

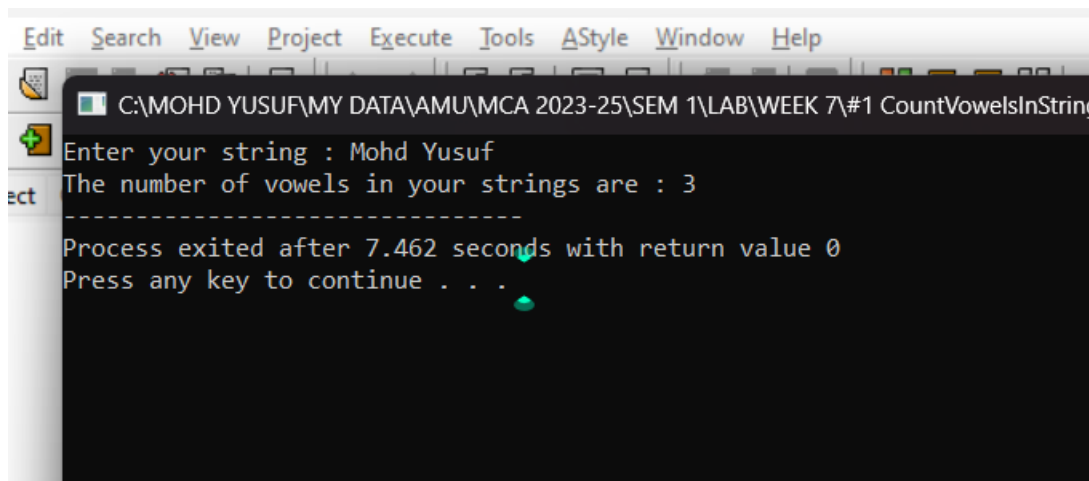
WEEK 7

1# Write a C++ Program for Count vowels String Using Pointer.

Code:

```
#1 CountVowelsInStringUsingPointer.cpp
1 // Write a C++ Program for Count vowels in String Using Pointer:
2
3 #include<iostream>
4 #include<cstring>
5 using namespace std;
6 int main()
7 {
8     int count = 0, start = 0;
9     char string[100];
10
11     cout<<"Enter your string : ";
12     cin.getline(string, 100);
13
14     int len = strlen(string);
15     char *ptr = string;
16
17     while(start != len)
18     {
19         if(*ptr == 'a' || *ptr == 'e' || *ptr == 'i' || *ptr == 'o' || *ptr == 'u' || *ptr == 'A' || *ptr == 'E' || *ptr == 'I' || *ptr == 'O' || *ptr == 'U')
20             *ptr++;
21         start++;
22     }
23
24     cout<<"The number of vowels in your strings are : "<<count;
25
26     return 0;
27 }
28
```

Output:



The screenshot shows a Windows command prompt window with the following text:

```
Enter your string : Mohd Yusuf
The number of vowels in your strings are : 3
-----
Process exited after 7.462 seconds with return value 0
Press any key to continue . . .
```

2# Write a C++ Program for Length of String Using Pointer.

Code:

```
ig #2 LengthOfStringUsingPointer.cpp
1 // Write a C++ Program for Length of String Using Pointer.
2
3 #include<iostream>
4 using namespace std;
5 int main()
6 {
7     int Length = 0;
8     char string[100];
9
10    cout<<"Enter your string : ";
11    cin.getline(string, 100);
12
13    char *ptr = string;
14
15    while(*ptr != '\0')
16    {
17        Length++;
18        *ptr++;
19    }
20
21    cout<<"The length of your strings is : "<<Length;
22
23    return 0;
24 }
25
```

Output:

```
Search View Project Execute Tools Astyle Window Help
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 7\#2 LengthOfStringUsingPointer.exe
Enter your string : Mohd Yusuf
The length of your strings is : 10
-----
Process exited after 6.095 seconds with return value 0
Press any key to continue . . .
```

3# Write a C++ program using pointers to compute the sum, mean and standard deviation of all elements stored in an array of n real numbers.

