

WEEK 6

1# Write a C++ Program for Add Two Numbers Using Pointer.

Code:

```
#1 AddTwoNumbersUsingPointer.cpp #2 SwapTwoNumbersUsingPointer.cpp #3 PrintAddressOfVariable.cpp
1 // Write a C++ Program for Add Two Numbers Using Pointer.
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     int num1, num2;
8
9     cout<<"Enter first number : ";
10    cin>>num1;
11    cout<<"Enter second number : ";
12    cin>>num2;
13
14    int *ptr1 = &num1;
15    int *ptr2 = &num2;
16
17    cout<<"The sum of "<<*ptr1<<" and "<<*ptr2<<" is : "<<*ptr1+*ptr2;
18
19    return 0;
20 }
21
```

Output:

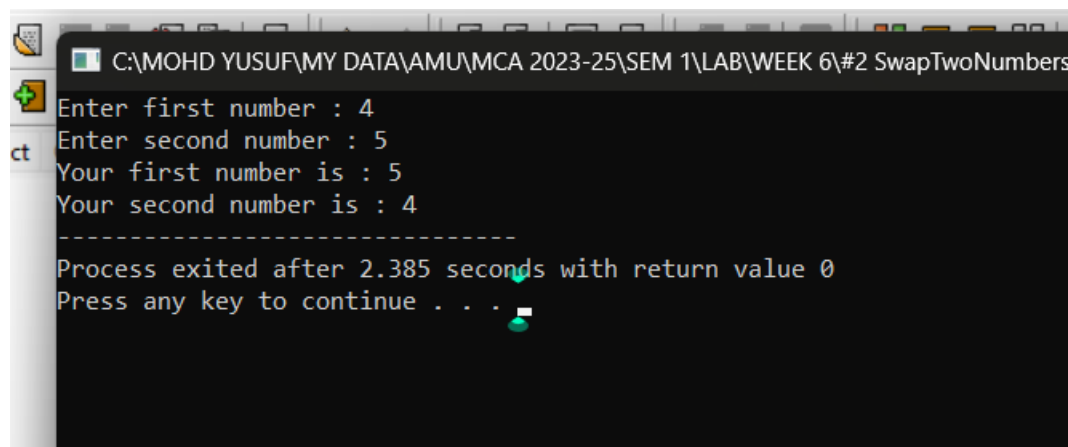
```
2
3 #include<iostream>
4 C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#1 Add...
5 Enter first number : 4
6 Enter second number : 5
7 The sum of 4 and 5 is : 9
8 -----
9 Process exited after 6.744 seconds with return value 0
10 Press any key to continue . . .
11
12
13
14
15
16
17
18
19
20
21
```

2# Write a C++ Program for Swap Numbers Using Pointers:

Code:

```
#2 SwapTwoNumbersUsingPointer.cpp #3 PrintAddressOfVariable.cpp
1 // Write a C++ Program for Swap Numbers Using Pointers:
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     int num1, num2;
8
9     cout<<"Enter first number : ";
10    cin>>num1;
11    cout<<"Enter second number : ";
12    cin>>num2;
13
14    int *ptr1 = &num1;
15    int *ptr2 = &num2;
16
17    int temp = *ptr1;
18    *ptr1 = *ptr2;
19    *ptr2 = temp;
20
21    cout<<"Your first number is : "<<*ptr1<<endl;
22    cout<<"Your second number is : "<<*ptr2;
23
24    return 0;
25 }
```

Output:



The screenshot shows a Windows command prompt window with the title bar "C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#2 SwapTwoNumbers". The program prompts for two numbers: "Enter first number : 4" and "Enter second number : 5". It then displays the swapped values: "Your first number is : 5" and "Your second number is : 4". The window also shows the process exit message: "Process exited after 2.385 seconds with return value 0" and "Press any key to continue . . .".

3# Write a C++ Program to Print the address of the Variable Using a Pointer.

Code:

#3 PrintAddressOfVariable.cpp

```
1 // Write a C++ Program to Print the address of the Variable Using a Pointer.
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     int x = 100;
8
9     int *ptr = &x;
10
11     cout<<"The address of variable 'x' is : "<<ptr;
12
13     return 0;
14 }
15
```

Output:

```
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#3 PrintAddressOfVariable.exe
The address of variable 'x' is : 0x6ffe14
-----
Process exited after 0.1305 seconds with return value 0
Press any key to continue . . .
```

4# Write a C++ Program for Increment and Decrement Integer Using Pointer.

