Queens College, CUNY
Computer Science 212 – Fall 2019 – Exam 1

Last name_____ First name_____Row:____Seat:_____

Question 1: (25 pts.)

Write a complete **main** method that does the following:

1. Takes any number, but at least two, command line arguments which are numbers (represented as strings) and determines if the numbers are in sorted order, printing a message to the console. (Hint: loop through the args array)
2. If there are not at least two command line arguments, throw an IllegalArgumentException with an appropriate message.

For example,

```
C:>java Question1 2 8 10 17 29 100
The numbers are in sorted order.
```

```
public class Question1 {

      public static void main (String args[]) {


            if (args.length < 2) throw new IllegalArgumentException("Too few arguments");
            boolean sorted = true;
            for (int i=0; i< args.length-1; i++)
                  if (Integer.parseInt(args[i]) > Integer.parseInt(args[i+1])) sorted = false;
            if (sorted)
                  System.out.println("Numbers are sorted");
            else
                  System.out.println("Numbers are not sorted");









      } //main
} // class Question1
```

Question 2: (25 pts.)

Write a method called *findLongest* that takes a two-dimension array of integers as a parameter and returns the index of the longest row in the array. For example, if the array (as created by the program below) is

```
10 45  3  8
 2 42
 3 21 44
```

The value returned would be 0

```
public class Question2 {
   public static void main(String args[]){

      int arr[][] = {{10, 45, 3, 8}, {2, 42}, {3, 21, 44}};

      System.out.println("The longest row is at index "+findLongest(arr));

   } //main
   public static int findLongest (int [][] myArray) {


      int longestRow = 0;
      for (int i=1; i<myArray.length; i++)
          if (myArray[i].length > myArray[longestRow])
             longestRow = i;
      return longestRow;









   } // findLongest
} // class Question2
```

Question 3: (25 pts.)

Write a main method that will request the user to enter Strings using a JOptionPane input dialog. The method should continue accepting strings until the user types “STOP”.

Then, using a JOptionPane message dialog, tell the user how many string of length 10 were entered.

```
public class Question3 {

   public static void main (String[] args) {


   String input = "";
   int count = 0;
   while (! input.equals("STOP")) {
       input = JOptionPane.showInputDialog(null,"Enter a string");
       if (input.length() == 10)
          count++;
   }
   JOptionPane.showMessageDialog (null,"There were "+count+" strings of length 10);
```

Question 4: (25 pts.)

Write a class called **Window** that contains the following information:

1. Private instance variables for the height and width of the window (int).
2. A two-argument constructor to set each of the instance variables above. If the height or width is negative, throw an IllegalArgumentException stating the argument that is not correct.

3. Get and Set methods for each instance variable with the same error detection as the constructor.

```
public class Window {
```

```
private int width;
private int height;

public Window(int w, int h) {
  if (w<0 || h <0) throw new IllegalArgumentException ("Bad height or width");
  width = w;
  height = h;
}

public int getWidth() return width;

public int getHeight() return height;

public void setWidth(int w) {
  if (w<0 ) throw new IllegalArgumentException ("Bad width");
  width=w;
}
public void setHeight(int h){
  if (h<0 ) throw new IllegalArgumentException ("Bad height");
  height = h;
}
```

Continue your answer for question 4 here as necessary…