**OmCSC 1101 – Problem Solving and Programming Laboratory**

**Lab 18 – Omar Faruk**

**25 points – Due November 17, end of lab**

**a)** Save this document with your name and the lab assignment number somewhere in the file name.

**b)** Type/paste your answers into the document.

**c)** Submit this document to the Canvas item where you downloaded this document.

***Problem Title: min and max array***

You need to write a C++ program to manipulate an integer array. For example,

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Array elements | 10 | 12 | 3 | 4 | 111 | 14 | 16 |
| Index | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

The length of the above array is: 7 (index: 0-6). You need to do the following tasks:

1. Declare an array with length 7.
2. Take the elements of the array from the user.
3. Now, you need to find the minimum number and the index of minimum number of that array.
4. Find the maximum number and index of maximum number of that array.
5. Print the justified output with proper alignment. Look the sample I/O.

You can use the following procedure/algorithm:

1. to find the **minimum** in an array:
2. Set minimum= 99999 (it is a large number)
3. For i=0 to (length-1)

If array[i]<minimum

Set minimum = array[i]

min\_index=i

1. to find the Maximum in an array:
2. Set maximum= -99999 (it is a small number)
3. For i=0 to (length-1)

If array[i]> maximum

Set maximum = array[i]

max\_index=i

**Sample Input/Output:**

**Graphical user interface, text

Description automatically generated**

During submission, you should use the following array:

17, 9, 20, 24,19, 100, 28

*[your program code here]\**

//==========================================================

//

// Title: Array Max & Min

// Course: CSC 1101

// Lab Number: Lab 18

// Author: Omar Faruk

// Date: 11/17/2020

// Description:

// Creating an array with size of 7

// & using for loops to calculate max and min

//

//==========================================================

#include <cstdlib> // For several general-purpose functions

#include <fstream> // For file handling

#include <iomanip> // For formatted output

#include <iostream> // For cin, cout, and system

#include <string> // For string data type

using namespace std; // So "std::cout" may be abbreviated to "cout"

int main()

{

// Declare Constants

const int ARRAY\_SIZE1 = 7;

const int COLFMT1 = 30;

const int COLFMT2 = 5;

// Declare variables

int set\_max = -999999;

int set\_min = 999999;

int index\_min, index\_max;

// Show application header

cout << "Welcome to Min & Max Array!" << endl;

cout << "--------------------------" << endl << endl;

// Declare array

int array1[ARRAY\_SIZE1];

// Array input

cout << "Enter the elements of the array:" << endl;

for (int i = 0; i < ARRAY\_SIZE1; i++)

{

cin >> array1[i];

}

// Minimum & Maximum index and array number

for (int i = 0; i < ( ARRAY\_SIZE1 ); i++)

{

if (array1[i] < set\_min)

{

set\_min = array1[i];

index\_min = i;

}

}

for (int i = 0; i < (ARRAY\_SIZE1); i++)

{

if (array1[i] > set\_max)

{

set\_max = array1[i];

index\_max = i;

}

}

// Print output

cout << setw(COLFMT1) << left << "\nMinimum element is:"

<< setw(COLFMT2) << right << set\_min << endl

<< setw(COLFMT1) << left << "Index of minimum element is:"

<< setw(COLFMT2) << right << index\_min << endl

<< setw(COLFMT1) << left << "Maximum element is:"

<< setw(COLFMT2) << right << set\_max << endl

<< setw(COLFMT1) << left << "Index of maximum element is:"

<< setw(COLFMT2) << right << index\_max << endl;

// Show application close

cout << "\nEnd of Min & Max Array" << endl;

}

*[your program output here]\*\**