Code:

```
#4 IncrementDecrementIntegerUsingPointer.cpp #5 PrintStringUsingPo

1 // Write a C++ Program for Increment and Decrement Integer Using Pointer.
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     int num = 100;
8     int *ptr = &num;
9
10    cout<<"Original value : "<<*ptr<<endl;
11
12    // Increment
13    (*ptr)++;
14    cout<<"After increment : "<<*ptr<<endl;
15
16    // Decrement
17    (*ptr)--;
18    cout<<"After decrement : "<<*ptr<<endl;
19
20    return 0;
21 }
22
```

Output:

```
#4 IncrementDecrementIntegerUsingPointer.cpp
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#4 Increment&DecrementIntegerUsin

Original value : 100
After increment : 101
After decrement : 100

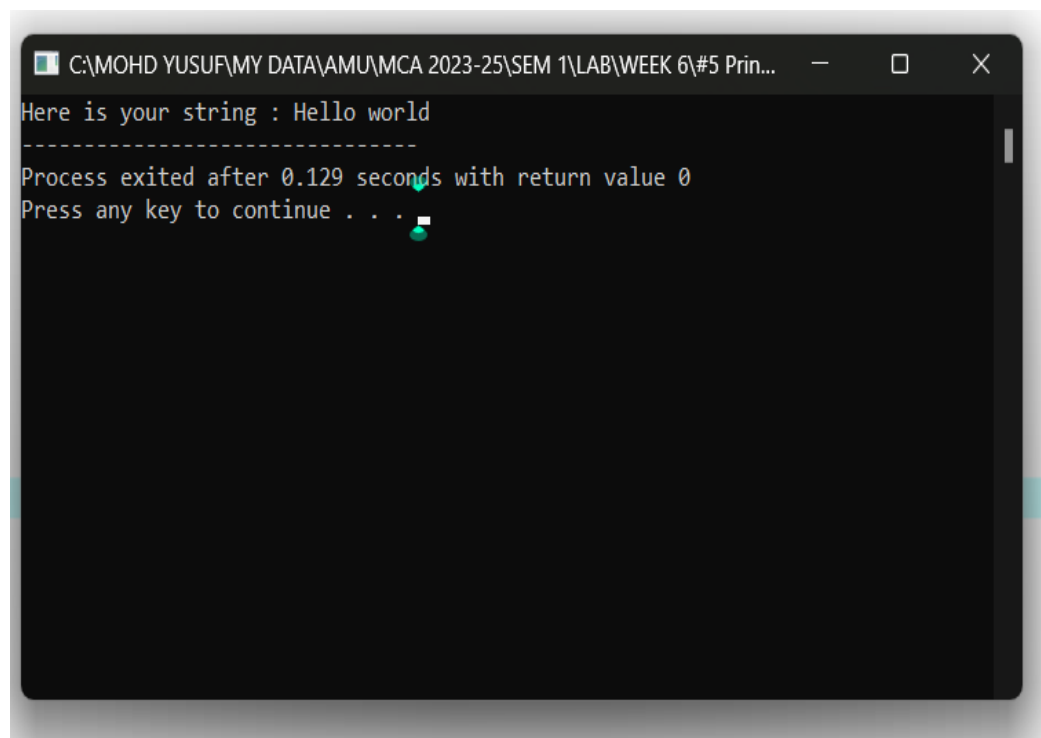
-----
Process exited after 0.1772 seconds with return value 0
Press any key to continue . . .
```

5# Write a C++ Program for Print String Using Pointer:

Code:

```
#5 PrintStringUsingPointer.cpp #6 ConcatenateTwoStringUsingPointer.cpp #7 EnterDisplayTheArrayUsingPointer.cpp
1 // Write a C++ Program for Print String Using Pointer:
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     string s = "Hello world";
8     string *ptr = &s;
9
10    cout<<"Here is your string : "<<*ptr;
11
12    return 0;
13 }
14
```

Output:

A screenshot of a Windows command prompt window. The title bar shows the file path: C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#5 Prin... The window contains the following text: "Here is your string : Hello world", followed by a dashed line separator, "Process exited after 0.129 seconds with return value 0", and "Press any key to continue . . .". A green cursor is visible at the end of the last line.

```
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#5 Prin...
Here is your string : Hello world
-----
Process exited after 0.129 seconds with return value 0
Press any key to continue . . .
```

6# Write a C++ program to concatenate two strings using pointers:

