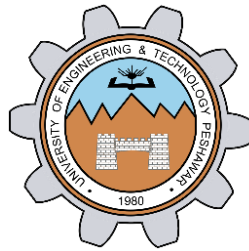# ARRAYS

LAB # 5

Spring 2022

CSE102L Computer Programming Lab

Submitted by: **Ali Asghar**

Registration No. : **21PWCSE2059**

Class Section: **C**

"On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

Student Signature: _____

Submitted to:

Engr. Abdullah Hamid

July 4, 2022

Department of Computer Systems Engineering

University of Engineering and Technology, Peshawar
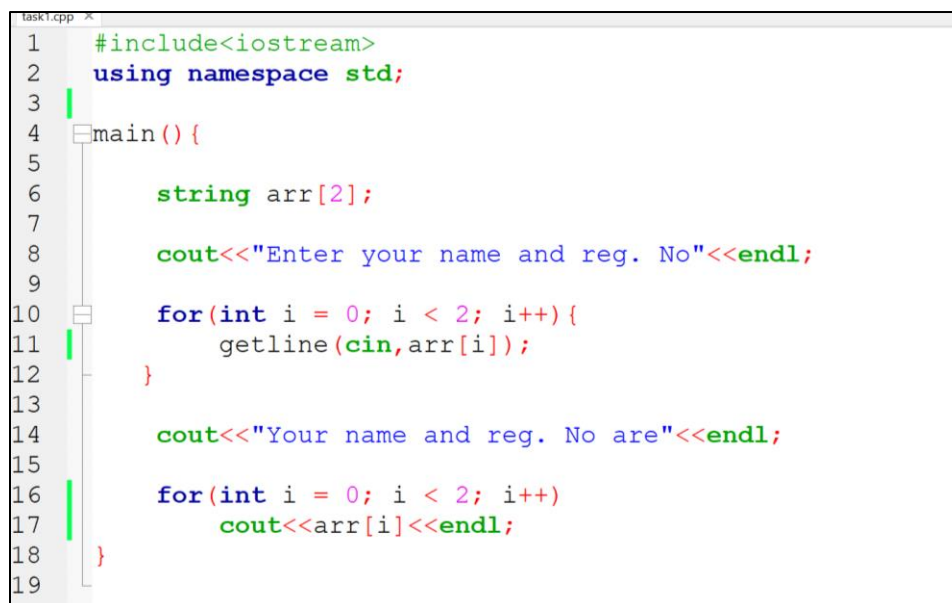
Lab Objective(s)

- To understand the programming knowledge using Array
- To understand the programming using array

TASK # 1:

Title:

Write a program in which you take your registration number and n…….Use loops for input and output.
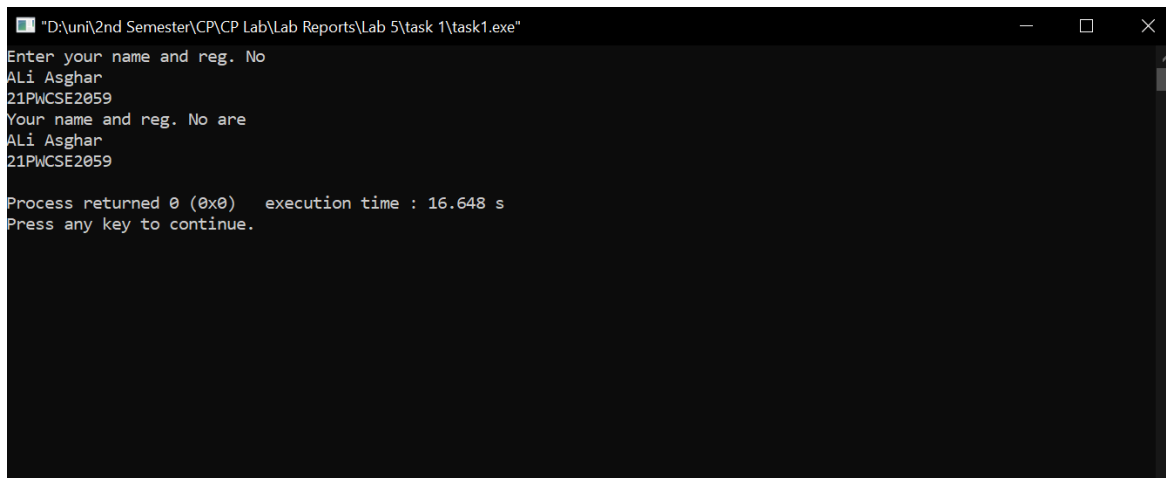
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
task1.cpp
1     #include<iostream>
2     using namespace std;
3
4     main(){
5
6         string arr[2];
7
8         cout<<"Enter your name and reg. No"<<endl;
9
10        for(int i = 0; i < 2; i++){
11            getline(cin,arr[i]);
12        }
13
14        cout<<"Your name and reg. No are"<<endl;
15
16        for(int i = 0; i < 2; i++)
17            cout<<arr[i]<<endl;
18    }
19
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 5\task 1\task1.exe"                    —    □    ×
Enter your name and reg. No
ALi Asghar
21PWCSE2059
Your name and reg. No are
ALi Asghar
21PWCSE2059

