**Week 2: Week 2 - Assignment**

**CSCI 520 Lab Assignment**

**Programming Assignment  #2**

To be done in the lab

(Friday, Jan. 27, 2017, 12noon-1:40pm , JOUR 102)

Turn in your work in the drop box for Week 2.

In this assignment, you write a C++ program that outputs each number and the farthest (the most distant in magnitude) element in the list from a given list of 20 distinct integers.

For example,

Input: 20  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  1

Output: (20 1) (2 20) (3 20) (4 20) (5 20) (6 20) (7 20) (8 20) (9 20) (10 20) (11 1) (12 1) (13 1) (14 1) (15 1) (16 1) (17 1) (18 1) (19 1) (1 20)

/\* the order of the pairs in the list in the output is not important \*/

Your program must implement the following algorithm:

Read input of N=20 integers into array A

Scan array A as index i runs from 0 to N-1

   calculate the farthest number in A from A[i]

Output each element and the farthest element in list L (i.e. array A)

In this assignment you are asked to implement list L as **an array of size N** such that each element in L is a **structure** that contains an element and the farthest element from that element in array A.

**CSCI 520 Weekly Course Assignment**

**Programming Assignment #2**

Due:  11:59pm, Thursday, Feb. 2, 2017

Turn in your work in the drop box for Week 2.

In this assignment, you write a C++ program that outputs each number and the farthest (the most distant in magnitude) number in the list from a given list of 20 distinct integers.

For example,

Input: 20  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  1

Output: (20 1) (2 20) (3 20) (4 20) (5 20) (6 20) (7 20) (8 20) (9 20) (10 20) (11 1) (12 1) (13 1) (14 1) (15 1) (16 1) (17 1) (18 1) (19 1) (1 20)

/\* the order of the pairs in the list in the output is not important \*/

Your program must implement the following algorithm:

Read input of N=20 integers into array A

Scan array A as index i runs from 0 to N-1

   calculate the farthest number in A from A[i]

Output each element and the farthest element in list L

In this assignment you are asked to implement list L as **a linear linked list** such that each node in L contains an element and the farthest element from that element in input array A, and next fields.  The output  step must traverse L and output information from nodes in L.

Good Luck

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