Assignment 6: Reading and Programming Project due Thursday, 10/17

Reading Assignment

Read Sections 6.1, Array Basics, and the subsections of Chapter 6 on pages 400-411 of the textbook completing self-test exercises.

Programming Assignment

This assignment consists of one project Merge to practice array traversal and the use of arrays as method parameters/return values.

Merge: Merge Two Sorted Arrays into One 11:00 p.m. on Thu, 10/17 worth 10 points

In this assignment you will be processing arrays. The user will enter two lists of non-negative integers. Each list should contain numbers in non-decreasing order terminated by -1. If any of the two lists violates the requirements on the input stated above, your program should print the following message:

ERROR: the list elements are not non-negative or not in non-decreasing order.

and terminate immediately. Otherwise, your job is to merge the two lists into one preserving the non-decreasing order of elements, i.e. create and print out an array that contains all numbers from both lists appearing in non-decreasing order.

You must define and use a method that is passed (at least) two arrays as parameters. This requirement counts for 3 points.

The following interactions present two examples of this program running.

This program merges two sorted lists into one.
Enter the elements of the first list in non-decreasing order.
Enter a non-negative number or -1 to terminate the list: 2
Enter a non-negative number or -1 to terminate the list: 7
Enter a non-negative number or -1 to terminate the list: 10
Enter a non-negative number or -1 to terminate the list: 11
Enter a non-negative number or -1 to terminate the list: -1

Enter the elements of the second list in non-decreasing order.
Enter a non-negative number or -1 to terminate the list: 3
Enter a non-negative number or -1 to terminate the list: 8
Enter a non-negative number or -1 to terminate the list: 5
ERROR: the list elements are not non-negative or not in non-decreasing order.
Here’s another example:

This program merges two sorted lists into one.
Enter the elements of the first list in non-decreasing order.
Enter a non-negative number or -1 to terminate the list: 2
Enter a non-negative number or -1 to terminate the list: 7
Enter a non-negative number or -1 to terminate the list: 10
Enter a non-negative number or -1 to terminate the list: 11
Enter a non-negative number or -1 to terminate the list: -1

Enter the elements of the second list in non-decreasing order.
Enter a non-negative number or -1 to terminate the list: 3
Enter a non-negative number or -1 to terminate the list: 8
Enter a non-negative number or -1 to terminate the list: 9
Enter a non-negative number or -1 to terminate the list: 23
Enter a non-negative number or -1 to terminate the list: 38
Enter a non-negative number or -1 to terminate the list: 45
Enter a non-negative number or -1 to terminate the list: 80
Enter a non-negative number or -1 to terminate the list: -1

Printing the merged list:
2 3 7 8 9 10 11 23 38 45 80

The grading program will look at the last line of your printout and compare it to the correct output, so make sure the last line that your program prints appears exactly as described by the examples above both in case of an error in the input and when the input is correct.