Process returned 0 (0x0)   execution time : 16.648 s
Press any key to continue.
```
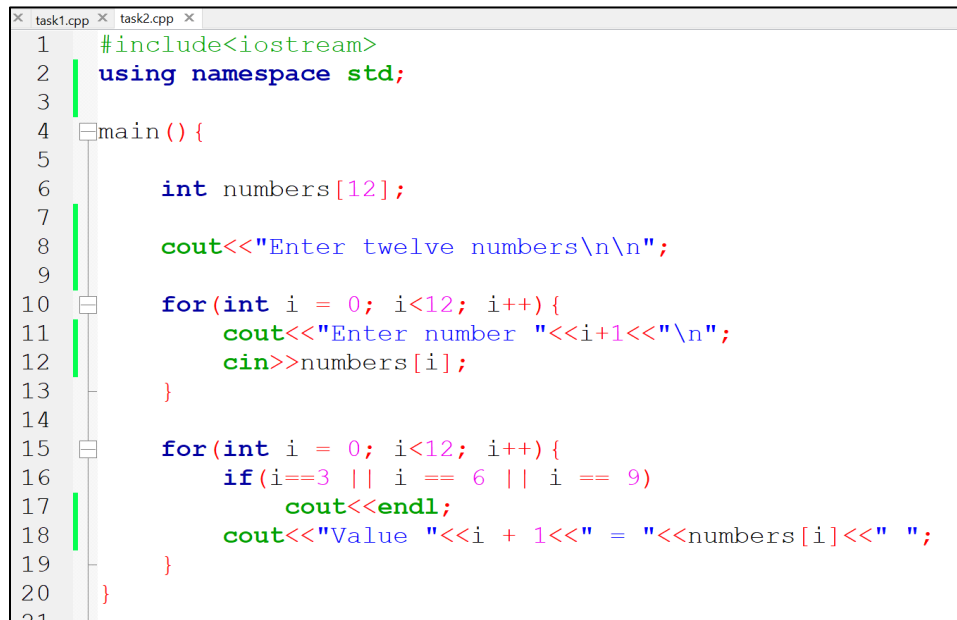
TASK # 2:

Title:

Write a program……………console (3 values in a row) (use separate loops for input and output operation).
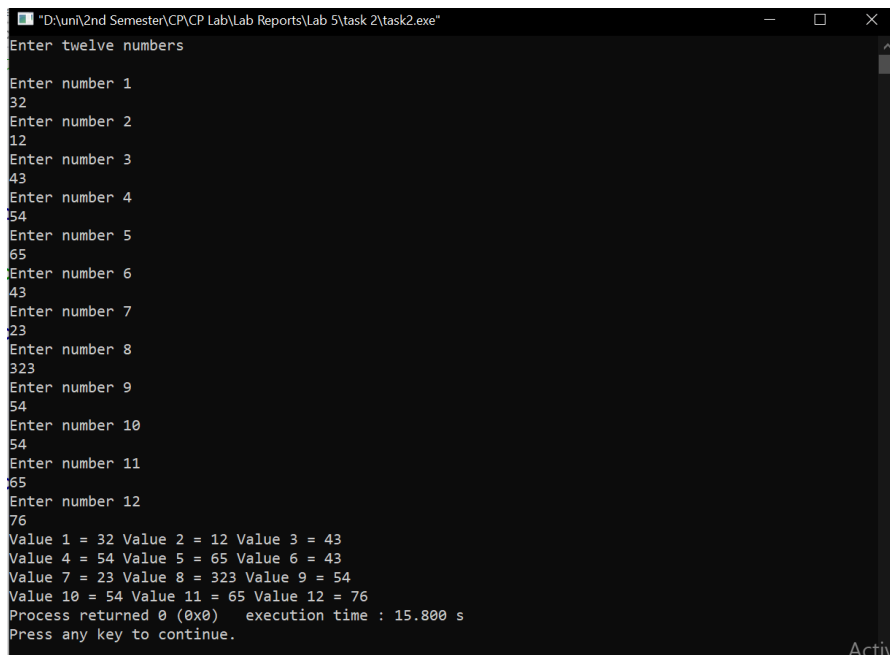
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main(){

    int numbers[12];

    cout<<"Enter twelve numbers\n\n";

    for(int i = 0; i<12; i++){
        cout<<"Enter number "<<i+1<<"\n";
        cin>>numbers[i];
    }

    for(int i = 0; i<12; i++){
        if(i==3 || i == 6 || i == 9)
            cout<<endl;
        cout<<"Value "<<i + 1<<" = "<<numbers[i]<<" ";
    }
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 5\task 2\task2.exe"                    —    □    ×
Enter twelve numbers

Enter number 1
32
Enter number 2
12
Enter number 3
43
Enter number 4
54
Enter number 5
65
Enter number 6
43
Enter number 7
23
Enter number 8
323
Enter number 9
54
Enter number 10
54
Enter number 11
65
Enter number 12
76
Value 1 = 32 Value 2 = 12 Value 3 = 43
Value 4 = 54 Value 5 = 65 Value 6 = 43
Value 7 = 23 Value 8 = 323 Value 9 = 54
Value 10 = 54 Value 11 = 65 Value 12 = 76
Process returned 0 (0x0)   execution time : 15.800 s
Press any key to continue.
                                                          Activ
```

