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/*
  File: array.cpp
  Created by: Isaiah Green
  Creation Date: 10/30/17
  Synopsis: compute the array when the user enters the array
*/

#include <iostream>

using namespace std;

// Global Constant
const int ARRAY_SIZE=20;

// FUNCTION PROTOTYPE FOR read_list
void read_list(int list[], int& count);
// FUNCTION PROTOTYPE FOR print_array
void print_array(const int list[], int count);
// FUNCTION PROTOTYPE FOR find_max
int find_max(const int list[], int count);
// FUNCTION PROTOTYPE FOR array_add
void array_add(int list[], int count, int x);

int main()
{
    //declared variables
    int list[ARRAY_SIZE];
    int max;
    int count(0);

    // call functions
    read_list(list,count);

    max=find_max(list,count);

    cout << endl;

    cout << "Original list (" << count << " values):" << endl;

    print_array(list,count);

    cout << endl;

    cout << "The maximum value is " << max << endl;

    array_add(list,count,max);

    cout << endl;

    cout << "Modified list (" << count << " values):" << endl;

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    print_array(list,count);

    return(0);
}

// DEFINE FUNCTION read_list() HERE:
// this function asks the user to enter as many values as they want but
ends when they put in -99 and only allows 20 numbers to be in the array
void read_list(int list[],int& count){
    int values; // variable created to allow the user to enter numbers
    cout << "Enter non-negative numbers (ints) terminated by -99" << endl;
    while(count < 20){
        cin >> values;
        if (values == -99){
            break;
        }
        else if (values < 0){
            while (values < 0){
                cin >> values;
            }
        }
        list[count]=values;
        count++;
    }
}

// DEFINE FUNCTION print_array() HERE:
// this function show the first 20 values
void print_array(const int list[], int count){

    for (int i(0); i < count; i++){
        if (i== count-1){
            cout << list[i] << "." << endl;
        }
        else{
            cout << list[i] << ", ";
        }
    }
}

// DEFINE FUNCTION find_max() HERE:
//this function will find the max value the user has inputed in the array
and returns that value
int find_max(const int list[], int count){
    int modify; // variable created to be with the first element in the
array
    modify=list[0];
    for(int j(1); j < count; j++){
        if (list[j] > modify){
            modify=list[j];
        }
    }
    return modify;
}

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// DEFINE FUNCTION array_add() HERE:
//this function takes the max and adds 2 to each value
void array_add(int list[], int count, int x){
    for (int k = 0; k < count; k++)
    {

        list[k]+=x;
    }
}
```