Lab Assignment #7

Purpose: array manipulation
Collaboration: You should work in a group of two.

Getting started

Change into your cse220 directory
Create a new directory called lab07
Change into the new directory
Implement the two programs below in your lab07 directory

Program 1

Write a program lab7.c as follows:
1. Declare an array of size 5.
2. Read 5 integers from the user and store them in the array.
3. Using a for loop, print the content of the array.
   Verify that all the elements entered by the user are printed correctly.

Modify your program so the array has size 10. Read 10 integers from the user and store them in the array. Then print the content of the array.
How many changes did you have to apply to your program?
Verify again that your program prints all the array content correctly.

Further modify the program so that it works for array of any size (this is called Variable Length Array, VLA in short). Namely, the program will first ask the user for the size of the array, e.g.,

    int n;
    printf("Please enter the size of an array: ");
    scanf("%d", &n);

Then declare an array of size n after the scanf statement. Now read n integers from the user and store them in the array. Print the content of the array.
Verify that your program prints all the array content correctly.

Try to access the content that is out of the array index boundary, e.g.,

    printf("%d\n", a[n]);

See what happens.

Show the TA your program and the results (you only need to show the Variable Length Array part).
Program 2

Write a program lab7-2.c as follows:

First declare and initialize an array with the following values:

\{6,12,5,97,1\}

Then write your program to find/compute the smallest (min) element in the array, the largest (max) element in the array, and the average of all elements. Print these values with a precision of 1 digit after the decimal point. Verify that your results are correct.

Update your program so it also prints the position of the min and max values such as:

The largest element is 97 and is at index 3
The smallest element is 1 and is at index 4
The average is 24.2

Show the TA your program and the results