CSE102L Computer Programming Lab

LAB # 5

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

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Department of Computer Systems Engineering

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Objectives:

1. To understand the programming knowledge using Array
2. To understand the programming using array

Question no 1:
1. Write a program to input twelve numbers from user using array and display all values on console (3 values in a row) (use separate loops for input and output operation).
   SAMPLE OUTPUT:

   Value 1=??   Value 2=??   Value 3=??
   Value 4=??   Value 5=??   Value 6=??
   Value 7=??   Value 8=??   Value 9=??
   Value 10=??   Value 11=??   Value 12=??

Program:

```cpp
#include<iostream>
using namespace std;
main()
{
    int x[12];
    int k=1;
    for(int i=1;i <= 12;i++)
    {
        cout<<"Enter value "<<i<<" ";
        cin>>x[i];
    }
    for(int i=1;i <= 4;i++)
    {
        for(int j=1;j<=3;j++)
        {
            cout<<"Value "<<k<<" = "<<x[k]<<"\t";
            k++;
        }
        cout<<endl;

    }
    getch();
}
```

Output:

```
C:\Users\Pc\Documents\CPP Lab pactice\cp_lab_5.1.exe

Enter value 1 12
Enter value 2 23
Enter value 3 34
Enter value 4 45
Enter value 5 67
Enter value 6 78
Enter value 7 89
Enter value 8 98
Enter value 9 76
Enter value 10 54
Enter value 11 33
Enter value 12 21
Value 1 = 12      Value 2 = 23     Value 3 = 34
Value 4 = 45      Value 5 = 67     Value 6 = 78
Value 7 = 89      Value 8 = 98     Value 9 = 76
Value 10 = 54     Value 11 = 33    Value 12 = 3
```

Question no 2:

2. Write a program to input ten numbers from user using array and find the average of numbers (use separate loops for input operation and calculation).

Program:

```cpp
#include<iostream>
using namespace std;
main()
{
     float x[10];
     float avg,sum=0;

     for(int i=1; i<=10; i++)
     {
          cout<<"Enter number " << i <<" = ";
          cin>>x[i];
          cout<<endl;
          sum=sum + x[i];
     }
```
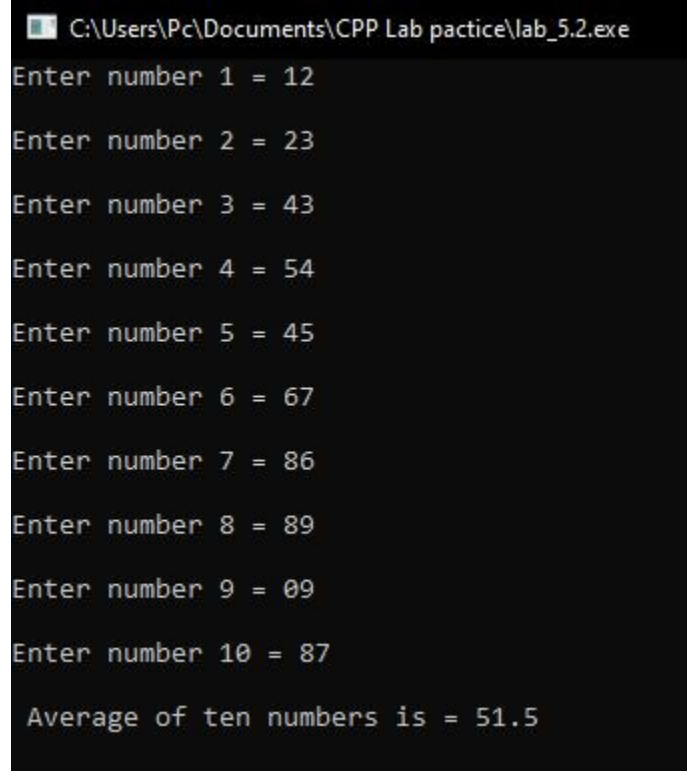
```
        avg=sum/10;
        cout<<" Average of ten numbers is = "<<avg;
        getch();
}
```

Output:

```
C:\Users\Pc\Documents\CPP Lab pactice\lab_5.2.exe

Enter number 1 = 12

Enter number 2 = 23

Enter number 3 = 43

Enter number 4 = 54

Enter number 5 = 45

Enter number 6 = 67

Enter number 7 = 86

Enter number 8 = 89

Enter number 9 = 09

Enter number 10 = 87

 Average of ten numbers is = 51.5
```

Question no 3:

3. Write a program to input multiple values from user using array and find the maximum
   (use separate loops for input operation and calculation).

