# WEEK 6

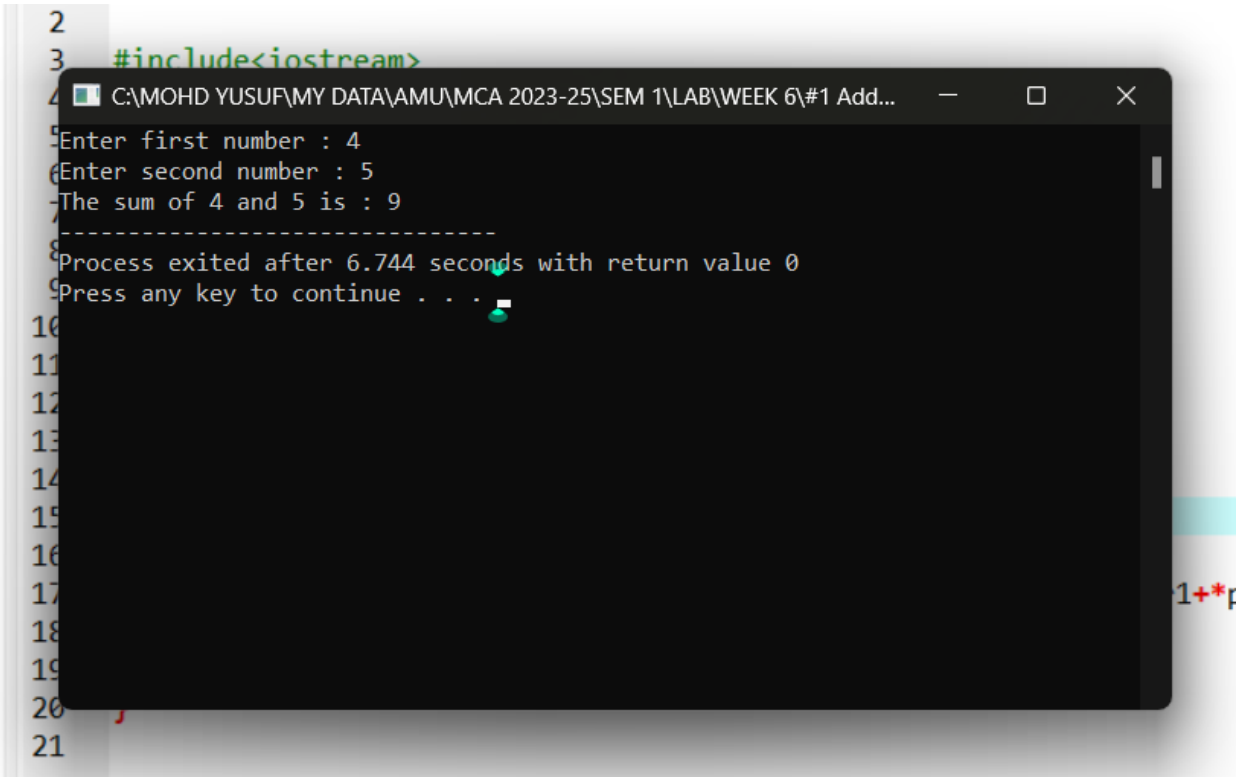
1# Write a C++ Program for Add Two Numbers Using Pointer.

Code:

#1 AddTwoNumbersUsingPointer.cpp | #2 SwapTwoNumbersUsingPointer.cpp | #3 PrintAddressOfVariable.cpp

```cpp
// Write a C++ Program for Add Two Numbers Using Pointer.

#include<iostream>
using namespace std;
int main()
{
    int num1, num2;

    cout<<"Enter first number : ";
    cin>>num1;
    cout<<"Enter second number : ";
    cin>>num2;

    int *ptr1 = &num1;
    int *ptr2 = &num2;

    cout<<"The sum of "<<*ptr1<<" and "<<*ptr2<<" is : "<<*ptr1+*ptr2;

    return 0;
}
```