Code:

```
#3 SumMeanStdDeviationOfArrayElements.cpp
1 // Write a C++ program using pointers to compute the sum, mean and standard deviation of all elements stored in an array of n real
2
3 #include<iostream>
4 #include<cmath>
5 using namespace std;
6 int main()
7 {
8     int len, sum = 0;
9
10    cout<<"Enter the length of your array : "; //Input length of the data
11    cin>>len;
12
13    int array[len]; // Declaring array of length given by user
14    int *ptr = array;
15
16    for(int i=1; i<=len; i++) // Taking array elements
17    {
18        cout<<"Enter element "<<i<<" : ";
19        cin>>*ptr;
20        sum += *ptr; // Sum of the data
21        *ptr++;
22    }
23
24    float mean = sum/len; // Mean of the data
25    float SumOfSqDiff = 0; // SumOfSqDiff = sum(element(i) - mean)^2
26    float stdDev;
27
28    ptr = array;
29
30    for(int i=1; i<=len; i++)
31    {
32        SumOfSqDiff += pow((*ptr - mean),2);
33        *ptr++;
34    }
35
36    stdDev = sqrt(SumOfSqDiff/len);
37
38    // Output
39    cout<<endl<<"Sum of your data is : "<<sum<<endl;
40    cout<<"Mean of your data is : "<<mean<<endl;
41    cout<<"Standard Deviation of your data is : "<<stdDev;
42
43    return 0;
44 }
45
```

Output:

```
Edit Search View Project Execute Tools AStyle Window Help
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 7\#3 SumMeanStdDeviationOfArrayElements.exe
Enter the length of your array : 5
Enter element 1 : 26
Enter element 2 : 56
Enter element 3 : 35
Enter element 4 : 15
Enter element 5 : 45

Sum of your data is : 177
Mean of your data is : 35
Standard Deviation of your data is : 14.2969
-----
Process exited after 6.13 seconds with return value 0
Press any key to continue . . .
```

4# Write a C++ program to create three objects for a class named `pntr_obj` with data members such as `roll_no` & `name`. Create a member function `set_data()` for setting the data values and `print()` member function to print which object has invoked it using the 'this' pointer.

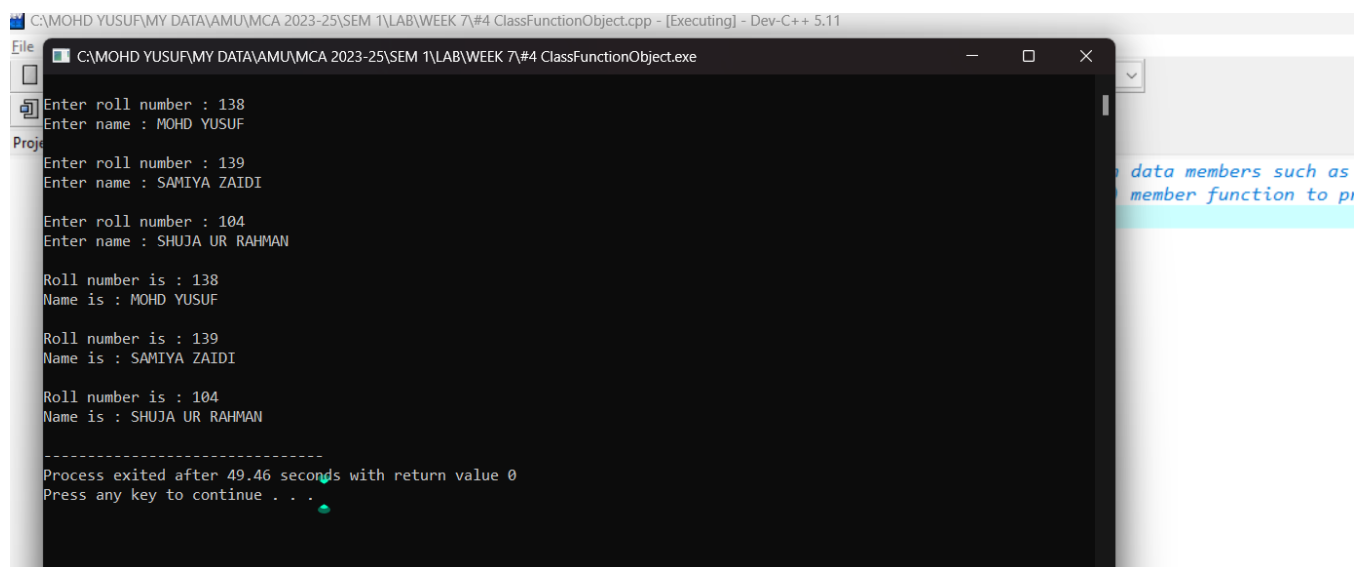
Code:

```

Debug  [*] #4 ClassFunctionObject.cpp
5  class pntr_obj
6  {
7      int roll_no;
8      string name;
9
10     public:
11         pntr_obj &set_data()
12         {
13             cout<<endl<<"Enter roll number : ";
14             cin>>roll_no;
15             cin.ignore();
16             cout<<"Enter name : ";
17             getline(cin, name);
18             return *this;
19         }
20
21         pntr_obj print()
22         {
23             cout<<endl<<"Roll number is : "<<roll_no<<endl;
24             cout<<"Name is : "<<name<<endl;
25             return *this;
26         }
27     };
28
29     int main()
30     {
31         pntr_obj obj1, obj2, obj3;
32         obj1.set_data();
33         obj2.set_data();
34         obj3.set_data();
35
36         obj1.print();
37         obj2.print();
38         obj3.print();
39     }

