

Bangladesh University of Professionals



Object Oriented Design and Programming-1

Assignment-1

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SECTION-A

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QUESTION 1.

CODE:

```
#include<iostream>

#include<string>

using namespace std;

class Entity
{
public:

    virtual string GetName(){ return "Entity";}

};

class player :public Entity
{
private:

    string m_name;

public:

    player(const string& name)

        : m_name(name){}

    string GetName(){ return m_name;}

};

void show(Entity* p)

{

    cout<<p->GetName()<<endl;;

}

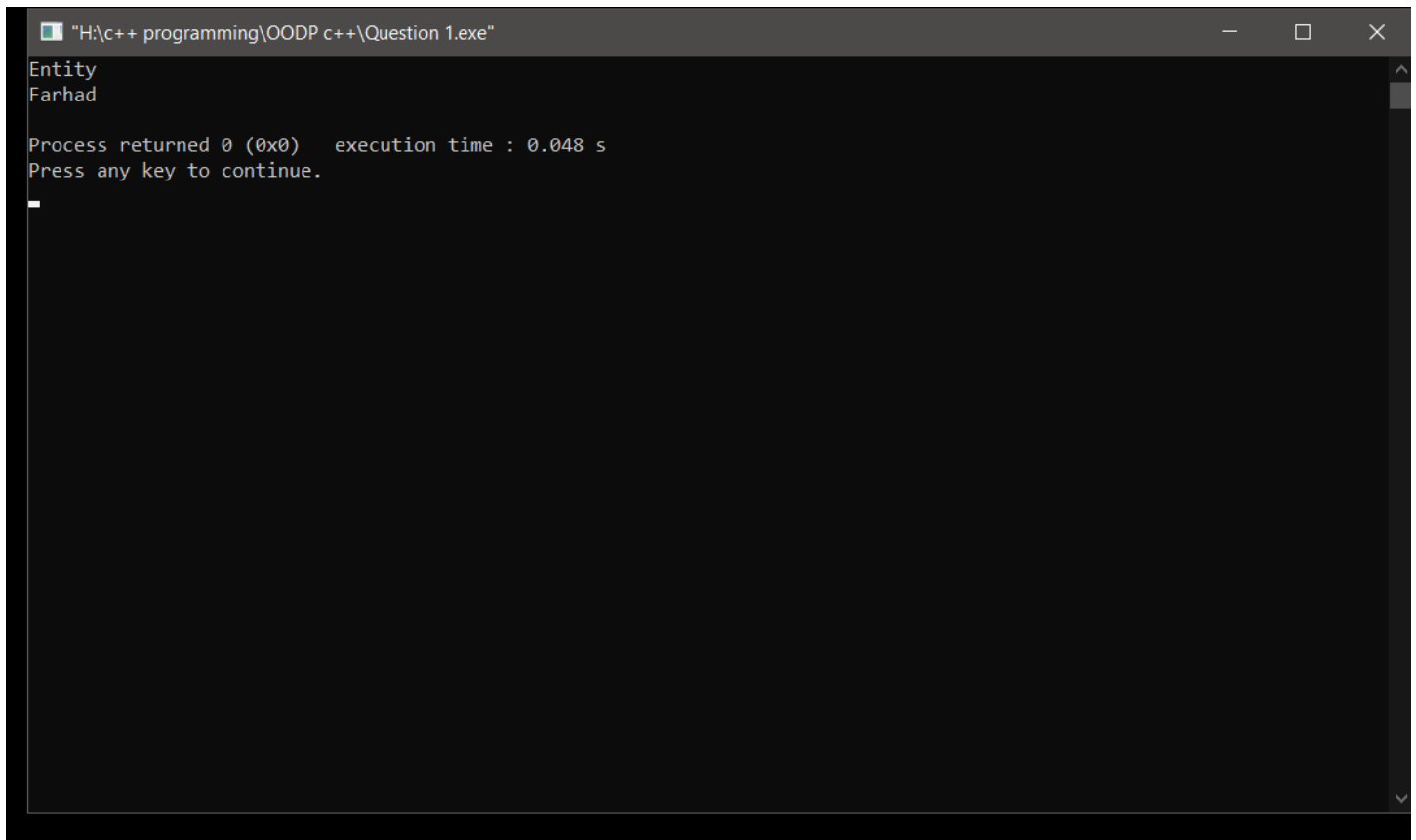
int main()

{

    Entity* e=new Entity();
```

```
player* p=new player("Farhad");  
  
show(e);  
  
    show(p);  
  
}
```