TASK # 3:

Title:

Write a program……………of numbers (use separate loops for input operation and calculation).

CODE SCREENSHOTS:
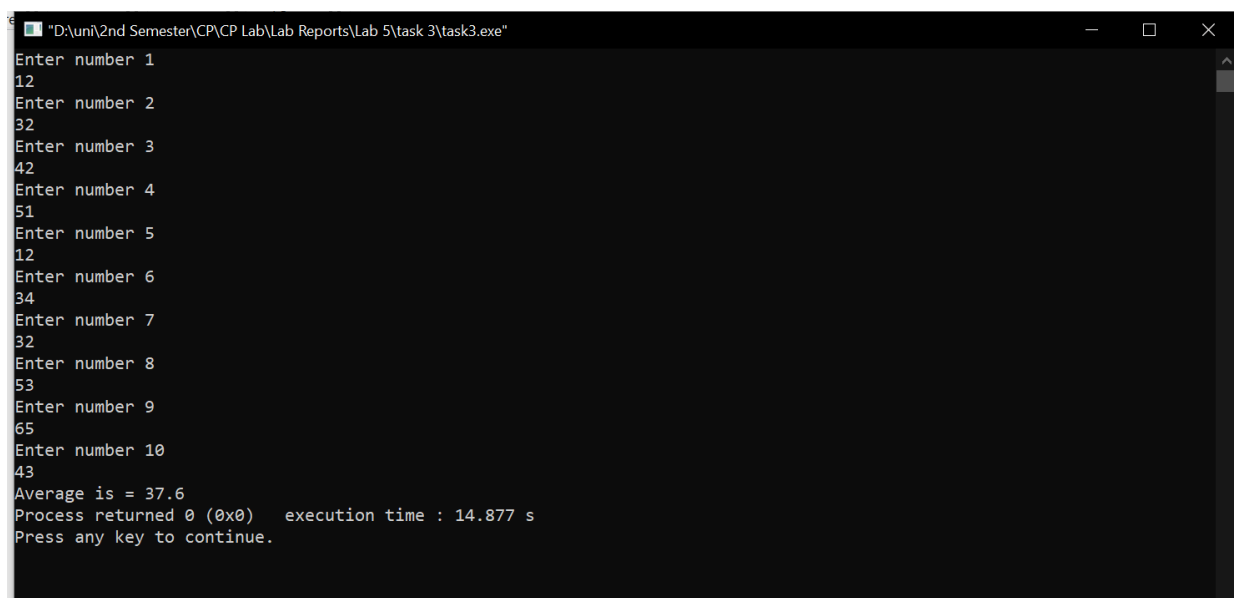
Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main(){

    int numbers[10];
    double sum = 0;
    double average = 0;

    for(int i = 0; i<10; i++){
        cout<<"Enter number "<<i+1<<endl;
        cin>>numbers[i];
    }

    for(int i = 0; i<10; i++){
        sum += numbers[i];
    }

    average = sum/10;
    cout<<"Average is = "<<average;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

