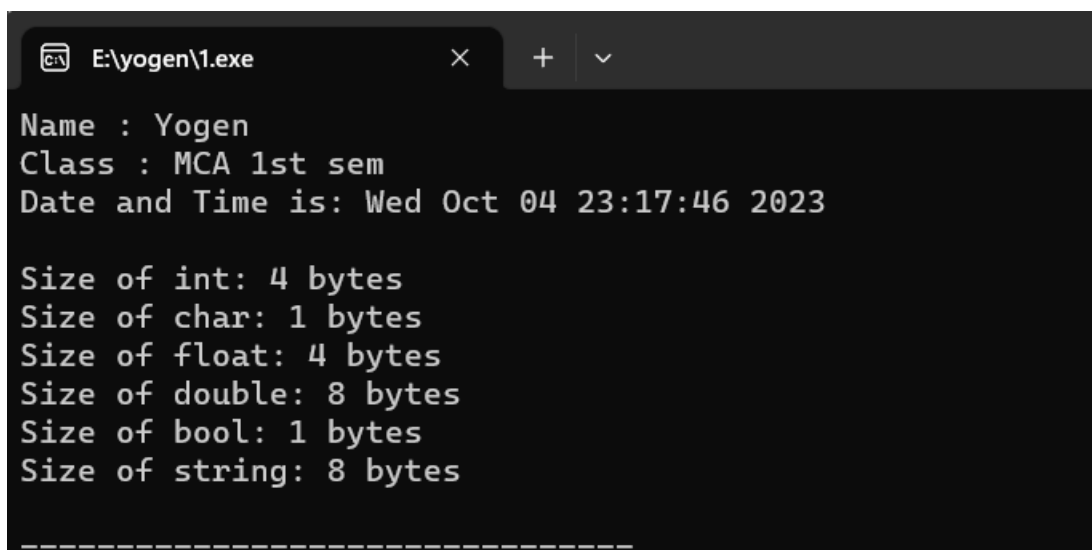


**Program 01: Write a C++ program to get the size of different type of datatypes.****Code:**

```
#include <iostream>
#include<ctime>
using namespace std;
int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    cout << "Size of int: " << sizeof(int) << " bytes" << endl;
    cout << "Size of char: " << sizeof(char) << " bytes" << endl;
    cout << "Size of float: " << sizeof(float) << " bytes" << endl;
    cout << "Size of double: " << sizeof(double) << " bytes" << endl;
    cout << "Size of bool: " << sizeof(bool) << " bytes" << endl;
    cout << "Size of string: " << sizeof(str) << " bytes" << endl;
    return 0;
}
```

**Output:**

```
E:\yogen\1.exe
Name : Yogen
Class : MCA 1st sem
Date and Time is: Wed Oct 04 23:17:46 2023

Size of int: 4 bytes
Size of char: 1 bytes
Size of float: 4 bytes
Size of double: 8 bytes
Size of bool: 1 bytes
Size of string: 8 bytes
-----
```

**Program 02: Write a C++ program to perform arithmetic operations using arithmetic operators.****Code:**

```
#include<iostream>
#include<ctime>
using namespace std;
int main ()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int a, b;
    cout << "Enter the value of a and value of b:";
    cin >> a>>b;
    int addition = a + b;
    int difference = a - b;
    int multiplication = a * b;
    float division = a / b;
    int remainder = a % b;

    cout << "Sum of "<<a<<" and "<<b<<"is = " << addition << endl;

    cout << "Difference between " <<a<<" and "<<b<<"is = " << difference << endl;

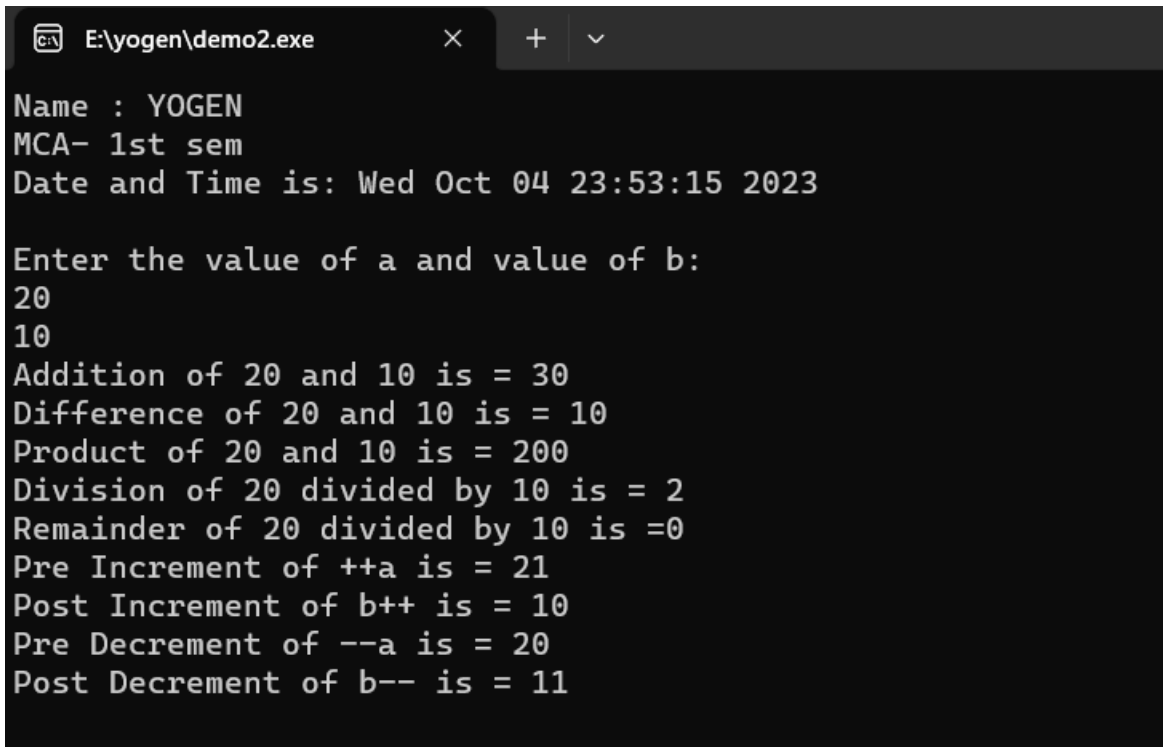
    cout << "Product of " <<a<<" and "<<b<<"is = " << multiplication << endl;

    cout << "Division of " <<a<<" and "<<b<<"is = " << division << endl;

    cout << "Remainder of " <<a<<" and "<<b<<"is = " << remainder << endl;

    cout << "Pre Increment of ++a is = "<<++a<<endl;
    cout << "Post Increment of b++ is = "<<b++<<endl;
    cout << "Pre Decrement of --a is = "<<--a<<endl;
    cout << "Post Decrement of b-- is = "<<b--<<endl;

    return 0;}
```

**Output :-**

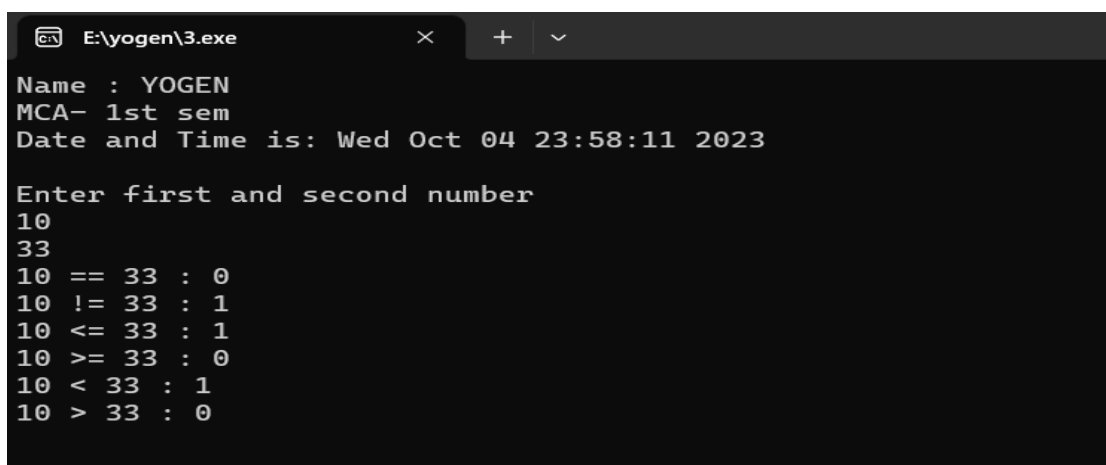
```
E:\yogen\demo2.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Wed Oct 04 23:53:15 2023

Enter the value of a and value of b:
20
10
Addition of 20 and 10 is = 30
Difference of 20 and 10 is = 10
Product of 20 and 10 is = 200
Division of 20 divided by 10 is = 2
Remainder of 20 divided by 10 is =0
Pre Increment of ++a is = 21
Post Increment of b++ is = 10
Pre Decrement of --a is = 20
Post Decrement of b-- is = 11
```

**Program 03: Write a C++ program to demonstrate the different types of relational operators .****Code:**

```
#include<iostream>
#include<ctime>
using namespace std;
int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int x,y;
    cout<<"Enter first and second number "<<endl;
    cin>>x>>y;
    cout<<x<<" == "<<y<<" : "<<(x==y)<<endl;
    cout<<x<<" != "<<y<<" : "<<(x!=y)<<endl;
    cout<<x<<" <= "<<y<<" : "<<(x<=y)<<endl;
    cout<<x<<" >= "<<y<<" : "<<(x>=y)<<endl;
    cout<<x<<" < "<<y<<" : "<<(x<y)<<endl;
    cout<<x<<" > "<<y<<" : "<<(x>y)<<endl;
    return 0;
}
```

**Output:**

```
E:\yogen\3.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Wed Oct 04 23:58:11 2023

Enter first and second number
10
33
10 == 33 : 0
10 != 33 : 1
10 <= 33 : 1
10 >= 33 : 0
10 < 33 : 1
10 > 33 : 0
```

**Program 04: Write a C++ program to demonstrate the logical operators (&&,||,!) .****Code:**

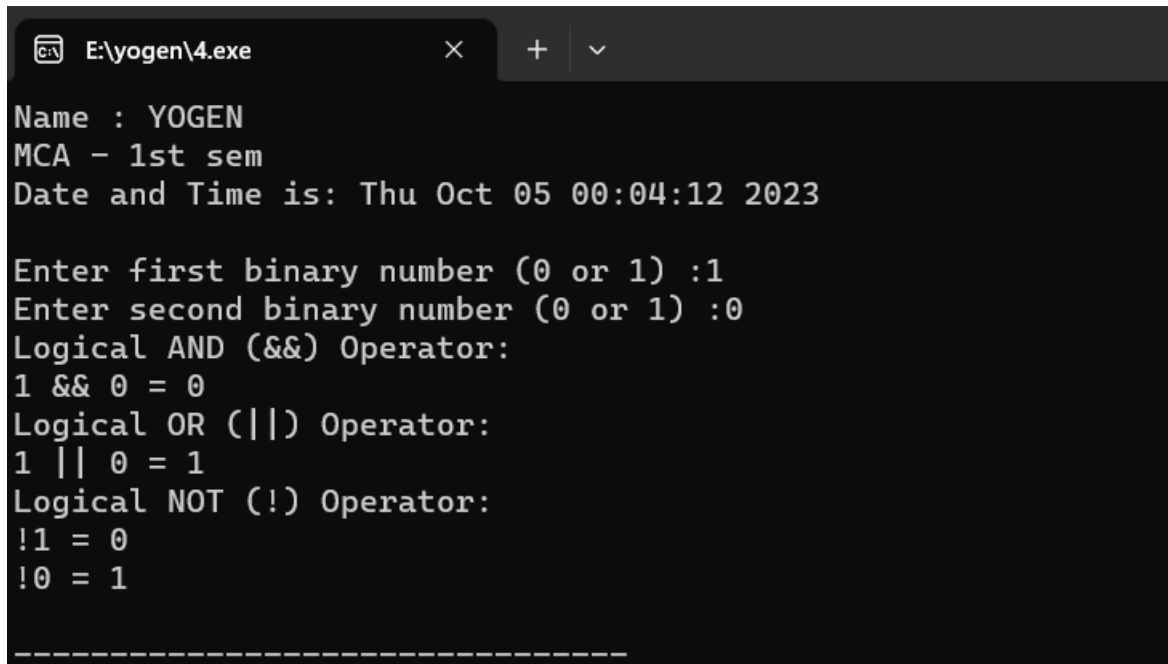
```
#include<iostream>
#include<ctime>
using namespace std;
int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA - 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int a,b;
    cout<<"Enter first binary number (0 or 1) :";
    cin>>a;
    cout<<"Enter second binary number (0 or 1) :";
    cin>>b;

    // Logical AND (&&) operator
    cout << "Logical AND (&&) Operator:" << endl;
    cout <<a<<" && "<<b<<" = "<<(a && b) << endl; // true && false = false

    // Logical OR (||) operator
    cout << "Logical OR (||) Operator:" << endl;
    cout <<a<<" || "<<b<<" = "<<(a || b) << endl; // true || false = true

    // Logical NOT (!) operator
    cout << "Logical NOT (!) Operator:" << endl;
    cout << "!"<<a <<" = " <<!a<< endl; // !true = false
    cout << "!"<<b <<" = " <<!b<< endl; // !false = true
    return 0;
}
```

**Output:-**

```
E:\yogen\4.exe
Name : YOGEN
MCA - 1st sem
Date and Time is: Thu Oct 05 00:04:12 2023

Enter first binary number (0 or 1) :1
Enter second binary number (0 or 1) :0
Logical AND (&&) Operator:
1 && 0 = 0
Logical OR (||) Operator:
1 || 0 = 1
Logical NOT (!) Operator:
!1 = 0
!0 = 1
-----
```

**Program 05: Write a C++ program to demonstrate the Bitwise operators .****Code :**

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

int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int num1,num2;
    cout<<"Enter a two number: "<<endl;
    cin>>num1>>num2;

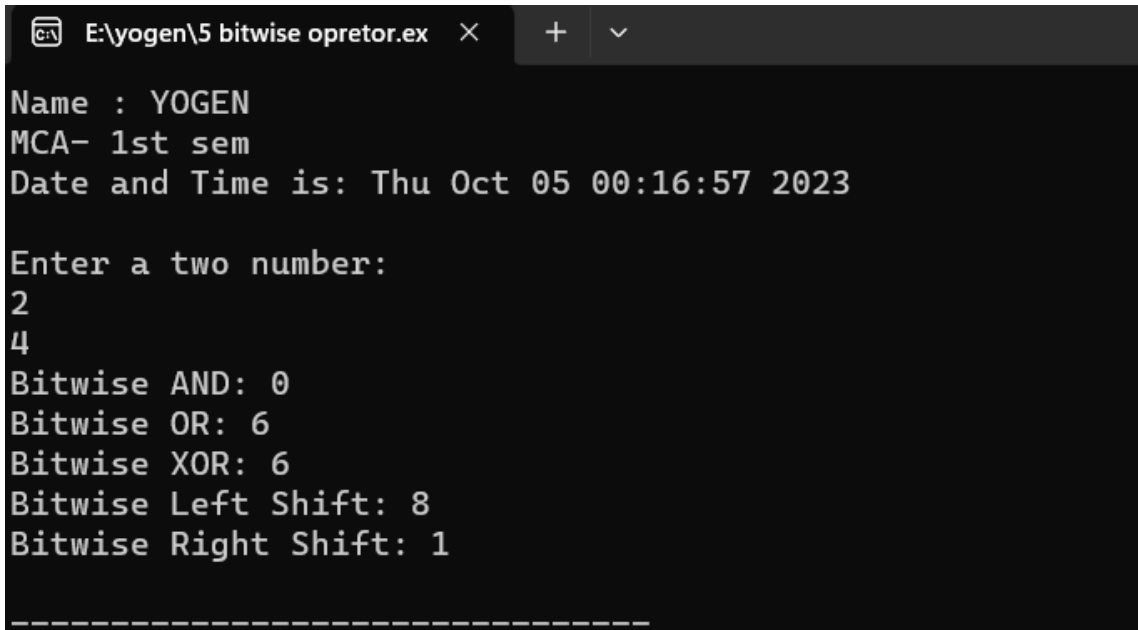
    // Bitwise AND
    int result_and = num1 & num2;
    cout << "Bitwise AND: " << result_and <<endl;

    // Bitwise OR
    int result_or = num1 | num2;
    cout << "Bitwise OR: " << result_or <<endl;

    // Bitwise XOR
    int result_xor = num1 ^ num2;
    cout << "Bitwise XOR: " << result_xor <<endl;

    // Bitwise Left Shift
    int left_shifted = num1 << 2;
    cout << "Bitwise Left Shift: " << left_shifted <<endl;
    // Bitwise Right Shift
```

```
int right_shifted = num1 >> 1;
cout << "Bitwise Right Shift: " << right_shifted << endl;
return 0;
}
```

**Output:**

```
E:\yogen\5 bitwise opretor.ex  X  +  v
Name : YOGEN
MCA- 1st sem
Date and Time is: Thu Oct 05 00:16:57 2023

Enter a two number:
2
4
Bitwise AND: 0
Bitwise OR: 6
Bitwise XOR: 6
Bitwise Left Shift: 8
Bitwise Right Shift: 1
-----
```



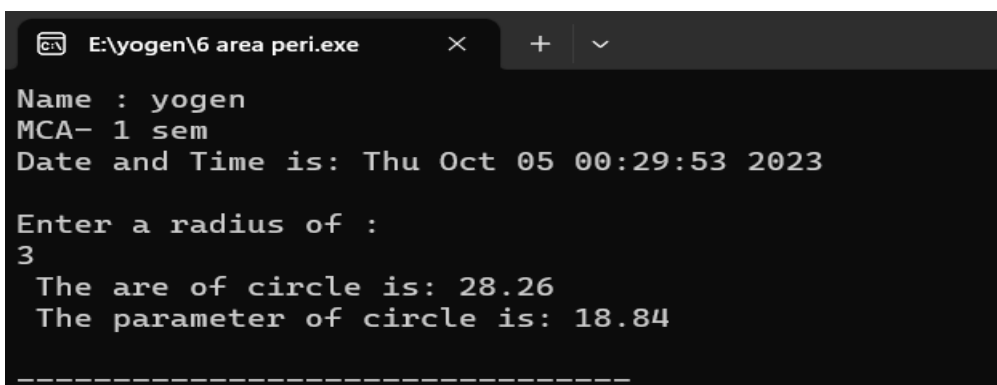
**Program 06: Write a C++ program to read radius of a circle, calculate area and perimeter and display them.(using const constant).**

**Code:**

```
#include<iostream>
#include<ctime>
using namespace std;
int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    const float PI = 3.14;    //Using const keyword find Area and parameter of circle
    int r;
    float a,p;
    cout<<"Enter a radius of circle:"<<endl;
    cin>>r;
    a= PI*r*r;
    cout<<" The area of circle is: "<<a<<endl;
    p=2*PI*r;
    cout<<" The parameter of circle is: "<<p<<endl;
    return 0;
}
```

**Output :-**



```
E:\yogen\6 area peri.exe
Name : yogen
MCA- 1 sem
Date and Time is: Thu Oct 05 00:29:53 2023

Enter a radius of :
3
The are of circle is: 28.26
The parameter of circle is: 18.84
-----
```

**Program 07: Write a C++ program for Assuming that res starts with the value 25 and p with 3,so print the following code:-**

a)     `cout<<res--;`  
      `cout<<++res;`

b)     `p=p*++res;`

**Code :**

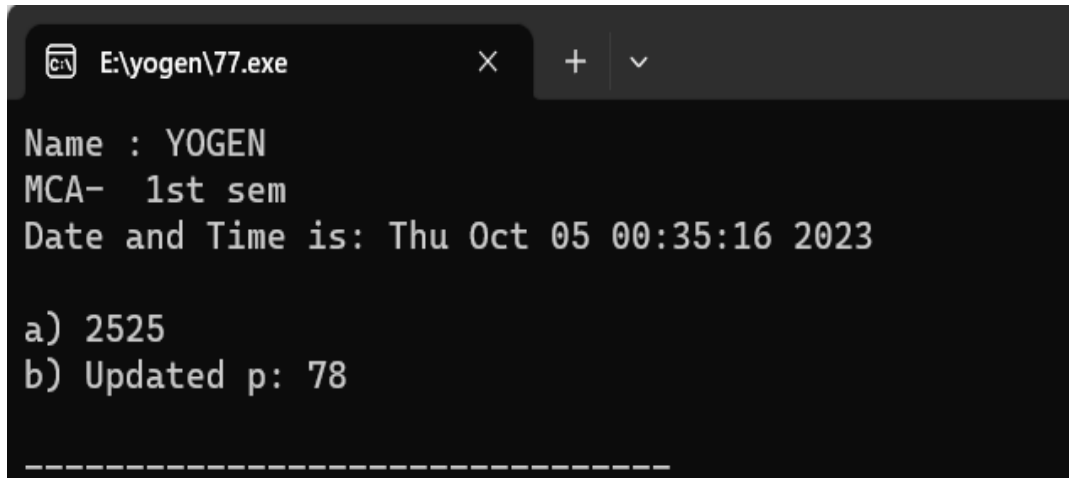
```
#include <iostream>
#include<ctime>
using namespace std;
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA- 1ST sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int res = 25;
    int p = 3;

    // Part a)
    cout << "a) ";
    cout << res--; // Post-decrement res
    cout << ++res; // Pre-increment res
    cout << endl;

    // Part b)
    p = p * ++res; // Pre-increment res and update p
    cout << "b) Updated p: " << p <<endl;

    return 0;
}
```

**Output:-**A screenshot of a Windows command prompt window. The title bar shows the file path 'E:\yogen\77.exe' and standard window controls (close, maximize, minimize). The command prompt displays the following text:  
Name : YOGEN  
MCA- 1st sem  
Date and Time is: Thu Oct 05 00:35:16 2023  
  
a) 2525  
b) Updated p: 78  
  
Below the last line, there is a dashed line consisting of approximately 20 hyphens.

```
E:\yogen\77.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Thu Oct 05 00:35:16 2023

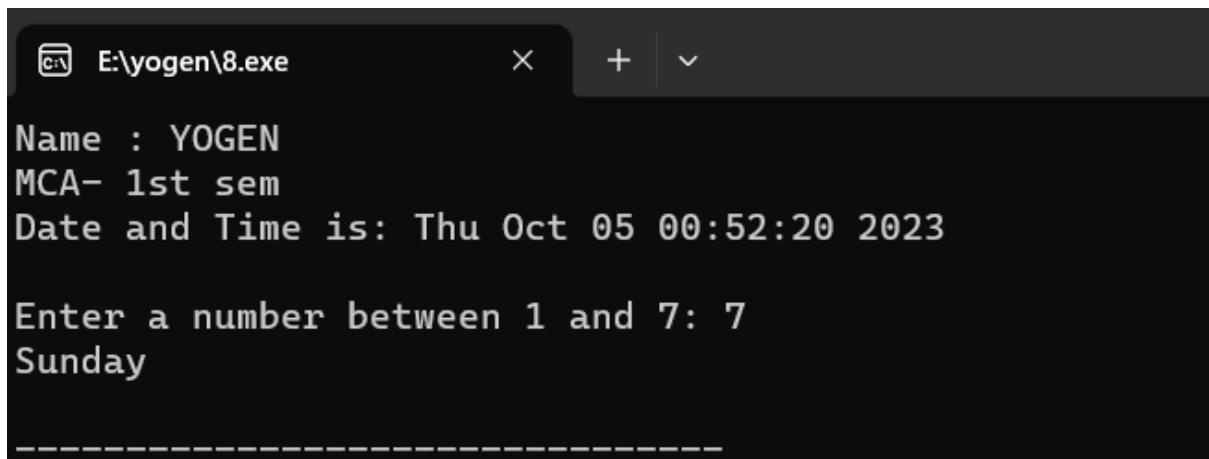
a) 2525
b) Updated p: 78
-----
```

**Program 08: Write a C++ program to input number of weeks day(1-7) and translate to its equivalent name of the day of the week using switch case.****Code :**

```
#include<iostream>
#include<ctime>
using namespace std;
int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

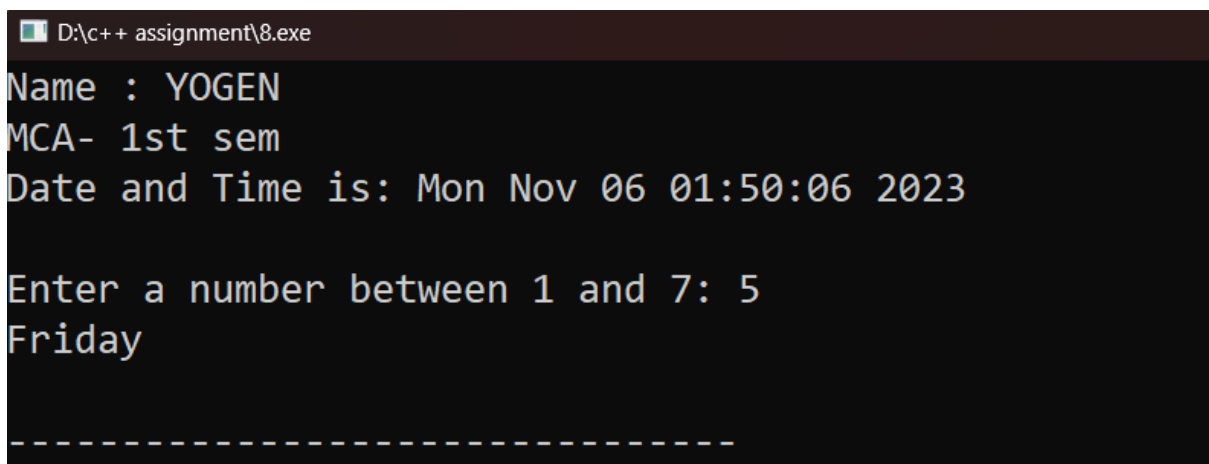
    int dayNumber;
    cout << "Enter a number between 1 to 7: ";
    cin >> dayNumber;

    switch (dayNumber)
    {
        case 1:
            cout << "Monday" << endl;
            break;
        case 2:
            cout << "Tuesday" << endl;
            break;
        case 3:
            cout << "Wednesday" << endl;
            break;
        case 4:
            cout << "Thrusday" << endl;
            break;
        case 5:
            cout << "Friday" << endl;
            break;
        case 6:
            cout << "Saturday" << endl;
            break;
        case 7:
            cout << "Sunday" << endl;
            break;
        default:
            cout << "Invalid input! Please enter a number between 1 to 7." << endl;
    }
    return 0;
}
```

**Output:**

```
E:\yogen\8.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Thu Oct 05 00:52:20 2023

Enter a number between 1 and 7: 7
Sunday
-----
```



```
D:\c++ assignment\8.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Mon Nov 06 01:50:06 2023

Enter a number between 1 and 7: 5
Friday
-----
```

**Program 09: Write a C++ program to make basic calculator using switch case.**

Code:

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

int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

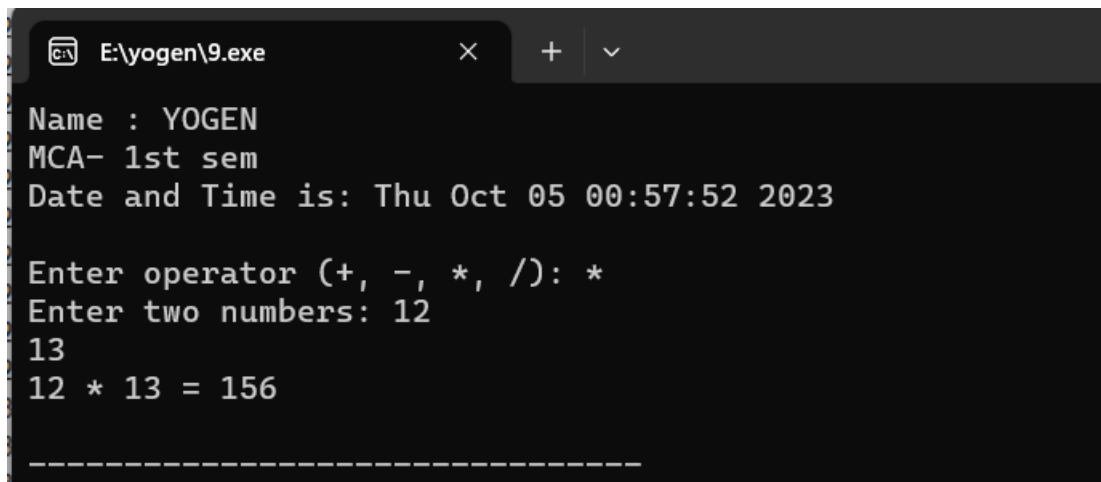
    char operation;
    double num1, num2;

    cout << "Enter operator (+, -, *, /): ";
    cin >> operation;

    cout << "Enter two numbers: ";
    cin >> num1 >> num2;

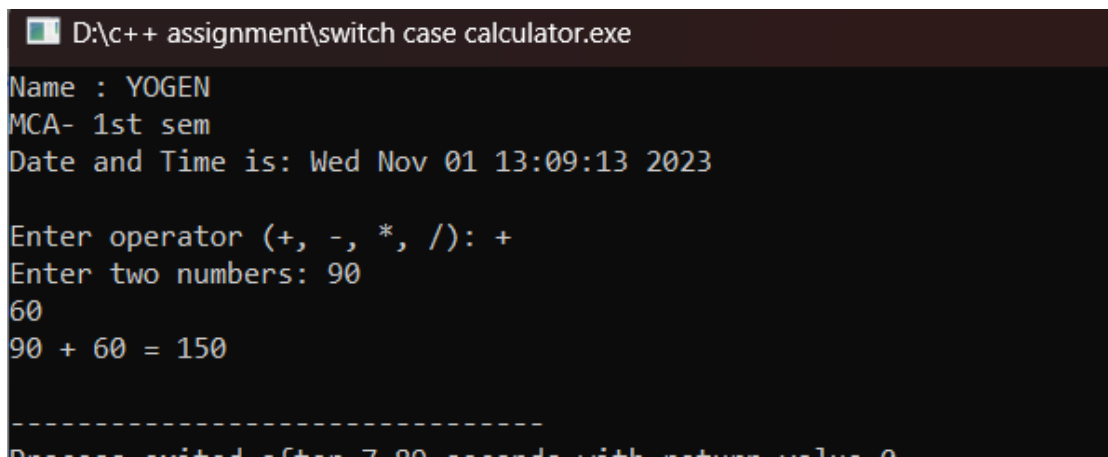
    switch (operation)
    {
        case '+':
            cout << num1 << " + " << num2 << " = " << num1 + num2 << endl;
            break;
        case '-':
            cout << num1 << " - " << num2 << " = " << num1 - num2 << endl;
            break;
        case '*':
            cout << num1 << " * " << num2 << " = " << num1 * num2 << endl;
            break;
        case '/':
            cout << num1 << " / " << num2 << " = " << num1 / num2 << endl;
            break;
        default:
            cout << "Invalid operator! Please enter +, -, *, or /." << endl;
    }

    return 0;
}
```

**Output:**

```
E:\yogen\9.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Thu Oct 05 00:57:52 2023

Enter operator (+, -, *, /): *
Enter two numbers: 12
13
12 * 13 = 156
-----
```



```
D:\c++ assignment\switch case calculator.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Wed Nov 01 13:09:13 2023

Enter operator (+, -, *, /): +
Enter two numbers: 90
60
90 + 60 = 150
-----
Program exited after 7.89 seconds with return value 0
```

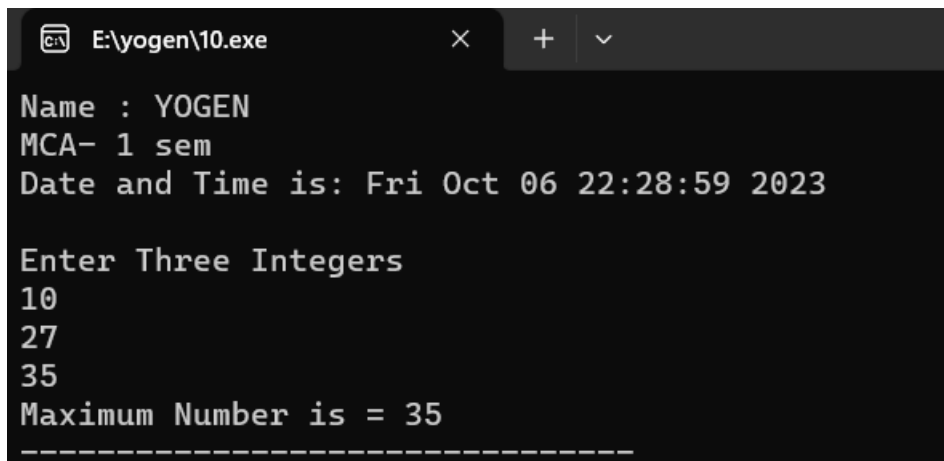
**Program 10: Write a C++ program to find largest number among three number using ternary operator.**

**Code :**

```
#include<iostream>
#include<ctime>
using namespace std;
int main()
{
cout<<"Name : YOGEN "<<endl;
cout<<"MCA- 1 sem"<<endl;
time_t now = time(0);
char* dt = ctime(&now);
cout<<"Date and Time is: "<<dt<<endl;

int a, b, c, max;
cout << "Enter Three Integers\n";
cin >> a >> b >> c;
max = (a > b) ? ((a > c) ? a : c) : ((b > c) ? b : c); //using ternary operator
cout << "Maximum Number is = " << max;
return 0;
}
```

Output :

A screenshot of a Windows command prompt window titled "E:\yogen\10.exe". The window shows the output of a C++ program. The first part of the output displays the user's name "YOGEN", the semester "MCA- 1 sem", and the current date and time "Fri Oct 06 22:28:59 2023". The second part of the output prompts the user to "Enter Three Integers", and the user has entered "10", "27", and "35". The program then outputs "Maximum Number is = 35" followed by a line of dashes.

```
E:\yogen\10.exe
Name : YOGEN
MCA- 1 sem
Date and Time is: Fri Oct 06 22:28:59 2023

Enter Three Integers
10
27
35
Maximum Number is = 35
-----
```



**Program11: Write a C++ program using for loop to print numbers from 1 to 10.**

**Code :**

```
#include<iostream>

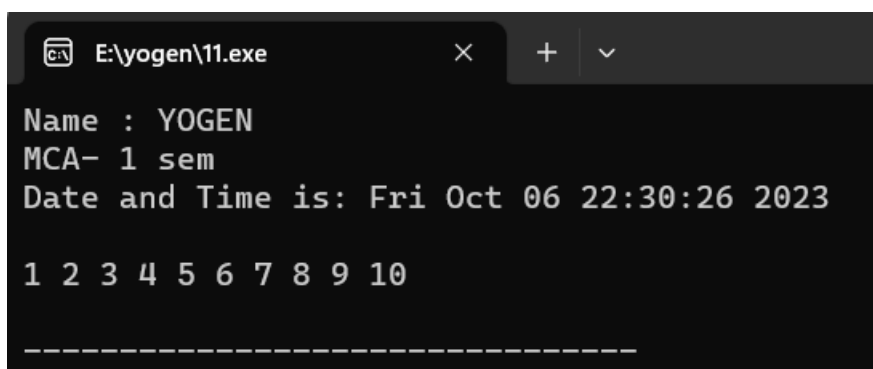
#include<ctime>

using namespace std;

int main()
{
cout<<"Name : YOGEN "<<endl;
cout<<"MCA- 1 sem"<<endl;
time_t now = time(0);
char* dt = ctime(&now);
cout<<"Date and Time is: "<<dt<<endl;

for (int i = 1; i <= 10; i++){
cout << i << " ";
}
cout << endl;
return 0;
}
```

Output :

A screenshot of a Windows command prompt window. The title bar shows the file path 'E:\yogen\11.exe'. The window contains the following text: 'Name : YOGEN', 'MCA- 1 sem', 'Date and Time is: Fri Oct 06 22:30:26 2023', and a sequence of numbers '1 2 3 4 5 6 7 8 9 10' followed by a dashed line.

```
E:\yogen\11.exe
Name : YOGEN
MCA- 1 sem
Date and Time is: Fri Oct 06 22:30:26 2023
1 2 3 4 5 6 7 8 9 10
-----
```

**Program12: Write a C++ program to display 2,4,6,8.....,18,20 using while loop.**

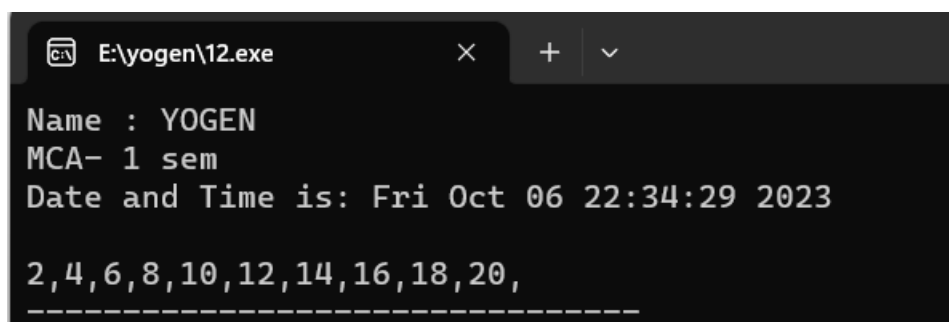
**Code :**

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

int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1 sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int i=0;
    while(i<=18) // using while loop
    {
        i+=2; // using assignment operator
        cout<<i<<",";
    }
    return 0;
}
```

Output :

A screenshot of a Windows command prompt window. The title bar shows the file name 'E:\yogen\12.exe' and standard window controls. The output of the program is displayed in a monospaced font: 'Name : YOGEN', 'MCA- 1 sem', 'Date and Time is: Fri Oct 06 22:34:29 2023', followed by a sequence of even numbers '2,4,6,8,10,12,14,16,18,20,' on a new line, and a dashed line '-----' on the following line.

```
E:\yogen\12.exe
Name : YOGEN
MCA- 1 sem
Date and Time is: Fri Oct 06 22:34:29 2023
2,4,6,8,10,12,14,16,18,20,
-----
```

**Program13: Write a c++ program to print following patterns :****A) \* \* \* \***

\* \* \*

\* \*

\*

**B) \***

\* \*

\* \* \*

\* \* \* \*

**C) 1**

1 2

1 2 3

1 2 3 4

**D) \***

\* \*

\* \* \*

\* \* \* \*

**Code :**

```

#include<iostream>
#include<ctime>
using namespace std;
void details()
{
cout<<"Name : YOGEN "<<endl;
cout<<"MCA- 1 sem"<<endl;
time_t now = time(0);
char* dt = ctime(&now);
cout<<"Date and Time is: "<<dt<<endl;
}

void triangle1()
{
int n;
cout<<"Enter a number : ";

```

```
cin>>n;
cout<<"A)"<<endl;
for(int i=n; i>=1; i--)
{
    for(int j=1; j<=i;j++)
    {
        cout<<"* ";
    }
    cout<<endl;
}
}
void triangle2()
{
    int n;
    cout<<"Enter a number : ";
    cin>>n;
    cout<<"B)"<<endl;

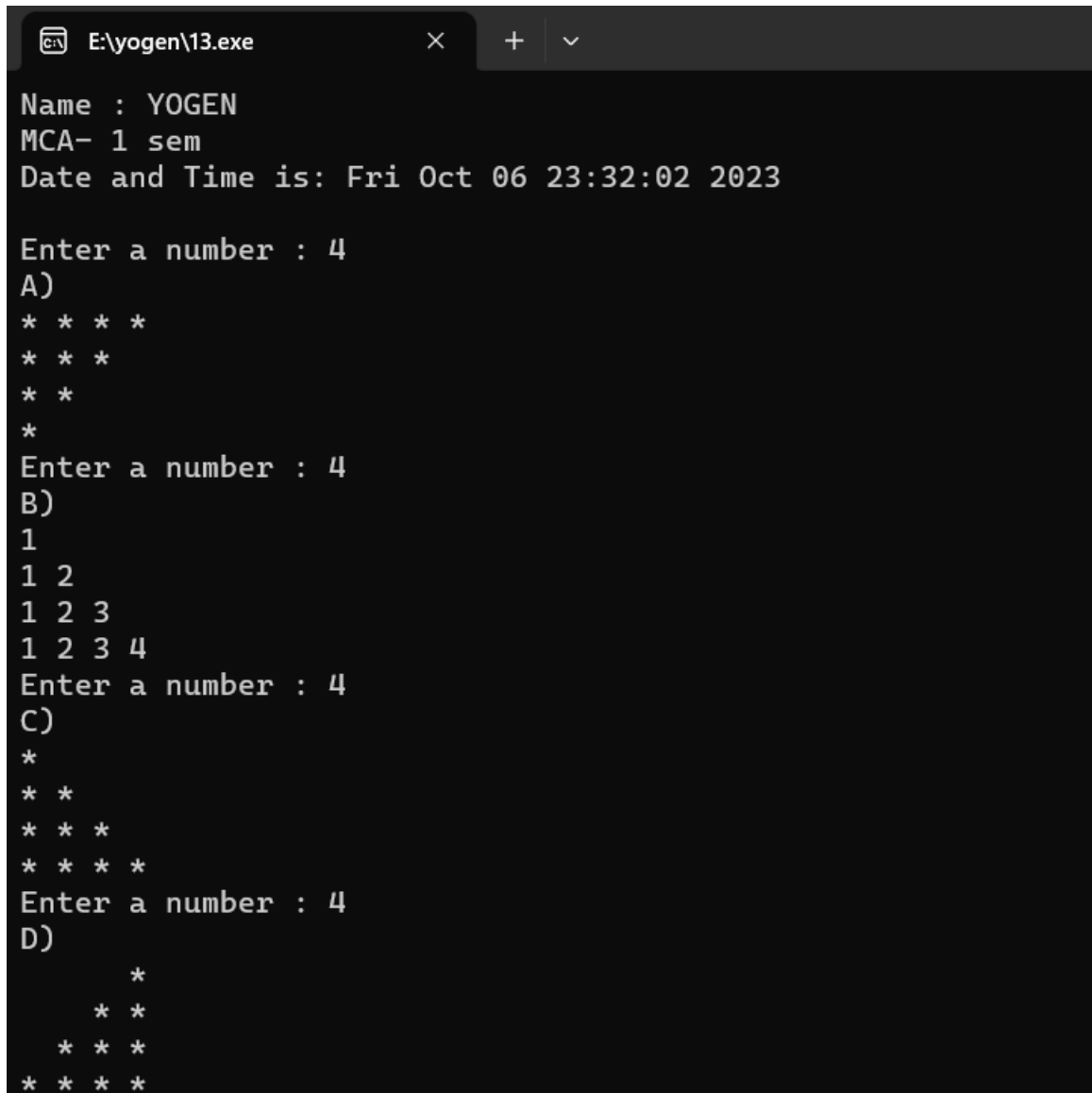
    for (int i = 1; i <= n; i++)
    {
        for (int j = 1; j <= i; j++)
        {
            cout <<j<<" ";
        }
        cout <<endl;
    }
}
void triangle3()
{
    int n;
    cout<<"Enter a number : ";
    cin>>n;
    cout<<"C)"<<endl;
    for(int i=1;i<=4;i++)
    {
        for(int s=1;s<=i;s++)
        {
            cout<<"* ";
        }
        cout<<endl;
    }
}
void triangle4()
{
```

```
int n;
cout<<"Enter a number : ";
cin>>n;
cout<<"D)"<<endl;

for (int i = n; i > 0; i--)
{
    for (int j = 1; j <= n; j++)
    {
        if (j >= i)
        {
            cout << "* ";
        }
        else
        {
            cout << " ";
        }
    }
    cout << endl;
}
```

```
int main()
{
    details();
    triangle1();
    triangle2();
    triangle3();
    triangle4();
    return 0;
}
```

Output:



```
E:\yogen\13.exe
Name : YOGEN
MCA- 1 sem
Date and Time is: Fri Oct 06 23:32:02 2023

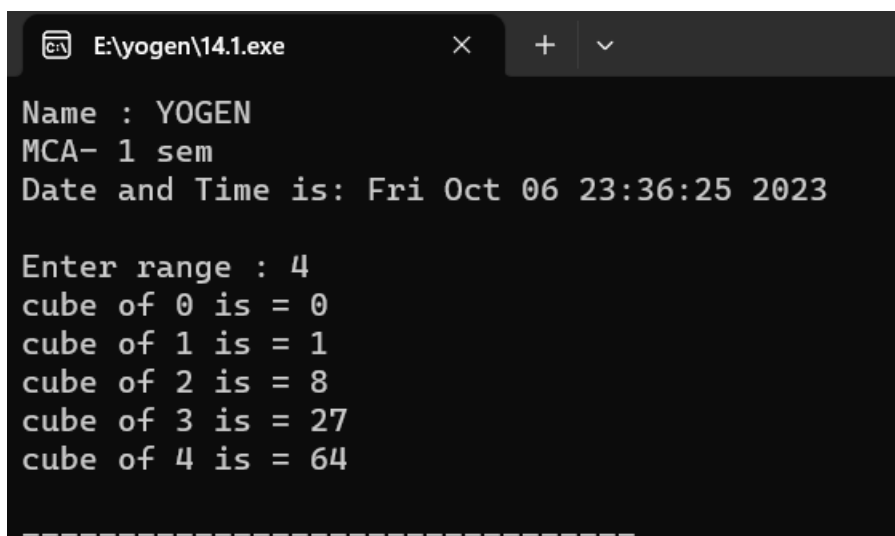
Enter a number : 4
A)
* * * *
* * *
* *
*
Enter a number : 4
B)
1
1 2
1 2 3
1 2 3 4
Enter a number : 4
C)
*
* *
* * *
* * * *
Enter a number : 4
D)
      *
    * *
  * * *
* * * *
```

**Program14: Write a C++ program to display the cube of the number upto an integer.****Code :**

```
#include<iostream>
#include<ctime>
using namespace std;
int main(){
cout<<"Name : YOGEN "<<endl;
cout<<"MCA- 1 sem"<<endl;
time_t now = time(0);
char* dt = ctime(&now);
cout<<"Date and Time is: "<<dt<<endl;

int range;
cout<<"Enter range : ";
cin>>range;
for(int i=0;i<=range;i++){
cout<<"cube of "<<i<<" is = "<<i*i*i<<endl;
}
return 0;
}
```

Output:



```
E:\yogen\14.1.exe
Name : YOGEN
MCA- 1 sem
Date and Time is: Fri Oct 06 23:36:25 2023

Enter range : 4
cube of 0 is = 0
cube of 1 is = 1
cube of 2 is = 8
cube of 3 is = 27
cube of 4 is = 64
```

**Program15: Write a C++ program to check for equality of two numbers without using arithmetic or comparison operator.****Code :**

```
#include<iostream>
#include<ctime>
using namespace std;
//using binary repratation for equal check

bool areEqual(int num1, int num2)
{
    return !(num1 ^ num2);
}

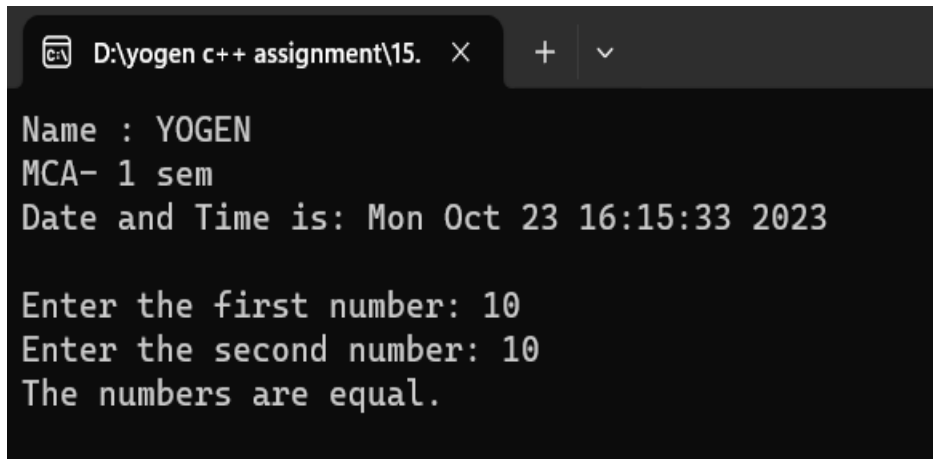
int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1 sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

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

    if (areEqual(num1, num2))
    {
        cout << "The numbers are equal." << endl;
    }
    else
    {
        cout << "The numbers are not equal." << endl;
    }
    return 0;
}
```

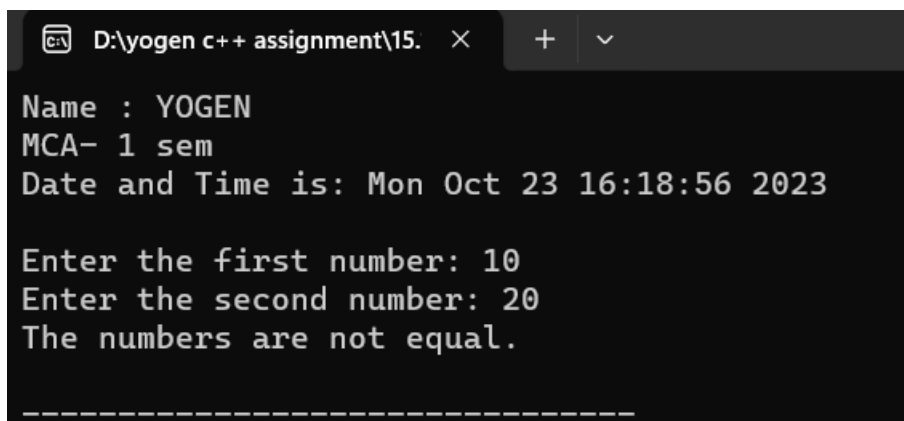


Output:



```
D:\yogen c++ assignment\15. x + v
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:15:33 2023

Enter the first number: 10
Enter the second number: 10
The numbers are equal.
```



```
D:\yogen c++ assignment\15. x + v
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:18:56 2023

Enter the first number: 10
Enter the second number: 20
The numbers are not equal.
-----
```

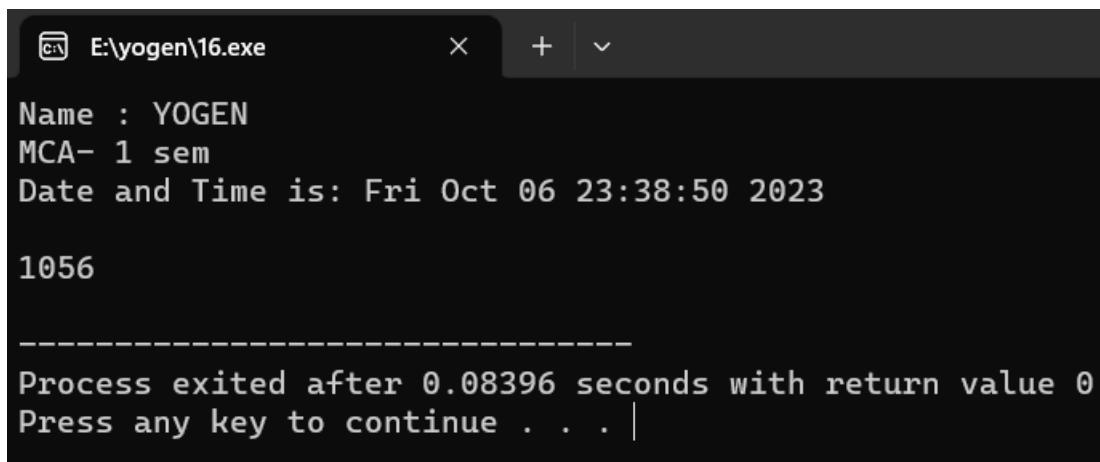
**Program 16: Write a C++ program to calculate value of 132 x 8 without using “ \* ”operator****Code :**

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

int main()
{
cout<<"Name : YOGEN "<<endl;
cout<<"MCA- 1 sem"<<endl;
time_t now = time(0);
char* dt = ctime(&now);
cout<<"Date and Time is: "<<dt<<endl;

int result;
int a=132;
result=a<<3;
cout<<result<<endl;
return 0;
}
```

Output:



```
E:\yogen\16.exe
Name : YOGEN
MCA- 1 sem
Date and Time is: Fri Oct 06 23:38:50 2023

1056

-----
Process exited after 0.08396 seconds with return value 0
Press any key to continue . . . |
```

**Program 17: Write a C++ program to find Area of rectangle (using #define).****Code :**

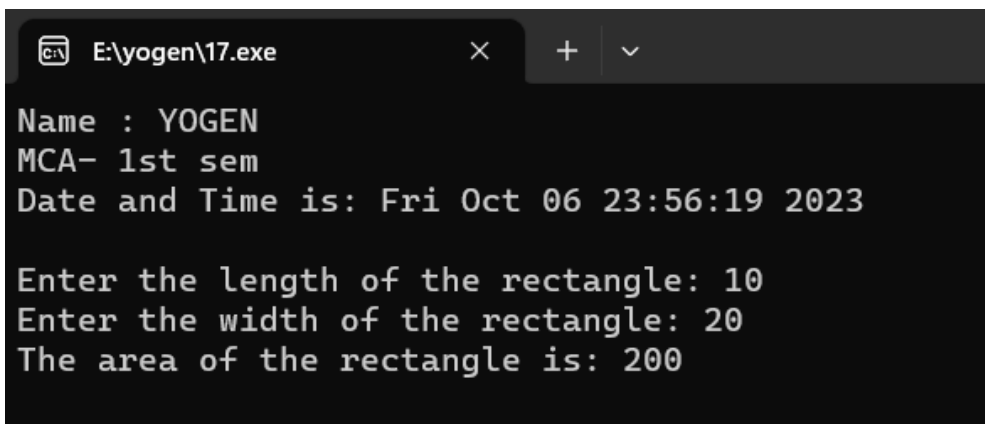
```
#include <iostream>
#include<ctime>
using namespace std;

#define AREA(length, width) (length * width) //declaration of #define

int main(){
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    double length, width;
    cout << "Enter the length of the rectangle: ";
    cin >> length;
    cout << "Enter the width of the rectangle: ";
    cin >> width;
    double area = AREA(length, width); // Calculate the area using the macro
    cout << "The area of the rectangle is: " << area << endl;
    return 0;
}
```

Output :



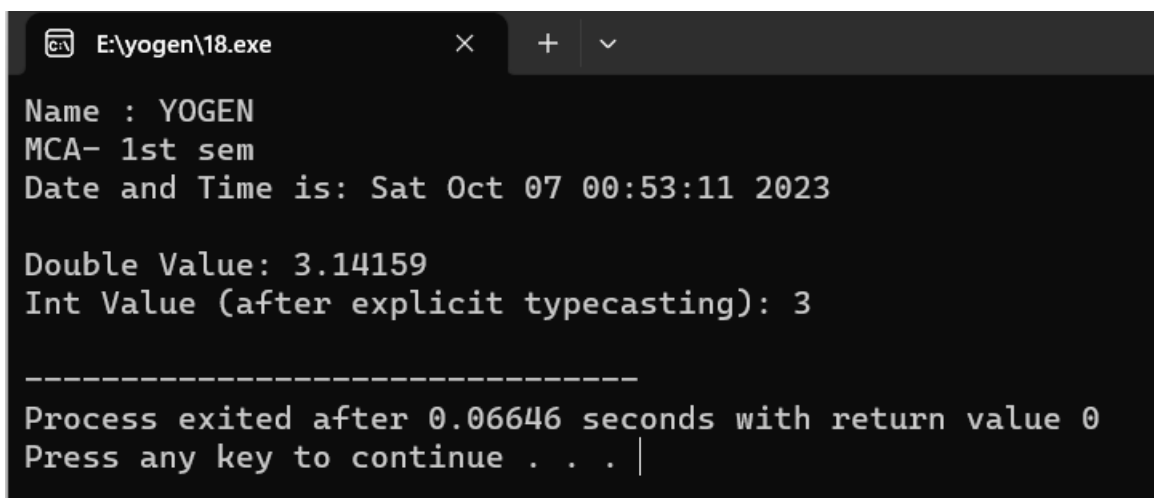
```
E:\yogen\17.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Fri Oct 06 23:56:19 2023

Enter the length of the rectangle: 10
Enter the width of the rectangle: 20
The area of the rectangle is: 200
```

**Program 18: Write a C++ program to demonstrate explicitly typecasting..****Code :**

```
#include <iostream>
#include<ctime>
using namespace std;
int main() {
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;
    double s = 3.14159;
    int r;
    // Explicitly typecast a double to an int
    r = (int)s;
    cout << "Double Value: " << s << endl;
    cout << "Int Value (after explicit typecasting): " << r << endl;
    return 0;
}
```

Output:



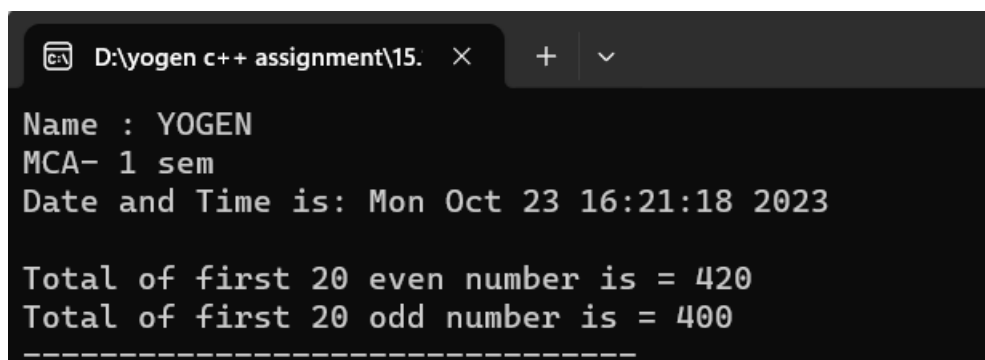
```
E:\yogen\18.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Sat Oct 07 00:53:11 2023

Double Value: 3.14159
Int Value (after explicit typecasting): 3

-----
Process exited after 0.06646 seconds with return value 0
Press any key to continue . . . |
```

**Program 19: Write a C++ program to display addition of first 1 to 20 odd numbers and also display addition of first 1 to 20 even number****Code :**

```
#include<iostream>
#include<ctime>
using namespace std;
void details()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1 sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;
}
void EvenOdd()
{
    int Even=0;
    int Odd=0;
    for(int i=0;i<=40;i++)
    {
        if(i%2==0) {
            Even+=i;
        }
        else {
            Odd+=i;
        }
    }
    cout<<"Total of first 20 even number is = "<<Even<<endl;
    cout<<"Total of first 20 odd number is = "<<Odd;
}
int main(){
    details();
    EvenOdd();
    return 0;
}
Output:
```

A screenshot of a terminal window with a dark background. The window title bar shows a file explorer icon, the path 'D:\yogen c++ assignment\15.', and window control buttons. The output text is as follows:

```
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:21:18 2023

Total of first 20 even number is = 420
Total of first 20 odd number is = 400
-----
```

**Program 20: Write a C++ program for a given problem – where age will be taken as input by the user and if age is greater than 18 and gender is “Male(M/m)” than print message to send him to “Room number 10” for voting and if gender is “Female(F/f)” than print message to send her to “Room number 12”,if gender is none of these two than send them to “Room number 8”.also given message “Not eligible for voting” in case of age is less than 18.(using nested if control structure)**

**Code:**

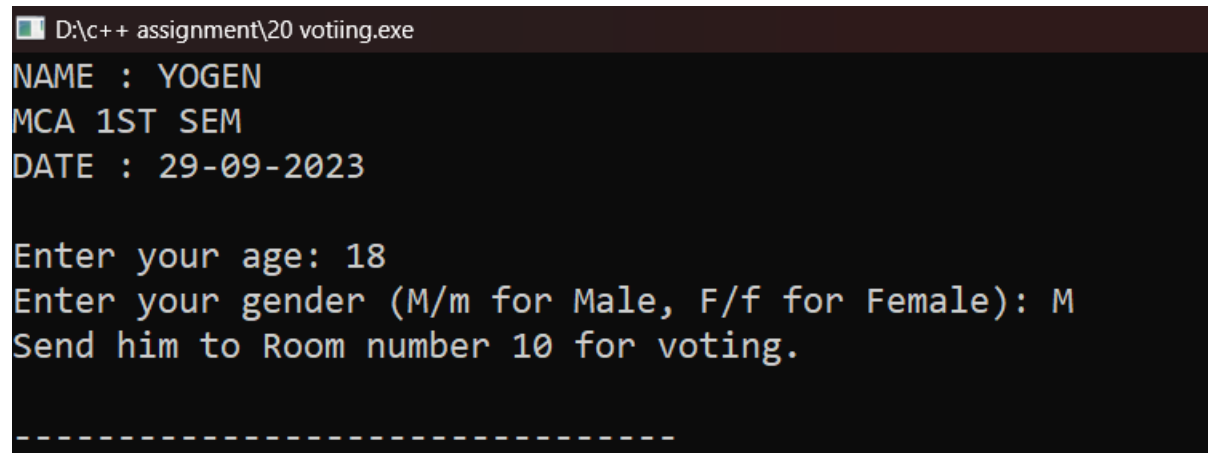
```
#include <iostream>
using namespace std;
int main() {
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 29-09-2023 "<<endl<<endl;

    int age;
    char gender;
    cout << "Enter your age: ";
    cin >> age;
    cout << "Enter your gender (M/m for Male, F/f for Female): ";
    cin >> gender;

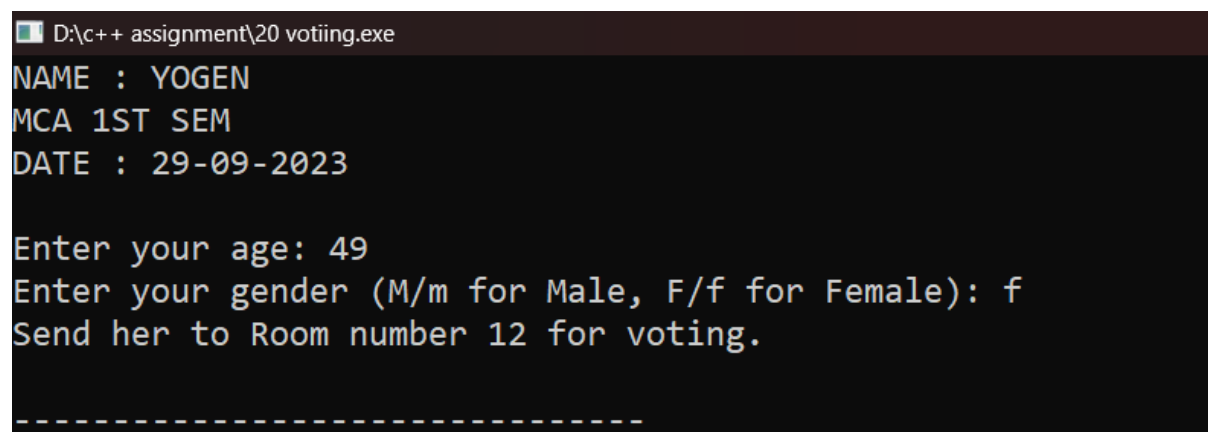
    if (age >= 18) {
        if (gender == 'M' || gender == 'm') {
            cout << "Send him to Room number 10 for voting." << endl;
        }
        else if (gender == 'F' || gender == 'f') {
            cout << "Send her to Room number 12 for voting." << endl;
        }
        else {
            cout << "Gender not recognized. Send to Room number 8." << endl;
        }
    }
    else {
        cout << "Not eligible for voting." << endl;
    }
}
```

```
        cout << "Not eligible for voting." << endl;
    }
    return 0;
}
```

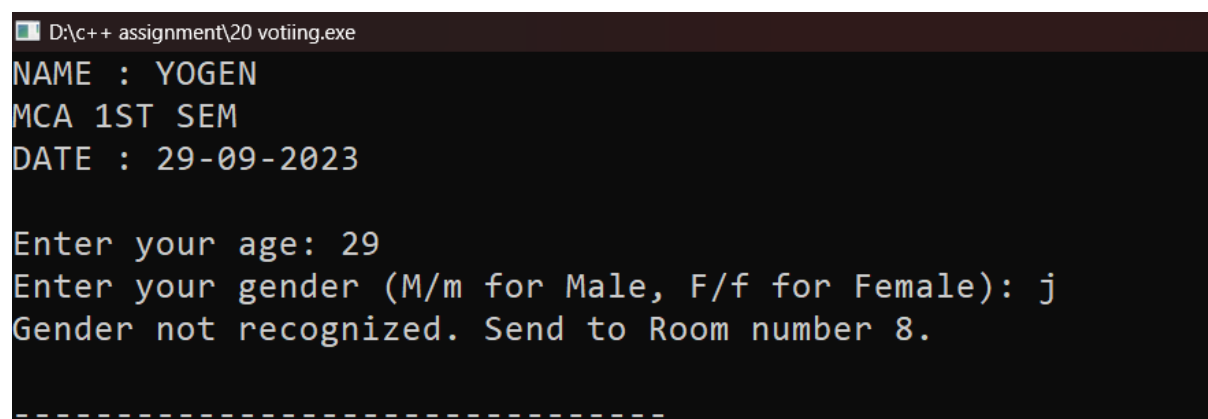
Output:



A screenshot of a Windows command prompt window titled "D:\c++ assignment\20 voting.exe". The program displays the following text: "NAME : YOGEN", "MCA 1ST SEM", "DATE : 29-09-2023". It then prompts "Enter your age: 18" and "Enter your gender (M/m for Male, F/f for Female): M". The program responds with "Send him to Room number 10 for voting." followed by a dashed line separator.



A screenshot of a Windows command prompt window titled "D:\c++ assignment\20 voting.exe". The program displays the following text: "NAME : YOGEN", "MCA 1ST SEM", "DATE : 29-09-2023". It then prompts "Enter your age: 49" and "Enter your gender (M/m for Male, F/f for Female): f". The program responds with "Send her to Room number 12 for voting." followed by a dashed line separator.



A screenshot of a Windows command prompt window titled "D:\c++ assignment\20 voting.exe". The program displays the following text: "NAME : YOGEN", "MCA 1ST SEM", "DATE : 29-09-2023". It then prompts "Enter your age: 29" and "Enter your gender (M/m for Male, F/f for Female): j". The program responds with "Gender not recognized. Send to Room number 8." followed by a dashed line separator.

**Program 21: Write a C++ program to print Hollow square pattern using for loop..****Code:**

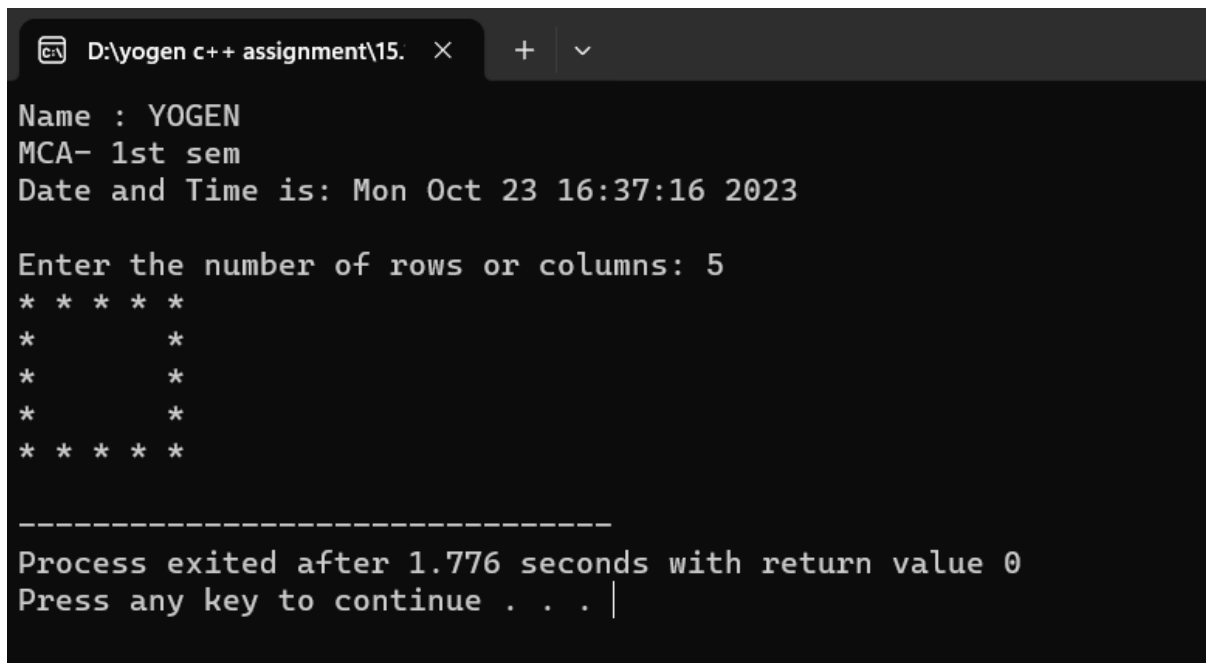
```
#include <iostream>
#include<ctime>
using namespace std;

int main()
{
    cout<<"YOGEN "<<endl;
    cout<<"MCA- 1st sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int n;
    cout << "Enter the number of rows or columns: ";
    cin >> n;
    for (int i = 1; i <= n; i++)
    {
        for (int j = 1; j <= n; j++)
        {
            // Print '*' for the outer row, inner row, outer column, and inner column
            if (i == 1 || i == n || j == 1 || j == n)
            {
                cout << "* ";
            }
            else
            {
                cout << " "; // Print a space for the interior of the square
            }
        }
        cout << endl;
    }
    return 0;
}
```



Output :



The screenshot shows a terminal window with a dark background. The title bar at the top reads "D:\yogen c++ assignment\15." followed by a close button and window control icons. The program output is as follows:

```
Name : YOGEN
MCA- 1st sem
Date and Time is: Mon Oct 23 16:37:16 2023

Enter the number of rows or columns: 5
* * * * *
*       *
*       *
*       *
*       *
* * * * *

-----
Process exited after 1.776 seconds with return value 0
Press any key to continue . . . |
```

**Program22: Write a C++ program to take input between 1-25 at runtime and display “Thank you user” for selecting number between 1-25 otherwise display ”please enter number between 1-25 only!!”.(using while loop).**

**Code:**

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

int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1 sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    int number;
    cout<<"Enter number : ";
    cin>>number;
    while(number<=25)
    {
        cout<<" Thank you ";
        return 0;
    }
    cout<<" please enter number between 1-25 ";
    return 0
}
```

**Output:**

```
E:\yogen\22.0.exe
Name : YOGEN
MCA- 1st sem
Date and Time is: Sat Oct 07 00:56:28 2023

Enter number : 22
Thank You User
-----
Process exited after 8.233 seconds with return value 0
Press any key to continue . . . |
```

```
D:\yogen c++ assignment\15.
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:38:59 2023

Enter number : 100
please enter number between 1-25
-----
Process exited after 1.452 seconds with return value 0
Press any key to continue . . . |
```

**Program23: Write a C++ program to find number is positive, negative or zero using “ goto ” jump statement..**

**Code:**

```
#include <iostream>
#include<ctime>
using namespace std;
int main()
{
cout<<"Name : YOGEN "<<endl;
cout<<"MCA- 1 sem"<<endl;
time_t now = time(0);
char* dt = ctime(&now);
cout<<"Date and Time is: "<<dt<<endl;

int number;
cout << "Enter a number: ";
cin >> number;
    if (number > 0)
    {
        goto positive;
    }
else if (number < 0)
{
    goto negative;
}
else
{
    goto zero;
}
positive:
    cout << "The number is positive." << endl;
    goto end;
negative:
    cout << "The number is negative." << endl;
    goto end;
```

zero:

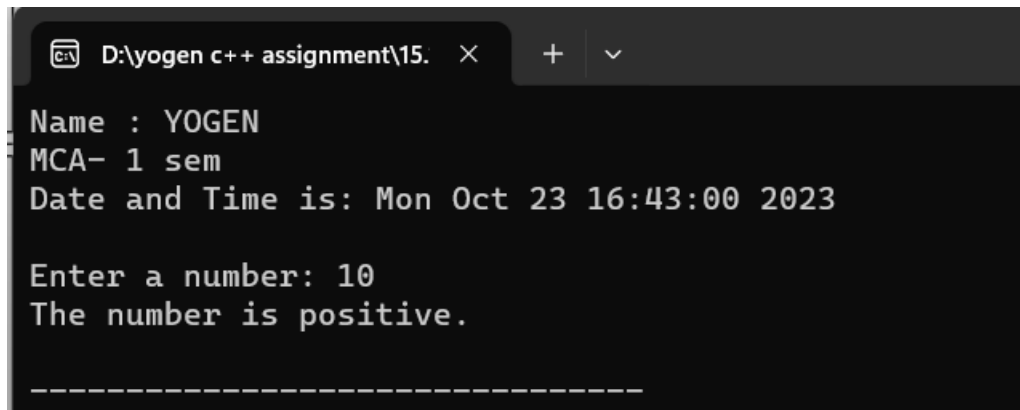
```
cout << "The number is zero." << endl;
```

end:

```
return 0;
```

```
}
```

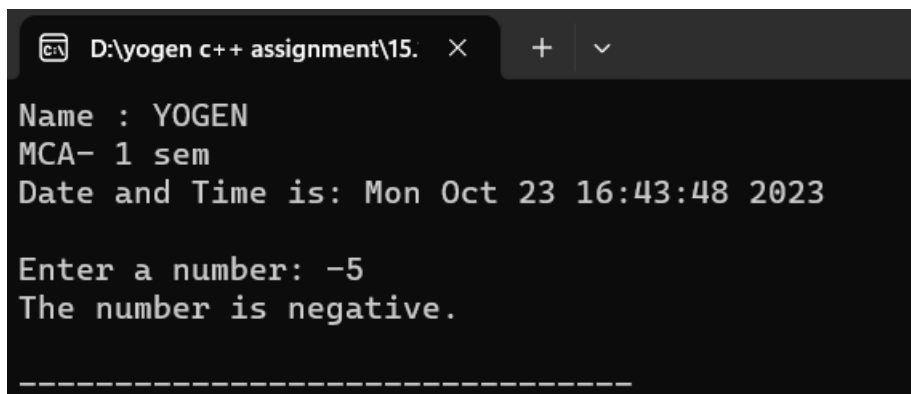
**Output:**



```
D:\yogen c++ assignment\15. x + v
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:43:00 2023

Enter a number: 10
The number is positive.

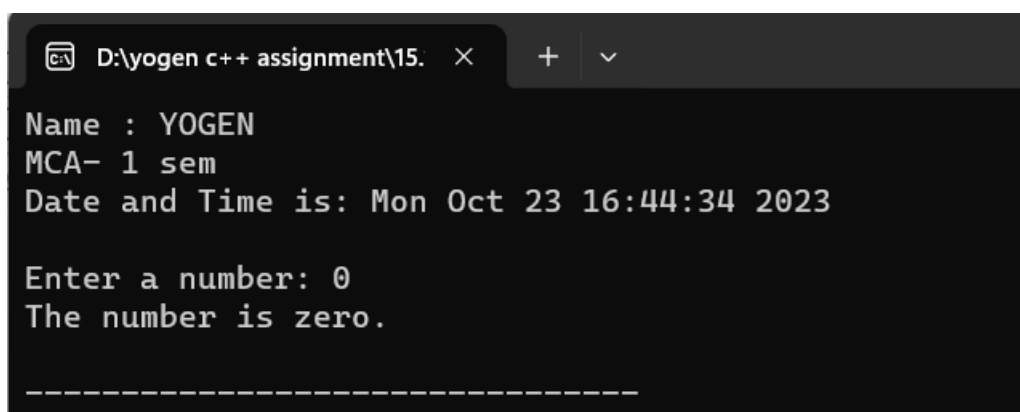
-----
```



```
D:\yogen c++ assignment\15. x + v
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:43:48 2023

Enter a number: -5
The number is negative.

-----
```



```
D:\yogen c++ assignment\15. x + v
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:44:34 2023

Enter a number: 0
The number is zero.

-----
```

**Program24: Write a C++ program to differentiate break and continue jump statement.****Code:**

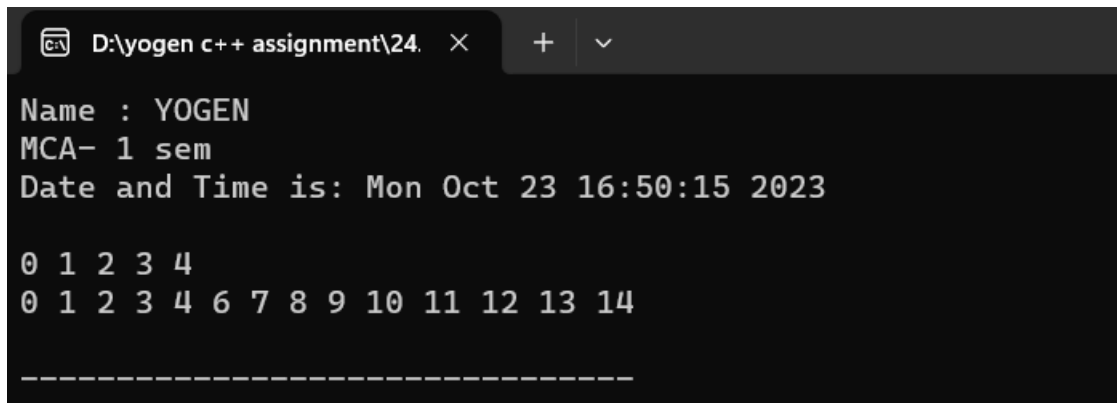
```
#include<iostream>
#include<ctime>
using namespace std;
int main()
{
    cout<<"Name : YOGEN "<<endl;
    cout<<"MCA- 1 sem"<<endl;
    time_t now = time(0);
    char* dt = ctime(&now);
    cout<<"Date and Time is: "<<dt<<endl;

    for (int i = 0; i < 15; i++)
    {
        if (i == 5)
        {
            break;    // This will exit the loop completely.
        }
        cout << i << " ";
    }
    cout << endl;

    for (int i = 0; i < 15; i++)
    {
        if (i == 5)
        {
            continue; // This will skip to the next iteration of the loop.
        }
        cout << i << " ";
    }
    cout << endl;

    return 0;
}
```

Output:



The screenshot shows a terminal window with a dark background and light gray text. The window title bar at the top reads "D:\yogen c++ assignment\24." followed by a close button (X) and a dropdown menu with a plus sign (+) and a downward arrow (v). The output of the program is as follows:

```
Name : YOGEN
MCA- 1 sem
Date and Time is: Mon Oct 23 16:50:15 2023

0 1 2 3 4
0 1 2 3 4 6 7 8 9 10 11 12 13 14

-----
```

**Program25: write a C++ program to display detail of 5 student detail should contained student name, roll number , marks using structure.**

**Code:**

```
#include<iostream>

using namespace std;

struct Student{

string name;

int roll_no;

int marks;

};

int main()

{

cout<<"NAME : YOGEN "<<endl;

cout<<"MCA 1ST SEM "<<endl;

cout<<"DATE : 01-11-2023 "<<endl<<endl;


Student s[5];

for(int i=0;i<5;i++){

cout<<"Enter the details for student "<<i+1<<endl;

cout<<"Name : ";

cin>>s[i].name;

cout<<"Roll no : ";

cin>>s[i].roll_no;

cout<<"Marks : ";

cin>>s[i].marks;

cout<<endl;

}

cout << "Student Details:" << endl;

for (int i = 0; i < 5; i++)

{

    cout << "Student " << i + 1 << " - Name: "<<s[i].name << ", Roll Number:"<<s[i].roll_no

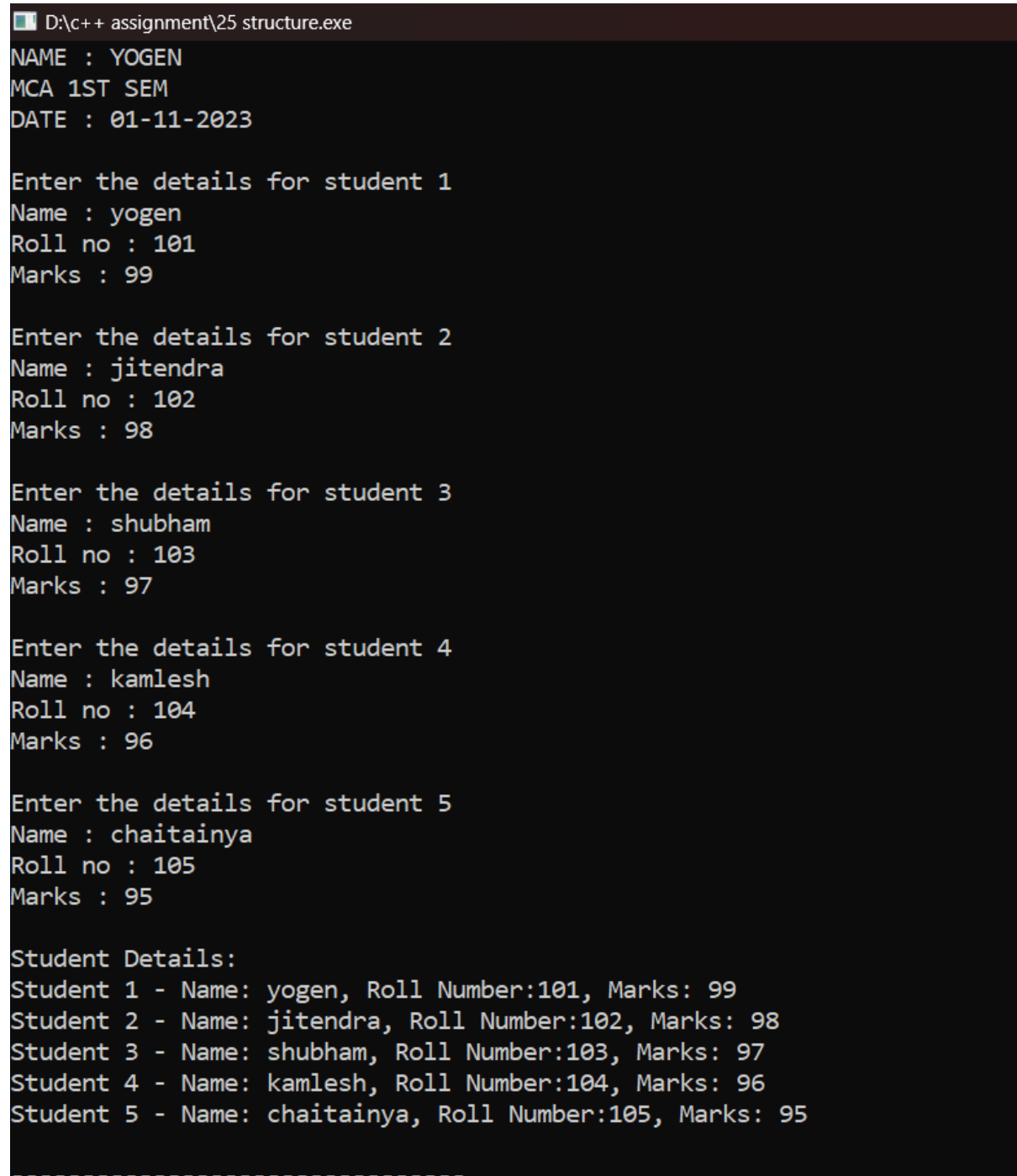
<< ", Marks: " << s[i].marks << endl;

}
```



```
return 0;  
}
```

## Output



```
D:\c++ assignment\25 structure.exe  
NAME : YOGEN  
MCA 1ST SEM  
DATE : 01-11-2023  
  
Enter the details for student 1  
Name : yogen  
Roll no : 101  
Marks : 99  
  
Enter the details for student 2  
Name : jitendra  
Roll no : 102  
Marks : 98  
  
Enter the details for student 3  
Name : shubham  
Roll no : 103  
Marks : 97  
  
Enter the details for student 4  
Name : kamlesh  
Roll no : 104  
Marks : 96  
  
Enter the details for student 5  
Name : chaitainya  
Roll no : 105  
Marks : 95  
  
Student Details:  
Student 1 - Name: yogen, Roll Number:101, Marks: 99  
Student 2 - Name: jitendra, Roll Number:102, Marks: 98  
Student 3 - Name: shubham, Roll Number:103, Marks: 97  
Student 4 - Name: kamlesh, Roll Number:104, Marks: 96  
Student 5 - Name: chaitainya, Roll Number:105, Marks: 95  
-----
```

**Program26: Write a C++ program to create a structure named “Date” which contains three member Day, month, year and display current date entering by the user using function definition.**

**Code:**

```
#include<iostream>

using namespace std;

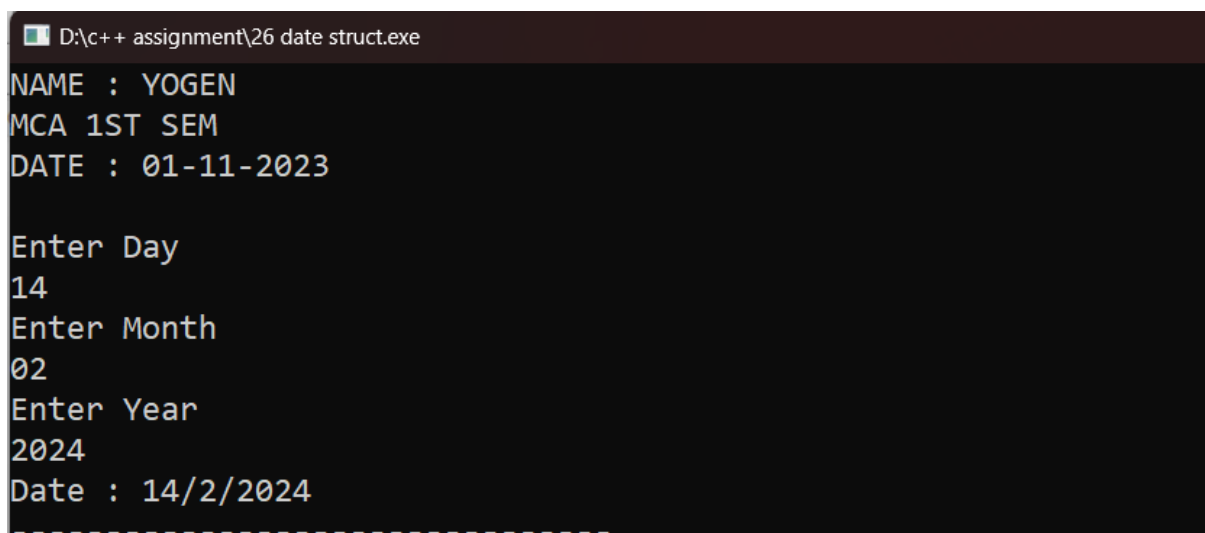
struct Date{
    int day,month,year;
}s;

void show(){    // function definition
cout<<"Enter Day "<<endl;
cin>>s.day;
cout<<"Enter Month "<<endl;
cin>>s.month;
cout<<"Enter Year "<<endl;
cin>>s.year;
cout<<"Date : "<<s.day<<"/"<<s.month<<"/"<<s.year;
}

int main(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE : 01-11-2023 "<<endl<<endl;

show();
return 0
}
```

**Output:**



```
D:\c++ assignment\26 date struct.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter Day
14
Enter Month
02
Enter Year
2024
Date : 14/2/2024
-----
```

**Program27: Write a C++ program to demonstrate enum with switch case.****Code:**

```
#include<iostream>

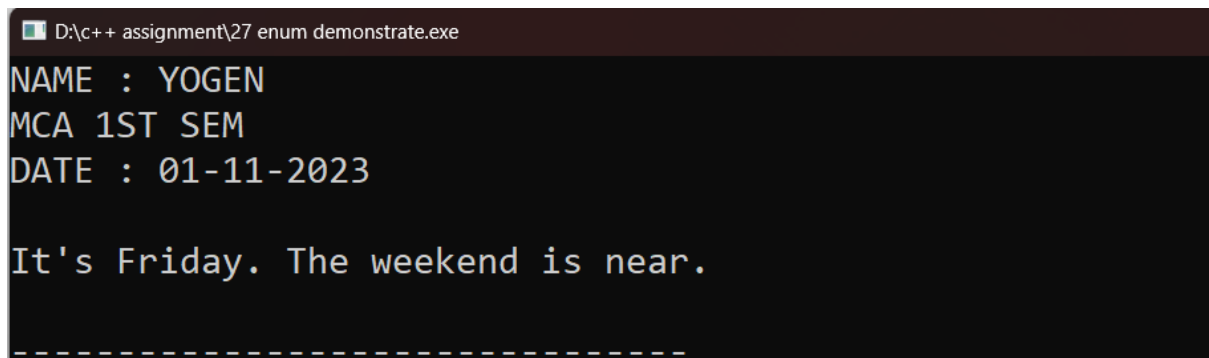
using namespace std;

enum
Days{SUNDAY,MONDAY,TUESDAY,WEDNESDAY,THURSDAY,FRIDAY,SATURDAY};

int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    Days today=FRIDAY;
    switch (today) {
        case SUNDAY:
            cout << "It's Sunday. It's the weekend!" << endl;
            break;
        case MONDAY:
            cout << "It's Monday. The workweek begins." << endl;
            break;
        case TUESDAY:
            cout << "It's Tuesday. Work continues." << endl;
            break;
        case WEDNESDAY:
            cout << "It's Wednesday. Midweek point." << endl;
            break;
        case THURSDAY:
            cout << "It's Thursday. Almost there!" << endl;
            break;
        case FRIDAY:
            cout << "It's Friday. The weekend is near." << endl;
            break;
        case SATURDAY:
```

```
        cout << "It's Saturday. Enjoy the weekend!" << endl;
        break;
    default:
        cout << "Invalid day." << endl;
        break;
    }
    return 0;
}
```

**Output:**A screenshot of a Windows command prompt window titled "D:\c++ assignment\27 enum demonstrate.exe". The output of the program is displayed in a monospaced font. It shows the user input "YOGEN" for the name, "MCA 1ST SEM" for the semester, and "01-11-2023" for the date. The program then outputs "It's Friday. The weekend is near." followed by a dashed line.

```
D:\c++ assignment\27 enum demonstrate.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

It's Friday. The weekend is near.
-----
```

**Program 28. Write a C++ program to create an enum having number of enum list or elements and count the size of elements inside the enum.**

**Code:**

```
#include<iostream>
using namespace std;
enum count{sun,mon,tue,wed,thr,fri,sat}; // declare enum with elements
int main()
{

cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE : 01-11-2023 "<<endl<<endl;

int ctr=0;

for(int i=sun;i<=sat;i++){

ctr++ ;

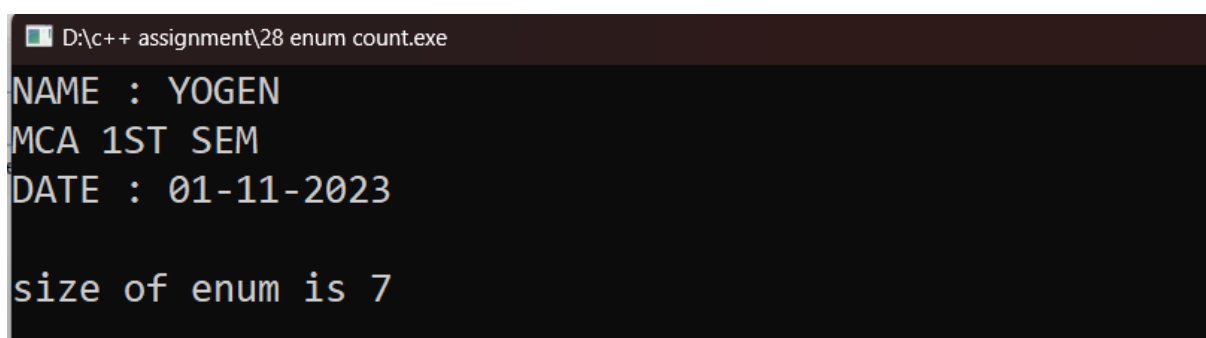
}

cout<<"size of enum is "<<ctr;

return 0;

}
```

Output :

A screenshot of a Windows command prompt window titled "D:\c++ assignment\28 enum count.exe". The output of the program is displayed in a monospaced font: "NAME : YOGEN", "MCA 1ST SEM", "DATE : 01-11-2023", and "size of enum is 7". The window has a dark background and a light-colored title bar.

```
D:\c++ assignment\28 enum count.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

size of enum is 7
```

**Program 29. Write a C++ program to swap two values without using third variable.****Code:**

```
#include<iostream>

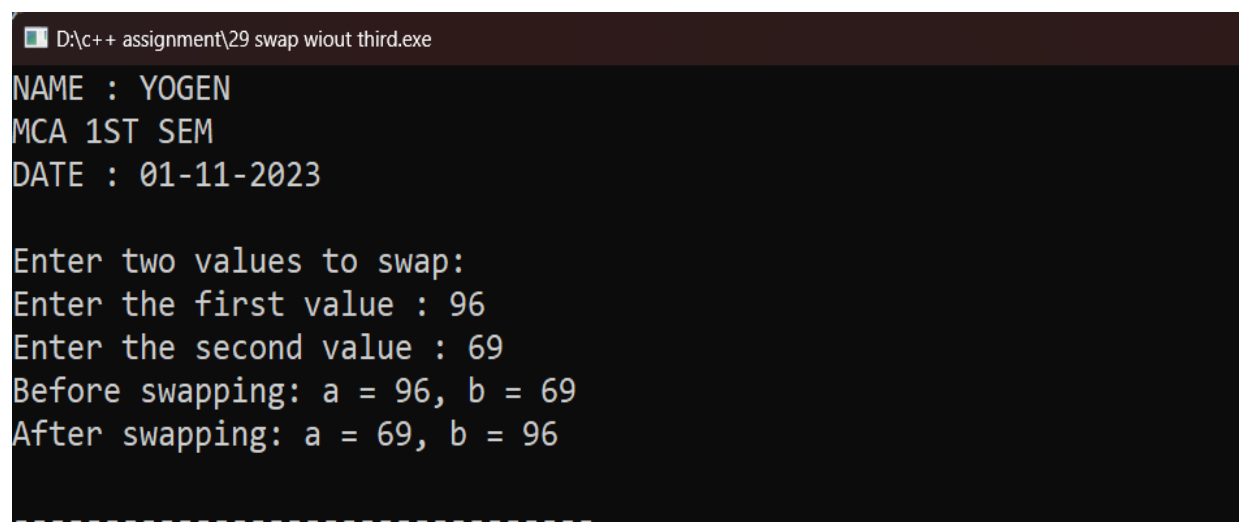
using namespace std;

int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    int a, b;
    cout << "Enter two values to swap:" << endl;
    cout << "Enter the first value : ";
    cin >> a;
    cout << "Enter the second value : ";
    cin >> b;

    cout << "Before swapping: a = " << a << ", b = " << b << endl;    // Swap the values
    a = a * b;
    b = a / b;
    a = a / b;

    cout << "After swapping: a = " << a << ", b = " << b << endl;
    return 0;
}
```

**Output:**

```
D:\c++ assignment\29 swap wiout third.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter two values to swap:
Enter the first value : 96
Enter the second value : 69
Before swapping: a = 96, b = 69
After swapping: a = 69, b = 96
```

**Program 30. Write a C++ program to swap two values using third variable of call by address function invoking.**

**Code:**

```
#include<iostream>
using namespace std;
void swap(int *x,int*y){

int temp =*x;
    *x=*y;
    *y=temp;
}
int main()

{

    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;
    int a,b;

    cout<<"Enter the first value for swap ";

    cin>>a;

    cout<<"Enter the second value for swap ";

    cin>>b;

    cout<<"Before swap value of a is = "<<a<<" and b is = "<<b<<endl;

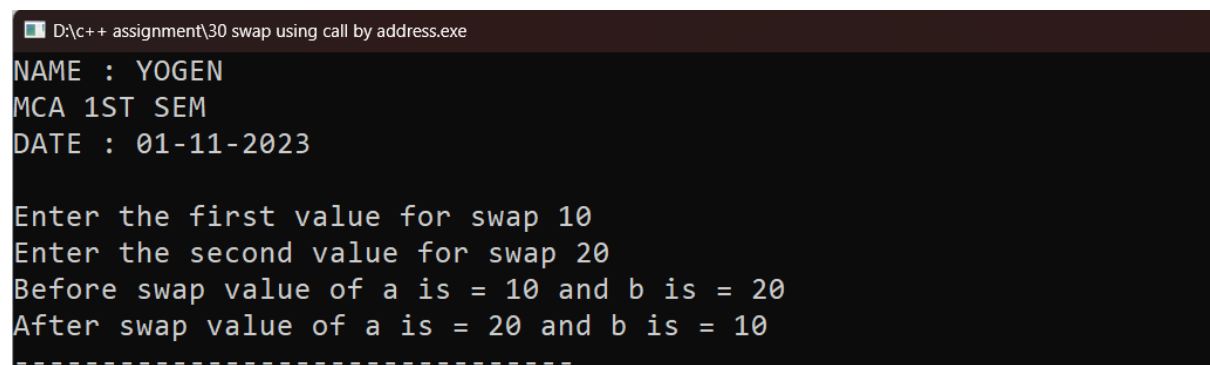
    swap(a,b); // call by address

    cout<<"After swap value of a is = "<<a<<" and b is = "<<b;

    return 0;

}
```

**Output:**



The screenshot shows a terminal window with the title "D:\c++ assignment\30 swap using call by address.exe". The output of the program is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

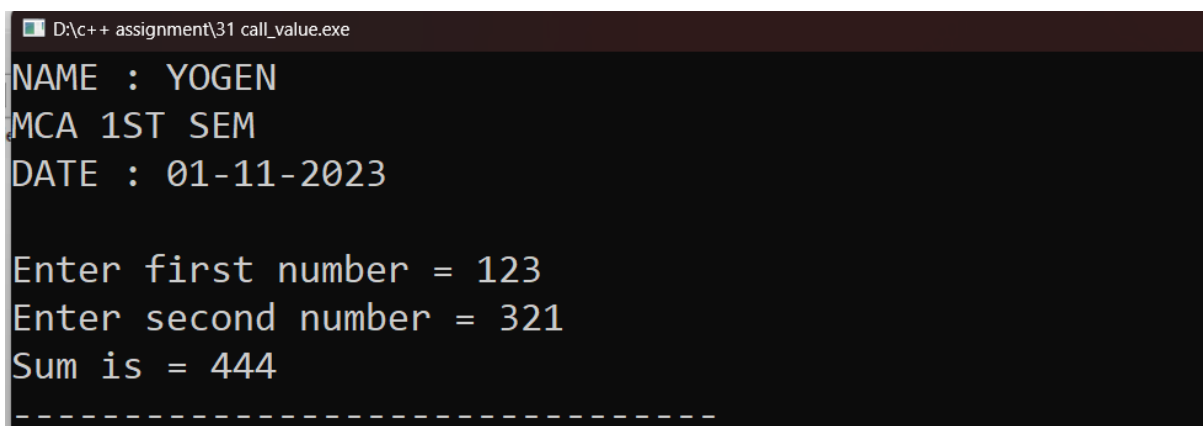
Enter the first value for swap 10
Enter the second value for swap 20
Before swap value of a is = 10 and b is = 20
After swap value of a is = 20 and b is = 10
-----
```

**Program 31. Write a C++ program to illustrate working of call by value of a function invoking.****Code:**

```
#include<iostream>
using namespace std;
void sum(int x, int y){
    int z=x+y;
    cout<<"Sum is = "<<z;
}
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    int a,b;
    cout<<"Enter first number = ";
    cin>>a;
    cout<<"Enter second number = ";
    cin>>b;
    sum(a,b); // function call by value
    return 0;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\31 call\_value.exe". The output of the program is displayed in white text on a black background. It shows the program's header information, followed by prompts for two numbers, and the resulting sum. The sum is 444, which is the sum of 123 and 321. A dashed line is shown at the bottom of the output.

```
D:\c++ assignment\31 call_value.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter first number = 123
Enter second number = 321
Sum is = 444
-----
```



**Program 32. Write a C++ program to illustrate working of call by reference method of a function invoking.****Code:**

```
#include<iostream>

using namespace std;

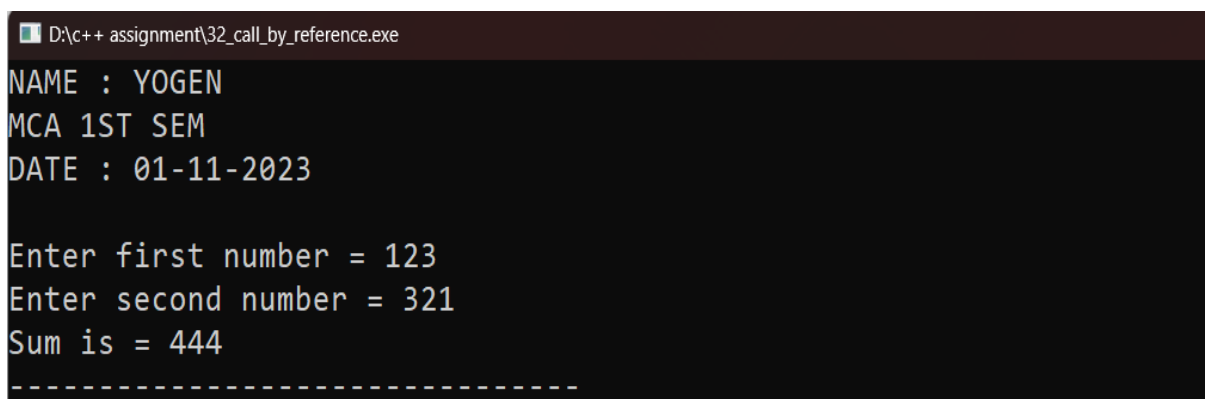
void sum(int &x, int &y){ // copy the address of actual parameter into formal parameter
int z=x+y;
cout<<"Sum is = "<<z;
}

int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    int a,b;
    cout<<"Enter first number = ";
    cin>>a;
    cout<<"Enter second number = ";
    cin>>b;
    sum(a,b); // passing actual parameter

    return 0;

}Output:
```

A screenshot of a Windows command prompt window titled "D:\c++ assignment\32\_call\_by\_reference.exe". The output of the program is displayed in a monospaced font: "NAME : YOGEN", "MCA 1ST SEM", "DATE : 01-11-2023", followed by a blank line. Then it prompts "Enter first number = 123" and "Enter second number = 321". The final output is "Sum is = 444", followed by a line of dashes "-----".

```
D:\c++ assignment\32_call_by_reference.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter first number = 123
Enter second number = 321
Sum is = 444
-----
```

**Program 33. Write a C++ program to calculate simple interest using default arguments.****Code:**

```
#include<iostream>

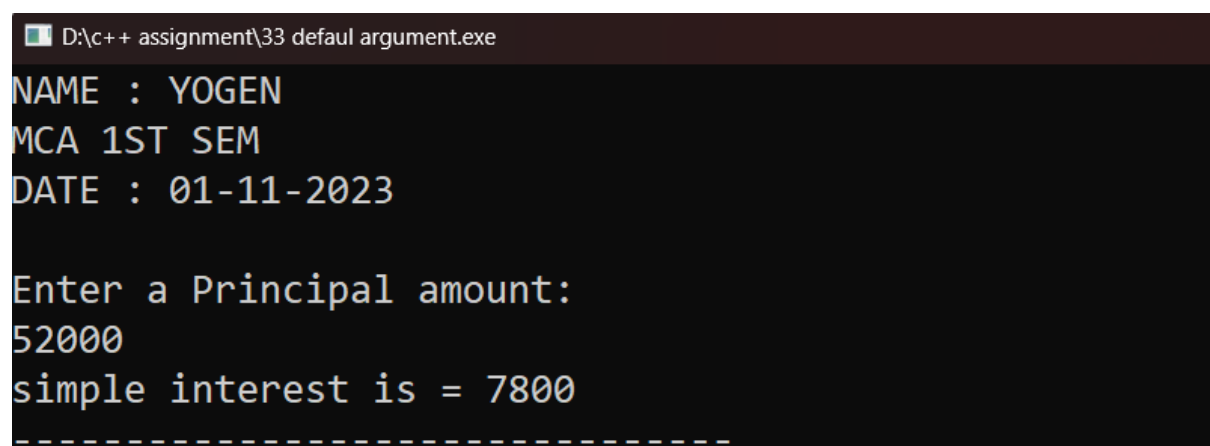
using namespace std;

double interest(double P , float R = 5.0, float T = 3.0) {
return (P*R*T)/100.0;
}

int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    double P;
    cout<<"Enter a Principal amount: "<<endl;
    cin>>P;
    cout<<"simple interest is = "<<interest(P);
    return 0;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\33 default argument.exe". The output of the program is displayed in white text on a black background. It shows the name "YOGEN", the semester "MCA 1ST SEM", the date "01-11-2023", and a prompt for the principal amount. The user has entered "52000", and the program has calculated the simple interest as "7800". A dashed line is shown at the bottom of the output.

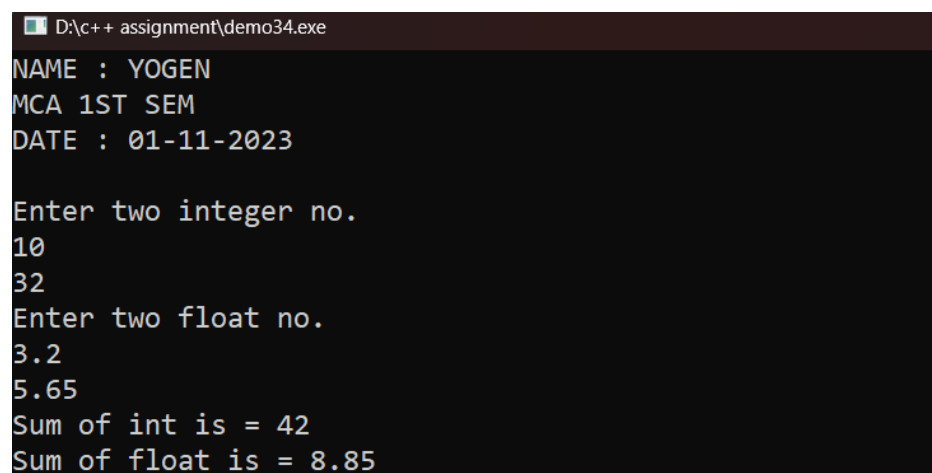
```
D:\c++ assignment\33 default argument.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter a Principal amount:
52000
simple interest is = 7800
-----
```

**Program 34. Write a C++ program using function template to add two integers and two float number.****Code:**

```
#include<iostream>
using namespace std;
template <class T,class C>
T Addition (T x, T y, C a, C b)
{
cout<<"Sum of int is = "<<x+y<<endl;
cout<<"Sum of float is = "<<a+b<<endl;
}
int main()
{
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE : 01-11-2023 "<<endl<<endl;

int x,y;
float a,b;
cout<<"Enter two integer no. "<<endl;
cin>>x>>y;
cout<<"Enter two float no. "<<endl;
cin>>a>>b;
Addition(x,y,a,b);
return 0;
}
```

**Output:**

The screenshot shows a Windows command prompt window titled "D:\c++ assignment\demo34.exe". The output of the program is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter two integer no.
10
32
Enter two float no.
3.2
5.65
Sum of int is = 42
Sum of float is = 8.85
```

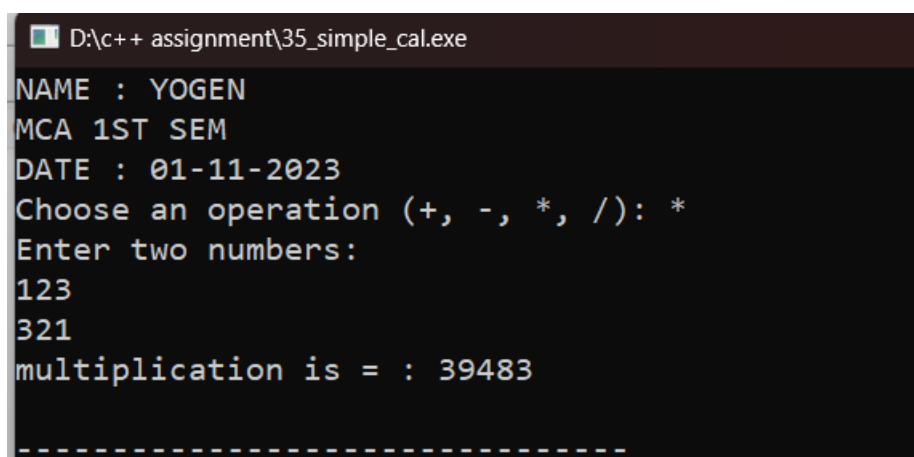
**Program 35. Write a C++ program to create simple calculator using class templates.****Code:**

```
#include<iostream>
using namespace std;
template <class T>
class Calculator {
    T num1;
    T num2;
public:
    Calculator(T x, T y) : num1(x), num2(y) {}
    T add() {
        return num1 + num2;
    }
    T subtract() {
        return num1 - num2;
    }
    T multiply() {
        return num1 * num2;
    }
    T divide() {
        if (num2 == 0) {
            cout<< "Error: Division by zero." << endl;
            return 0;
        }
        return num1 / num2;
    }
};

int main() {
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl;

    double num1, num2;
    char operation;
    cout << "Choose an operation (+, -, *, /): ";
    cin >> operation;
    cout << "Enter two numbers: "<<endl;
    cin >> num1 >> num2;
```

```
Calculator<double> calculator(num1, num2);
switch (operation) {
    case '+':
        cout << "sum is = : " << calculator.add() << endl;
        break;
    case '-':
        cout << "subtraction is = : " << calculator.subtract() << endl;
        break;
    case '*':
        cout << "multiplication is = : " << calculator.multiply() << endl;
        break;
    case '/':
        cout << "divison is = : " << calculator.divide() << endl;
        break;
    default:
        cout<< "Invalid operation." << endl;
        break;
}
return 0;
```

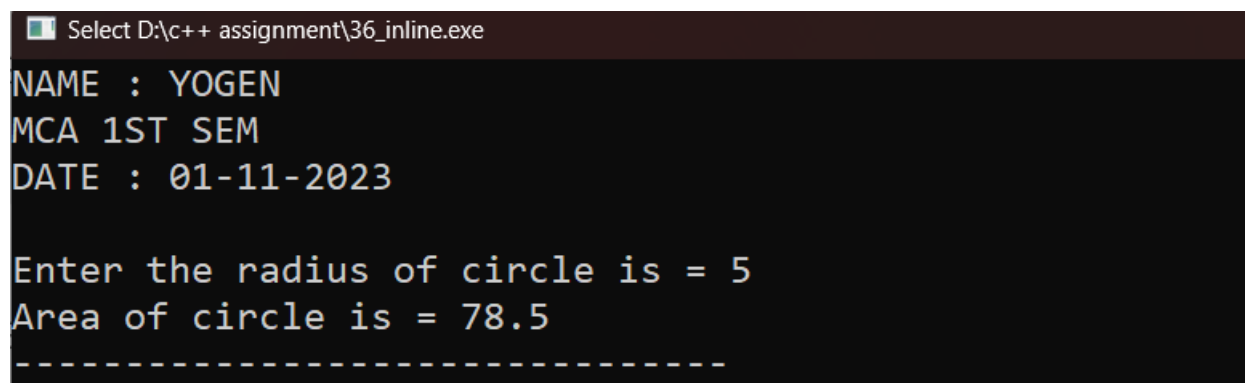
**Output:**A screenshot of a Windows command prompt window titled "D:\c++ assignment\35\_simple\_cal.exe". The window shows the output of a C++ program. The text displayed is: "NAME : YOGEN", "MCA 1ST SEM", "DATE : 01-11-2023", "Choose an operation (+, -, \*, /): \*", "Enter two numbers:", "123", "321", and "multiplication is = : 39483". There is a dashed line at the bottom of the window.

```
D:\c++ assignment\35_simple_cal.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023
Choose an operation (+, -, *, /): *
Enter two numbers:
123
321
multiplication is = : 39483
-----
```

**Program 36. Write a C++ program using inline function to calculate area of circle.****Code:**

```
#include<iostream>
using namespace std;
inline float AreaCircle(float r,float pie=3.14){ // Using inline function
return pie*r*r;
}
int main()
{
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE : 01-11-2023 "<<endl<<endl;

float r;
cout<<"Enter the radius of circle is = ";
cin>>r;
cout<<"Area of circle is = " <<AreaCircle(r) ;
return 0;
}
```

**Output:**

```
Select D:\c++ assignment\36_inline.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter the radius of circle is = 5
Area of circle is = 78.5
-----
```

**Program 37. Write a C++ program to demonstrate function overloading.****Code:**

```
#include<iostream>

using namespace std;

int add(int a, int b){
    return a+b;
}

double add(double a,double b){
    return a+b;
}

string add(string x, string y){
    return x+y;
}

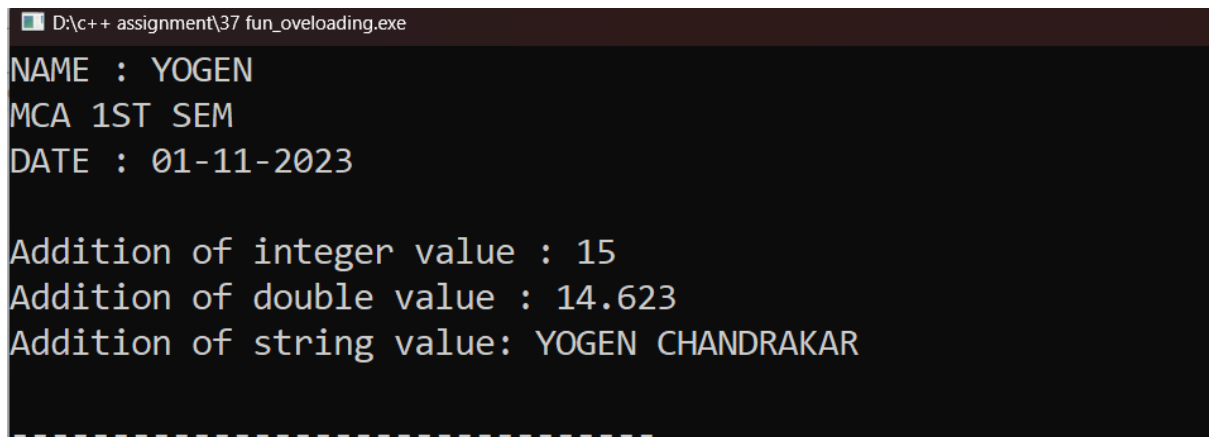
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    int x=5,y=10;
    double c=5.857,d=8.766;
    string r="YOGEN ",s="CHANDRAKAR";
    int result1 = add(x,y);
    double result2 = add(c,d);
    string result3 = add(r,s);

    cout<<"Addition of integer value : "<<result1<<endl;
    cout<<"Addition of double value : "<<result2<<endl;
    cout<<"Addition of string value: "<<result3<<endl;

    return 0;
}
```

Output :

A screenshot of a Windows command prompt window. The title bar shows the file path "D:\c++ assignment\37 fun\_oveloading.exe". The output of the program is displayed in white text on a black background. It shows the name "YOGEN", the semester "MCA 1ST SEM", and the date "01-11-2023". Below these, it shows the results of three operations: "Addition of integer value : 15", "Addition of double value : 14.623", and "Addition of string value: YOGEN CHANDRAKAR". The output ends with a dashed line.

```
D:\c++ assignment\37 fun_oveloading.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Addition of integer value : 15
Addition of double value : 14.623
Addition of string value: YOGEN CHANDRAKAR
-----
```



**Program 38.write a C++ program to find the size of 1-D, 2-D, & multidimensional array.****Code:**

```
#include<iostream>

using namespace std;

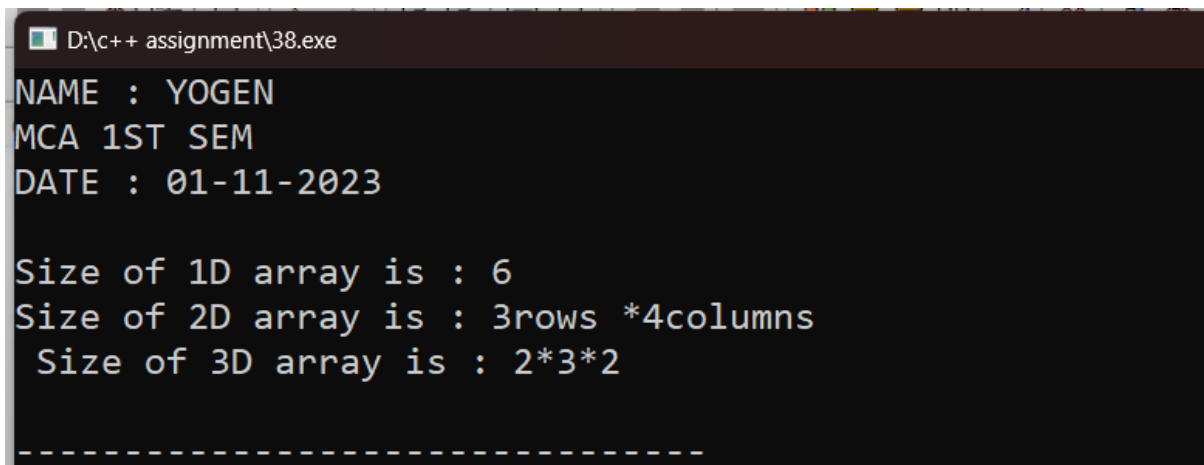
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    //size of one D array
    int oneDarry[] = {1,2,3,4,5,6};
    int size1D = sizeof(oneDarry)/sizeof(oneDarry[0]);
    cout<<"Size of 1D array is : "<<size1D<<endl;

    //size of 2D array
    int twoDarry[3][4] = { {1,2,3,4},{5,6,7,8},{9,10,11,12} };
    int row2D = sizeof(twoDarry)/sizeof(twoDarry[0]);
    int col2D = sizeof(twoDarry[0])/sizeof(twoDarry[0][0]);
    cout<<"Size of 2D array is : "<<row2D<<"rows *"<<col2D<<"columns"<<endl;

    //size of 3D(multi dimension) array
    int threeDarry[2][3][2] = { {
        {1,2},{3,4},{5,6}},
        {{7,8},{9,10},{11,12}}
    };
    int dim1 = sizeof(threeDarry)/sizeof(threeDarry[0]);
    int dim2 = sizeof(threeDarry[0])/sizeof(threeDarry[0][0]);
    int dim3 = sizeof(threeDarry[0][0])/sizeof(threeDarry[0][0][0]);
    cout<<" Size of 3D array is : "<<dim1<<"*"<<dim2<<"*"<<dim3<<endl;
    return 0;
}
```

Output:-

A screenshot of a terminal window with a dark background. The title bar at the top reads "D:\c++ assignment\38.exe". The output text is as follows:

```
NAME : YOGEN  
MCA 1ST SEM  
DATE : 01-11-2023  
  
Size of 1D array is : 6  
Size of 2D array is : 3rows *4columns  
Size of 3D array is : 2*3*2  
-----
```

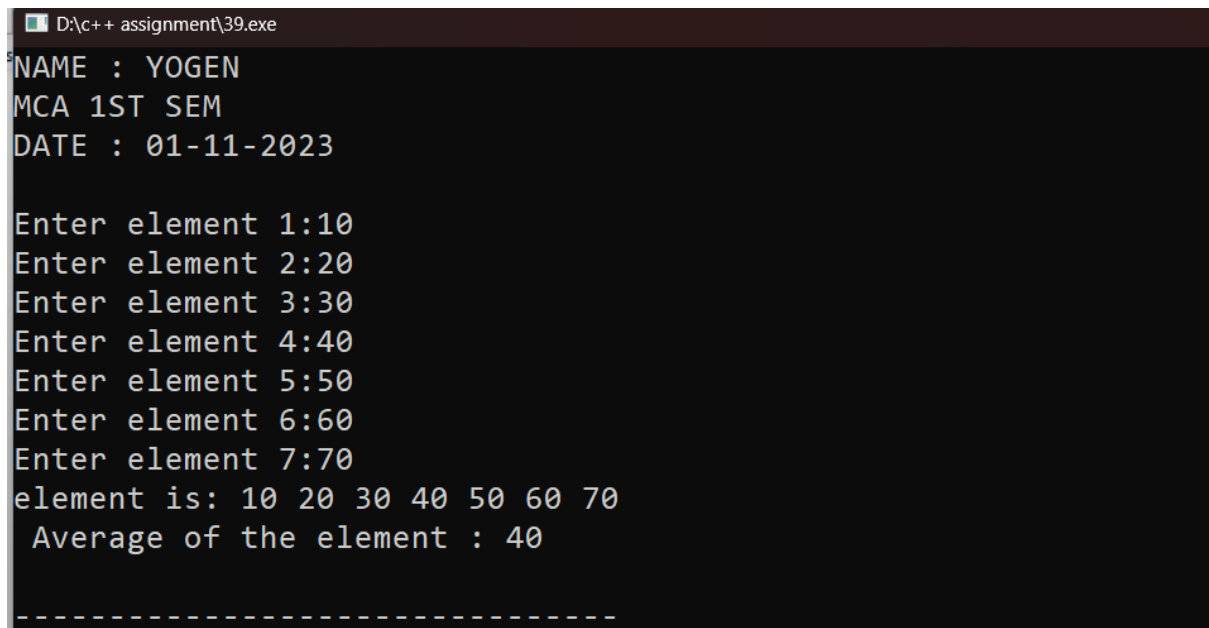
**Program 39. write a C++ program create and display one-D array of size 7 and also display average of all the element.**

**Code:**

```
#include<iostream>
using namespace std;
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    int oneDarry[7];
    //for enter values
    for(int i=0;i<7;i++){
        cout<<"Enter element "<<i+1<<":";
        cin>>oneDarry[i];
    }
    //calculate sum
    int sum=0;
    for(int i=0; i<7;i++){
        sum += oneDarry[i];
    }
    int avg =sum/7;
    cout<<"element is: ";
    for(int i=0;i<7;i++){
        cout<<oneDarry[i]<<" ";
    }
    cout<<"\n Average of the element : "<<avg<<endl;
    return 0;
}
```

Output;



```
D:\c++ assignment\39.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

Enter element 1:10
Enter element 2:20
Enter element 3:30
Enter element 4:40
Enter element 5:50
Enter element 6:60
Enter element 7:70
element is: 10 20 30 40 50 60 70
Average of the element : 40
-----
```

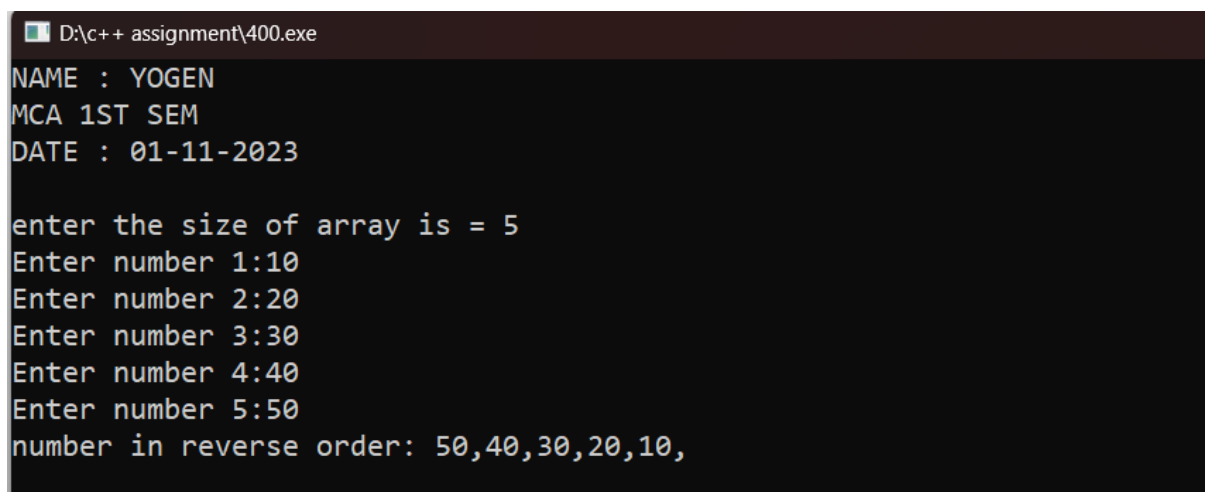
**Program 40. Write a C++ program to input 5 number in an array and print all the number from the backside of the array.**

**Code:**

```
#include<iostream>
using namespace std;
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 01-11-2023 "<<endl<<endl;

    int size;
    cout<<"enter the size of array is = ";
    cin>>size;
    int number[size];
    for(int i=0; i<size; i++){
        cout<<"Enter number "<<i+1<<":";
        cin>>number[i];
    }
    cout<<"number in reverse order: "; ////printing number from backside
    for(int i= size-1;i>=0; i--){
        cout<<number[i]<<",";
    }
    cout<<endl;
    return 0 ;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\400.exe". The window shows the execution of a C++ program. The output is as follows: "NAME : YOGEN", "MCA 1ST SEM", "DATE : 01-11-2023", followed by a blank line. Then it prompts "enter the size of array is = 5". It then prompts for five numbers: "Enter number 1:10", "Enter number 2:20", "Enter number 3:30", "Enter number 4:40", and "Enter number 5:50". Finally, it prints "number in reverse order: 50,40,30,20,10,". The numbers 50, 40, 30, 20, and 10 are in red text, while the rest is in white text on a black background.

```
D:\c++ assignment\400.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

enter the size of array is = 5
Enter number 1:10
Enter number 2:20
Enter number 3:30
Enter number 4:40
Enter number 5:50
number in reverse order: 50,40,30,20,10,
```

**Program 41. Write a C++ program create class named “Student”, having two data member of private specifier name rollno and marks. and make marks data member as array of size 5. Student class also contains public member function named getdata( ), showdata( ), and totalmarks( ) which will define outside of the class. getdata( ) will take input from the user only, showdata( ) will show the input data from the user, and totalmarks( ) will sum all the 5 marks of subject and display the total marks.**

**Code:**

```
#include<iostream>
using namespace std;
class student
{
int roll_no;
int marks[5];
public:
void getdata();
void showdata();
void totalmarks();

};
void student :: getdata()
{
cout<<"enter the roll no"<<endl;
cin>>roll_no;
cout<<"enter 5 marks "<<endl;
for (int i=0;i<5;i++)
{
cin>>marks[i];
}
}
void student :: showdata()
{
int i,sum;
cout<<"roll no is "<<roll_no<<endl;
// cout<<" marks is"<<marks[i];

cout<<"marks is"<<endl;
for (int i=0;i<5;i++)
{
cout<<marks[i]<<endl;
}
}
```

```
cout<<"total marks is ";
for (int i=0;i<5;i++)
{
sum += marks[i];
}

cout<<sum;
}
void student :: totalmarks()
{
int i, sum;
for (int i=0;i<5;i++)
{
//          cin>>marks[i];
sum += marks[i];
}

}
int main()
{
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE : 01-11-2023 "<<endl<<endl;

student s;
s.getdata();
s.showdata();
s.totalmarks();
return 0;
}
```

Output:-



```
D:\c++ assignment\41.1.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

enter the roll no
101
enter 5 marks
98
65
88
77
66
roll no is =101
marks is
98
65
88
77
66
total marks is 394
-----
```



**Program 42. Write a C++ program to find greatest number among three numbers implementing the nesting of member function.**

**Code:**

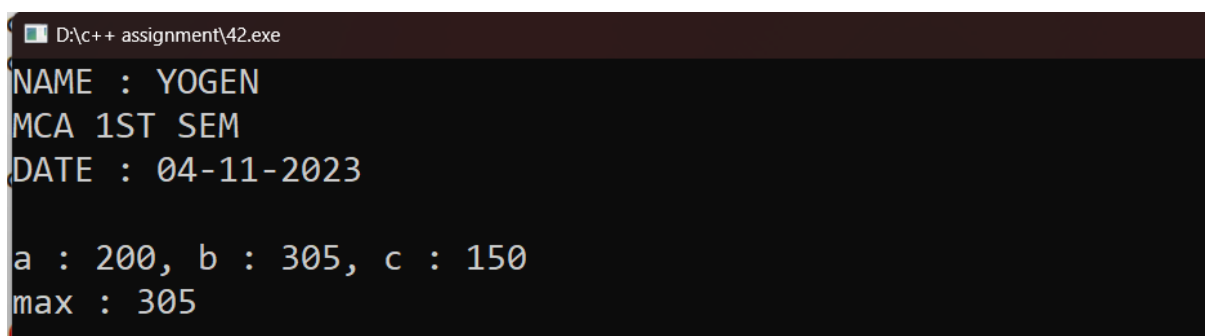
```
#include<iostream>
using namespace std;
class ThreeNum{
public :
int a , b ,c ;

int max(int x, int y){
return x > y ? x : y ;
}
void display(){
cout << "a : " <<a ;
cout << ", b : " <<b ;
cout << ", c : " <<c << endl ;
}
void displayMax(){
cout << "max : " << max(a,max(b,c)) << endl ;
}
};
int main(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE : 04-11-2023 "<<endl<<endl;

ThreeNum t ;
t.a = 200 ;
t.b = 305 ;
t.c = 150 ;

t.display() ;
t.displayMax() ;
return 0 ;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\42.exe". The output of the program is displayed in white text on a black background. It shows the program's header information followed by the values of variables a, b, and c, and the result of the max function.

```
D:\c++ assignment\42.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 04-11-2023

a : 200, b : 305, c : 150
max : 305
```

**Program Q.43** Write a C++ program to create class named “My\_class”, having two private member of integer type. And perform addition, multiplication, and subtraction operation inside the class body.

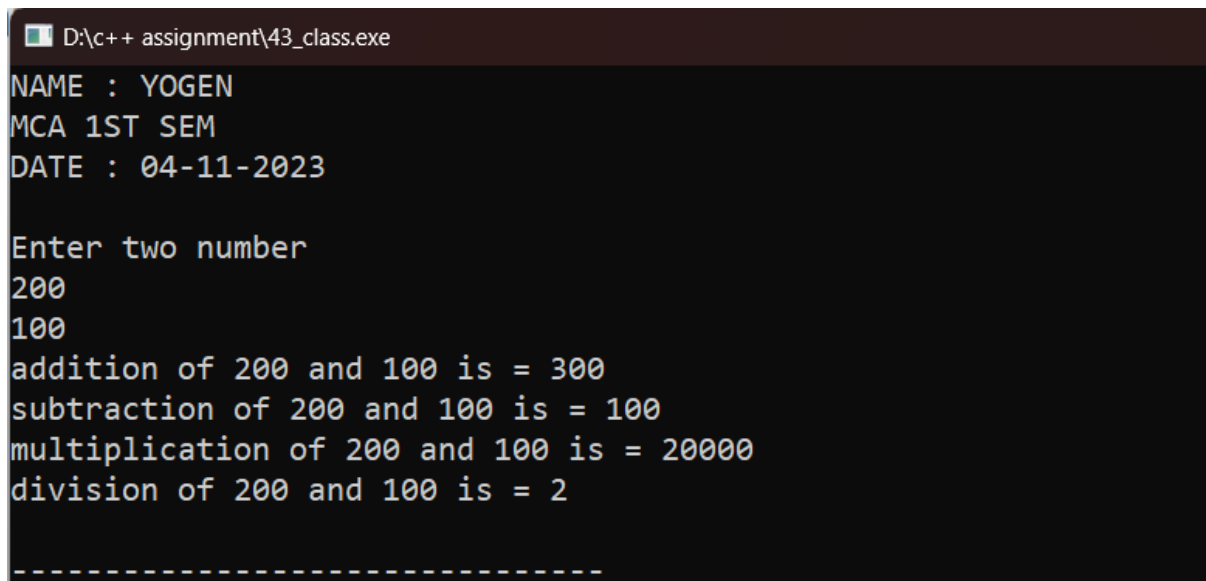
**Code :**

```
#include<iostream>
using namespace std;
class My_class {
int a,b;          // private data members
public:
    void addition(int a,int b){
        cout<<"addition of "<<a<<" and "<<b<<" is = "<<a+b<<endl;
    }
    void subtraction(int a,int b){
        cout<<"subtraction of "<<a<<" and "<<b<<" is = "<<a-b<<endl;
    }
    void multiplication(int a,int b){
        cout<<"multiplication of "<<a<<" and "<<b<<" is = "<<a*b<<endl;
    }
    void division(int a,int b){
        cout<<"division of "<<a<<" and "<<b<<" is = "<<a/b<<endl;
    }
};
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 04-11-2023 "<<endl<<endl;

    int a,b;
    cout<<"Enter two number "<<endl;
    cin>>a>>b;
    My_class yogen;
    yogen.addition(a,b);
    yogen.subtraction(a,b);
    yogen.multiplication(a,b);
    yogen.division(a,b);

    return 0;
}
```

Output:



```
D:\c++ assignment\43_class.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 04-11-2023

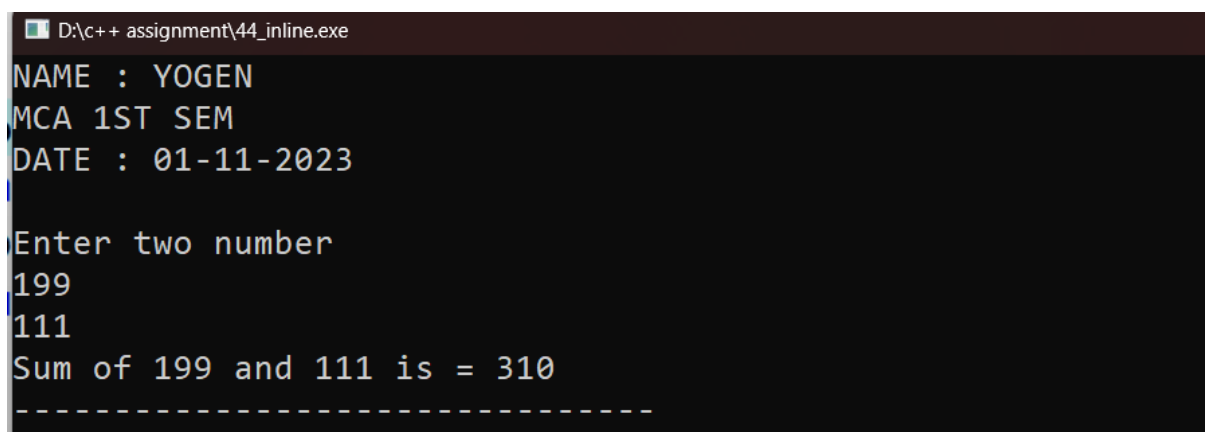
Enter two number
200
100
addition of 200 and 100 is = 300
subtraction of 200 and 100 is = 100
multiplication of 200 and 100 is = 20000
division of 200 and 100 is = 2
-----
```

**Program 44 Write a C++ program to make outside function inline.****Code:**

```
#include<iostream>
using namespace std;
class InFun{
int a,b;
public:
    void sum();
};
inline void InFun::sum(){ // using inline function
cout<<"Enter two number "<<endl;
cin>>a>>b;
cout<<"Sum of "<<a<<" and "<<b<<" is = "<<a+b;
}
int main()
{
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE : 01-11-2023 "<<endl<<endl;

InFun s;
s.sum();
return 0;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\44\_inline.exe". The output of the program is displayed in white text on a black background. It shows the name "YOGEN", "MCA 1ST SEM", and "DATE : 01-11-2023" followed by a blank line. Then it prompts "Enter two number". The user enters "199" and "111" on separate lines. The program then outputs "Sum of 199 and 111 is = 310" followed by a dashed line.

```
D:\c++ assignment\44_inline.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 01-11-2023

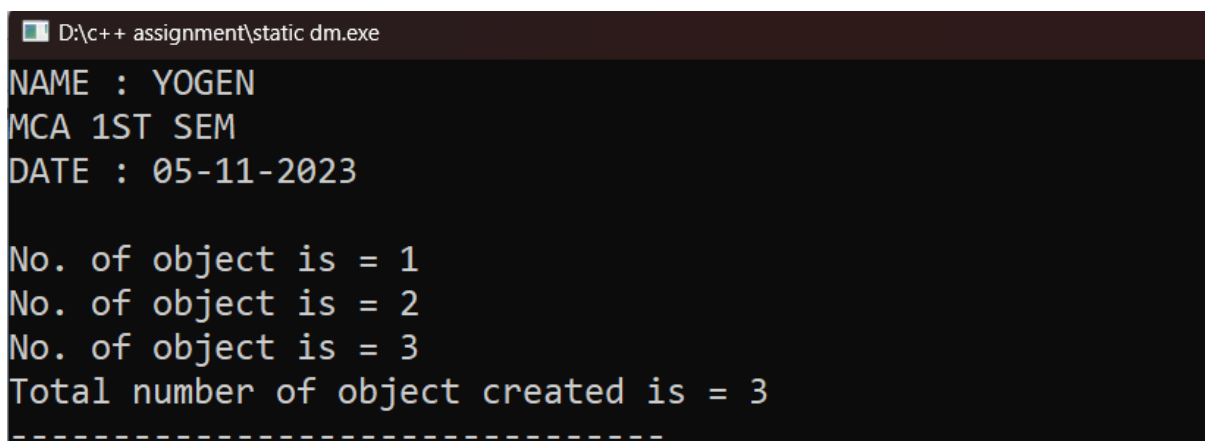
Enter two number
199
111
Sum of 199 and 111 is = 310
-----
```

**Program 45. Write a C++ program to keep count of created object using static member.****Code:**

```
#include<iostream>
using namespace std;
class yogen{
public:
    static int a;      // initialize static data member
    void count(){
        ++a;
        cout<<"No. of object is = "<<a<<endl;
    }
    int ObjectCount() {
        return a;      // Return the current count of objects
    }
};
int yogen::a=0;      // define static data member
int main(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 05-11-2023 "<<endl<<endl;

    yogen y1;
    y1.count();
    yogen y2;
    y2.count();
    yogen y3;
    y3.count();
    cout<<"Total number of object created is = "<<y1.ObjectCount();
    return 0;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\static dm.exe". The output of the program is displayed in white text on a black background. It shows the program's name, "NAME : YOGEN", "MCA 1ST SEM", and "DATE : 05-11-2023". Then, it shows the count of objects created: "No. of object is = 1", "No. of object is = 2", and "No. of object is = 3". Finally, it shows the total count: "Total number of object created is = 3". The output ends with a dashed line.

```
D:\c++ assignment\static dm.exe
NAME : YOGEN
MCA 1ST SEM
DATE : 05-11-2023

No. of object is = 1
No. of object is = 2
No. of object is = 3
Total number of object created is = 3
-----
```

**Program 46. Define a class candidate in C++ with the following description:=**

**Private member:-**

- A data member RNo (Registration Number) of type long.
- A data member Name of type string.
- A data member Score of type float.
- A data member Remarks of type string.
- A member function AssignRem( ) to assign Remarks as per the Score obtained by a candidate. Score range and the respective Remarks are shown as follows:

Score	Remarks
>=50	Selected
Less than 50	Not Selected

**Public member:-**

- A member function Enter( ) to allow user to enter values for RNo, Name, Score and call function AssignRem( ) to assign the remarks.
- A member function DISPLAY( ) to allow user to view the content of all the data members.

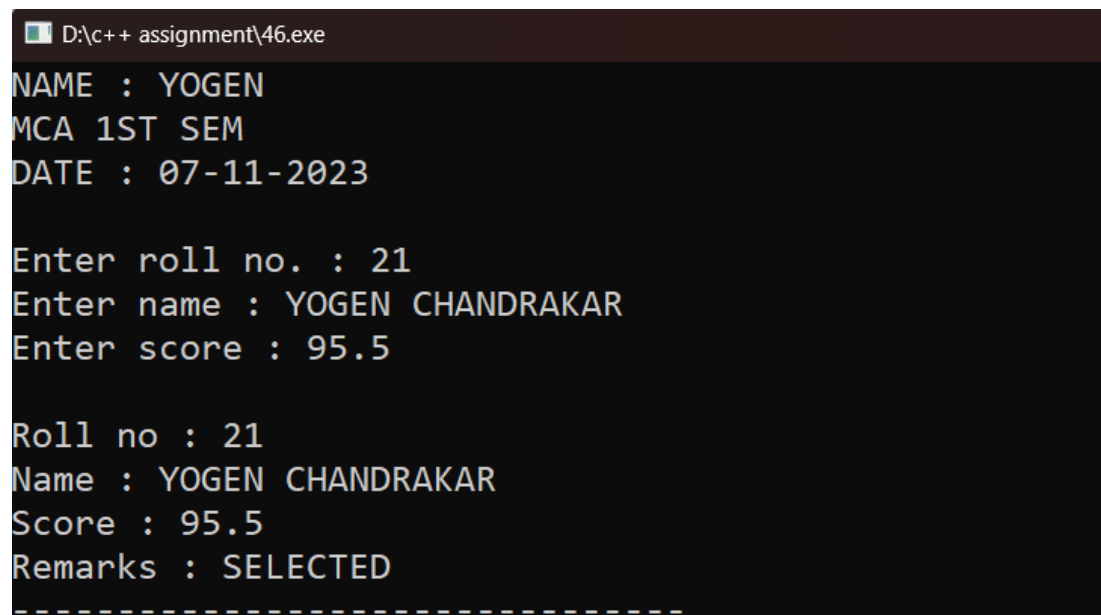
**Code:**

```
#include<iostream>
using namespace std;
class candidate{
    long rno;
    string name,Remarks;
    float score;
    void AssignRem();
    public:
        void Enter();
        void Display();
};
void candidate::AssignRem(){
    score>=50? Remarks = "SELECTED":Remarks = "NOT SELECTED";
}
void candidate::Enter(){
    cout<<"Enter roll no. : ";
    cin>>rno;
    cout<<"Enter name : ";
    getline(cin,name);
    getline(cin,name);
    cout<<"Enter score : ";
    cin>>score;
    AssignRem();    // calling private member function
}
void candidate::Display(){
    cout<<"\nRoll no : "<<rno;
    cout<<"\nName : "<<name;
    cout<<"\nScore : "<<score
```

```
        ;
        cout<<"\nRemarks : "<<Remarks;
    }
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE : 07-11-2023 "<<endl<<endl;

    candidate obj;
    obj.Enter();
    obj.Display();
    return 0;
}
```

OUTPUT:

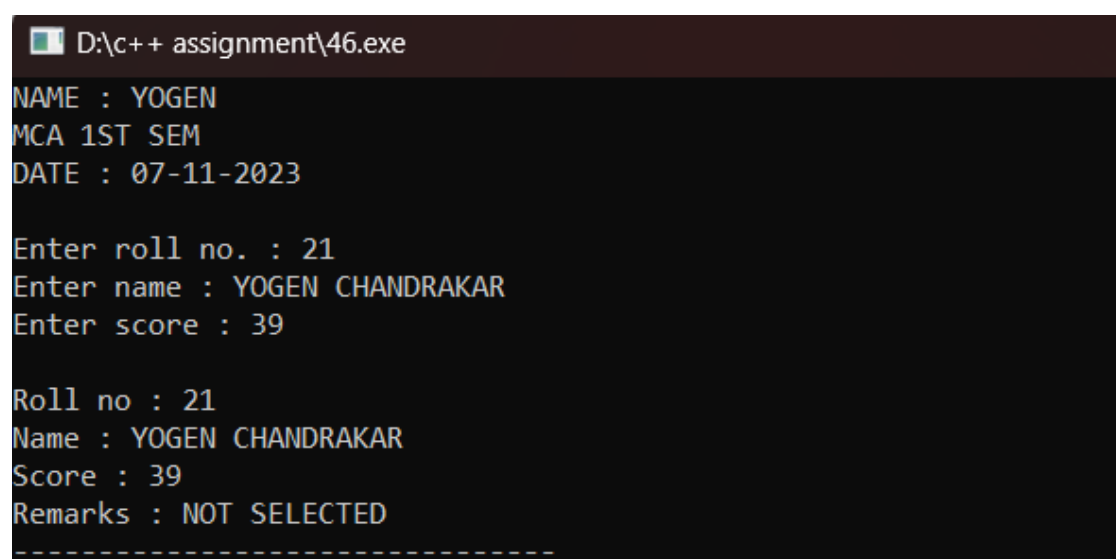


A screenshot of a Windows command prompt window titled "D:\c++ assignment\46.exe". The output of the program is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE : 07-11-2023

Enter roll no. : 21
Enter name : YOGEN CHANDRAKAR
Enter score : 95.5

Roll no : 21
Name : YOGEN CHANDRAKAR
Score : 95.5
Remarks : SELECTED
-----
```



A screenshot of a Windows command prompt window titled "D:\c++ assignment\46.exe". The output of the program is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE : 07-11-2023

Enter roll no. : 21
Enter name : YOGEN CHANDRAKAR
Enter score : 39

Roll no : 21
Name : YOGEN CHANDRAKAR
Score : 39
Remarks : NOT SELECTED
-----
```

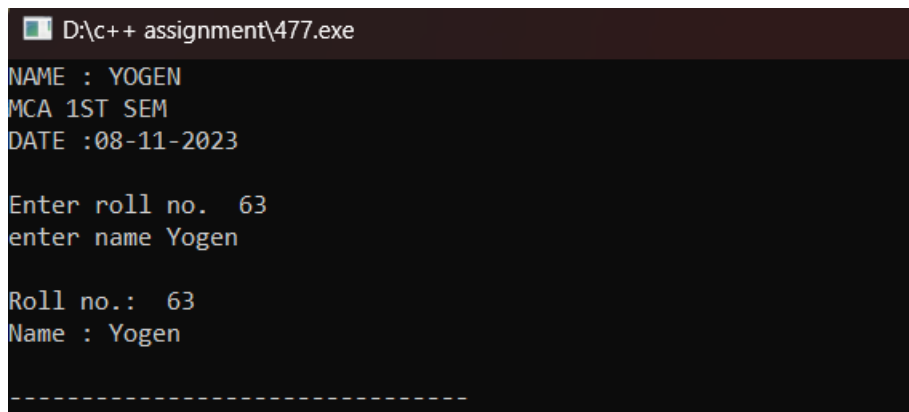
**Program 47. Write a C++ program to implement single inheritance.****Code:**

```
#include<iostream>
using namespace std;
class Parent{                                // Base class
    int rollno;
public:
    void enter(){
        cout<<"Enter roll no. ";
        cin>>rollno;
    }
    void show(){
        cout<<"\nRoll no.: "<<rollno<<endl;
    }
};
class Child : private Parent{                // Derived class
    char name[100];
public:
    void input(){
        enter();
        cout<<"enter name ";
        cin>>name;
    }
    void output(){
        show();
        cout<<"Name : "<<name<<endl;
    }
};
int main()
{
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE :08-11-2023 "<<endl<<endl;

    Child c;
    c.input();
    c.output();
    return 0;
}
```



Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\477.exe". The window shows the output of a C++ program. The first three lines are "NAME : YOGEN", "MCA 1ST SEM", and "DATE :08-11-2023". Then, it prompts "Enter roll no. 63" and "enter name Yogen". The next two lines are "Roll no.: 63" and "Name : Yogen". The window ends with a dashed line.

```
D:\c++ assignment\477.exe
NAME : YOGEN
MCA 1ST SEM
DATE :08-11-2023

Enter roll no. 63
enter name Yogen

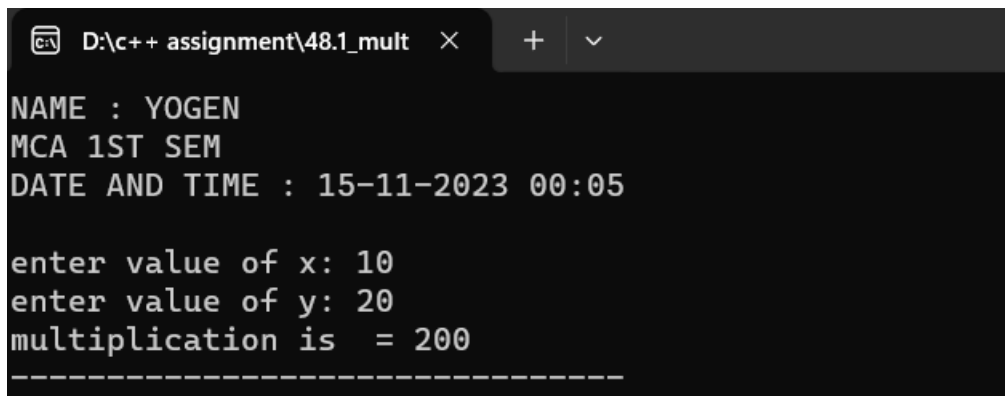
Roll no.: 63
Name : Yogen
-----
```

**Program 48. Write a C++ program to implement multiple inheritance.****Code:**

```
#include<iostream>
using namespace std;
class A          //base class first
{
public:
    int x;
    void getx()
    {
        cout << "enter value of x: ";
        cin >> x;
    }
};
class B          //base class second
{
public:
    int y;
    void gety()
    {
        cout << "enter value of y: ";
        cin >> y;
    }
};
class C : public A, public B    //C is derived from base class A and class B
{
public:
    void mul()
    {
        cout << "multiplication is = " << x * y;
    }
};

void my_info(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE AND TIME : 15-11-2023 00:05 "<<endl<<endl;
}
int main()
{
    my_info();
    C obj1; //object of derived class C
    obj1.getx();
    obj1.gety();
    obj1.mul();
    return 0;
}
```

Output:

A screenshot of a terminal window showing the output of a C++ program. The window title is 'D:\c++ assignment\48.1\_mult'. The output text is: 'NAME : YOGEN', 'MCA 1ST SEM', 'DATE AND TIME : 15-11-2023 00:05', 'enter value of x: 10', 'enter value of y: 20', 'multiplication is = 200', followed by a line of dashes.

```
D:\c++ assignment\48.1_mult × + v
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 15-11-2023 00:05

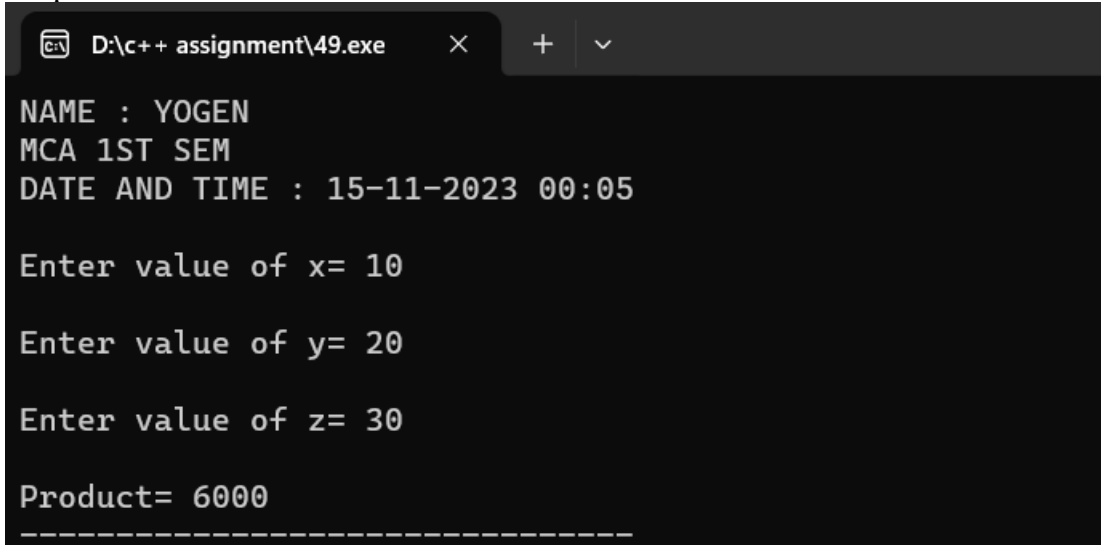
enter value of x: 10
enter value of y: 20
multiplication is = 200
-----
```

**Program 49. Write a C++ program to implement multilevel inheritance.****Code:**

```
#include<iostream>
using namespace std;
class base          //single base class
{
public:
    int x;
    void getdata()
    {
        cout << "Enter value of x= ";
        cin >> x;
    }
};
class derive1 : public base    // derived class from base class
{
public:
    int y;
    void readdata()
    {
        cout << "\nEnter value of y= ";
        cin >> y;
    }
};
class derive2 : public derive1 // derived from class derive1
{
private:
    int z;
public:
    void indata()
    {
        cout << "\nEnter value of z= ";
        cin >> z;
    }
    void product()
    {
        cout << "\nProduct= " << x * y * z;
    }
};
void my_info(){
    cout<<"NAME : YOGEN "<<<endl;
    cout<<"MCA 1ST SEM "<<<endl;
    cout<<"DATE AND TIME : 15-11-2023 00:05 "<<<endl<<endl;
}
int main()
{
    my_info();
    derive2 a; //object of derived class
    a.getdata();
    a.readdata();
}
```

```
a.indata();  
a.product();  
return 0;  
}
```

Output:



```
D:\c++ assignment\49.exe  
NAME : YOGEN  
MCA 1ST SEM  
DATE AND TIME : 15-11-2023 00:05  
  
Enter value of x= 10  
  
Enter value of y= 20  
  
Enter value of z= 30  
  
Product= 6000  
-----
```

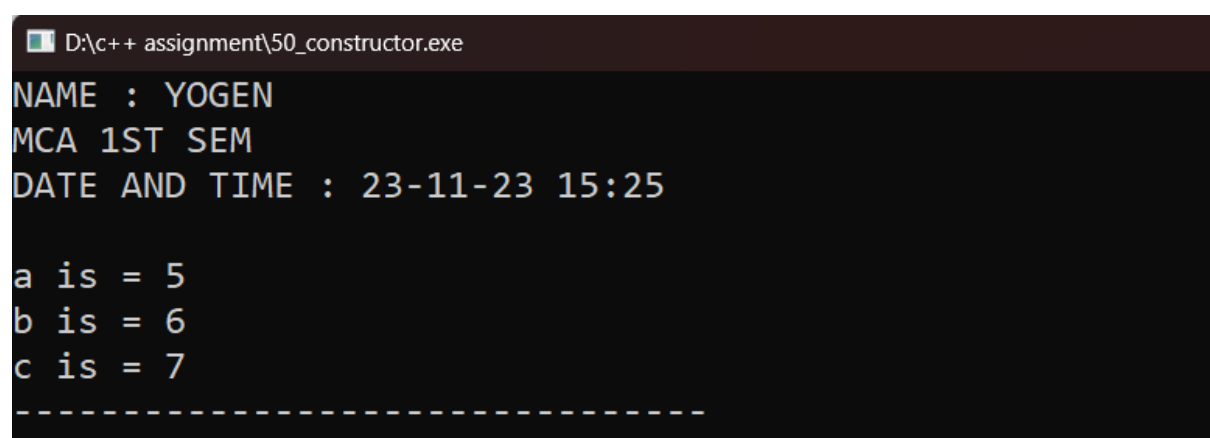
**Program 50. Write a C++ program to initialize three integer values through constructor using parameter.**

Code:

```
#include<iostream>
using namespace std;
class Number{
    int a,b,c;
    public:
        Number(int x,int y,int z){
            a = x;
            b = y;
            c = z;
            cout<<"a is = "<<a<<"\nb is = "<<b<<"\nc is = "<<c;
        }
};
void myinfo(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 23-11-23 15:25 "<<endl<<endl;
}
int main()
{
    myinfo();
    Number n(5,6,7);

    return 0;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\50\_constructor.exe". The output of the program is displayed in yellow text on a black background. It shows the program's name, "NAME : YOGEN", "MCA 1ST SEM", and "DATE AND TIME : 23-11-23 15:25" followed by a blank line. Then it shows the values of variables a, b, and c: "a is = 5", "b is = 6", and "c is = 7", followed by a dashed line.

```
D:\c++ assignment\50_constructor.exe
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 23-11-23 15:25

a is = 5
b is = 6
c is = 7
-----
```

**Program 51 .Write a C++ program to illustrate order of invocation for these, Define two class first class named “Sub” and second named “Mark” in C++ with the following description:=**

**Class “Sub” contains -**

**Private member:-**

- A data member ppr1\_code of type int.
- A data member ppr2\_code of type int.

**Public member:-**

- A default constructor which initializes and display the private member of its class.

**Class “Mark” contains –**

**Private member:-**

- A data member ppr1\_mark of type float.
- A data member ppr2\_mark of type float.

**Public member:-**

- A Parameterized constructor which initializes and display the private member of its class.

create an object of Sub class inside these class.

Code:

```
#include<iostream>
using namespace std;
class Sub{
    int ppr1_code;
    int ppr2_code;
    public:
        Sub(){
            ppr1_code = 101;
            ppr2_code = 102;
            cout<<"\nppr1 code : "<<ppr1_code<<"\nppr2_code : 
"<<ppr2_code<<endl;
        }
};
class Mark {
    float ppr1_mark;
    float ppr2_mark;
    public:
        Mark(float x , float y){ // intializing parameterized counstructor
```

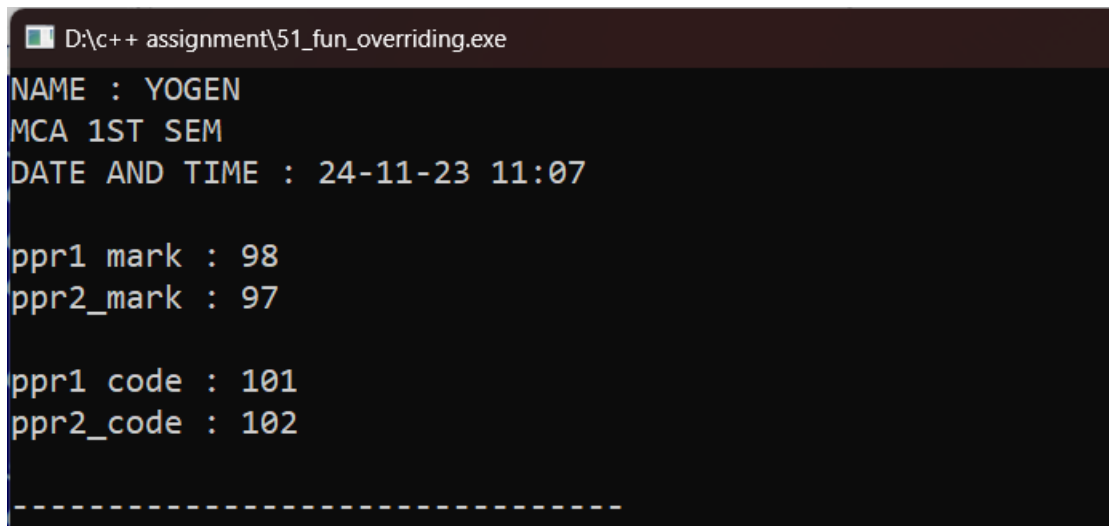
```
        ppr1_mark = x;
        ppr2_mark = y;
        cout<<"\nppr1 mark : "<<ppr1_mark<<"\nppr2 mark : "<<ppr2_mark<<endl;
        Sub s;
    }
};
my_info(){

    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 24-11-23 11:07 "<<endl;

}
int main()
{
    my_info();
    Mark m(98,97);

    return 0;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\51\_fun\_overriding.exe". The output of the program is displayed in a monospaced font. It shows the name "YOGEN", the semester "MCA 1ST SEM", and the date and time "24-11-23 11:07". Below this, it shows the marks for two papers: "ppr1 mark : 98" and "ppr2 mark : 97". Finally, it shows the codes for the two papers: "ppr1 code : 101" and "ppr2 code : 102". The output ends with a dashed line.

```
D:\c++ assignment\51_fun_overriding.exe
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 24-11-23 11:07

ppr1 mark : 98
ppr2 mark : 97

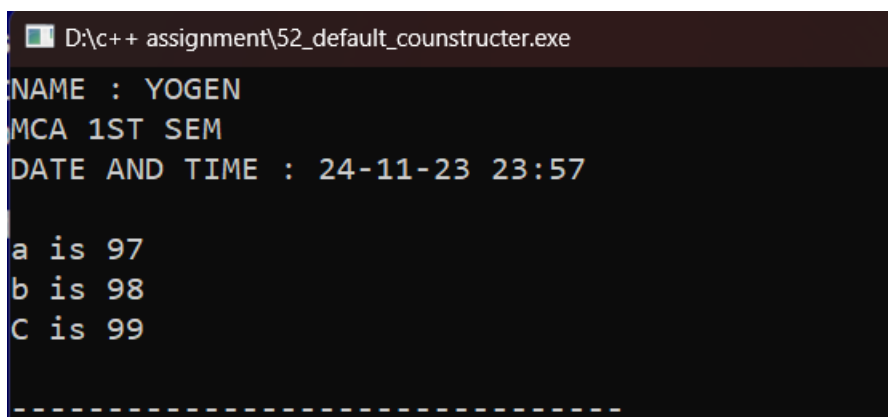
ppr1 code : 101
ppr2 code : 102
-----
```



**Program 52. Write a C++ program to invoke a constructor having default argument.****Code:**

```
#include<iostream>
using namespace std;
class Addition{
    int a,b,c;
public :
    Addition(int x=97,int y=98,int z=99) // default counstructor
    {
        a = x;
        b = y;
        c = z;
        cout<<"a is "<<a<<"\nb is "<<b<<"\nC is "<<c<<endl;
    }
};
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 24-11-23 23:57"<<endl<<endl;
}
int main()
{
    my_info();
    Addition a;
}
```

Output:

A screenshot of a Windows command prompt window. The title bar shows the file path 'D:\c++ assignment\52\_default\_counstructor.exe'. The output of the program is displayed in a monospaced font. It shows the output of the my\_info() function followed by the output of the Addition class constructor. The output is as follows:  
NAME : YOGEN  
MCA 1ST SEM  
DATE AND TIME : 24-11-23 23:57  
  
a is 97  
b is 98  
C is 99  
-----

**Program 53. Write a C++ program to copy one object variable to another object using copy constructor.**

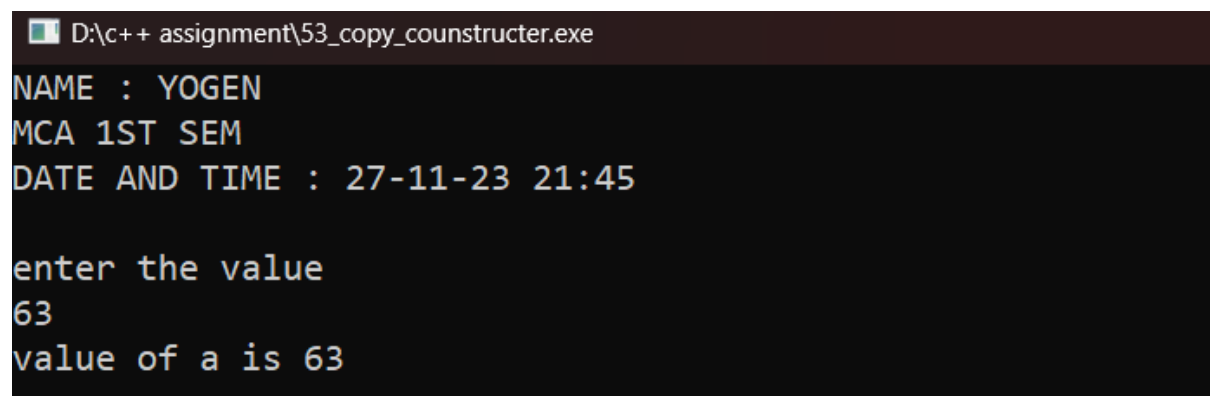
Code:

```
#include<iostream>
using namespace std;
class A{
    int a;
    public :
    A(){
        cout<<"enter the value "<<endl;
        cin>>a;
    }
    A(A &y){    // syntax : class_name(class_name & passing_object)
        a = y.a;
        cout<<"value of a is "<<a;
    }
};

void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 27-11-23 21:45 "<<endl<<endl;
}

int main()
{
    my_info();
    A x;
    A y(x); // calling copy constructor
    return 0;
}
```

Output:

A screenshot of a Windows command prompt window titled "D:\c++ assignment\53\_copy\_counstructor.exe". The output of the program is displayed in green text on a black background. It shows the program's self-introduction: "NAME : YOGEN", "MCA 1ST SEM", and "DATE AND TIME : 27-11-23 21:45" followed by a blank line. Then, it prompts "enter the value". The user has entered "63", and the program responds with "value of a is 63".

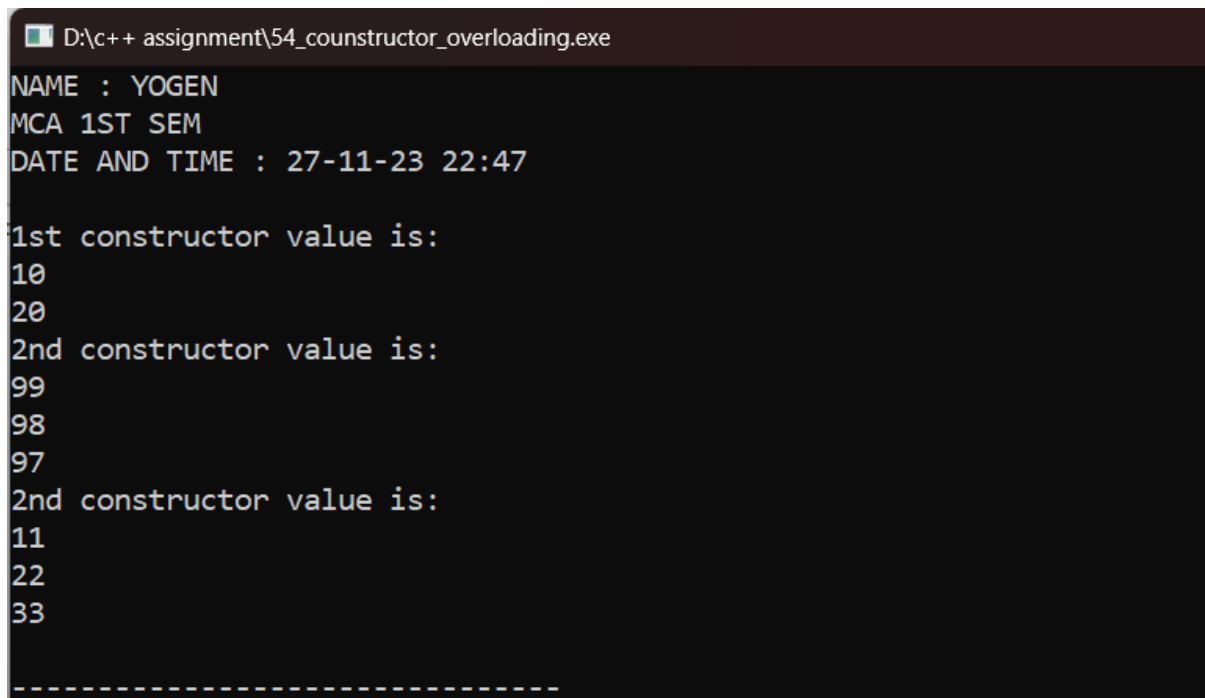
```
D:\c++ assignment\53_copy_counstructor.exe
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 27-11-23 21:45

enter the value
63
value of a is 63
```

**Program 54. Write a C++ program to perform constructor overloading having three constructor within a class.****Code:**

```
#include<iostream>
using namespace std;
class cons {
int a,b,c;
public:
    cons(int x=10,int y=20){
        a = x;
        b = y;
        cout<<"1st constructor value is:\n"<<a<<endl<<b<<endl;
    }
    cons(int x,int y,int z){
        a = x;
        b = y;
        c = z;
        cout<<"2nd constructor value is:\n" <<a<<endl<<b << endl    <<c<<endl;
    }
    cons(float x,float y,float z){
        a = x;
        b = y;
        c = z;
        cout<<"3rd constructor value is:\n" <<a<< endl <<b <<endl <<c<<endl;
    }
};
void my_info(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE AND TIME : 27-11-23 22:47 "<<endl<<endl;
}
int main({
my_info();
cons c;
cons d(99,98,97);
cons e(11,22,33);
return 0;
}
```

Output:

A screenshot of a Windows command prompt window with a dark background. The title bar at the top reads "D:\c++ assignment\54\_counstructor\_overloading.exe". The output text is as follows:

```
NAME : YOGEN  
MCA 1ST SEM  
DATE AND TIME : 27-11-23 22:47  
  
1st constructor value is:  
10  
20  
2nd constructor value is:  
99  
98  
97  
2nd constructor value is:  
11  
22  
33  
  
-----
```

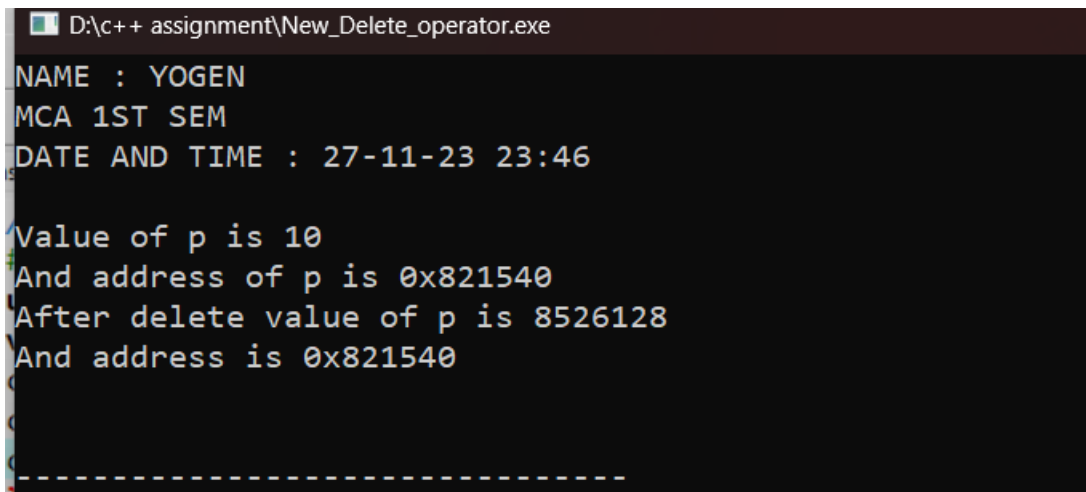
**Program 55.** Write a C++ program to allocate and deallocate memory at run time for a variable.

**Code:**

```
#include<iostream>
using namespace std;
int main()
{
    int *p = new int();
    *p = 10;
    cout<<"before delete value of p is "<<*p<<"\nAnd address is "<<p<<endl;
    delete p;
    cout<<"after delete value of p is "<<*p<<"\nafter delete address of is "<<p<<endl;
    cout<<endl;

    return 0;
}
```

Output:



**Program 56. Write a C++ program to demonstrate run time polymorphism(function overriding).****Code:**

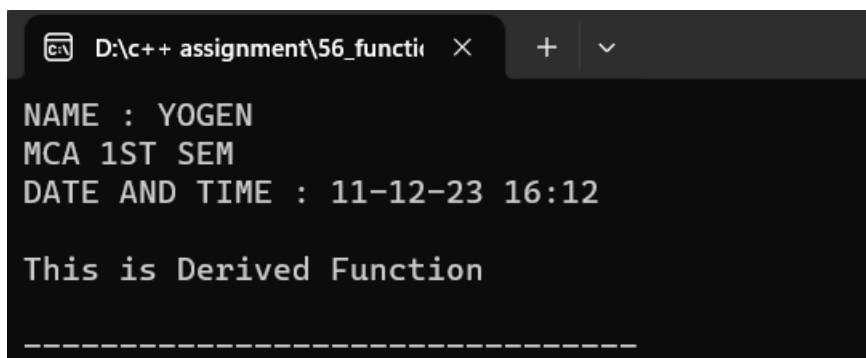
```
#include<iostream>
using namespace std;
class Base {
public:
    void print() {
        cout << "This is Base Function" << endl;
    }
};

class Derived : public Base {
public:
    void print() { //using function overriding
        cout << "This is Derived Function" << endl;
    }
};

void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 11-12-23 16:12 "<<endl<<endl;
}

int main(){
    my_info();
    Derived derived1;
    derived1.print();
    return 0;
}

Output:
```

A screenshot of a Windows command prompt window. The title bar shows the file path 'D:\c++ assignment\56\_function' and standard window controls. The output text is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 11-12-23 16:12

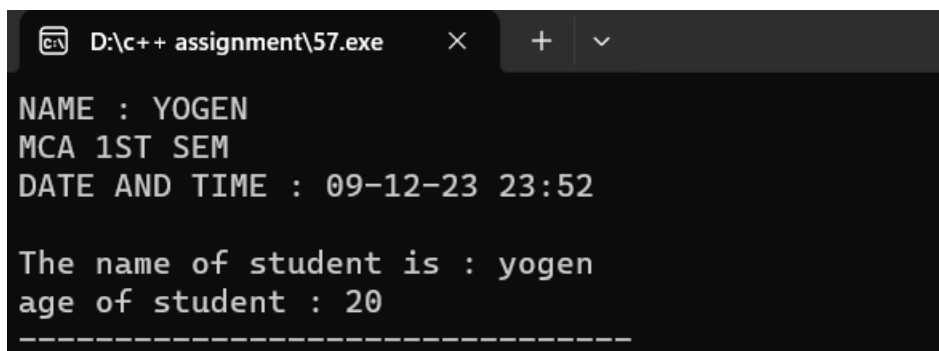
This is Derived Function
-----
```

**Program 57. Write a C++ program to create a class named “Student” having two private member name type string and age type int. and in public section class contain one member function named “Stu\_info” which initializes the data members of its class at run time and one another member function named “Show\_info” which display the detail of a student (name,age). And invoke them using pointer to object.**

**Code:**

```
#include<iostream>
using namespace std;
class Student {
    int age;
    string name;
public:
    int Stu_info(string n,int a){
        name = n;
        age = a ;
    }
    int Show_info(){
        cout<<"The name of student is : "<<name<<endl<<"age of student : "<<age;
    }
};
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 09-12-23 23:52 "<<endl<<endl;
}
int main()
{
    my_info();
    Student s,*p;
    p = &s;
    p->Stu_info("yogen",20); //invoke using pointer
    p->Show_info();
    return 0;
}
```

Output:

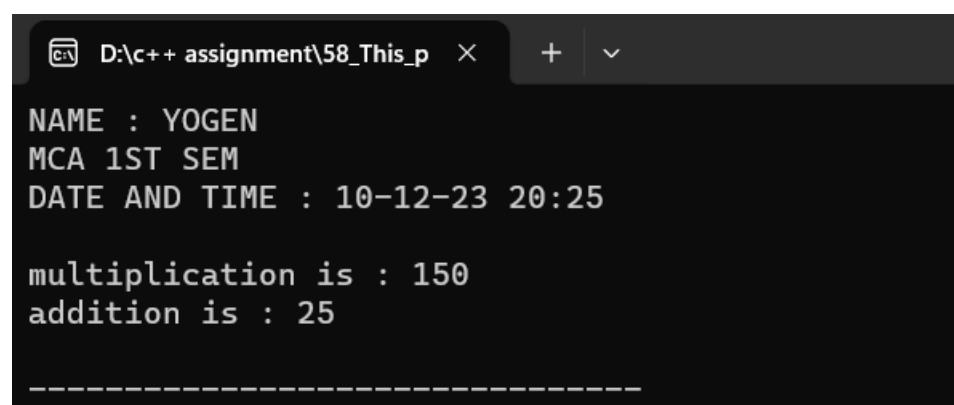


```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 09-12-23 23:52

The name of student is : yogen
age of student : 20
-----
```

**Program 58. Write a C++ program to illustrate functioning of this pointer.****Code:**

```
#include<iostream>
using namespace std;
class A{
    int a,b;
public:
    void GetData(int a,int b){
        this->a=a*b;
        this->b=a+b;
    }
    void Display(){
        cout<<"multiplication is : "<<a<<endl;
        cout<<"addition is : "<<b<<endl;
    }
};
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 10-12-23 20:25 "<<endl<<endl;
}
int main()
{
    my_info();
    A a;
    a.GetData(10,15);
    a.Display();
    return 0;
}
```

**Output:**A screenshot of a terminal window with a dark background. The title bar shows a file path 'D:\c++ assignment\58\_This\_p' and standard window controls. The output text is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 10-12-23 20:25

multiplication is : 150
addition is : 25

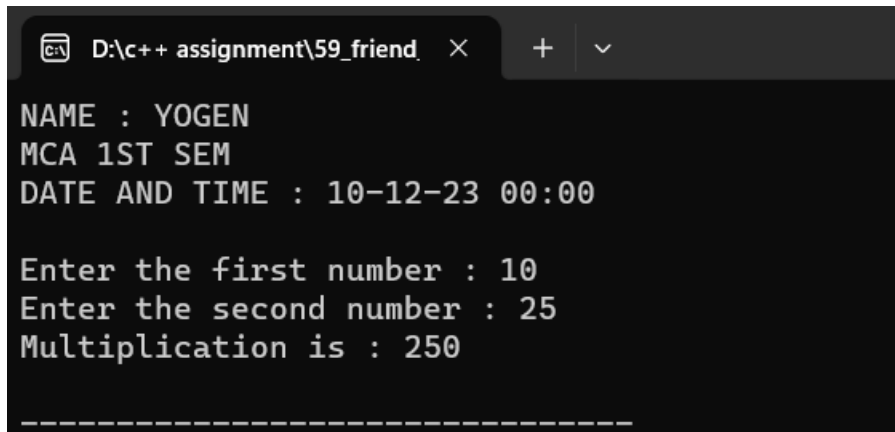
-----
```



**Program 59. Write a C++ program to create two classes (named First\_class and Second\_class), and perform multiplication of two number (where first number is public data member of First\_class and second number is public data member of Second\_class) using friend function.**

**Code:**

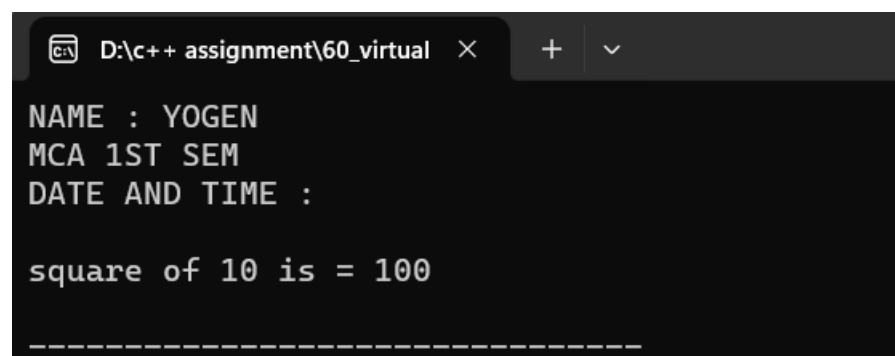
```
#include<iostream>
using namespace std;
class First_class{
    public:
        int a;
        void get_first(){
            cout<<"Enter the first number : ";
            cin>>a;
        }
};
class Second_class{
    public:
        int b;
        void get_second(){
            cout<<"Enter the second number : ";
            cin>>b;
        }
    friend int mul(First_class,Second_class); // declaring friend function
};
int mul(First_class f,Second_class s){ //defining friend function outside the class
    int result = f.a*s.b;
    return result;
}
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 10-12-23 00:00 "<<endl<<endl;
}
int main()
{
    my_info();
    First_class l;
    l.get_first();
    Second_class m;
    m.get_second();
    int r = mul(l,m);
    cout<<"Multiplication is : "<<r<<endl;
    return 0;
}
```

**Output:**A screenshot of a terminal window with a dark background. The title bar shows a file path: "D:\c++ assignment\59\_friend". The output text is as follows:

```
NAME : YOGEN  
MCA 1ST SEM  
DATE AND TIME : 10-12-23 00:00  
  
Enter the first number : 10  
Enter the second number : 25  
Multiplication is : 250  
-----
```

**Program 60. Write a C++ program to the working of virtual function.****Code:**

```
#include<iostream>
using namespace std;
class A{
    int x=5;
    public:
        virtual void display(){ // create virtual function
            cout<<"squre of "<<x<<" is "<<x*x<<endl;
        }
};
class B:public A{ //create derive class b
    int y=10;
    public:
        void display(){
            cout<<"square of "<<y<<" is = "<<y*y<<endl;
        }
};
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : "<<endl<<endl;
}
int main(){
    my_info();
    A *a;
    B b;
    a = &b;
    a->display();
    b.display();
    return 0;
}
```

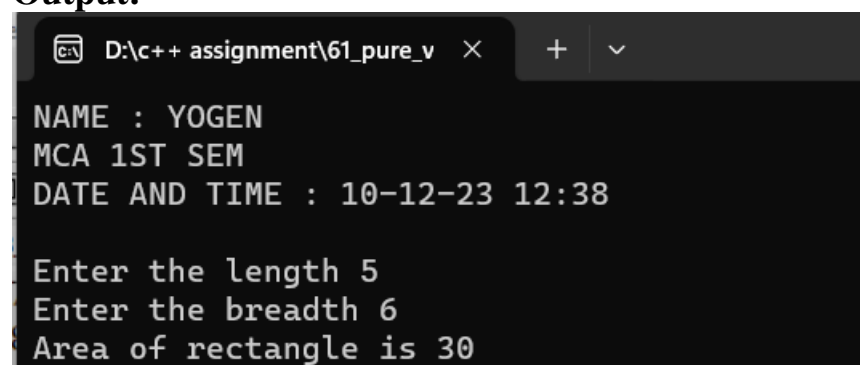
**Output:**A screenshot of a terminal window with a dark background. The title bar shows the file path 'D:\c++ assignment\60\_virtual' and standard window controls. The output text is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME :

square of 10 is = 100
-----
```

**Program 61. Write a C++ program to the working of pure virtual function.****Code:**

```
#include<iostream>
using namespace std;
class A {
public:
    int a,b;
    void GetData(){
        cout<<"Enter the length ";
        cin>>a;
        cout<<"Enter the breadth ";
        cin>>b;
    }
    virtual void area()=0; //declaring pure virtual function
};
class B : public A{
public:
    void area(){ //pure virtual function define in derived class
        cout<<"Area of rectangle is "<<a*b;
    }
};
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 10-12-23 12:38 "<<endl<<endl;
}
int main(){
    my_info();
    A a //we can not create an object of class A because class A is a now abstract class
    A *ptr;
    B b;
    ptr = &b;
    ptr->GetData();
    ptr->area();
    //b.GetData();
    //b.area();
    return 0;
}
```

**Output:**

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 10-12-23 12:38

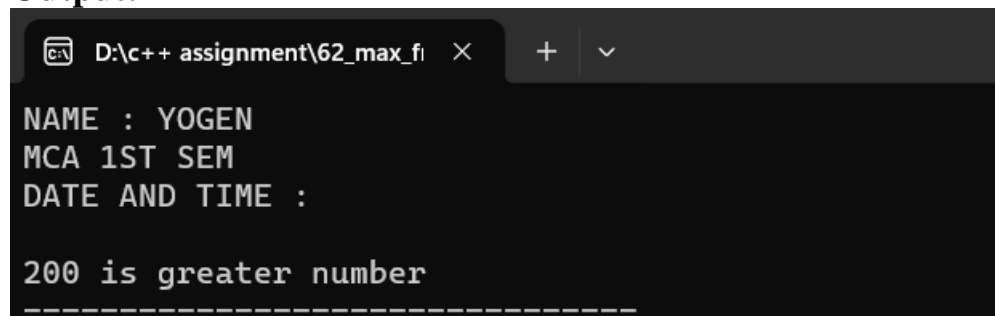
Enter the length 5
Enter the breadth 6
Area of rectangle is 30
```

**Program 62. Write a C++ program to find large number between two number using friend class.**

**Code:**

```
#include<iostream>
using namespace std;
class A{
    int n1,n2;
    public:
    A(int i,int j)
    {
        n1=i;
        n2=j;
    }
    friend class B;    // declaring friend class
};
class B
{
    public:
    void max(A a){
        if (a.n1>a.n2) {
            cout<<a.n1<<"greater number ";
        }
        else {
            cout<<a.n2<<" is greater number ";
        }
    }
};
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : "<<endl<<endl;
}
int main(){
    my_info();
    A a(100,200);
    B b;
    b.max(a);
    return 0;
}
```

**Output:**



```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME :

200 is greater number
-----
```

**Program 63. Write a C++ program to for operator overloading to compare two objects are equal are not using ==operator.**

**Code:**

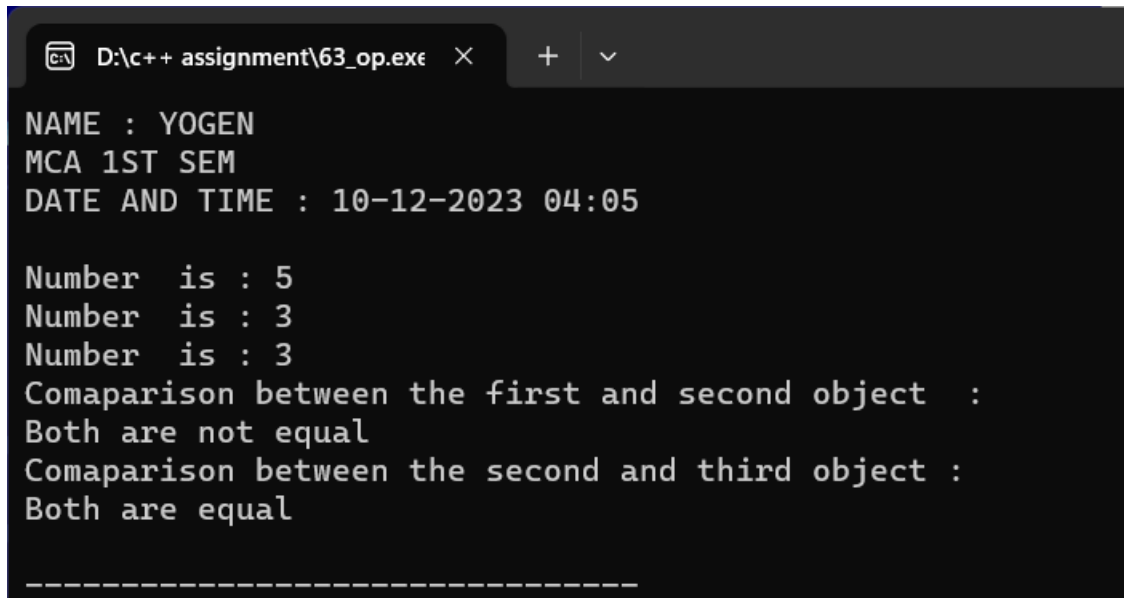
**// code :**

```
#include<iostream>
using namespace std;
class First_class{
    int number;
public:
    First_class(int num){
        number = num;
        cout<<"Number is : "<<number<<endl;
    }

    First_class operator ==(First_class obj)
    {
        if(number==obj.number)
        {
            cout<<"Both are equal "<<endl;
        }
        else
        {
            cout<<"Both are not equal "<<endl;
        }
    }
};

void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 10-12-2023 04:05 "<<endl<<endl;
}
int main()
{
    my_info();
    First_class F1(5),F2(3) ,F3(3);
    cout<<"Comaparison between the first and second object : "<<endl;
    F1==F2;
    cout<<"Comaparison between the second and third object : "<<endl;
    F2==F3;

    return 0;
}
```

**Output:**A screenshot of a Windows command prompt window showing the output of a C++ program. The window title bar indicates the file path 'D:\c++ assignment\63\_op.exe'. The output text is as follows:

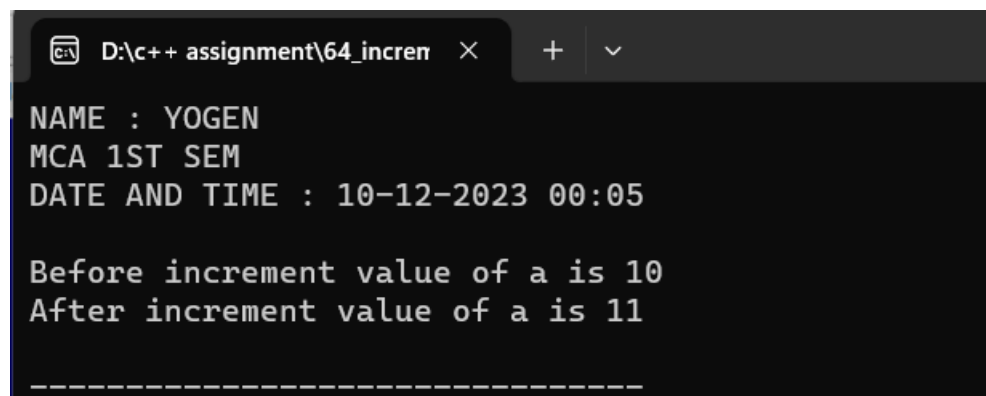
```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 10-12-2023 04:05

Number is : 5
Number is : 3
Number is : 3
Comaparison between the first and second object :
Both are not equal
Comaparison between the second and third object :
Both are equal
-----
```

**Program 64. Write a C++ program to illustrate unary operator overloading on increment operator by using member function.****Code:**

```
//member function.
#include<iostream>
using namespace std;
class yogen{
    int a,b;
    public:
        yogen(int x){
            a=x;
            cout<<"Before increment value of a is "<<a<<endl;
        }
        void operator ++(){
            a=++a;
            cout<<"After increment value of a is "<<a<<endl;
        }
};

void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 10-12-2023 00:05 "<<endl<<endl;
}
int main()
{
    my_info();
    yogen y(10);
    ++y;
    return 0;
}
```

**Output:**

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 10-12-2023 00:05

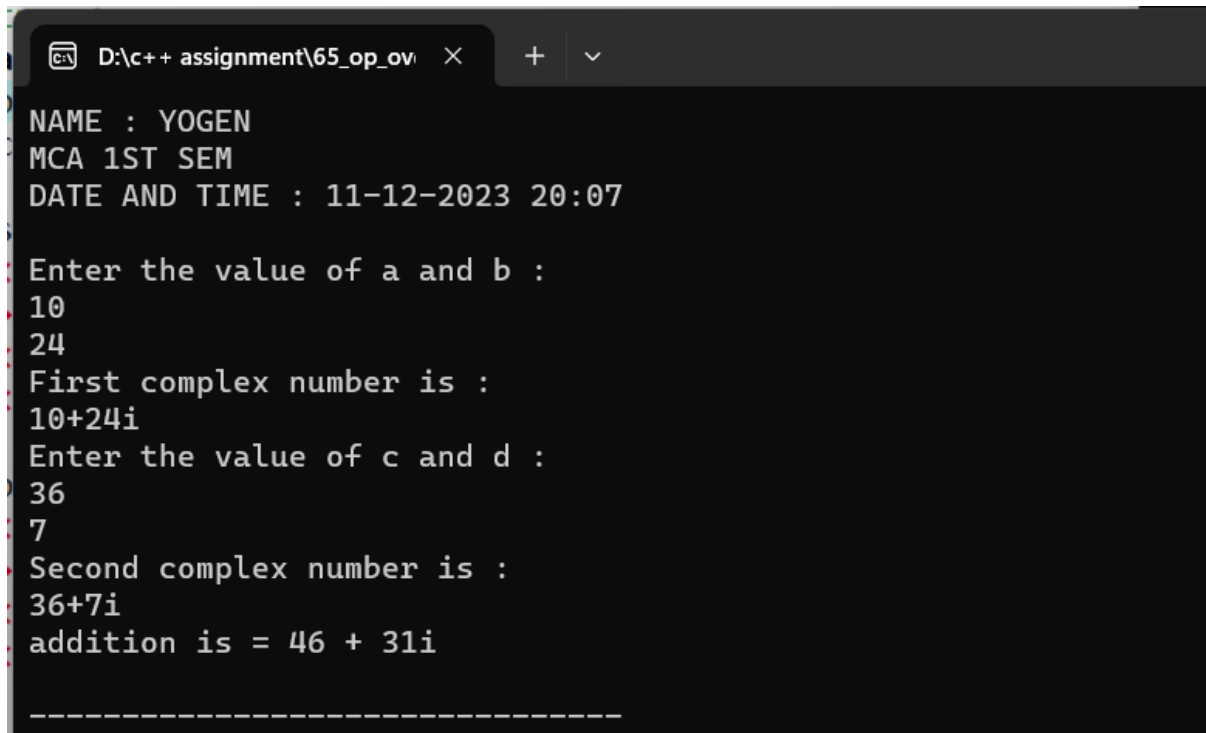
Before increment value of a is 10
After increment value of a is 11
-----
```



**Program 65. Write a C++ program to add two complex number using + operator overloading by friend function.**

**Code:**

```
#include<iostream>
using namespace std;
class add_two_complex {
public:
    void firstcomplex(){
        cout<<"Enter the value of a and b : "<<endl;
        cin >>a >> b;
        cout<<"First complex number is : "<<endl;
        cout<<a<<"+"<<b<<"i"<<endl;
    }
    void secondcomplex(){
        cout<<"Enter the value of c and d : "<<endl;
        cin>>c>>d;
        cout<<"Second complex number is : "<<endl;
        cout<<c<<"+"<<d<<"i"<<endl;
    }
    friend void operator +(add_two_complex); //declare friend function
};
void operator +(add_two_complex s1)
{
    int n,m;
    n = s1.a+s1.c;
    m = s1.b+s1.d;
    cout<<"addition is "<<n<<" + "<<m<<"i"<<endl;
}
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 11-12-2023 20:07 "<<endl<<endl;
}
int main()
{
    my_info();
    add_two_complex s1;
    s1.firstcomplex();
    s1.secondcomplex();
    +s1;
    return 0;
}
```

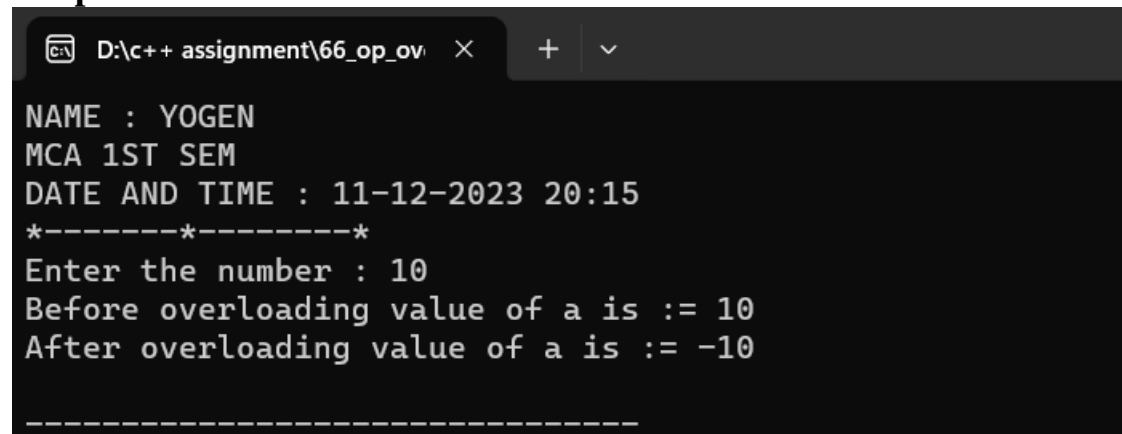
**Output:**A screenshot of a terminal window with a dark background. The window title bar shows a file path 'D:\c++ assignment\65\_op\_ov' and standard window controls. The output text is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 11-12-2023 20:07

Enter the value of a and b :
10
24
First complex number is :
10+24i
Enter the value of c and d :
36
7
Second complex number is :
36+7i
addition is = 46 + 31i
-----
```

**Program 66. Write a C++ program to illustrate unary minus operator overloading using friend function.****Code:**

```
#include<iostream>
using namespace std;
class overload
{
    int a;
public:
    void get()
    {
        cout<<"Enter the number : ";
        cin>>a;
        cout<<"Before overloading value of a is := "<<a<<endl;
    }
    friend void operator -(overload ); // Declaring friend function with operator
    overloading
};
void operator -(overload x)
{
    x.a=-x.a;
    cout<<"After overloading value of a is := "<<x.a<<endl;
}
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 11-12-2023 20:15 "<<endl;
    cout<<"*-----*-----*"<<endl;
}
int main()
{
    my_info();
    overload o;
    o.get();
    -o; // unary minus operator
    return 0;
}
```

**Output:**A screenshot of a terminal window showing the output of a C++ program. The window has a title bar with a file icon, the path 'D:\c++ assignment\66\_op\_ov', and window control buttons. The output text is as follows:

```
NAME : YOGEN  
MCA 1ST SEM  
DATE AND TIME : 11-12-2023 20:15  
*-----*-----*  
Enter the number : 10  
Before overloading value of a is := 10  
After overloading value of a is := -10  
-----
```

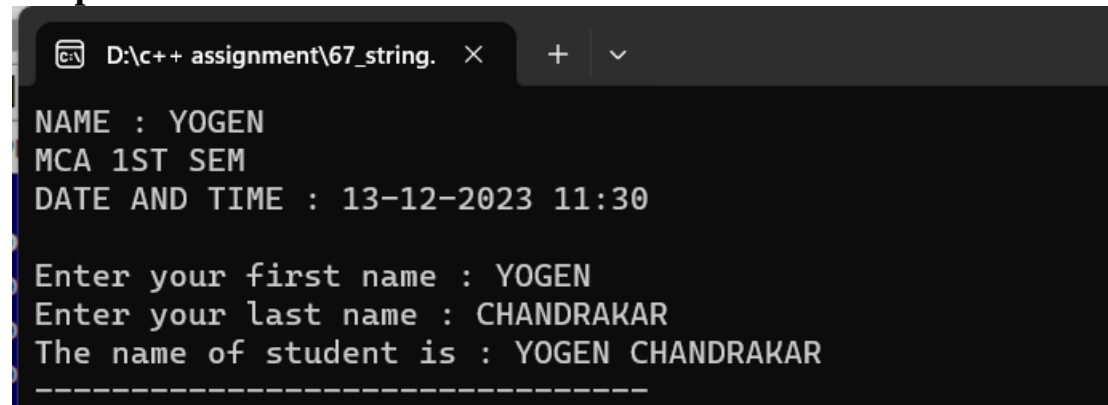
**Program 67. WAP to demonstrate the use of >> and getline( ) for reading the string.****Code:**

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

void my_info(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE AND TIME : 13-12-2023 11:30 "<<endl<<endl;

}
void str(){
    string Fname,Lname ;
    cout<<"Enter your first name : ";
    cin>>Fname;
    cout<<"Enter your last name : ";
    getline(cin,Lname);
    getline(cin,Lname);
    cout<<"The name of student is : "<<Fname<<" "<<Lname;

}
int main()
{
my_info();
str();
return 0;
}
```

**Output:**A screenshot of a Windows command prompt window with a dark background. The title bar shows the file path 'D:\c++ assignment\67\_string.' and standard window controls. The output of the program is displayed in white text: 'NAME : YOGEN', 'MCA 1ST SEM', 'DATE AND TIME : 13-12-2023 11:30', followed by a blank line, then 'Enter your first name : YOGEN', 'Enter your last name : CHANDRAKAR', and 'The name of student is : YOGEN CHANDRAKAR'. The last line is followed by a dashed underline.

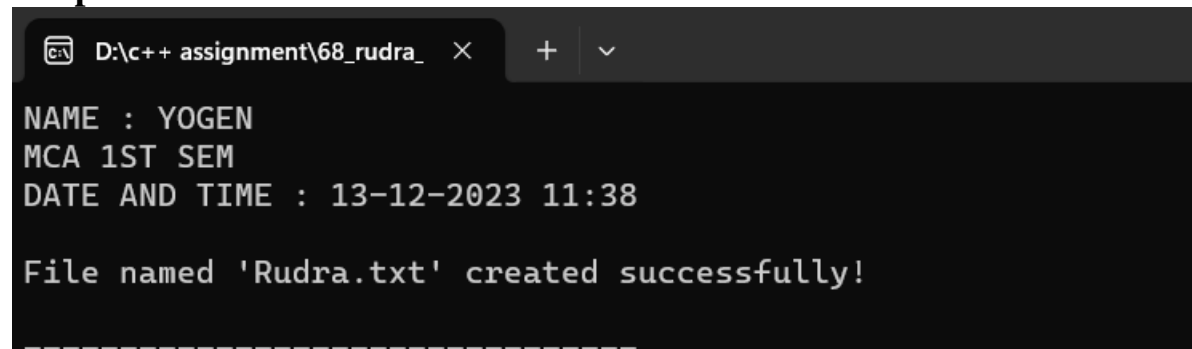
```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 13-12-2023 11:30

Enter your first name : YOGEN
Enter your last name : CHANDRAKAR
The name of student is : YOGEN CHANDRAKAR
-----
```

**Program 68. WAP to create a file named “Rudra” using constructor.****Code:**

```
#include <iostream>
#include <fstream>
using namespace std;
class CreateFile {
public:
    CreateFile() { // Constructor to create a file named "Rudra"

        ofstream file("Rudra.txt");
        if (file.is_open())
        {
            cout<<"File named 'Rudra.txt' created successfully!" << std::endl;
            // Closing the file
            file.close();
        }
        else
        {
            cout<<cerr << "Error creating the file!" << std::endl;
        }
    }
};
void my_info()
{
    cout<<"NAME : YOGEN " << endl;
    cout<<"MCA 1ST SEM " << endl;
    cout<<"DATE AND TIME : 13-12-2023 11:38 " << endl<< endl;
}
int main(){
    my_info();
    CreateFile c;
    return 0;
}
```

**Output:**

```
D:\c++ assignment\68_rudra_  X + v
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 13-12-2023 11:38

File named 'Rudra.txt' created successfully!
-----
```

**Program 69. WAP to create a file name “Info” using open function having details about your name,age,class and address.and display them into the console using eof( ).**

**Code:**

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

void my_info(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE AND TIME : 13-12-2023 00:01 "<<endl<<endl;
}

int main() {
my_info();
ofstream outFile("Info.txt");

if (outFile.is_open()) {
    string name, address;
    int age;
    char className[50];
    cout << "Enter your name: ";
    getline(cin, name);

    cout << "Enter your age: ";
    cin >> age;
    cin.ignore();

    cout << "Enter your class: ";
    cin.getline(className, 50);

    cout << "Enter your address: ";
    getline(cin, address);

    outFile << "Name: " << name << endl;
    outFile << "Age: " << age << endl;
    outFile << "Class: " << className << endl;
    outFile << "Address: " << address << endl;

    outFile.close();
    cout << "File 'Info.txt' created successfully!" << endl << endl;

    ifstream inFile("Info.txt");

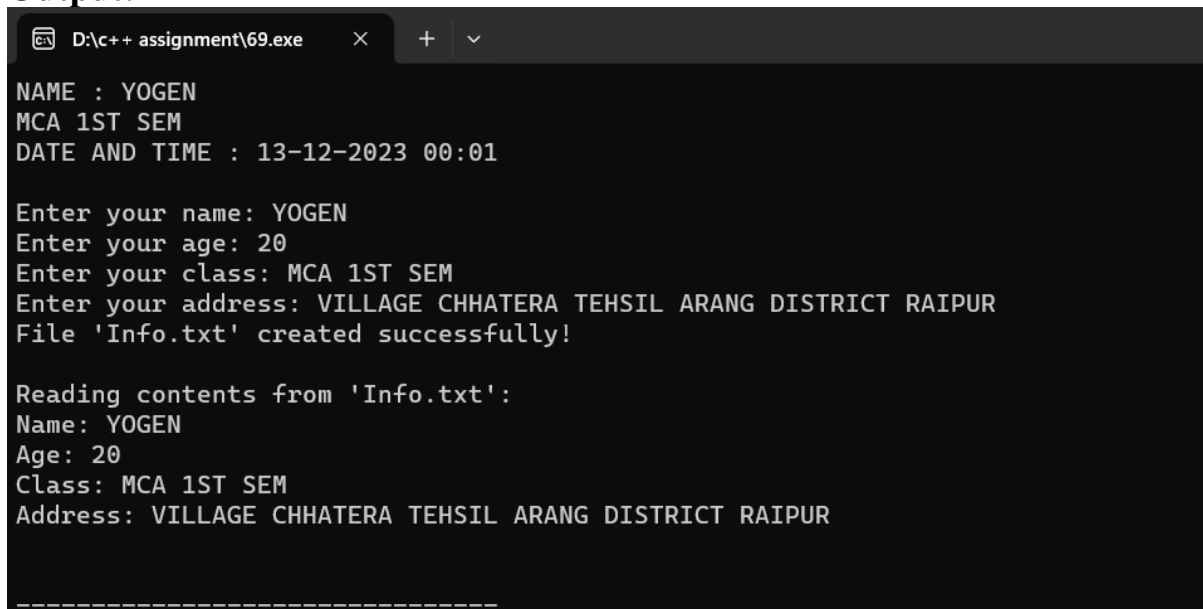
    if (inFile.is_open()) {
        cout << "Reading contents from 'Info.txt':" << endl;
        while (!inFile.eof()){
            string line;
```

```
        getline(inFile, line);
        cout << line << endl;
    }
    inFile.close();
}

else
{
    cout << "Error opening the file for reading!" << endl;
}

else
{
    cout << "Error creating the file!" << endl;
}

return 0;
}
```

**Output:**A screenshot of a Windows command prompt window titled "D:\c++ assignment\69.exe". The window shows the output of a C++ program. It starts with a header section: "NAME : YOGEN", "MCA 1ST SEM", and "DATE AND TIME : 13-12-2023 00:01". This is followed by a series of prompts and user inputs: "Enter your name: YOGEN", "Enter your age: 20", "Enter your class: MCA 1ST SEM", and "Enter your address: VILLAGE CHHATERA TEHSIL ARANG DISTRICT RAIPUR". A message "File 'Info.txt' created successfully!" is displayed. Then, it says "Reading contents from 'Info.txt':" and lists the stored data: "Name: YOGEN", "Age: 20", "Class: MCA 1ST SEM", and "Address: VILLAGE CHHATERA TEHSIL ARANG DISTRICT RAIPUR". The window ends with a line of dashes.

```
D:\c++ assignment\69.exe  X  +  v
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 13-12-2023 00:01

Enter your name: YOGEN
Enter your age: 20
Enter your class: MCA 1ST SEM
Enter your address: VILLAGE CHHATERA TEHSIL ARANG DISTRICT RAIPUR
File 'Info.txt' created successfully!

Reading contents from 'Info.txt':
Name: YOGEN
Age: 20
Class: MCA 1ST SEM
Address: VILLAGE CHHATERA TEHSIL ARANG DISTRICT RAIPUR

-----
```



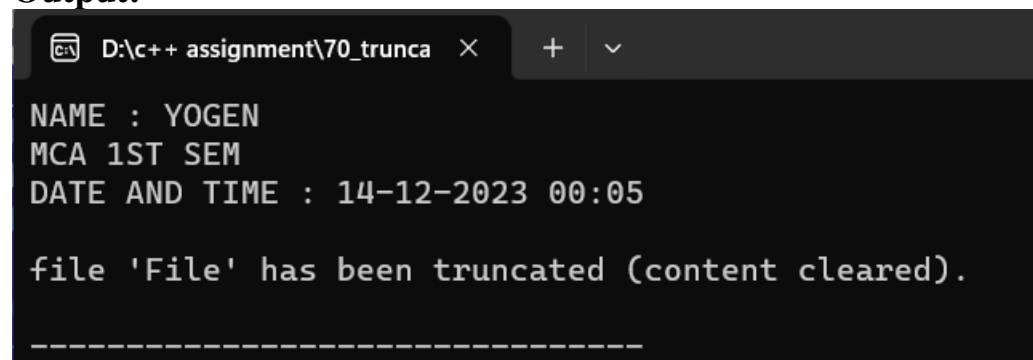
**Program 70.WAP to perform truncate operation in a file existing file named "File".****Code:**

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

void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 14-12-2023 00:05 "<<endl<<endl;
}

void truncate(){
    ofstream outFile("File", ios::trunc);
    if (outFile.is_open())
    {
        cout << "file 'File' has been truncated (content cleared)." << endl;
        outFile.close();
    }
    else
    {
        cout << "Error opening the file for truncation!" << endl;
    }
}

int main() {
    my_info();
    truncate();
    return 0;
}
```

**Output:**A screenshot of a Windows command prompt window. The title bar shows the file path 'D:\c++ assignment\70\_trunca' and standard window controls. The output text is as follows:

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 14-12-2023 00:05

file 'File' has been truncated (content cleared).
-----
```

**Program 71.WAP to open a existing file name “Shiva” in append mode to add some content in a file.****Code:**

```
#include <iostream>
#include <fstream>
using namespace std;
void my_info(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE AND TIME : 14-12-2023 00:25 "<<endl<<endl;
}

int main() {
my_info();
ofstream outFile("Shiva",ios::app);

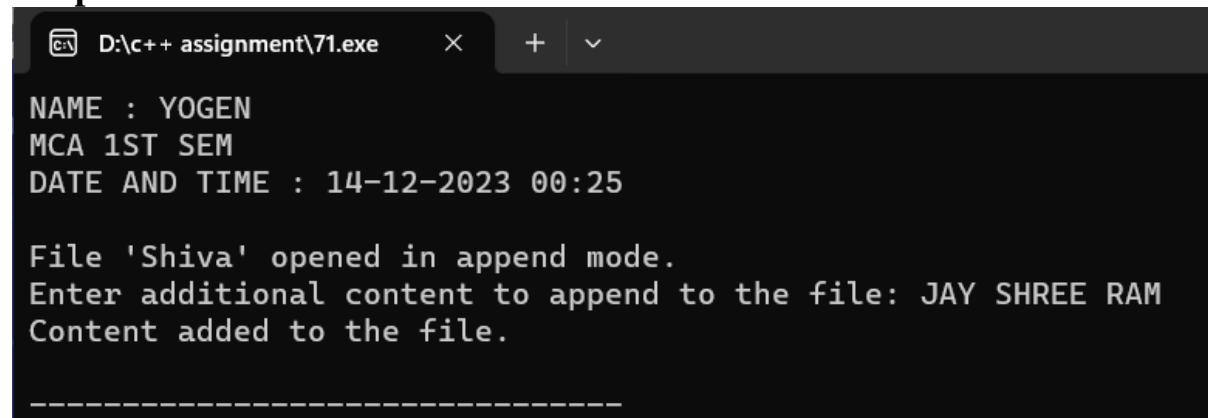
if (outFile.is_open()) {
cout << "File 'Shiva' opened in append mode." << endl;

string additionalContent;
cout << "Enter additional content to append to the file: ";
getline(cin,additionalContent);

outFile << additionalContent << endl;

cout <<"Content added to the file." << endl;

outFile.close();
}
else {
cout << "Error opening the file for appending!" << endl;
}
return 0;
}
```

**Output:**

```
D:\c++ assignment\71.exe
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 14-12-2023 00:25

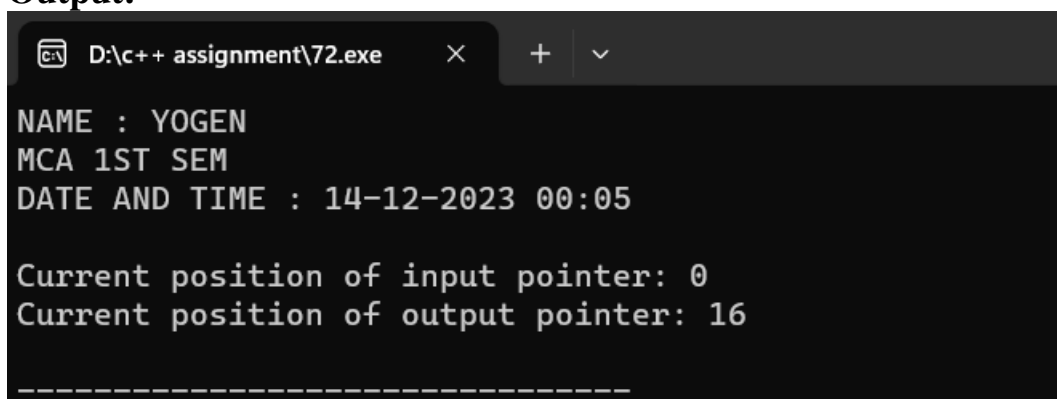
File 'Shiva' opened in append mode.
Enter additional content to append to the file: JAY SHREE RAM
Content added to the file.

-----
```

**Program 72.WAP to find current position of input/output pointer of a file.  
Code:**

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

void my_info(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE AND TIME : 14-12-2023 00:05 "<<endl<<endl;
}
void curr_pos()
{
ifstream fin("File");
cout<<"Current position of input pointer: " << fin.tellg() << endl;
ofstream fout;
fout.open("File",ios::app);
fout<<endl<<"aaj kare so ab";
cout << "Current position of output pointer: " << fout.tellp() << endl;
fin.close();
fout.close();
}
int main()
{
my_info();
curr_pos();
return 0;
}
```

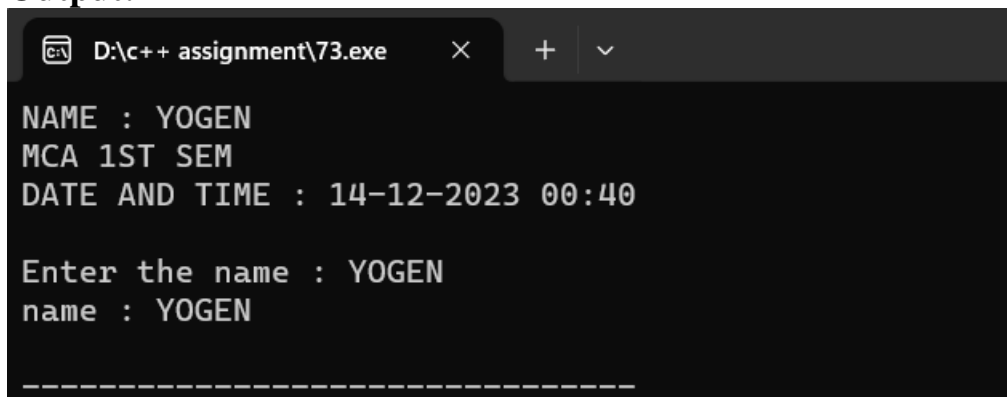
**Output:**

```
D:\c++ assignment\72.exe  X  +  v
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 14-12-2023 00:05

Current position of input pointer: 0
Current position of output pointer: 16
-----
```

**Program 73.WAP to differentiate read( ) and getline( ) function.****Code:**

```
///  
    getline()  
  
#include<iostream>  
using namespace std;  
void my_info(){  
    cout<<"NAME : YOGEN "<<endl;  
    cout<<"MCA 1ST SEM "<<endl;  
    cout<<"DATE AND TIME : 14-12-2023 00:40 "<<endl<<endl;  
}  
int main()  
{  
    my_info();  
    char name[20];  
    cout<<"Enter the name : ";  
    cin.getline(name,18); // read maximum 18 character  
    cout<<"name : "<<name<<endl;  
    return 0;  
}
```

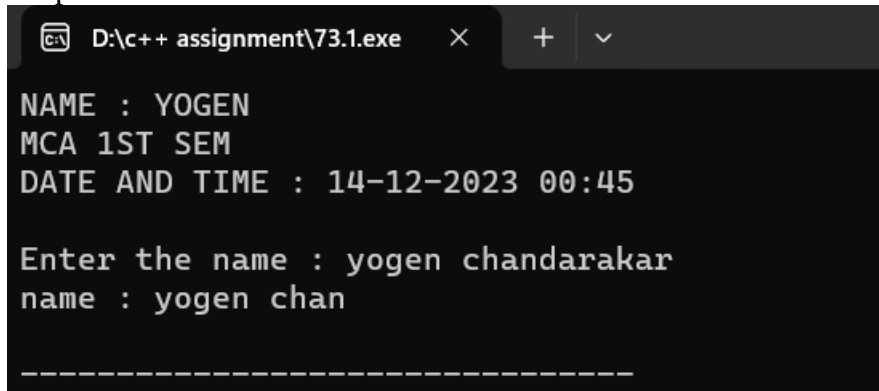
**Output:**

```
NAME : YOGEN  
MCA 1ST SEM  
DATE AND TIME : 14-12-2023 00:40  
  
Enter the name : YOGEN  
name : YOGEN  
-----
```

```
///  
    read()  
#include<iostream>  
using namespace std;  
  
void my_info(){  
    cout<<"NAME : YOGEN "<<endl;  
    cout<<"MCA 1ST SEM "<<endl;  
    cout<<"DATE AND TIME : 14-12-2023 00:45 "<<endl<<endl;  
}  
  
int main()  
{  
    my_info();  
    char name[20];  
    cout<<"Enter the name : ";
```

```
cin.read(name,10);  
cout<<"name : "<<name<<endl;  
return 0;  
}
```

Output:



```
D:\c++ assignment\73.1.exe  X  +  v  
  
NAME : YOGEN  
MCA 1ST SEM  
DATE AND TIME : 14-12-2023 00:45  
  
Enter the name : yogen chandarakar  
name : yogen chan  
-----
```

**Program 74.WAP to demonstrate manipulators(setw, setprecision, setbase, setfill).****Code:**

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

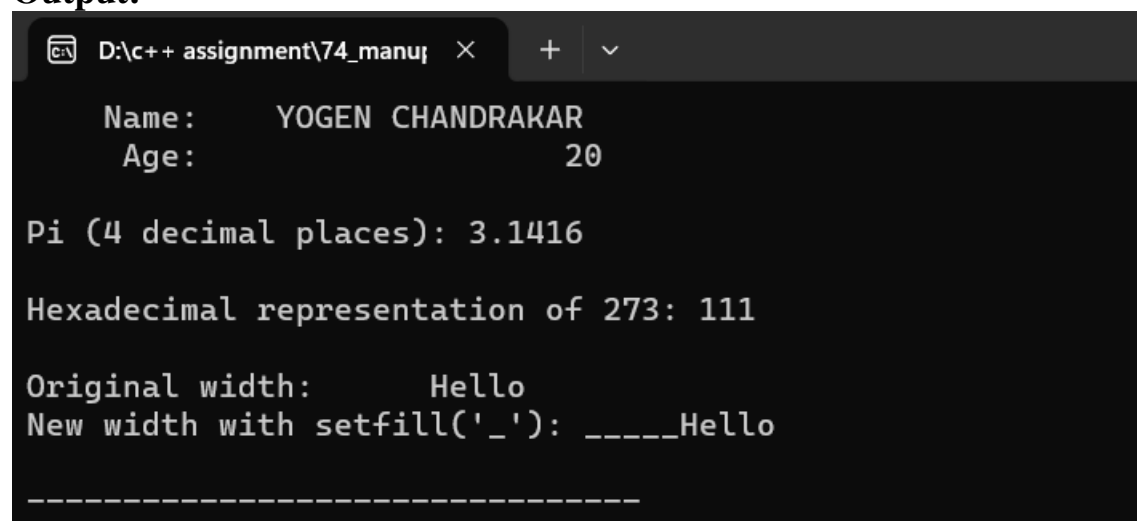
void my_info(){
    cout<<"NAME : YOGEN "<<endl;
    cout<<"MCA 1ST SEM "<<endl;
    cout<<"DATE AND TIME : 14-12-2023 01:05 "<<endl<<endl;
}

int main()
{
    cout<<setw(10)<<"Name: "<<setw(20)<<"YOGEN CHANDRAKAR " << endl;
    cout<<setw(10)<<"Age: "<<setw(20)<<20<<endl<<endl;

    double pi = 3.141592653589793;
    cout<<fixed<<setprecision(4)<<"Pi (4 decimal places): "<<pi<<endl<<endl;

    int number = 273;
    cout<<setbase(16)<<"Hexadecimal representation of 273: "<<number<<endl<<endl;

    cout<<"Original width: "<<setw(10)<<"Hello"<<endl;
    cout << setfill('_') << "New width with setfill('_'): " << setw(10) << "Hello" << endl;
    cout << setfill(' '); // Reset fill character to space
    return 0;
}
```

**Output:**

```
D:\c++ assignment\74_manu x + v
Name:      YOGEN CHANDRAKAR
Age:              20

Pi (4 decimal places): 3.1416

Hexadecimal representation of 273: 111

Original width:      Hello
New width with setfill('_'): ____Hello
-----
```

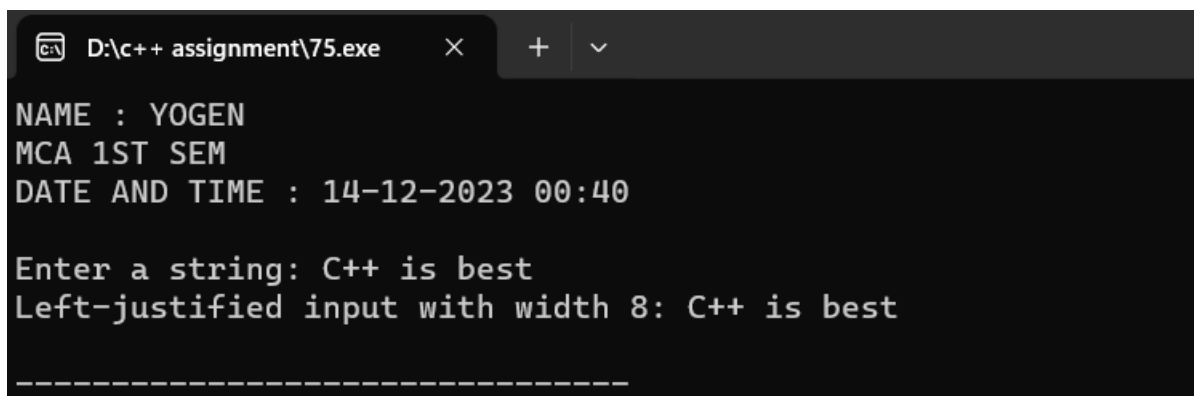
**Program 75.WAP which reads input from the keyboard whose width specified with 8 and unused space filled with '#'and input should be left-justified****Code:**

```
#include <iostream>
#include <iomanip>
#include <string>
using namespace std;

void my_info(){
cout<<"NAME : YOGEN "<<endl;
cout<<"MCA 1ST SEM "<<endl;
cout<<"DATE AND TIME : 14-12-2023 00:40 "<<endl<<endl;
}

int main(){
my_info();
cout << "Enter a string: ";
string input;
getline(cin, input);

if (input.length() < 8) {
input.insert(0, 8 - input.length(), '#');
}
cout << "Left-justified input with width 8: " << input << endl;
return 0;
}
```

**Output:**

```
NAME : YOGEN
MCA 1ST SEM
DATE AND TIME : 14-12-2023 00:40

Enter a string: C++ is best
Left-justified input with width 8: C++ is best
-----
```