Answer Screenshot:

A screenshot of a Windows command prompt window titled "H:\c++ programming\OODP c++\Question 1.exe". The window has a dark background and white text. The output of the program is displayed as follows:
Entity
Farhad

Process returned 0 (0x0) execution time : 0.048 s
Press any key to continue.
A small white cursor is visible on the line following the "Press any key to continue." message.

```
"H:\c++ programming\OODP c++\Question 1.exe"  
Entity  
Farhad  
  
Process returned 0 (0x0)   execution time : 0.048 s  
Press any key to continue.  
_
```

QUESTION 2.

CODE:

```
#include<iostream>

using namespace std;

#define rep(i,n) for(int i=0;i<n;i++)

class first

{ int book_no;

    string book_name;

public:

    void getdata()

    {

        cout<<"Enter the Book name : ";

        cin>>book_name;

        cout<<"Enter the Book No : ";

        cin>>book_no;

    }

    void putdata()

    {

        cout<<"Book Name is "<<book_name<<endl;

        cout<<"Book No is "<<book_no<<endl;

    } };

class second{

    string author;

    string publisher;

public:

    void getdata()
```

```

{ cout<<"Enter the name of the Aurthor : ";

    cin>>author;

    cout<<"Enter the name of the publisher : ";

    cin>>publisher;

}

void showdata()

{ cout<<"Aurthor's Name : "<<author<<endl;

    cout<<"publisher's Name : "<<publisher<<endl; }

};

class third:public first,public second

{ int  pageno,pubyear;

public:

    void get(){

        first::getdata();

        second::getdata();

        cout<<"Enter Number of pages : ";

        cin>>pageno;

        cout<<"Enter the publishing Year : ";

        cin>>pubyear;  }

    void show()  {

        first::putdata();

        second::showdata();

        cout<<"Number of Pages : "<<pageno<<endl;

        cout<<"Publishing Year : "<<pubyear<<endl;

    }

};

int main()

{ int num;

    cout<<"\nEnter the number of books : ";