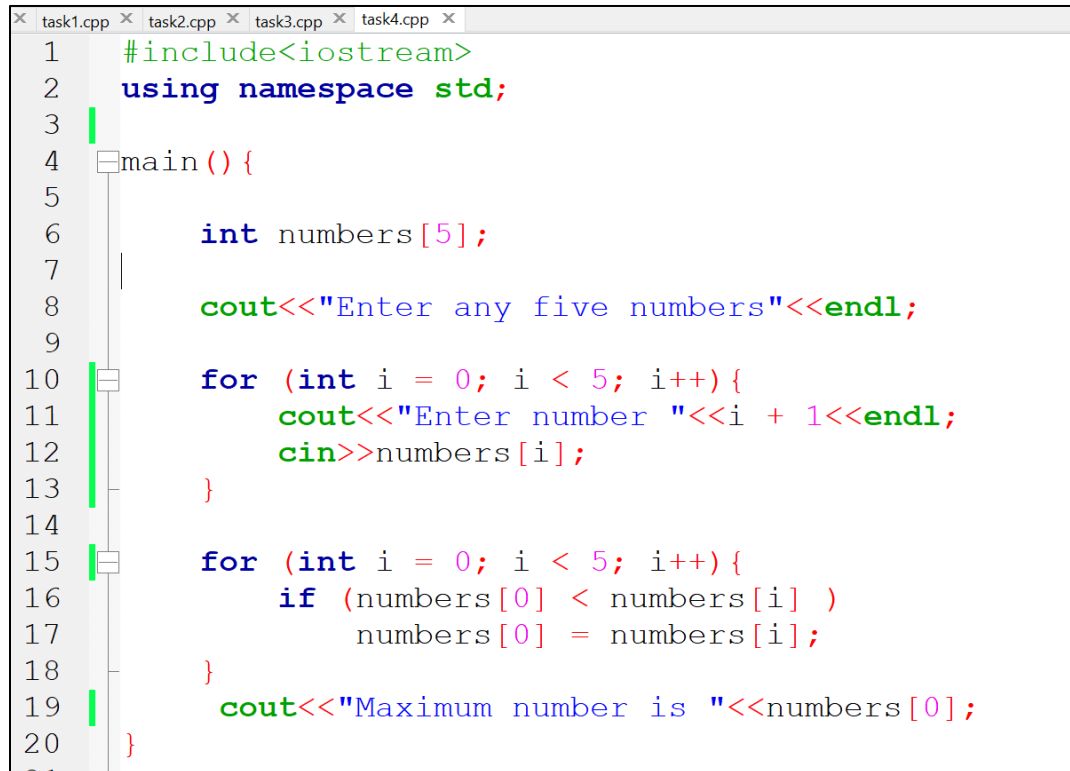Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 5\task 3\task3.exe"
Enter number 1
12
Enter number 2
32
Enter number 3
42
Enter number 4
51
Enter number 5
12
Enter number 6
34
Enter number 7
32
Enter number 8
53
Enter number 9
65
Enter number 10
43
Average is = 37.6
Process returned 0 (0x0)   execution time : 14.877 s
Press any key to continue.
```

TASK # 4:

Title:

Write a program to input multiple values from...(use separate loops for input operation and calculation).
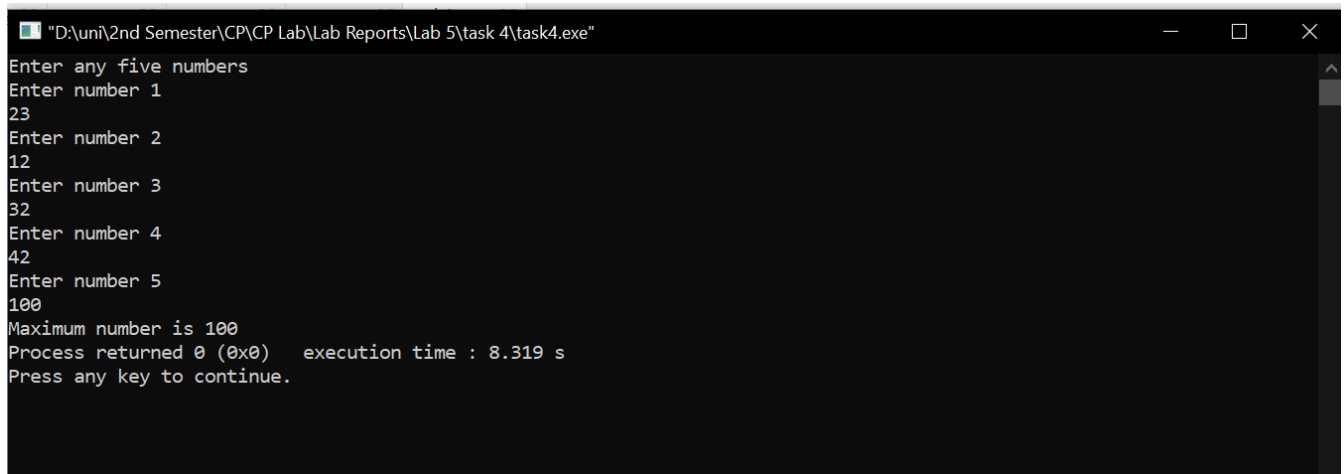
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main(){

    int numbers[5];

    cout<<"Enter any five numbers"<<endl;