```

Output:



```

C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 7\#4 ClassFunctionObject.cpp - [Executing] - Dev-C++ 5.11
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 7\#4 ClassFunctionObject.exe
Enter roll number : 138
Enter name : MOHD YUSUF
Enter roll number : 139
Enter name : SAMIYA ZAIDI
Enter roll number : 104
Enter name : SHUJA UR RAHMAN

Roll number is : 138
Name is : MOHD YUSUF

Roll number is : 139
Name is : SAMIYA ZAIDI

Roll number is : 104
Name is : SHUJA UR RAHMAN

-----
Process exited after 49.46 seconds with return value 0
Press any key to continue . . .

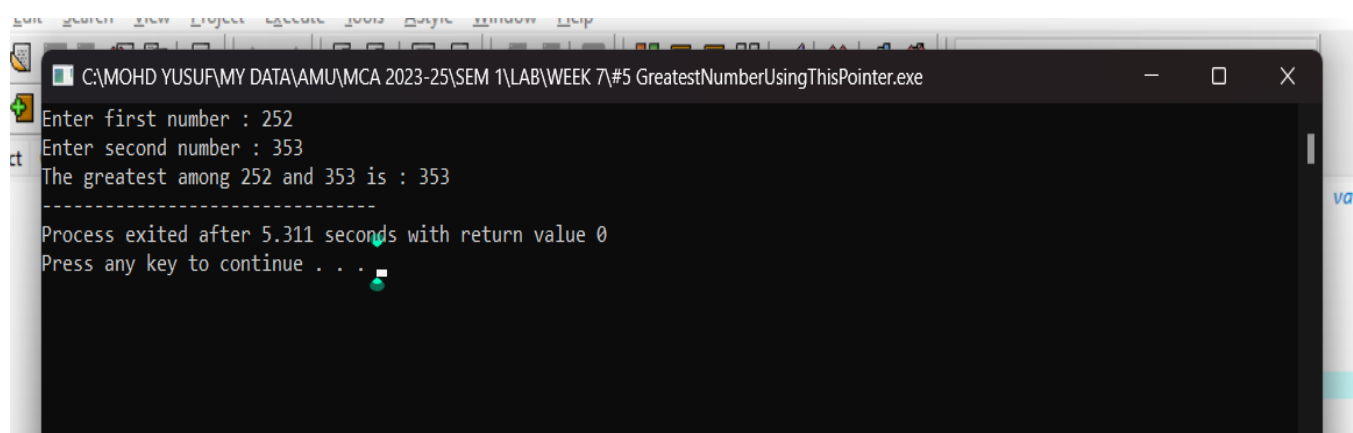
```

5# Develop a C++ program to find the greatest of two numbers using this pointer which returns the member variable.

Code:

```
#4 ClassFunctionObject.cpp #5 GreatestNumberUsingThisPointer.cpp
1 // Develop a C++ program to find the greatest of two numbers using this pointer which returns the member variable.
2
3 #include<iostream>
4 using namespace std;
5
6 class Numbers
7 {
8     private:
9         int num1;
10        int num2;
11
12    public:
13        Numbers(int a, int b) : num1(a), num2(b) {}
14
15        int findgreatest()
16        {
17            return (this->num1 > this->num2) ? this->num1 : this-> num2;
18        }
19    };
20
21 int main()
22 {
23     int a, b;
24
25     cout<<"Enter first number : ";
26     cin>>a;
27     cout<<"Enter second number : ";
28     cin>>b;
29
30     Numbers numbers(a,b);
31
32     int greatest = numbers.findgreatest();
33
34     cout<<"The greatest among "<<a<<" and "<<b<<" is : "<<greatest;
35
36     return 0;
```

Output:



The screenshot shows a Windows command prompt window titled "C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 7\#5 GreatestNumberUsingThisPointer.exe". The program prompts the user to enter two numbers. The first number entered is 252, and the second number entered is 353. The program then outputs "The greatest among 252 and 353 is : 353". Below this, it shows "Process exited after 5.311 seconds with return value 0" and "Press any key to continue . . .".

6# Write a C++ Program for Count vowels String Using Pointer.

Code:

```

#4 ClassFunctionObject.cpp #5 GreatestNumberUsingThisPointer.cpp #6 FlightClass.cpp
1 // Write a C++ program to implement flight class with data member as flight_no., source destination and fare.
2 // Write a member function to display the flight information using this pointer.
3
4 #include<iostream>
5 #include<string>
6 using namespace std;
7 class flight
8 {
9 private:
10     int flight_no;
11     string source;
12     string destination;
13     float fare;
14 public:
15     void set_data(int flight_no,const string &source,const string &destination,float fare){
16         this->flight_no=flight_no;
17         this->source=source;
18         this->destination=destination;
19         this->fare=fare;
20     };
21     void print(){
22         cout<<"Flight Details: "<<endl<<endl;
23         cout<<"Flight Number : "<<this->flight_no<<endl;
24         cout<<"Flight From : "<<this->source<<endl;
25         cout<<"Flight To : "<<this->destination<<endl;

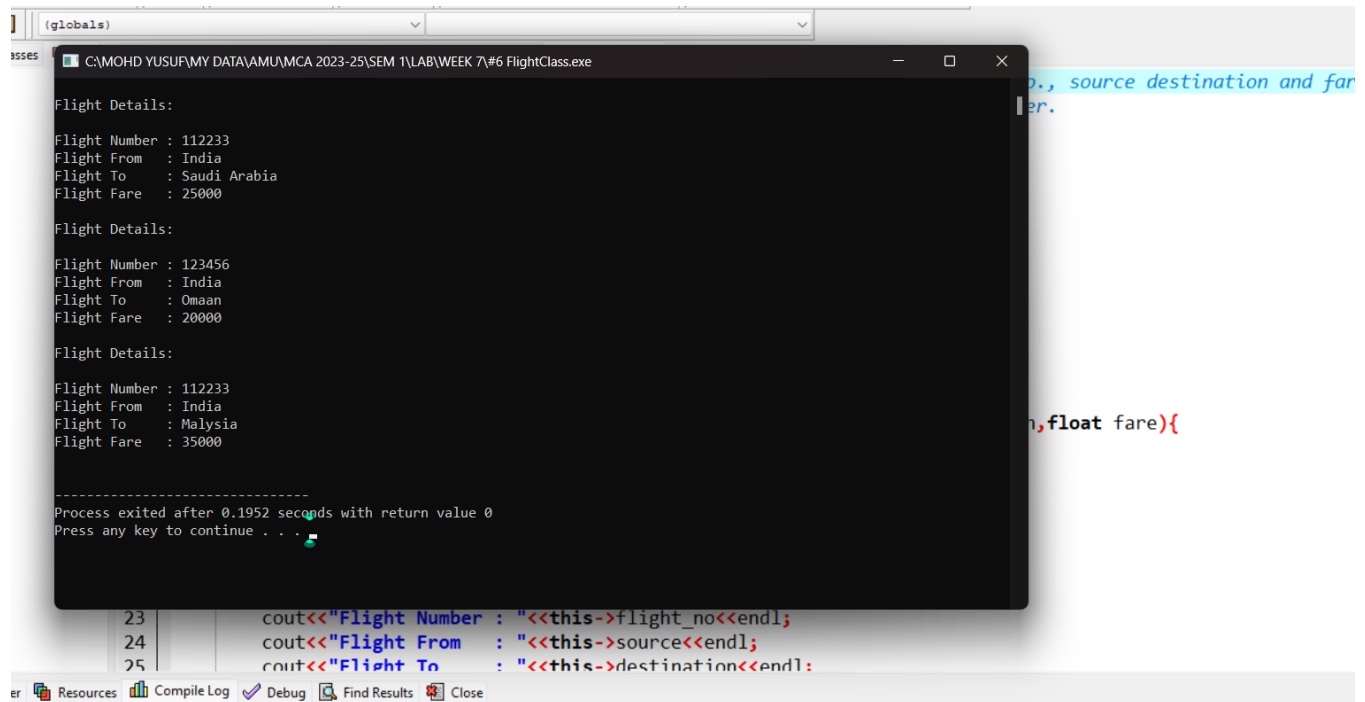
```

```

#4 ClassFunctionObject.cpp #5 GreatestNumberUsingThisPointer.cpp #6 FlightClass.cpp
25         cout<<"Flight To : "<<this->destination<<endl;
26         cout<<"Flight Fare : "<<this->fare<<endl;
27         cout<<"\n";
28     };
29 };
30
31
32 int main(){
33     flight vistara,indigo,kingfisher;
34     //Object declaration of class flight
35
36     //setting data to objects with set data function
37     vistara.set_data(112233,"India","Saudi Arabia",25000);
38     indigo.set_data(123456,"India","Omaan",20000);
39     kingfisher.set_data(112233,"India","Malaysia",35000);
40     cout<<endl;
41
42     //Printing data of object whose data was set.
43     vistara.print();
44     indigo.print();
45     kingfisher.print();
46
47     return 0;
48 }

```

Output:



The screenshot shows a Windows command prompt window titled "C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 7\#6 FlightClass.exe". The output displays flight details for three flights. The first flight has number 112233, from India to Saudi Arabia, with a fare of 25000. The second flight has number 123456, from India to Oman, with a fare of 20000. The third flight has number 112233, from India to Malaysia, with a fare of 35000. The program exits after 0.1952 seconds with a return value of 0. The background shows a code editor with the following code:

```
23 cout<<"Flight Number : "<<this->flight_no<<endl;
24 cout<<"Flight From : "<<this->source<<endl;
25 cout<<"Flight To : "<<this->destination<<endl;
```

7# Write a C++ Program for Count vowels String Using Pointer.

Code:

```
1 // Write a C++ program to use this pointer and return the pointer reference.
2
3 #include<iostream>
4 using namespace std;
5 class ptr_ref{
6     private:
7         int val;
8     public:
9         ptr_ref& set_data(int val){
10             this->val=val;
11             return *this; //Refrencing current object thus we can chain get and set.
12         };
13
14         void get_data(){
15             cout<<"The Value of Object using this and pointer reference is : "<<this->val;
16         }
17 };
18 int main(){
19
20     int a;
21     cout<<"Enter an integer: ";
22     cin>>a;
23
24     ptr_ref obj1;
25     obj1.set_data(a).get_data();
26
27     return 0;
```

Output:

```
Debug #4 ClassFunctionObject.cpp #5 GreatestNumberUsingThisPointer.cpp #6 FlightClass.cpp #7 ReturnPointerReference.cpp
1 // Write a C++ program to use this pointer and return the pointer reference.
2
C:\MOHD YUSUF\MY DATA\AMU\MCA 2023-25\SEM 1\LAB\WEEK 7\#7 ReturnPointerReference.exe
Enter an integer: 151
The Value of Object using this and pointer reference is : 151
-----
Process exited after 2.084 seconds with return value 0
Press any key to continue . . .
```