Code:

```
#6 ConcatenateTwoStringUsingPointer.cpp #7 EnterDisplayTheArrayUsingPointer.cpp #8 SumOfArrayElementsUsingPointer.cpp #9 Er
1 // Write a C++ program to concatenate two strings using pointers:
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     string s1, s2;
8
9     cout<<"Enter first string : ";
10    cin>>s1;
11    cout<<"Enter second string : ";
12    cin>>s2;
13
14    string *ptr1 = &s1, *ptr2 = &s2;
15
16    cout<<endl<<"Concatenation under process..."<<endl;
17    cout<<endl<<"Concatenated string is : "<<*ptr1 + *ptr2;
18
19    return 0;
20 }
21
```

Output:

```
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#6 ConcatenateTwoStringUsingPoi
Enter first string : MOHD
Enter second string : YUSUF

Concatenation under process...

Concatenated string is : MOHDYUSUF
-----
Process exited after 9.383 seconds with return value 0
Press any key to continue . . .
```

7# Write a program for reading elements using a pointer into an array and display the values using an array.

- Declare a set of elements.
- Declare the pointer and initialize it to the first element address of a set of elements(array).
- Repeat the loop until the pointer reaches to the last element and displays each element.

Code:

```
#7 EnterDisplayTheArrayUsingPointer.cpp #8 SumOfArrayElementsUsingPointer.cpp #9 EnterDisplayTheArrayUsingPointer.cpp
6  #include<iostream>
7  using namespace std;
8  int main()
9  {
10     int n;
11     |
12     cout<<"Enter the number of elements in the array : ";
13     cin>>n;
14
15     int array[n]; // declare an array to store elements
16     int *ptr = array; // Declare the pointer and initialized it to the first element address
17
18     for(int i=1; i<=n; i++)
19     {
20         cout<<"Enter element "<<i<<" : ";
21         cin>>*ptr;
22         ptr++;
23     }
24
25     ptr = array; // resetting the pointer last location.
26     // display the elements:
27     cout<<"Your entered elements are : "<<endl;
28     for(int i=1; i<=n; i++)
29     {
30         cout<<*ptr<<" ";
31         ptr++;
32     }
33
34     return 0;
35 }
```

Output:

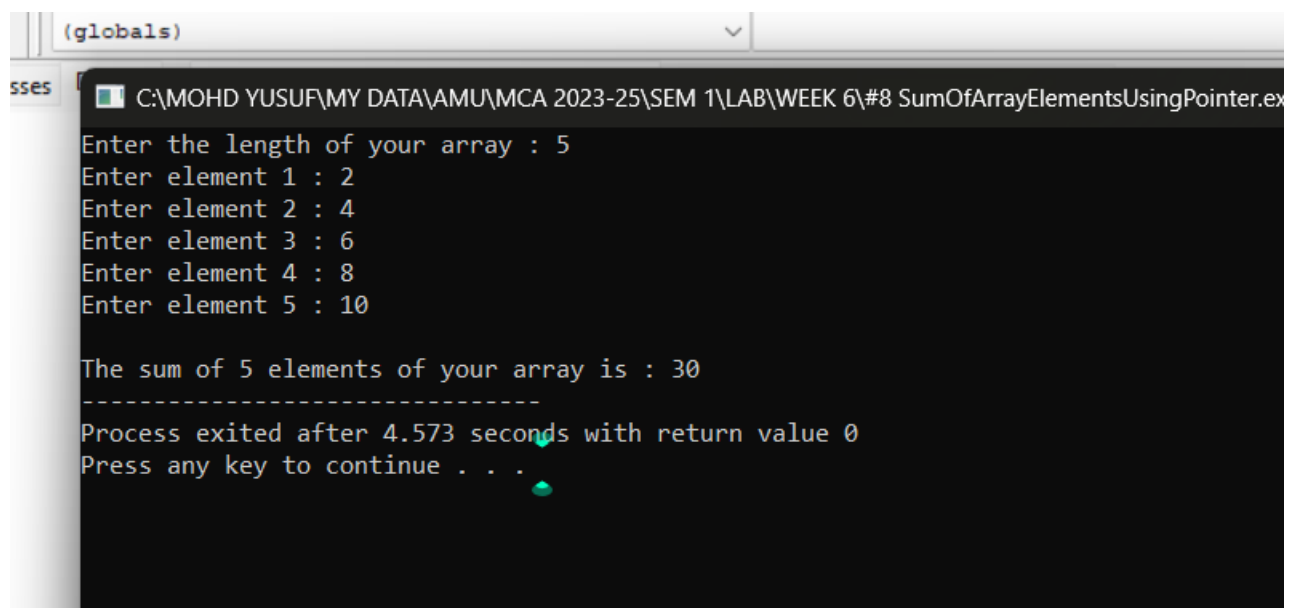
```
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#7 Enter&DisplayTheArrayUsingPointer.cpp - [Executing]
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#7 Enter&DisplayTheArrayUsingPointer.exe
Enter the number of elements in the array : 5
Enter element 1 : 2
Enter element 2 : 4
Enter element 3 : 6
Enter element 4 : 8
Enter element 5 : 10
Your entered elements are :
2 4 6 8 10
-----
Process exited after 11.13 seconds with return value 0
Press any key to continue . . .
```