Program:

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

int main()
{
   int i;
   float arr[100];
```

```cpp
    for(i = 1; i <= 10; i++)
    {
      cout << "Enter Number " << i << " : ";
      cin >> arr[i];
    }
        for(i = 1;i <= 10; i++)
    {

      if(arr[0] < arr[i])
        arr[0] = arr[i];
    }
            cout << "Largest number is = " << arr[0];
}
```
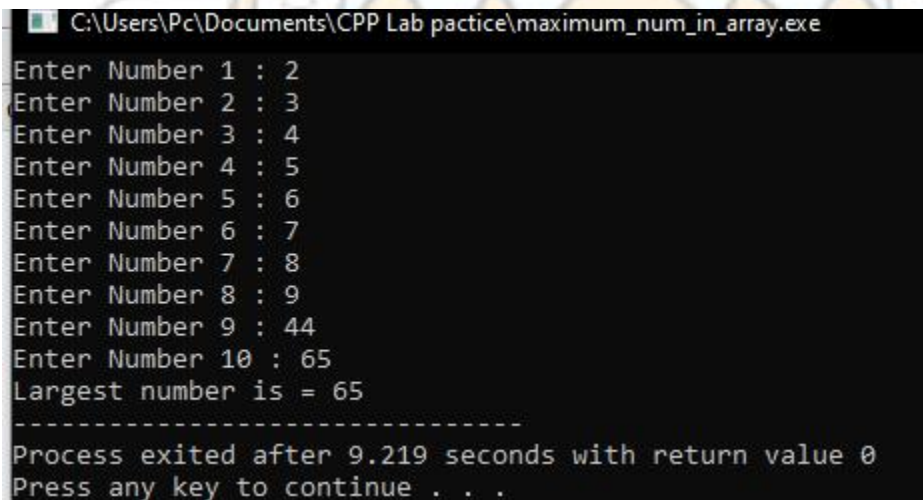
Output:


```
C:\Users\Pc\Documents\CPP Lab pactice\maximum_num_in_array.exe
Enter Number 1 : 2
Enter Number 2 : 3
Enter Number 3 : 4
Enter Number 4 : 5
Enter Number 5 : 6
Enter Number 6 : 7
Enter Number 7 : 8
Enter Number 8 : 9
Enter Number 9 : 44
Enter Number 10 : 65
Largest number is = 65
--------------------------------
Process exited after 9.219 seconds with return value 0
Press any key to continue . . .
```

Question no 4:

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

Program:

#include<iostream>

```cpp
using namespace std;
main()
{
    int x[5],y[5],sum=0;

    for(int i = 1; i <= 5; i++)
    {
        cout<<"Enter the number"<<i<<" for First array = ";
        cin>>x[i];

    }
    cout<<"*******************************************""\n\n";

        for(int i = 1; i <= 5; i++)
    {
    cout<<"Enter number "<<i<<" for Second array = ";
        cin>>y[i];

    }
    cout<<"*******************************************""\n\n";

    for(int i = 1; i <= 5; i++)
    {
        sum=x[i] + y[i];
        cout<<"The sum of "<<x[i] <<"+"<< y[i]<<" is "<<sum<<endl;
    }
}
```

Output:

```
C:\Users\Pc\Documents\CPP Lab pactice\sum_of_2_arrays.exe

Enter the number1 for First array = 2
Enter the number2 for First array = 4
Enter the number3 for First array = 6
Enter the number4 for First array = 8
Enter the number5 for First array = 12
******************************************************

Enter number 1 for Second array = 2
Enter number 2 for Second array = 4
Enter number 3 for Second array = 6
Enter number 4 for Second array = 8
Enter number 5 for Second array = 5
******************************************************

The sum of 2+2 is 4
The sum of 4+4 is 8
The sum of 6+6 is 12
The sum of 8+8 is 16
The sum of 12+5 is 17


------------------------------------
Process exited after 21.04 seconds with return value 0
Press any key to continue . . .
```

Question no 5:

5. Write a program to input array from user and display the elements of array in reverse order (use separate loops for input and output operation).

   SAMPLE OUTPUT:

   Input = 1, 2, 3, 4, 5

   Output = 5, 4, 3, 2, 1

Program:

```
#include <iostream>
using namespace std;
main()
{
int a[10];
int i;
```

```cpp
    cout<<" Enter array elements = "<<endl;
    for (i = 1; i <= 10; i++)
        cin>>a[i];

    for (i = 10; i >= 1; i--)
        cout<<"reverse numbers are = "<<a[i]<<endl;

    return 0;
}
```
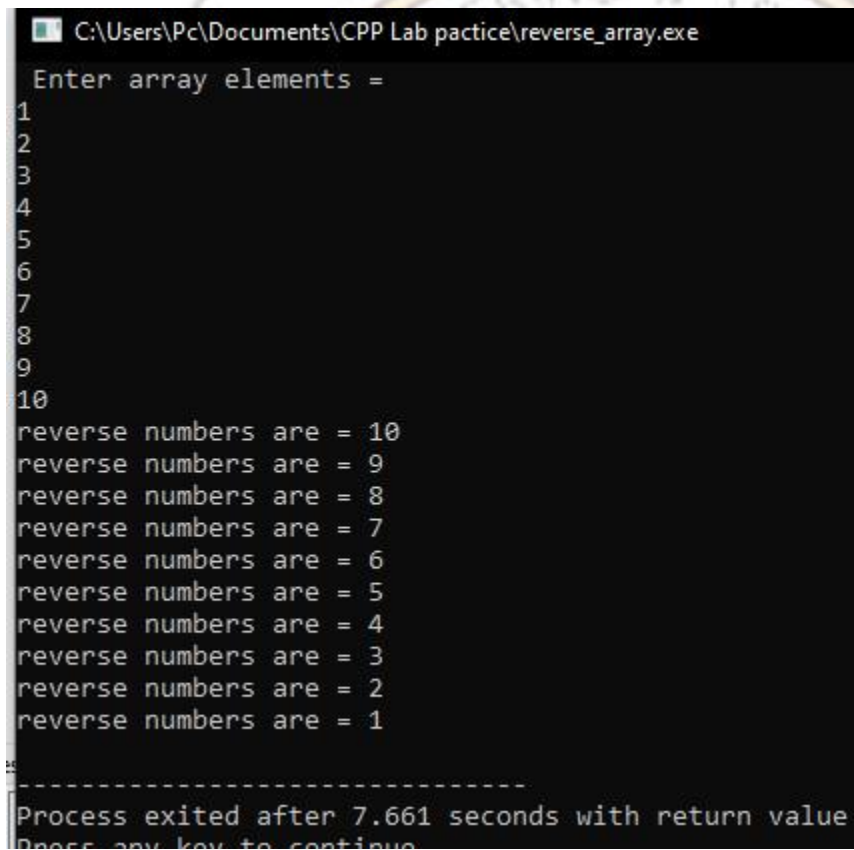
Output:

Question no 6:

6. Write a program to input multiple values from user using array and then ask user to input
    a key number and then compare it with values entered by user(for array) and then display

the index number of array with which value get matched (use seperate loops for input operation and calculation) (use different loops for input operation and calculation).

Program:

```cpp
#include<iostream>

using namespace std;
main()
{
    int x[5], key;
    for(int i = 1; i <= 5 ; i++)
    {
        cout<<"Enter number "<<i<<" = ";
        cin>>x[i];
    }

    cout<<"\nEnter Key_Number : ";
    cin>>key;

    for(int j = 1; j <= 5; j++ )

        if(x[j] == key)
        {
        cout<<"Your Key matched with "<<x[j]<<" and index "<<j<<" of the array\n\n";
        }
    else
    {

        cout<<"The key doesnt match with any index of array";
    }
return 0;
}
```
Output:

```
C:\Users\Pc\Documents\CPP Lab pactice\array_matches_key_entered.exe

Enter number 1 = 2
Enter number 2 = 4
Enter number 3 = 6
Enter number 4 = 8
Enter number 5 = 12

Enter Key_Number : 2
Your Key matched with 2 and index 1 of the array

The key doesnt match with any index of arrayThe key doesn
dex of arrayThe key doesnt match with any index of array
--------------------------------
Process exited after 9.356 seconds with return value 0
Press any key to continue . . .
```