SPRING 2007

CSC 120.02 Introduction to Computer Science

Assignment 5

Due: March 27, 2007

Algorithms: Sorting

(20 points)

1. Download Java SE JDK 6 from http://java.sun.com, install it and select it for BlueJ if needed.
2. Download BubbleSort.zip from ANGEL
3. Unzip BubbleSort.zip into BlueJ's examples directory
4. Open the BubbleSort project in BlueJ
5. Open the editor window for the ListOfIntegers class
6. Bubble sort is an algorithm that can be described in pseudocode as follows.

```
Set current to index of first item in the list;
do
{
  Set the value of  a boolean variable named swap to false;
  for (index going from (listLength-1) to (current+1))
  {
    if (list[index]<list[index-1])
    {
      Swap list[index] and list[index-1];
      Set the value of swap to true;
    }
  }
  Increment current to shrink the unsorted portion of the list;
}
while ((current<(listLength-1))&&swap);
```

   Implement bubble sort as a method in the ListOfIntegers class so that a separate Swap method for swapping two elements of the list is also implemented as part of the same class and invoked.
7. Test and debug your implementation of the bubble sort algorithm.
8. From ANGEL, email me the text of your ListOfIntegers.java file **as plain text**. It should contain, among other things, the texts of your Swap and BubbleSort methods. 20 points will be awarded for having submitted a correct code.