University of engineering & technology Peshawar

COMPUTER PROGRAMMING -LAB

Lab report # 5

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Section: **B**

Reg No: **19PWCSE1795**

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Submitted to:

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Objectives:

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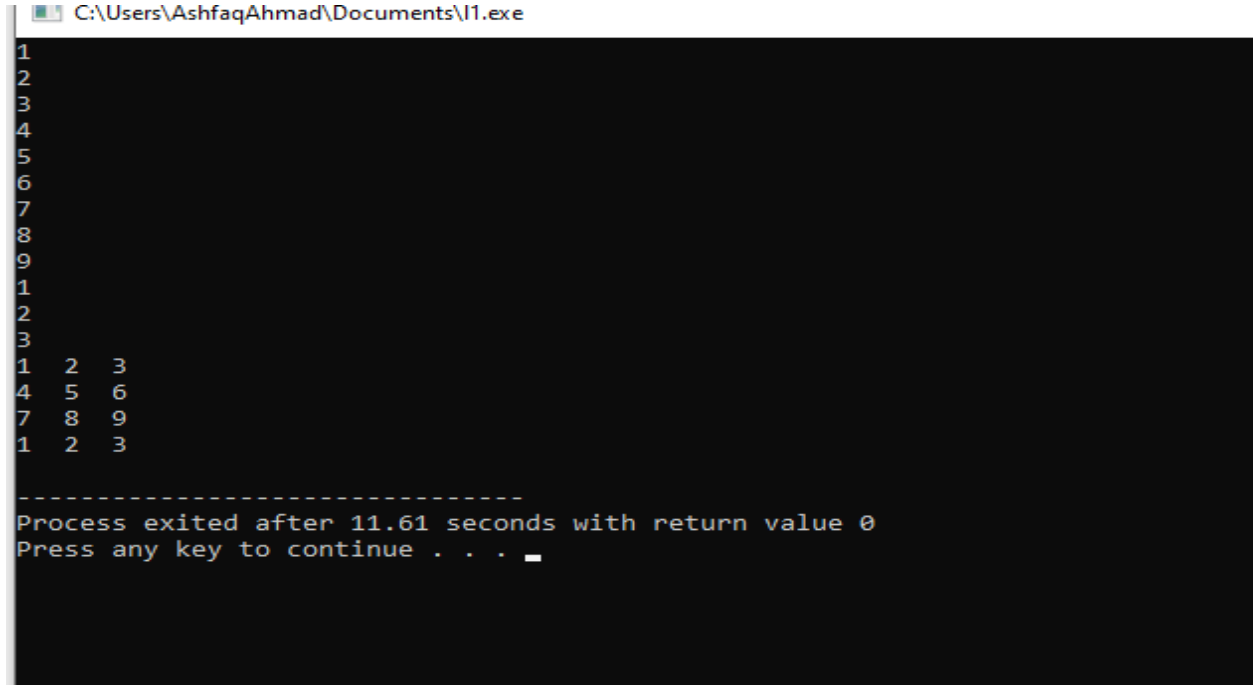- To understand the programming using array.

❖ **Task no 1:**

Write a program to input twelve numbers from user using array and display all values on console (3 values in a row)

Source code:

```cpp
#include <iostream>
using namespace std;
int main()
{
    int a[4][3];
    for(int i=0; i<4; i++)
    {
        for(int j=0; j<3; j++) //(for loop for inputs)
        {
        cin>>a[i][j];
        }
    }
    for(int i=0; i<4; i++) //(for loop for outputs)
    {
        for(int j=0; j<3; j++) //(for loop for outputs)
        {
        cout<<a[i][j]<<"  ";
        }
        cout<<"\n";
    }
        return 0;
}
```

Compilation:

```
C:\Users\AshfaqAhmad\Documents\I1.exe

1
2
3
4
5
6
7
8
9
1
2
3
1   2   3
4   5   6
7   8   9
1   2   3

-------------------------------
Process exited after 11.61 seconds with return value 0
Press any key to continue . . . _
```

❖ **Task no 2:**

Write a program to input ten numbers from user using array and find the average of numbers.