Output:



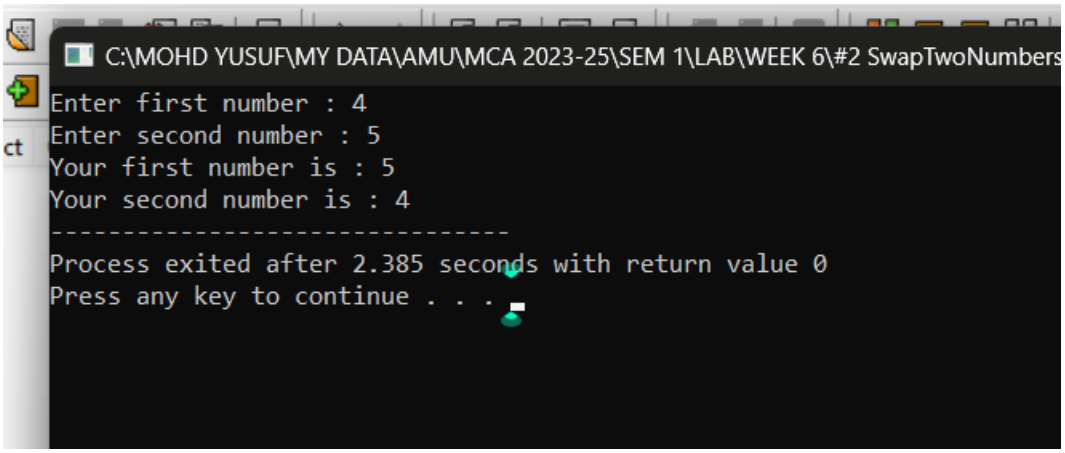
## 2# Write a C++ Program for Swap Numbers Using Pointers:

Code:

#2 SwapTwoNumbersUsingPointer.cpp #3 PrintAddressOfVariable.cpp

```cpp
// Write a C++ Program for Swap Numbers Using Pointers:

#include<iostream>
using namespace std;
int main()
{
    int num1, num2;

    cout<<"Enter first number : ";
    cin>>num1;
    cout<<"Enter second number : ";
    cin>>num2;

    int *ptr1 = &num1;
    int *ptr2 = &num2;

    int temp = *ptr1;
    *ptr1 = *ptr2;
    *ptr2 = temp;

    cout<<"Your first number is : "<<*ptr1<<endl;
    cout<<"Your second number is : "<<*ptr2;

    return 0;
}
```

Output:



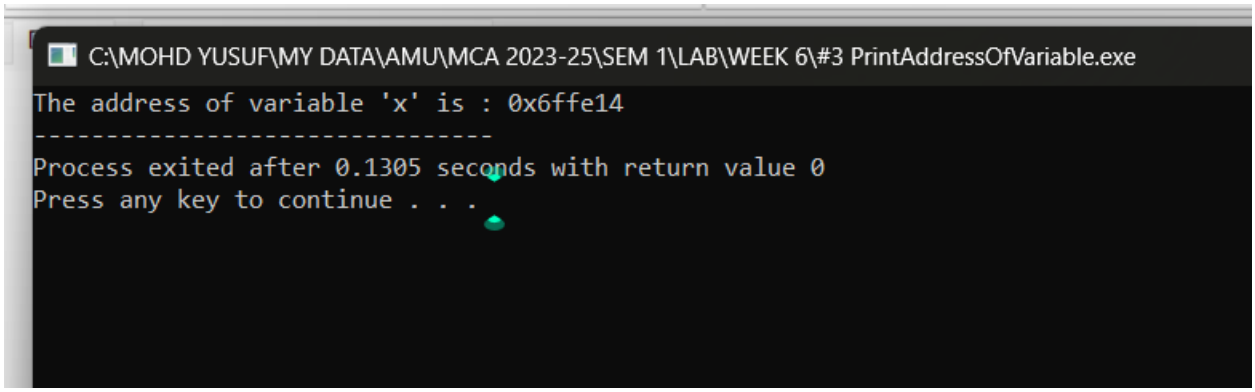
3# Write a C++ Program to Print the address of the Variable Using a Pointer.