8# Write a program for reading elements using a pointer into the array and display the values using an array.

Code:

```
#8 SumOfArrayElementsUsingPointer.cpp #9 EnterDisplayTheArrayUsingPointer.cpp
1 // Write a program through a pointer variable to the sum of n elements from the array.
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     int n, sum = 0;
8
9     cout<<"Enter the length of your array : ";
10    cin>>n;
11
12    int array[n];
13    int *ptr = array;
14
15    for(int i=1; i<=n; i++)
16    {
17        cout<<"Enter element "<<i<<" : ";
18        cin>>*ptr;
19        sum += *ptr;
20        ptr++;
21    }
22
23    cout<<endl;
24    cout<<"The sum of "<<n<<" elements of your array is : "<<sum;
25    return 0;
26 }
27
```

Output:



```
(globals)
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#8 SumOfArrayElementsUsingPointer.ex
Enter the length of your array : 5
Enter element 1 : 2
Enter element 2 : 4
Enter element 3 : 6
Enter element 4 : 8
Enter element 5 : 10

The sum of 5 elements of your array is : 30
-----
Process exited after 4.573 seconds with return value 0
Press any key to continue . . .
```


9# Write a program for reading elements using a pointer into the array and display the values using an array.

Code:

```
#9 EnterDisplayTheArrayUsingPointer.cpp
1 // Write a program for reading elements using a pointer into the array and display the values using an array.
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     int n;
8
9     cout<<"Enter the number of elements in the array : ";
10    cin>>n;
11
12    int array[n]; // declare an array to store elements
13    int *ptr = array; // Declare the pointer and initialized it to the first element address
14
15    for(int i=1; i<=n; i++)
16    {
17        cout<<"Enter element "<<i<<" : ";
18        cin>>*ptr;
19        ptr++;
20    }
21
22    ptr = array; // resetting the pointer last location.
23    // display the elements:
24    cout<<"Your entered elements are : "<<endl;
25    for(int i=1; i<=n; i++)
26    {
27        cout<<*ptr<<" ";
28        ptr++;
29    }
30
31    return 0;
32 }
```

Output:

```
1 // Write a program for reading elements using a pointer into the array an
2
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#9 Enter&DisplayTheArrayUsingPointer.exe
Enter the number of elements in the array : 5
Enter element 1 : 2
Enter element 2 : 4
Enter element 3 : 6
Enter element 4 : 8
Enter element 5 : 10
Your entered elements are :
2 4 6 8 10
-----
Process exited after 7.36 seconds with return value 0
Press any key to continue . . .
```

10# Write a C++ program to reverse a string using pointers.

Code:

```
#10 ReverseTheStringUsingPointer.cpp
1 // Write a C++ program to reverse a string using pointers.
2
3 #include<iostream>
4 #include<cstring>
5 using namespace std;
6 int main()
7 {
8     char str[100];
9
10    cout<<"Enter your string please : ";
11    cin.getline(str, 100);
12
13    int len = strlen(str);
14
15    char *start = str;
16    char *end = str + len - 1;
17
18    while(start<end)
19    {
20        char temp = *start;
21        *start = *end;
22        *end = temp;
23        *start++;
24        *end--;
25    }
26
27    cout<<endl<<"Your reverse string is : "<<str;
28
29    return 0;
30 }
```

Output:

```
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#10 ReverseTheStringUsingPointer.cpp - [Executing]
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 6\#10 ReverseTheStringUsingPointer.exe
Enter your string please : Hello world
Your reverse string is : dlrow olleH
-----
Process exited after 12.37 seconds with return value 0
Press any key to continue . . .
```