Source code:

```cpp
#include <iostream>
using namespace std;
int main()
{
    float a[10],sum=0,avg;
    for (int i=1; i<=10; i++) //(for loop for inputs)
    {
        cout<<"enter num "<<i<<endl;
        cin>>a[i];
    }
    for(int i=1; i<=10; i++) //(for loop for calculation)
    {
        sum=sum+a[i];
    }
    cout<<"sum of the above integers= "<<sum<<endl;
    avg=(sum/10);
    cout<<"average= "<<avg;
    return 0;
}
```

Compilation:

```
enter num 1
4
enter num 2
3
enter num 3
45
enter num 4
6
enter num 5
7
enter num 6
4
enter num 7
5
enter num 8
6
enter num 9
7
enter num 10
4
sum of the above integers= 91
average= 9.1
--------------------------------
Process exited after 9.113 seconds with return value 0
Press any key to continue . . .
```

❖ Task 3:

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

Source code:

```cpp
#include <iostream>
using namespace std;
int main()
{
    int array[10];
    cout<<"please enter integers\n";
    for(int i=0; i<10; i++) //(for loop for inputs)
    {
        cin>>array[i];
    }
    int max=array[0];
    for(int i=0; i<10; i++) //(for loop for calculation)
    {
        if(array[i]>max)
        {
            max=array[i];
        }
    }
    cout<<"the maximum integer is ="<<max;
    return 0;
}
```

Compilation:

```
please enter integers
34
54
22
56
43
67
43
56
77
56
the maximum integer is =77
-------------------------------
Process exited after 14.65 seconds with return value 0
Press any key to continue . . .
```

❖ Task 4:

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

Source code:

```cpp
1    #include <iostream>
2    using namespace std;
3    int main ()
4    {
5        int x[5],y[5],a;
6        cout<<"please enter first array elements...\n"; //(for loop for first array inputs)
7        for (int i=0; i<5; i++)
8        {
9        cin>>x[i];
10       }
11       cout<<"please enter 2nd array elements...\n";
12       for (int i=0; i<5; i++)                        //(for loop for first array inputs)
13       {
14       cin>>y[i];
15       }
16       cout<<"the sum of above two arrays elements are given...\n";
17       for (int i=0; i<5; i++)                        //(for loop for calculation)
18       {
19       a=x[i]+y[i];
20       cout<<x[i]<<"+"<<y[i]<<"= "<<a<<endl;
21       }
22
23       return 0;
24
25   }
```

Compilation:

```
please enter first array elements...
34
56
78
98
76
please enter 2nd array elements...
54
34
65
76
90
the sum of above two arrays elements are given...
34+54= 88
56+34= 90
78+65= 143
98+76= 174
76+90= 166


---------------------------------
Process exited after 12.9 seconds with return value 0
Press any key to continue . . . ▪
```

❖ **Task 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).

Source code:

```cpp
1    #include <iostream>
2    using namespace std;
3    int main()
4    {
5        int x[5];
6        cout<<"please enter array integers...\n";
7        for(int i=0; i<5; i++)              //(for loop for inputs)
8        {
9            cin>>x[i];
10       }
11       cout<<"above inputs 0f array in reverse form are... \n";
12       for(int i=4; i>-1; i--)             //(for loop for outputs)
13       {
14           cout<<x[i]<<endl;
15       }
16       return 0;
17   }
```

Compilation:

```
please enter array integers...
1
2
3
4
5
above inputs 0f array in reverse form are...
5
4
3
2
1

---------------------------------
Process exited after 8.953 seconds with return value 0
Press any key to continue . . . _
```

❖ **Task 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 separate loops for input operation and calculation)(use different loops for input operation and calculation).

Source code:

```cpp
#include <iostream>
using namespace std;
int main ()
{
    int x[10],a;
    cout<<"please enter first array elements...\n"; //(for loop for array inputs)
    for (int i=0; i<10; i++)
    {
    cin>>x[i];
    }
    cout<<"please enter key number...\n";
    cin>>a;
    for(int i=0; i<10; i++)                          //(for loop for calculation)
    {
        if(x[i]==a)
        {
        cout<<"the index number of array with which the key number get matched is :"<<"x"<<i;
        }
    }
      return 0;
}
```

Compilation:

```
please enter first array elements...
5
6
7
89
56
76
87
98
45
34
please enter key number...
76
the index number of array with which the key number get matched is :x5
-------------------------------
Process exited after 32.5 seconds with return value 0
Press any key to continue . . .
```