    for (int i = 0; i < 5; i++){
        cout<<"Enter number "<<i + 1<<endl;
        cin>>numbers[i];
    }

    for (int i = 0; i < 5; i++){
        if (numbers[0] < numbers[i] )
            numbers[0] = numbers[i];
    }
      cout<<"Maximum number is "<<numbers[0];
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

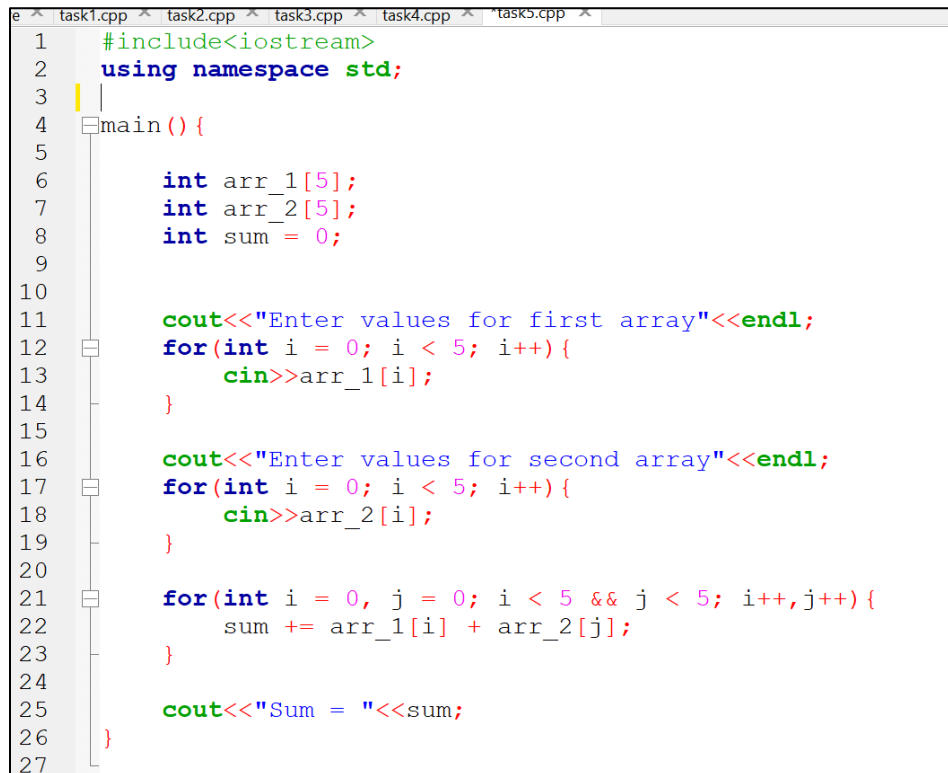Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 5\task 4\task4.exe"
Enter any five numbers
Enter number 1
23
Enter number 2
12
Enter number 3
32
Enter number 4
42
Enter number 5
100
Maximum number is 100
Process returned 0 (0x0)    execution time : 8.319 s
Press any key to continue.
```

