CSC 1051 Lab Projects, Dr. Joyce, Arrays

All programs and support classes should be correctly indented, easy to read, use appropriate identifier names, and otherwise follow good programming convention. For each project you should create and print a report before moving on to the next project.

1. Create a copy of the ReverseOrder.java program from Chapter 7 of Lewis. It is posted on the course web site.
   
   a. Compile and run the program.
   
   b. Change the program so that it uses a list of 5 integers instead of a list of 10 doubles. Compile and run the new program.
   
   c. How’d it go? Circle one: easy OK difficult very difficult

2. Create a program called HoldNumbers01 that will prompt the user for how many numbers they want generated and what is the highest possible number to generate. Assume the user enters positive integers in response to the prompts. The program then generates the numbers, stores them in an array, and writes out the numbers that were stored. For example, a program run might look like this:

   How many numbers >  3
   Highest possible number >  15

   The numbers are:
   12
   5
   7

   a. How’d it go? Circle one: easy OK difficult very difficult

3. Create a program called HoldNumbers02 that is similar to 01 except that it will output the numbers in rows of 8 numbers each. For example, a program run might look like this:

   How many numbers >  20
   Highest possible number >  100

   The numbers are:
   12  45  33  87  1  45  27  29  How’d it go? Circle one:
   94  15  56  8  21  83  13  38  easy OK difficult very difficult
   51  75  20  62
4. Create a program called `HoldNumbers03` that is similar to 02 except that it will also output the average, variance and standard deviation of the numbers. The variance is the average of the squared differences between numbers and their average. Standard deviation is the square root of the variance.

For example if the numbers are 10 20 30
- the average is $60 / 3 = 20$
- the variance is $( (20 – 10)^2 + (20 – 20)^2 + (20 – 30)^2 ) / 3 = 200/3 = 66.7$
- and the standard deviation is the square root of 66.7 = 8.2

a. How’d it go? Circle one: easy OK difficult very difficult

Create a report about your program.