```

```

cin>>num;

third book[num];

rep(i,num)

{

    book[i].get();

    cout<<endl;

}

cout<<endl;

rep(i,num)

{

    book[i].show();

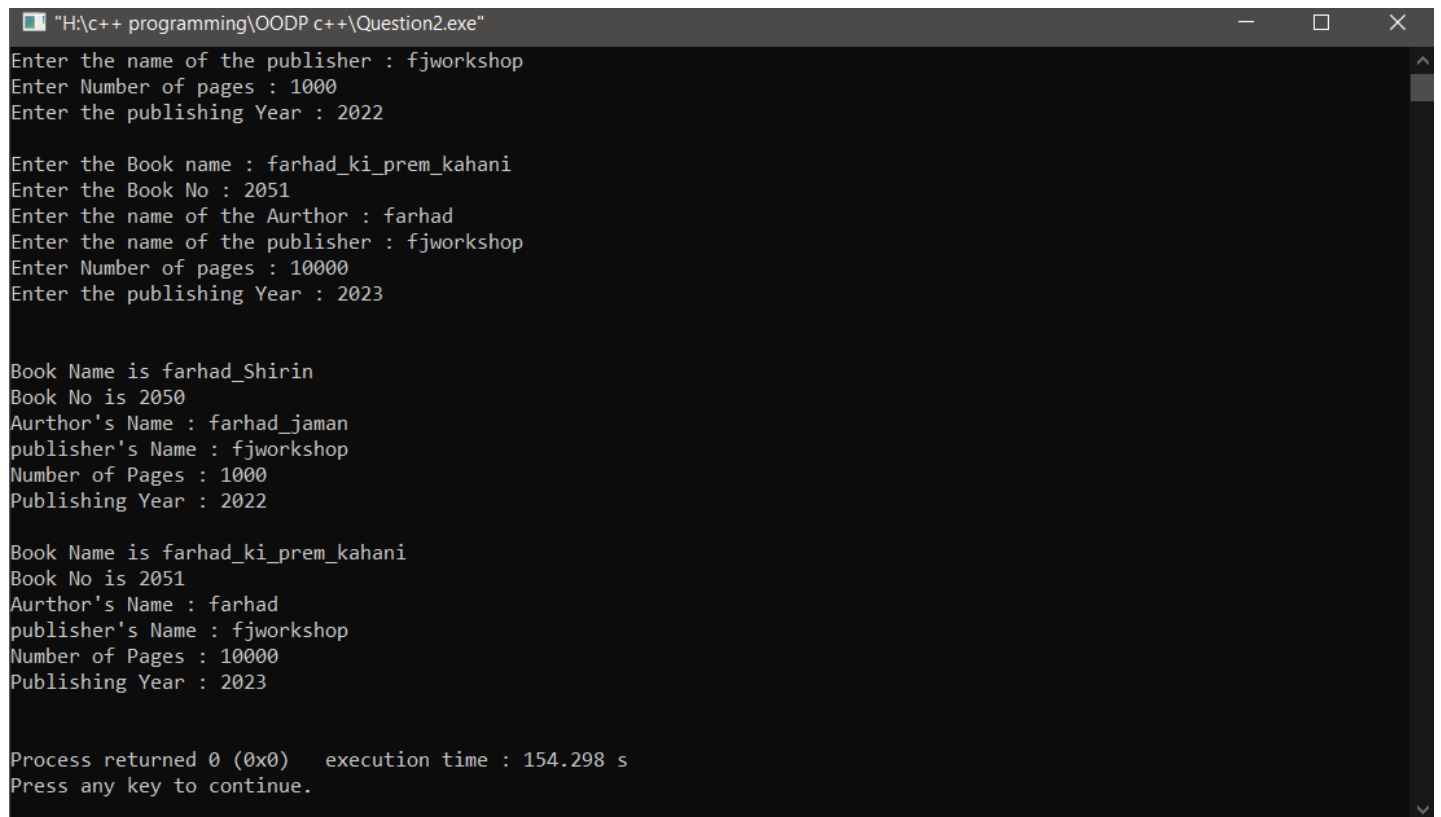
    cout<<endl;

}

}

```

Answer Screenshot:



```

H:\c++ programming\OODP c++\Question2.exe
Enter the name of the publisher : fjworkshop
Enter Number of pages : 1000
Enter the publishing Year : 2022

Enter the Book name : farhad_ki_prem_kahani
Enter the Book No : 2051
Enter the name of the Aurthor : farhad
Enter the name of the publisher : fjworkshop
Enter Number of pages : 10000
Enter the publishing Year : 2023

Book Name is farhad_Shirin
Book No is 2050
Aurthor's Name : farhad_jaman
publisher's Name : fjworkshop
Number of Pages : 1000
Publishing Year : 2022

Book Name is farhad_ki_prem_kahani
Book No is 2051
Aurthor's Name : farhad
publisher's Name : fjworkshop
Number of Pages : 10000
Publishing Year : 2023

Process returned 0 (0x0)   execution time : 154.298 s
Press any key to continue.

```

QUESTION 3.