TASK # 5:

Title:

Write a program to input two arrays from user and find the sum of arrays (element by element).
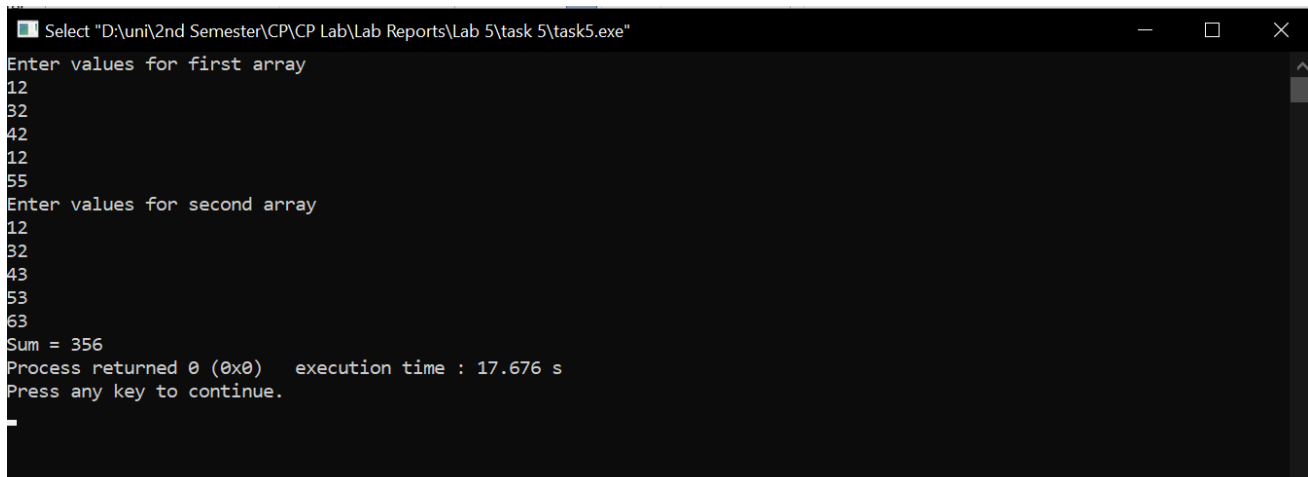
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main(){

    int arr_1[5];
    int arr_2[5];
    int sum = 0;


    cout<<"Enter values for first array"<<endl;
    for(int i = 0; i < 5; i++){
        cin>>arr_1[i];
    }

    cout<<"Enter values for second array"<<endl;
    for(int i = 0; i < 5; i++){
        cin>>arr_2[i];
    }

    for(int i = 0, j = 0; i < 5 && j < 5; i++,j++){
        sum += arr_1[i] + arr_2[j];
    }

    cout<<"Sum = "<<sum;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):
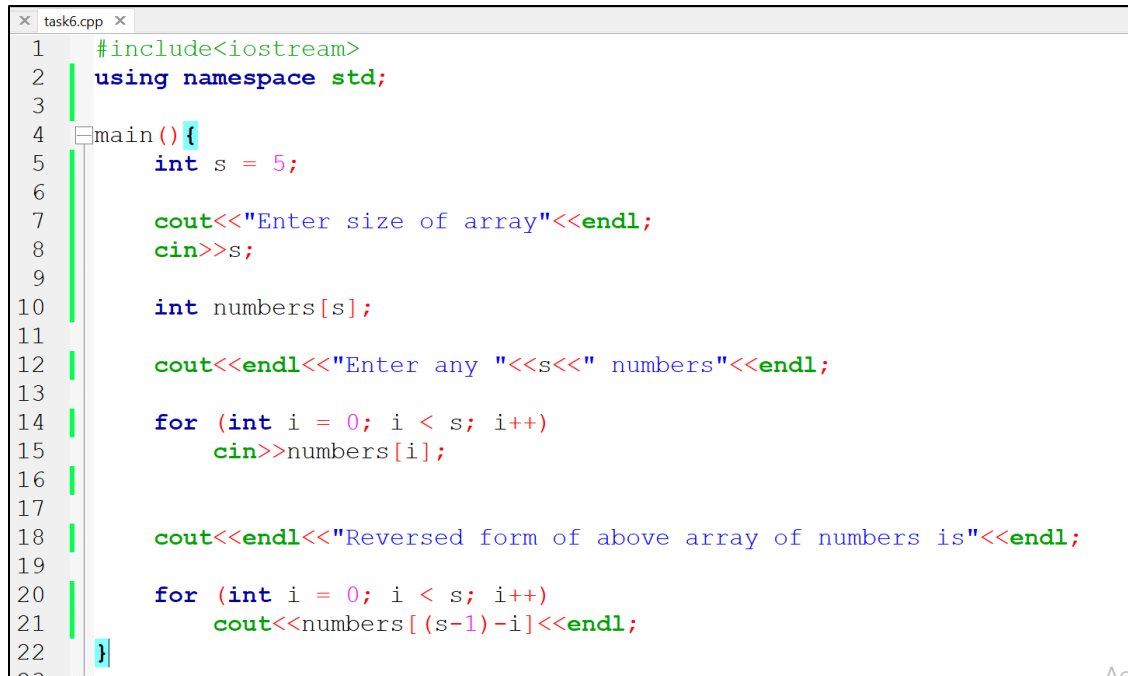Here is the screenshot of the output of above code.

```
Select "D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 5\task 5\task5.exe"

Enter values for first array
12
32
42
12
55
Enter values for second array
12
32
43
53
63
Sum = 356
Process returned 0 (0x0)   execution time : 17.676 s
Press any key to continue.
```