Code:

#3 PrintAddressOfVariable.cpp

```cpp
// Write a C++ Program to Print the address of the Variable Using a Pointer.

#include<iostream>
using namespace std;
int main()
{
    int x = 100;

    int *ptr = &x;

    cout<<"The address of variable 'x' is : "<<ptr;

    return 0;
}

```

Output:



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

Code:

#4 IncrementDecrementIntegerUsingPointer.cpp #5 PrintStringUsingPo

```cpp
// Write a C++ Program for Increment and Decrement Integer Using Pointer.

#include<iostream>
using namespace std;
int main()
{
    int num = 100;
    int *ptr = &num;

    cout<<"Original value : "<<*ptr<<endl;

    // Increment
    (*ptr)++;
    cout<<"After increment : "<<*ptr<<endl;

    // Decrement
    (*ptr)--;
    cout<<"After decrement : "<<*ptr<<endl;

    return 0;
}

```

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 . . .
```

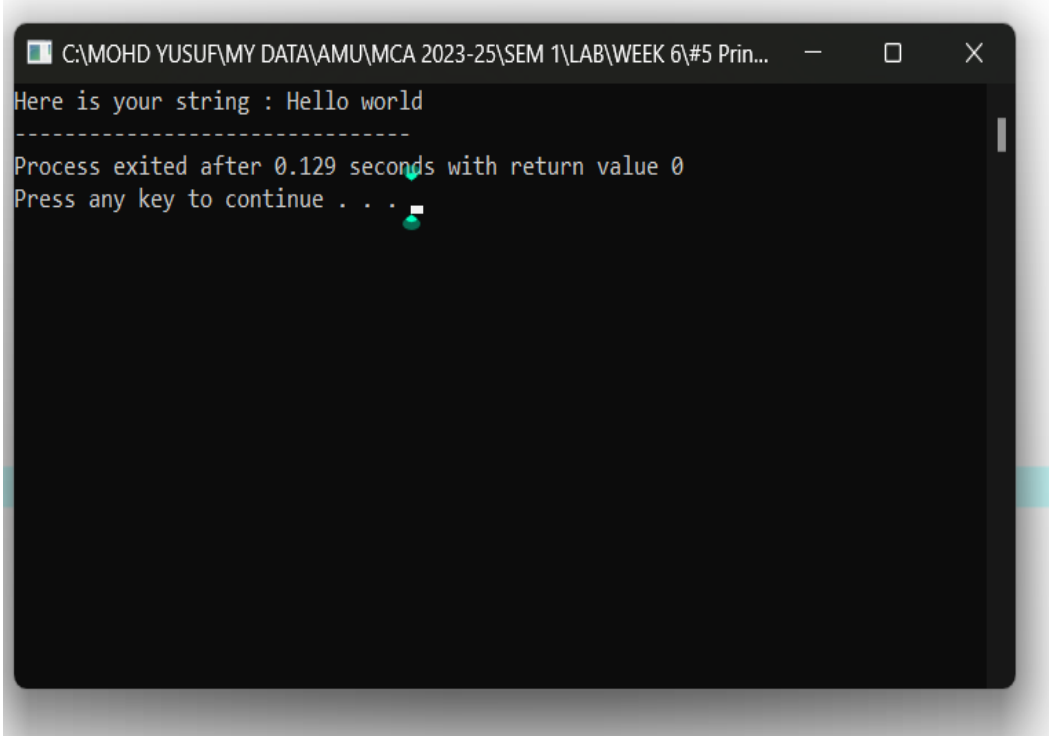
## 5# Write a C++ Program for Print String Using Pointer:

Code:

#5 PrintStringUsingPointer.cpp | #6 ConcatenateTwoStringUsingPointer.cpp | #7 EnterDisplayTheArrayUsir