CODE:

```
#include<iostream>

#include<string.h>

using namespace std;

class A
{
    char str[100];

    public:

    void operator =(char* s1)
    {
        strcpy(str,s1);
    }

    void operator +(A obj1) {
        strcat(str,obj1.str);
    }

    void operator <=(A obj) {
        if(strcmp(str,obj.str)==0)
            cout<<"Both strings are identical."<<endl;
        else
        {
            if(strlen(str)==strlen(obj.str))
                cout<<"Strings are not identical but there length is same"<<endl;
            else
                cout<<"Strings not identical and there length is also different"<<endl;
        }

        cout<<endl;
    }
}
```

```

    }

    void display()
    {
        cout<<str<<endl;
    }
};

int main()
{
    char str1[100];
    char str2[100];
    cout<<"Please Enter the first string"<<endl;
    cin.getline(str1,100);
    cout<<"Please Enter the second string"<<endl;
    cin.getline(str2,100);

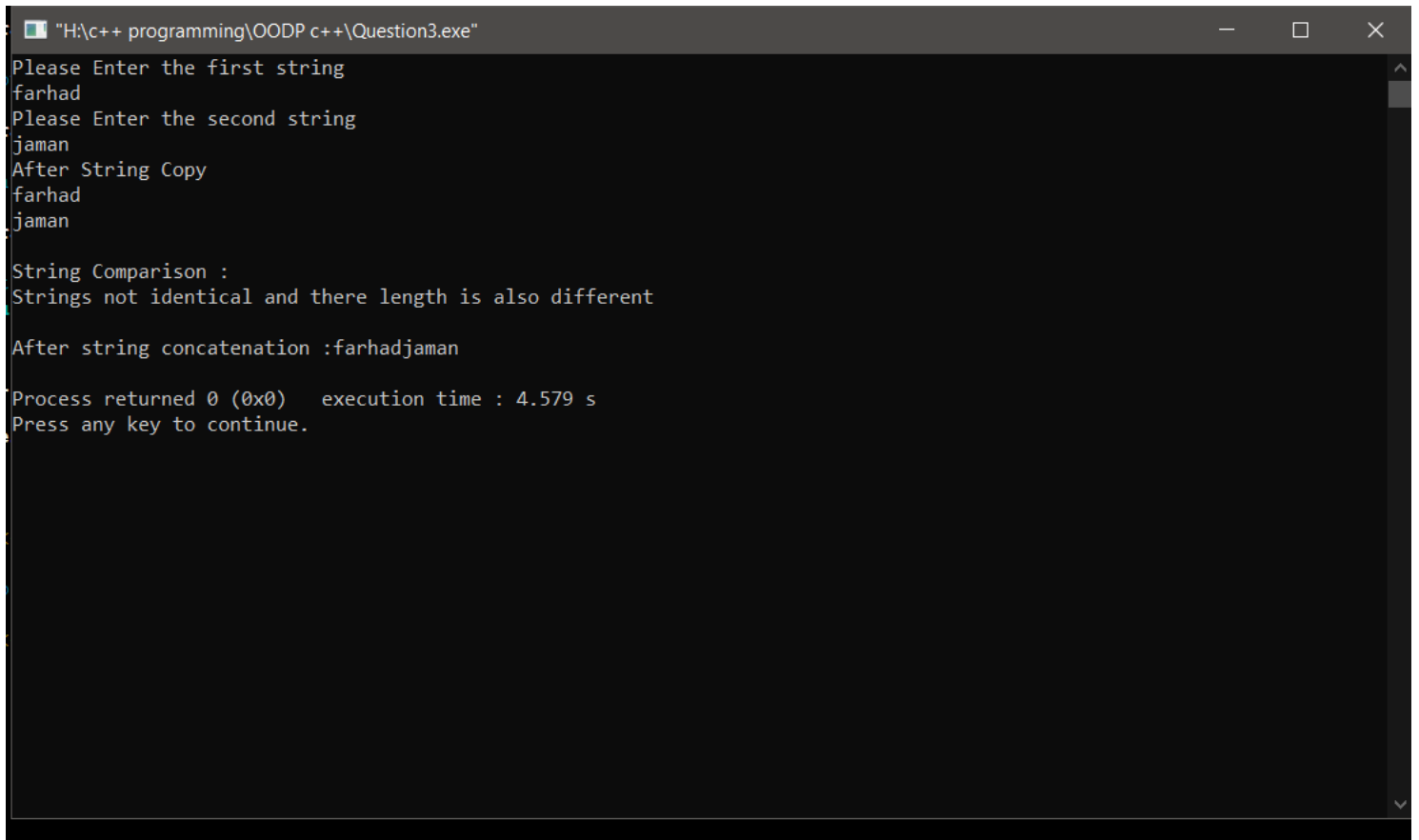
    A s1,s2;

    s1=str1;
    s2=str2;

    cout<<"After String Copy"<<endl;
    s1.display();
    s2.display();
    cout<<endl;
    cout<<"String Comparison : "<<endl;
    (s1<=s2);
    s1+s2;
    cout<<"After string concatenation : " ;
    s1.display();
}

```


Answer Screenshot:



The screenshot shows a Windows command prompt window titled "H:\c++ programming\OODP c++\Question3.exe". The program prompts the user to enter two strings: "farhad" and "jaman". It then displays the strings after copying, compares them, and shows the result of concatenation. The execution time is 4.579 seconds.

```
"H:\c++ programming\OODP c++\Question3.exe"
Please Enter the first string
farhad
Please Enter the second string
jaman
After String Copy
farhad
jaman

String Comparison :
Strings not identical and there length is also different

After string concatenation :farhadjaman

Process returned 0 (0x0)   execution time : 4.579 s
Press any key to continue.
```

Question 4:

Code:

```
#include<iostream>

using namespace std;

class TIME
{
    int hours,minutes,seconds;

public:
    void getdata()
    {
        cout<<"Input Hours : ";
        cin>>hours;

        cout<<"Input Minutes : ";
        cin>>minutes;

        cout<<"Input seconds : ";
        cin>>seconds;
    }

    void add(TIME &s2)
    {
        this->hours=this->hours+s2.hours;

        this->minutes=this->minutes+s2.minutes;

        this->seconds=this->seconds+s2.seconds;
    }

    void display()
    {
        cout<<"Total Time = ";

        cout<<hours<<"hrs"<<" : "<<minutes<<"mins"<<" : "<<seconds<<"secs"<<endl;
    }
}
```

```
};

int main()
{
    TIME s1;

    TIME s2;

    s1.getdata();

    cout<<endl;

    s2.getdata();

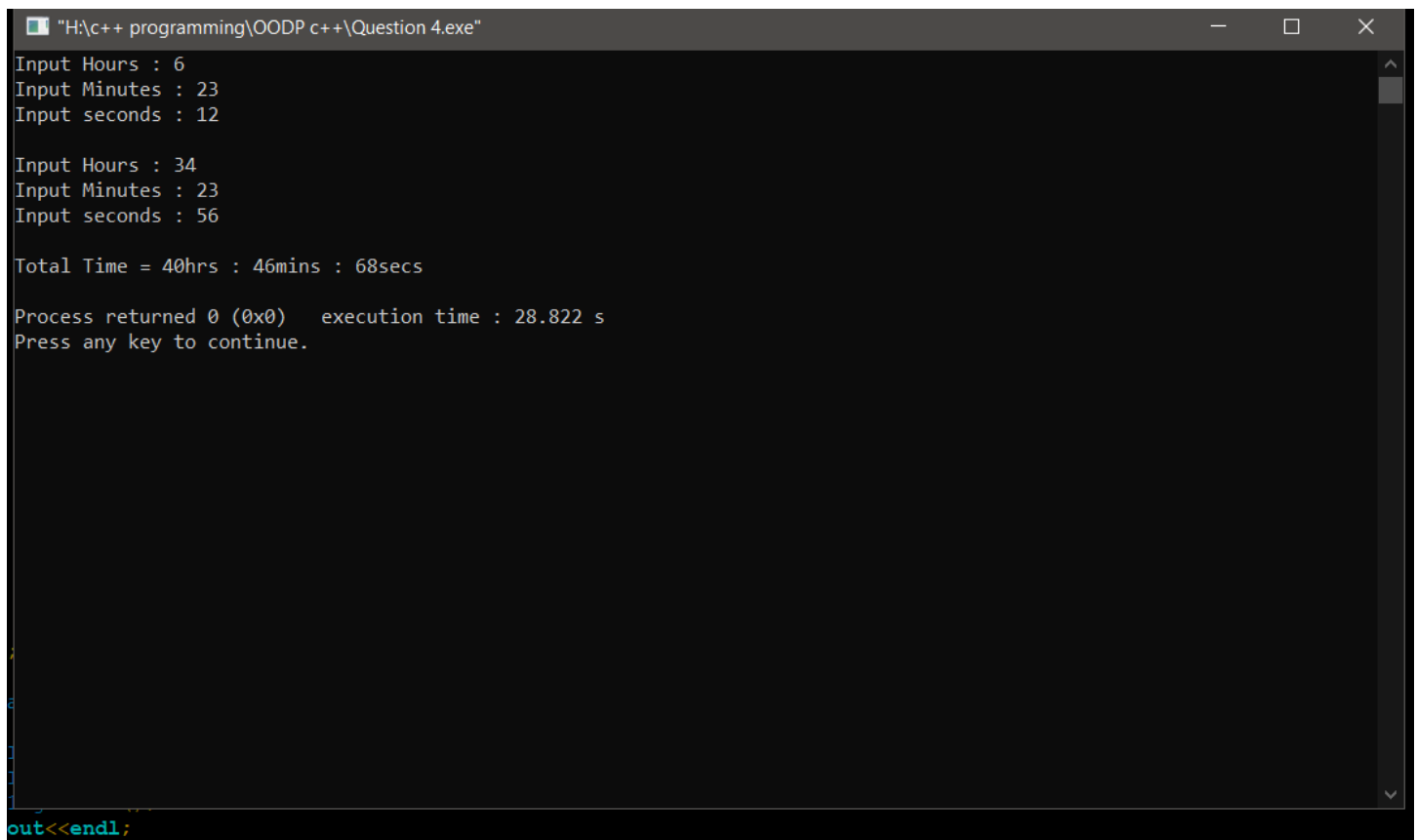
    s1.add(s2);

    cout<<endl;

    s1.display();

}
```