TASK # 6:

Title:

Write a program ………..of array in reverse order (use separate loops for input and output operation).
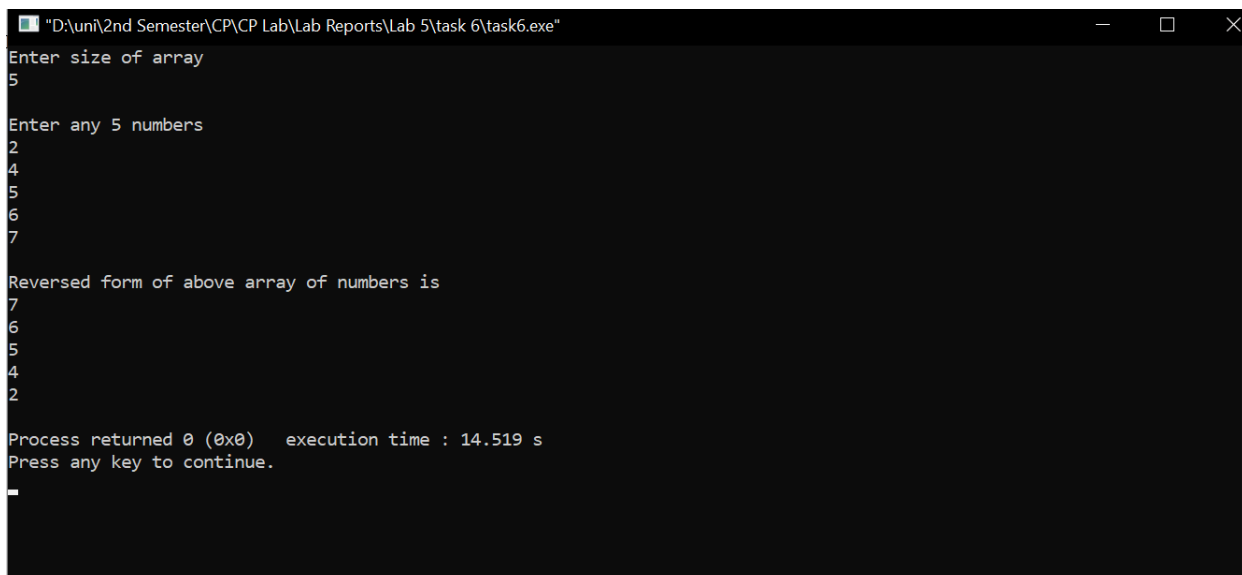
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main(){
    int s = 5;

    cout<<"Enter size of array"<<endl;
    cin>>s;

    int numbers[s];

    cout<<endl<<"Enter any "<<s<<" numbers"<<endl;

    for (int i = 0; i < s; i++)
        cin>>numbers[i];


    cout<<endl<<"Reversed form of above array of numbers is"<<endl;

    for (int i = 0; i < s; i++)
        cout<<numbers[(s-1)-i]<<endl;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

