

Homework 5

Chapters 9, 10, 11, 12

1. (5 pts) Write a C# program that includes two methods that are called a large number of times. Both methods are passed a large array, one by value and one by reference. Compare the times required to call these two methods and explain the difference. Be sure to call them a sufficient number of times to illustrate a difference in the required time. Analyze the running result and reasons caused it. Put code into **problem1**
2. (5 pts) Write a program, using the syntax of whatever language you like, that produces different behavior depending on whether pass-by-reference or pass-by-value-result is used in its parameter passing. Analyze the differences by looking at the related variable status/value. Put the code into **problem2**
3. (5 pts) Chapter 10, problem 3.
4. (5 pts) Write an abstract data type for queues whose elements store 10-character names. The queue elements must be dynamically allocated from the heap. Queue operations are enqueue, dequeue, and empty. Use either C++, Java. Put the code into **problem4**
5. (5 pts) Design and implement a C++ program that defines a base class A, which has a subclass B, which itself has a subclass C. The A class must implement a method, which is overridden in both B and C. You must also write a test class that instantiates A, B, and C and includes three calls to the method. One of the calls must be statically bound to A's method. One call must be dynamically bound to B's method, and one must be dynamically bound to C's method. Put the code into **problem5**

To submit (1 pt):

- Create a folder titled LastNameHW5
- In the folder create a subfolder named Code. Place all sources files for all tasks in the Code subfolder
- Create a single document (pdf only etc.) Place the written answers to all the problems and questions in this single document. Make sure each problem and part are clearly labeled. Include your name at the beginning of the document.
 - o Title this document LastNameHW5Answers
 - o Save this document in the LastNameHW5 folder
- Zip the LastNameHW5 folder
- Submit the zip through the assignment mechanism.