Assignment 4

Please read **turn-in checklist** at the end of this document before you start doing exercises.

**Problems To Hand In (Java Implementation)**:

1. We are given an array of n numbers A in an arbitrary order. Design an algorithm to find the largest and second maximum number in A using at most 1.5n -2 comparisons.

**Note: Full credit (30 points) will be awarded for an algorithm that uses at most 1.5n -2 comparisons. Algorithms that make more comparisons will be scored out of 10 points.**

Find a file called Problem1.java in assignment 4 folder.

Complete the method of max2ndmax().

Test your method in the main method provided following the comments.

**Problems NOT to Hand In (Practice Problems):**

The following problems are NOT collected and NOT graded. However, some of these problems will be used in quizzes, so it is in your best interest to do practice problems.

Solutions to practical problems will be discussed AFTER quizzes (To be fair with the class, the instructor will NOT answer questions about practice problems BEFORE quizzes. If asked, the instructor will show similar problems discussed during lectures).

1. Divide and Conquer: Minimum and Maximum

<https://www.techiedelight.com/find-minimum-maximum-element-array-minimum-comparisons/>

1. Divide and Conquer: Integer Multiplication

<https://courses.cs.duke.edu/spring19/compsci330/lecture3scribe.pdf>

**TURN-IN CHECKLIST:**

1. **All your source code\* of “Problems To Hand In”. Remember to include your name, the date, and the course number in comments near the beginning of your code.**

**\* The source code you submit must contain all the files necessary to run your program. These files will typically be***.java***files containing programs.**

1. **Create a folder and name it 'FirstName\_LastName\_assignment\_4'. In the newly created folder copy and paste your files (.java files). Then compress the folder, and push it to Brightspace.**