CCS0015L – Data Structures and Algorithms / Lab Activity 1

General Instruction:

Apply the following C++ programming constructs in your code:

- User-defined functions: function with parameter, function returning a value.
- Dynamic Array

Program Specifications.

Part-1.

Application Name	"2D Search Key"
System Input	• 2D Array Dimension: Row, Column • Elements of the 2D Array • Search Key
Data Entry Validation	• Array dimension must be an integer value. • Answer to "Try Again?" is Y, y, N, n only
System Output	• Provide error messages/notification for invalid data entry. • Search key count and location. • Ask the user if he/she wants to "Try Again?" If answer is Y/y then repeat the whole process, else exit from the application.

Sample Screen Output

Input Array Dimension => Row : **3** Column : **4**

Input Array Elements

2 4 6 8

1 1 1 1

2 3 2 3

Search Key : **1**

Search Key Count : **4**

Search Key Location : **[1,0][1,1][1,2][1,3]**

Try Again? **Y**

Part-2.

Application Name	"2D Element Count"
System Input	• 2D Array Dimension: Row, Column • Elements of the 2D Array
Data Entry Validation	• Array dimension must be an integer value. • Answer to "Try Again?" is Y, y, N, n only
System Output	• Provide error messages/notification for invalid data entry. • List of elements and its count. • Ask the user if he/she wants to "Try Again?" If answer is Y/y then repeat the whole process, else exit from the application.

Sample Screen Output

Input Array Dimension => Row : **3** Column : **4**

Input Array Elements

2 4 6 4

1 1 1 4

2 3 2 3

Element Count

1 => 3

2 => 3

3 => 2

4 => 3

6 => 1

Try Again? **Y**