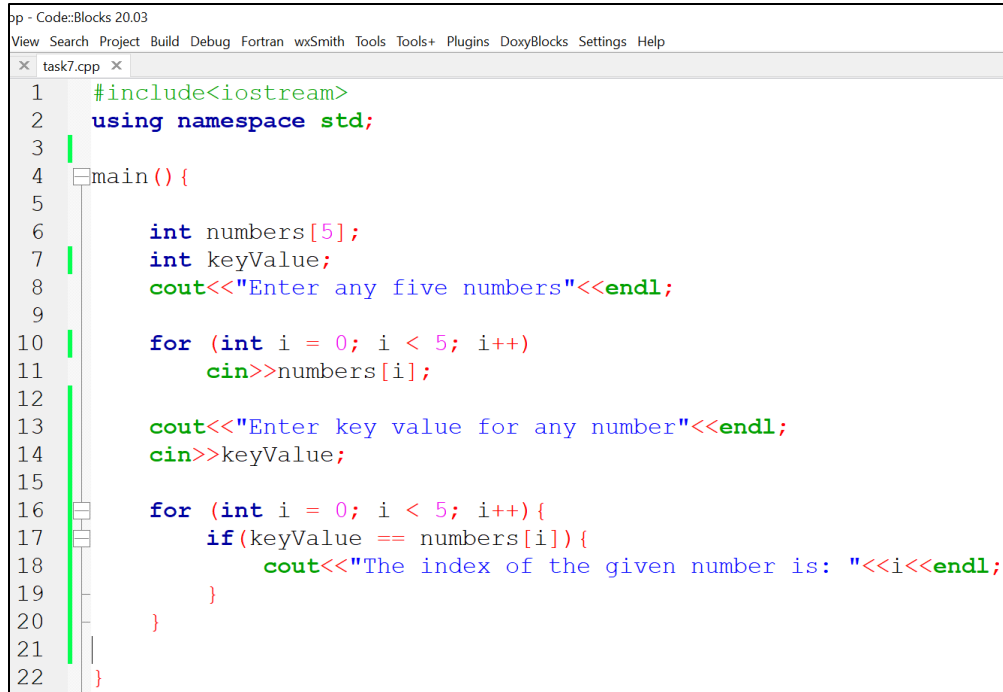Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 5\task 6\task6.exe"
Enter size of array
5

Enter any 5 numbers
2
4
5
6
7

Reversed form of above array of numbers is
7
6
5
4
2

Process returned 0 (0x0)   execution time : 14.519 s
Press any key to continue.
```

TASK # 7:

Title:

Write a program to input multiple……………….(use different loops for input operation and calculation).
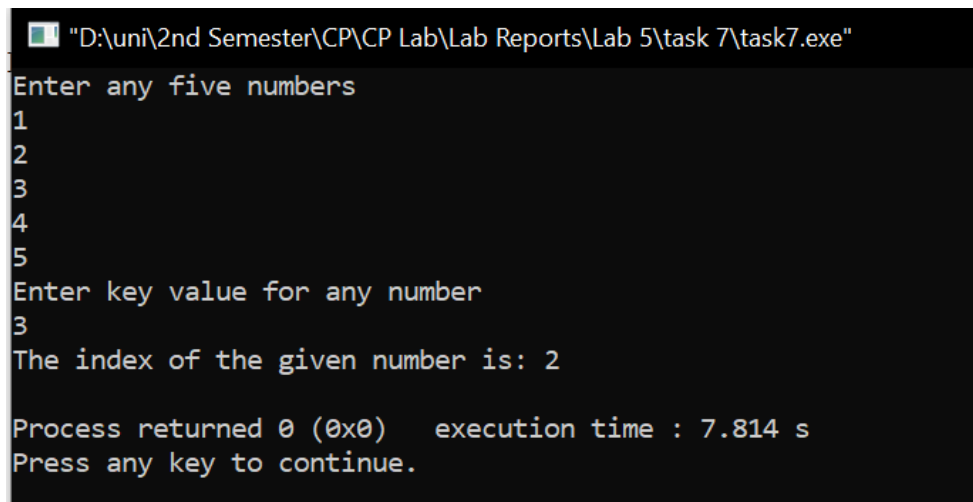
CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#include<iostream>
using namespace std;

main(){

    int numbers[5];
    int keyValue;
    cout<<"Enter any five numbers"<<endl;

    for (int i = 0; i < 5; i++)
        cin>>numbers[i];

    cout<<"Enter key value for any number"<<endl;
    cin>>keyValue;

    for (int i = 0; i < 5; i++){
        if(keyValue == numbers[i]){
            cout<<"The index of the given number is: "<<i<<endl;
        }
    }

}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.

```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 5\task 7\task7.exe"

Enter any five numbers
1
2
3
4
5
Enter key value for any number
3
The index of the given number is: 2

Process returned 0 (0x0)   execution time : 7.814 s
Press any key to continue.
```