```cpp
// Write a C++ Program for Print String Using Pointer:

#include<iostream>
using namespace std;
int main()
{
    string s = "Hello world";
    string *ptr = &s;

    cout<<"Here is your string : "<<*ptr;

    return 0;
}

```

Output:



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

Code:

#6 ConcatenateTwoStringUsingPointer.cpp | #7 EnterDisplayTheArrayUsingPointer.cpp | #8 SumOfArrayElementsUsingPointer.cpp | #9 Er

```cpp
// Write a C++ program to concatenate two strings using pointers:

#include<iostream>
using namespace std;
int main()
{
    string s1, s2;

    cout<<"Enter first string : ";
    cin>>s1;
    cout<<"Enter second string : ";
    cin>>s2;

    string *ptr1 = &s1, *ptr2 = &s2;

    cout<<endl<<"Concatenation under process..."<<endl;
    cout<<endl<<"Concatenated string is : "<<*ptr1 + *ptr2;

    return 0;
}
```

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.
i. Declare a set of elements.
ii. Declare the pointer and initialize it to the first element address of a set of elements(array).
iii. 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

```cpp
#include<iostream>
using namespace std;
int main()
{
    int n;

    cout<<"Enter the number of elements in the array : ";
    cin>>n;

    int array[n]; // declear an array to store elements
    int *ptr = array; // Declare the pointer and initialized it to the first element address

    for(int i=1; i<=n; i++)
    {
        cout<<"Enter element "<<i<<" : ";
        cin>>*ptr;
        ptr++;
    }

    ptr = array; // resetting the pointer last location.
    // display the elements:
    cout<<"Your entered elements are : "<<endl;
    for(int i=1; i<=n; i++)
    {
        cout<<*ptr<<" ";
        ptr++;
    }

    return 0;
}
```

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

```cpp
// Write a program through a pointer variable to the sum of n elements from the array.

#include<iostream>
using namespace std;
int main()
{
    int n, sum = 0;

    cout<<"Enter the length of your array : ";
    cin>>n;

    int array[n];
    int *ptr = array;

    for(int i=1; i<=n; i++)
    {
        cout<<"Enter element "<<i<<" : ";
        cin>>*ptr;
        sum += *ptr;
        ptr++;
    }

    cout<<endl;
    cout<<"The sum of "<<n<<" elements of your array is : "<<sum;
    return 0;
}

```

Output:

```
(globals)
sses
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

```cpp
// Write a program for reading elements using a pointer into the array and display the values using an array.

#include<iostream>
using namespace std;
int main()
{
    int n;

    cout<<"Enter the number of elements in the array : ";
    cin>>n;

    int array[n]; // declear an array to store elements
    int *ptr = array; // Declare the pointer and initialized it to the first element address

    for(int i=1; i<=n; i++)
    {
        cout<<"Enter element "<<i<<" : ";
        cin>>*ptr;
        ptr++;
    }

    ptr = array; // resetting the pointer last location.
    // display the elements:
    cout<<"Your entered elements are : "<<endl;
    for(int i=1; i<=n; i++)
    {
        cout<<*ptr<<" ";
        ptr++;
    }

    return 0;
}
```

Output:

```
// Write a program for reading elements using a pointer into the array an
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

```cpp
// Write a C++ program to reverse a string using pointers.

#include<iostream>
#include<cstring>
using namespace std;
int main()
{
    char str[100];

    cout<<"Enter your string please : ";
    cin.getline(str, 100);

    int len = strlen(str);

    char *start = str;
    char *end = str + len - 1;

    while(start<end)
    {
        char temp = *start;
        *start = *end;
        *end = temp;
        *start++;
        *end--;
    }

    cout<<endl<<"Your reverse string is : "<<str;

    return 0;
}
```

Output: