

Program 1

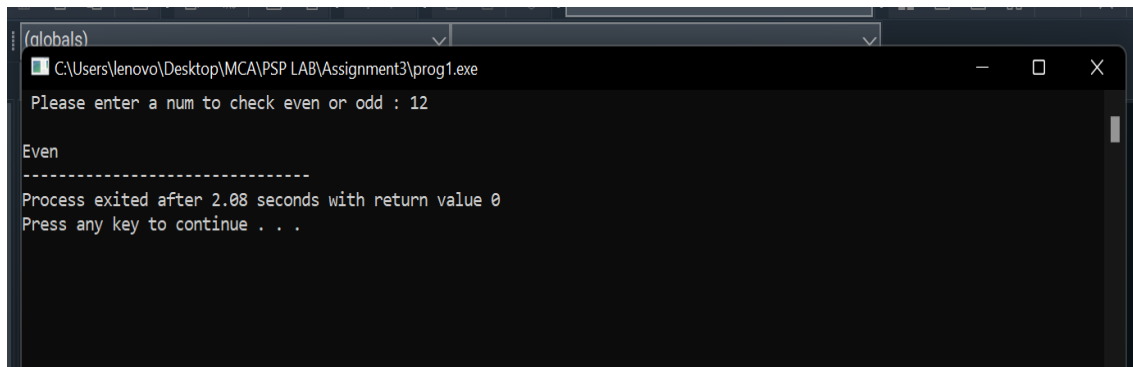
```
#include<iostream>

using namespace std;

int main()
{

    int n;
    cout << " Please enter a num to check even or odd : ";
    cin >> n;
    if(n % 2 == 0)
        cout << "\nEven";
    else
        cout << "\nOdd";

    return 0;
}
```



```
(globals)
C:\Users\lenovo\Desktop\MCA\PSP LAB\Assignment3\prog1.exe
Please enter a num to check even or odd : 12
Even
-----
Process exited after 2.08 seconds with return value 0
Press any key to continue . . .
```

Program 2

```
#include<iostream>

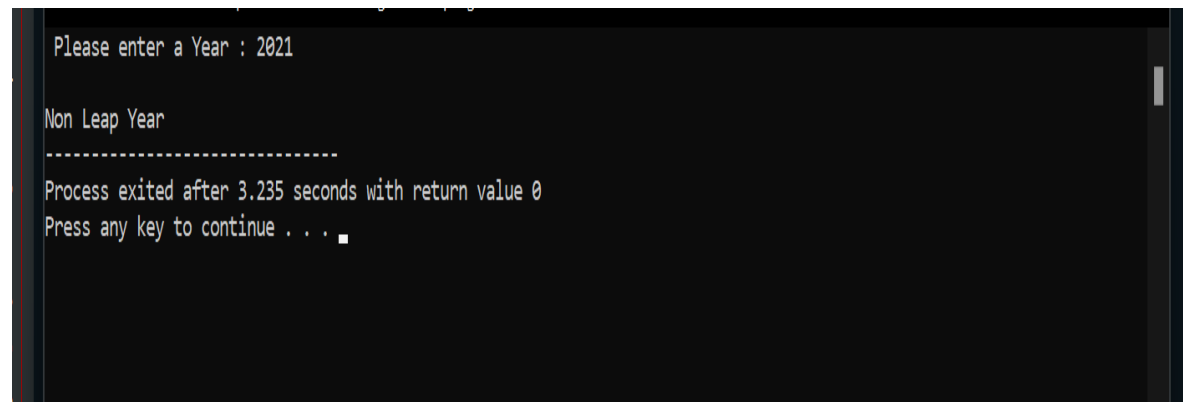
using namespace std;

int main()
{

    int year;

    cout << " Please enter a Year : ";
    cin >> year;
    if(year % 100 == 0)
        if(year % 400 == 0)
            cout << "\nleap year";
        else
            cout << "\nNon leap Year";
    else if(year % 4 == 0)
        cout << "\nleap year";
    else
        cout << "\nNon Leap Year";

    return 0;
}
```



The screenshot shows a terminal window with a dark background. The text displayed is as follows:

```
Please enter a Year : 2021

Non Leap Year
-----
Process exited after 3.235 seconds with return value 0
Press any key to continue . . .
```

Program 3

```
#include<iostream>

using namespace std;

int main()
{
    int a,b,c,max,min;

    cout <<"\nPlease enter three numbers : ";
    cin >>a >>b >>c;

    if (a > b)

        if(b > c)

            cout << c << " " << b << " " << a;

        else

            if(a>c)
                cout << b << " " << c << " " << a;

            else
                cout << b << " " << a << " " << c;

    else

        if(b < c)

            cout << a << " " << b << " " << c;

        else

            if(a<c)
                cout << a << " " << c << " " << b;

            else
                cout << c << " " << a << " " << b;

    return 0;
}
```

```
Please enter three numbers : 3 2 1
1 2 3
-----
Process exited after 4.736 seconds with return value 0
Press any key to continue . . .
```

Program 4

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

int main() {

    char op;
    float num1, num2;

    cout << "Enter operator: +, -, *, /: ";
    cin >> op;

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

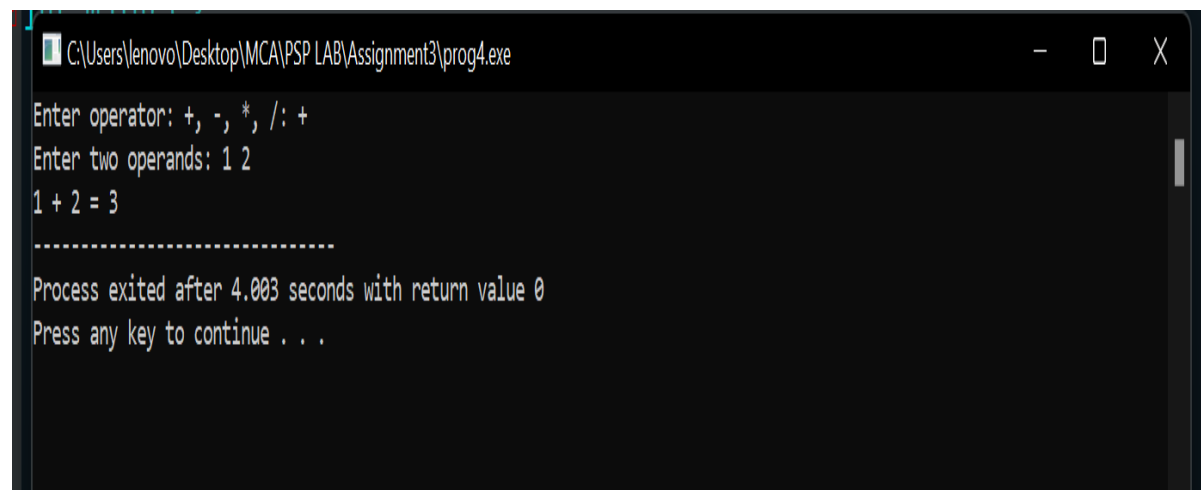
    switch(op) {

        case '+':
            cout << num1 << " + " << num2 << " = " << num1 + num2;
            break;

        case '-':
            cout << num1 << " - " << num2 << " = " << num1 - num2;
            break;

        case '*':
            cout << num1 << " * " << num2 << " = " << num1 * num2;
            break;
```

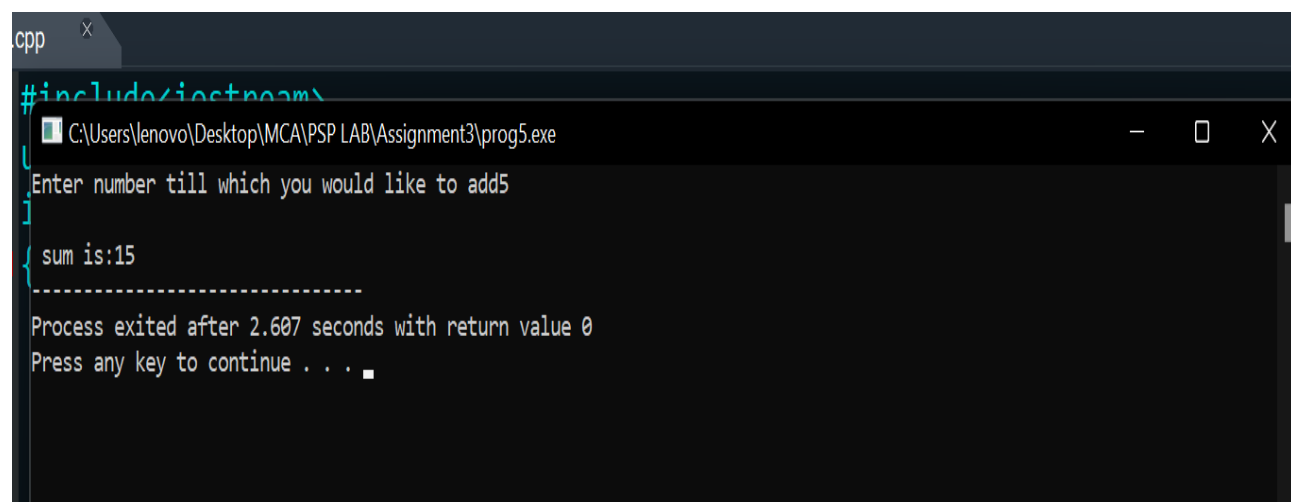
```
case '/':  
    cout << num1 << " / " << num2 << " = " << num1 / num2;  
    break;  
  
default:  
    // If the operator is other than +, -, * or /, error message is shown  
    cout << "Error! operator is not correct";  
    break;  
}  
  
return 0;  
}
```



```
C:\Users\lenovo\Desktop\MCA\PSP LAB\Assignment3\prog4.exe  
Enter operator: +, -, *, /: +  
Enter two operands: 1 2  
1 + 2 = 3  
-----  
Process exited after 4.003 seconds with return value 0  
Press any key to continue . . .
```

Program 5(i)

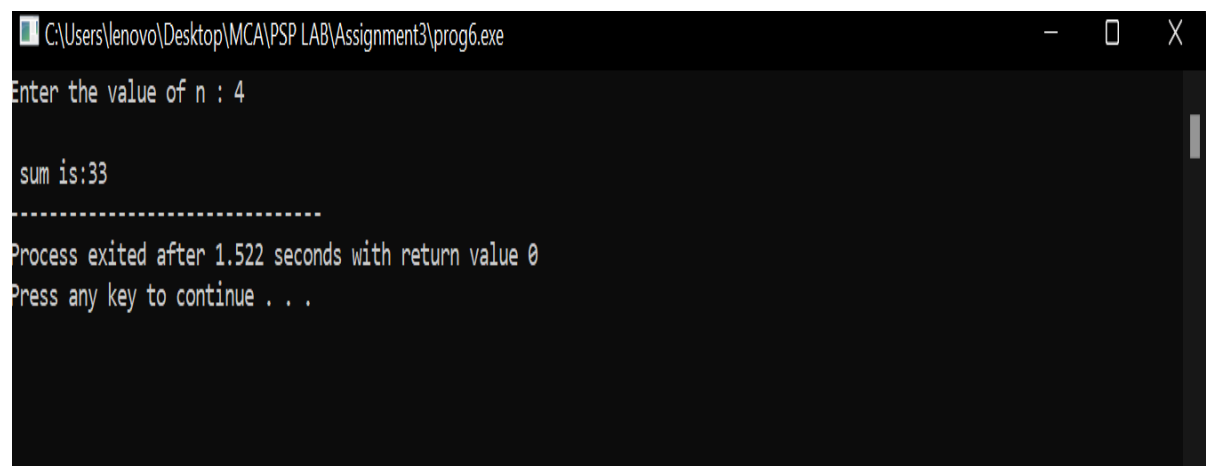
```
#include<iostream>
using namespace std;
int main()
{
    int n,sum=0;
    cout<<"Enter number till which you would like to add";
    cin>>n;
    while(n>0)
    {
        sum+=n;
        n--;
    }
    cout<<"\n sum is:"<<sum;
    return 0;
}
```

A screenshot of a Windows command prompt window with a dark background. The title bar shows a file named 'cpp' and a close button. The command prompt displays the output of a C++ program. The first line is the source code for the program, which includes the header <iostream>, uses the std namespace, and defines a main function. The main function prompts the user to enter a number, reads the input '5', and calculates the sum of numbers from 1 to 5. The output shows 'sum is:15'. Below the output, a dashed line separates it from the program's exit message: 'Process exited after 2.607 seconds with return value 0'. The prompt then asks the user to 'Press any key to continue . . .', with a cursor positioned at the end of the line.

```
cpp x
#include<iostream>
C:\Users\lenovo\Desktop\MCA\PSP LAB\Assignment3\prog5.exe
Enter number till which you would like to add5
sum is:15
-----
Process exited after 2.607 seconds with return value 0
Press any key to continue . . .
```

Program 5(ii)

```
#include<iostream>
using namespace std;
int main()
{
    int n,prod=1,i=1,sum=0;
    cout<<"Enter the value of n : ";
    cin>>n;
    while(n>0)
    {
        while(i<=n)
        {
            prod*=i;
            i++;
        }
        sum+=prod;
        n--;
        i=1;
        prod=1;
    }
    cout<<"\n sum is:"<<sum;
    return 0;
}
```

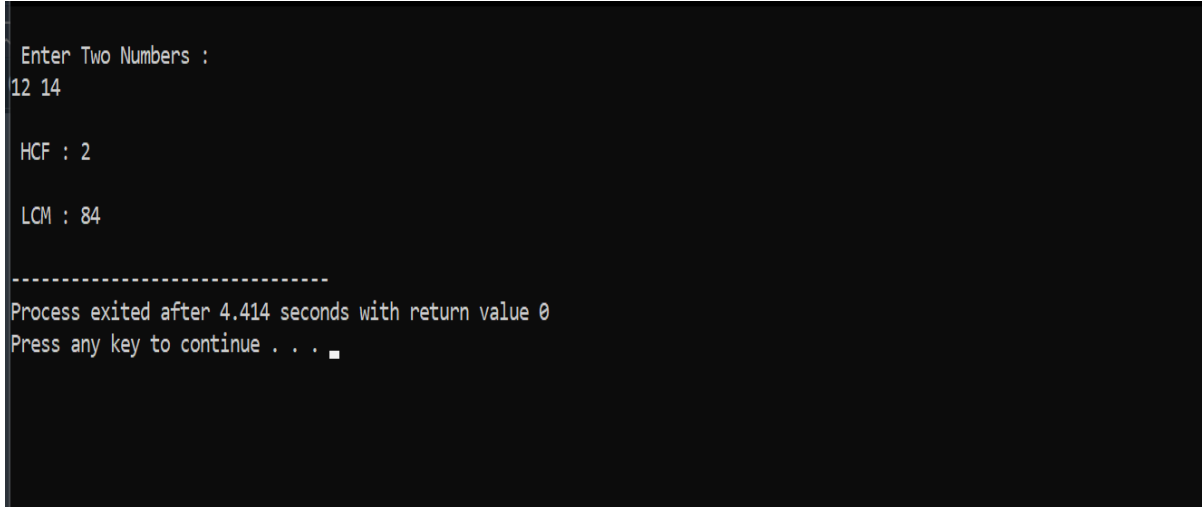


```
C:\Users\lenovo\Desktop\MCA\PSP LAB\Assignment3\prog6.exe
Enter the value of n : 4

sum is:33
-----
Process exited after 1.522 seconds with return value 0
Press any key to continue . . .
```

Program 6

```
#include<iostream>
using namespace std;
int main()
{
    int a, b, x, y, temp, hcf, lcm;
    cout<<"\n Enter Two Numbers : \n";
    cin>>x>>y;
    a=x;
    b=y;
    while(b!=0)
    {
        temp=b;
        b=a%b;
        a=temp;
    }
    hcf=a;
    lcm=(x*y)/hcf;
    cout<<"\n HCF : "<<hcf<<"\n";
    cout<<"\n LCM : "<<lcm<<"\n";
    return 0;
}
```



```
Enter Two Numbers :
12 14

HCF : 2

LCM : 84

-----
Process exited after 4.414 seconds with return value 0
Press any key to continue . . .
```


Program 7

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

int main() {
    int n,factorial = 1,i = 1;

    cout << "Please enter a number : ";
    cin>> n;
    do {
        factorial *= i;
        i++;
    } while (i <= n);

    cout << factorial << endl;
}
```



```
C:\Users\lenovo\Desktop\MCA\PSP LAB\Assignment3\prog7.exe
Please enter a number : 4
24
-----
Process exited after 1.809 seconds with return value 0
Press any key to continue . . .
```

Program 8(i)

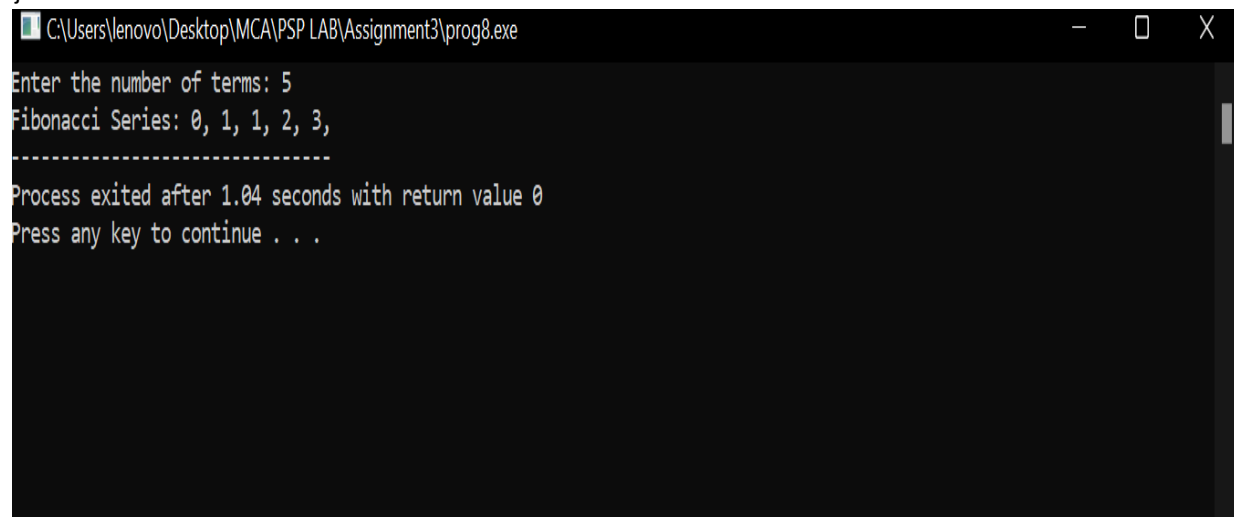
```
#include <iostream>
using namespace std;

int main() {
    int n, t1 = 0, t2 = 1, nextTerm = 0;

    cout << "Enter the number of terms: ";
    cin >> n;

    cout << "Fibonacci Series: ";

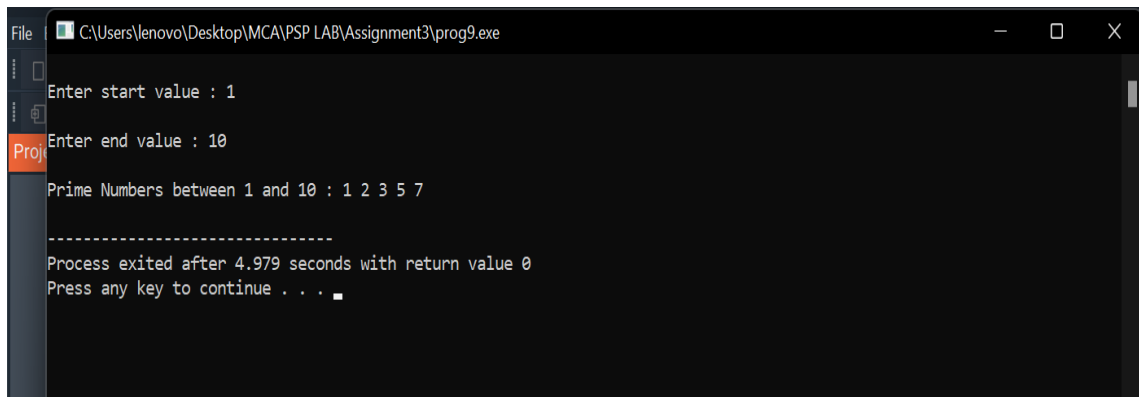
    for (int i = 1; i <= n; ++i) {
        // Prints the first two terms.
        if(i == 1) {
            cout << t1 << ", ";
            continue;
        }
        if(i == 2) {
            cout << t2 << ", ";
            continue;
        }
        nextTerm = t1 + t2;
        t1 = t2;
        t2 = nextTerm;
        cout << nextTerm << ", ";
    }
    return 0;
}
```



The screenshot shows a Windows command prompt window titled "C:\Users\lenovo\Desktop\MCA\PSP LAB\Assignment3\prog8.exe". The window displays the output of the program: "Enter the number of terms: 5", "Fibonacci Series: 0, 1, 1, 2, 3,", followed by a dashed line separator. Below the separator, it says "Process exited after 1.04 seconds with return value 0" and "Press any key to continue . . .".

Program 8(ii)

```
#include <iostream>
using namespace std;
int main()
{
    int a, b, i, flag;
    cout << "\nEnter start value : ";
    cin >> a;
    cout << "\nEnter end value : ";
    cin >> b;
    cout << "\nPrime Numbers between " << a << " and " << b << " : ";
    while (a < b)
    {
        flag = 0;
        for(i = 2; i <= a/2; ++i)
        {
            if(a % i == 0)
            {
                flag = 1;
                break;
            }
        }
        if (flag == 0)
            cout << a << " ";
        ++a;
    }
    cout << endl;
    return 0;
}
```



```
File C:\Users\lenovo\Desktop\MCA\PSPP LAB\Assignment3\prog9.exe
Enter start value : 1
Enter end value : 10
Prime Numbers between 1 and 10 : 1 2 3 5 7
-----
Process exited after 4.979 seconds with return value 0
Press any key to continue . . .
```