B: Problem Solving (Submit: lab4b.c)**

Prepare the program solution for Programming Project 6, Chapter 4 (Selection Structures), Edition 6 and 7. There are two changes from the textbook

1. To make your task easier, do NOT prompt-and-input the x-y coordinates (i.e. do not use scanf). Instead, simply hard-code initialize the coordinate variables to the shown values and re-build the program to test with new values
2. As well as the two test cases shown, prepare your own additional test cases to make sure your code works for all four quadrants and the two axis. Document every combination that you try in a header-comment at the top of your program.

### **Marking Scheme**

No mark is confirmed unless the TA has a written note of it BEFORE you leave the lab, AND you have submitted your program on the submit program.

0 marks: Absent or so incomplete that the major topics of the lab have not been completed or demonstrated

1 mark: Present but minimal work was achieved or the student is independently unable to describe the work s/he has done

2 marks: Solution is mostly correct, but is missing one key topic area OR has not been submitted

3 marks: Solution covers all key topic areas AND has been submitted

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