

This assignment requires you to write a C++ program and a Java program. See

<http://www.cslab.pepperdine.edu/warford/cosc450/cosc-450-Setup-for-Cpp.pdf>

for the C++ setup, and

<http://www.cslab.pepperdine.edu/warford/cosc450/cosc-450-Setup-for-Java.pdf>

for the Java setup.

1. Study Ben-Ari, Chapter 3.
2. Write a C++ program named `Count3.cpp` that adds a third process to Ben-Ari, Algorithm 2.9, page 30, that also loops  $m$  times and increments  $n$ . Note that the program will produce correct results when the final value of  $n$  is  $3*m$ .

Experiment with the program and with `CountA.cpp` to answer the following questions.

- (1) For what value of  $m$  does `CountA.cpp` begin to produce incorrect results?
- (2) For what value of  $m$  does `Count3.cpp` begin to produce incorrect results?
- (3) Would you expect there to be a difference between these two values?
- (4) Was there a difference between these two values?

Put the answers to these questions in the comment section at the bottom of `Count3.cpp`.

To hand in C++ programs in this course modify the source file in the distribution, duplicate the file to be handed in, prepend the duplicated file name with your two-digit course ID, and hand it in electronically. For this problem, hand in

`Count3.cpp`

3. Write a Java program named `Count3.java` that adds a third process to Ben-Ari, Algorithm 2.9, page 30, that also loops  $m$  times and increments  $n$ .

Experiment with the program and with `CountA.java` to answer the following questions.

- (1) For what value of  $m$  does `CountA.java` begin to produce incorrect results?
- (2) For what value of  $m$  does `Count3.java` begin to produce incorrect results?
- (3) Was there a difference between these values and the corresponding ones for C++?

Put the answers to these questions in the comment section at the bottom of `Count3.java`.

All the Java programs for this course are in the following distribution

<http://www.cslab.pepperdine.edu/warford/cosc450/cosc450JavaDistr.zip>

in an IntelliJ IDE directory. To hand in Java programs in this course modify the source file in the distribution, duplicate the file to be handed in, prepend the duplicated file name with your two-digit course ID, and hand it in electronically. For this problem, hand in

`Count3.java`