

CS 260

Programming Assignment 1

Each of the following problems is worth 20 points. Create a zip folder containing your solutions to the problems and upload it to Moodle. Remember you get 12 points for having a working solution, 4 points for efficiency, 2 points for programming style (abstraction, data hiding, and comments), and 2 points for robustness (does it properly deal with invalid data and potential exceptions).

You may submit your solution in either Java or C++.

- 1) Create a class for an unordered array of integers. The default constructor will create an array of 100 elements. You should also have a constructor that accepts an integer value for the size of the array and creates an array of that size. You should have methods to add an element to the array (at the next available location), delete the last added element, return the current number of elements, and list the current elements.

You need to also create a main program that exercises this class. Show that you properly deal with potential issues.

- 2) Add a method to this class that returns the largest element and removes it from the array. Assume that the array may contain duplicates and any valid integral value.

Again, you will need to show that it works properly.

- 3) Create an additional method for your array class that removes all duplicate entries.

Again, you will need to show that it works properly and handles potential issues. List the elements of the array before starting and after completion.

- 4) Using the method you wrote in exercise two, create a second array that is sorted from largest to smallest.

List the first array before starting and the second array after completion. Show that your program deals with potential issues.