Screenshot:

A screenshot of a Windows command prompt window titled "H:\c++ programming\OODP c++\Question 4.exe". The window has standard Windows window controls (minimize, maximize, close) in the top right corner. The output of the program is displayed in white text on a black background. It shows two sets of input for hours, minutes, and seconds. The first set is 6, 23, and 12. The second set is 34, 23, and 56. The program then outputs the total time as 40hrs : 46mins : 68secs. Below this, it shows "Process returned 0 (0x0) execution time : 28.822 s" and "Press any key to continue.". At the bottom left of the window, a portion of the source code is visible, showing "out<<endl;".

```
"H:\c++ programming\OODP c++\Question 4.exe"
Input Hours : 6
Input Minutes : 23
Input seconds : 12

Input Hours : 34
Input Minutes : 23
Input seconds : 56

Total Time = 40hrs : 46mins : 68secs

Process returned 0 (0x0)   execution time : 28.822 s
Press any key to continue.

out<<endl;
```

Question-5

Code:

```
#include<iostream>

using namespace std;

class fibonacci

{
    unsigned long int temp1,temp2,total;
public:
    fibonacci()
    {
        temp1=0;
        temp2=1;
        total=temp1+temp2;
    }

    fibonacci (fibonacci &ref1)
    {
        temp1=ref1.temp1;
        temp2=ref1.temp2;
        total=ref1.total;
    }

    void series(int n)
    {
        cout<<temp1<<" "<<temp2<<" ";
        for(int i=0;i<n-2;i++)
        {
            cout<<total<<" ";
            temp1=temp2;
            temp2=temp1+temp2;
            total=temp1+temp2;
        }
    }
};
```

```

        total=temp1+temp2;

    }

}

};

int main ()
{
    int n;

    cout<<"How many number you want to Print"<<endl;

    cin>>n;

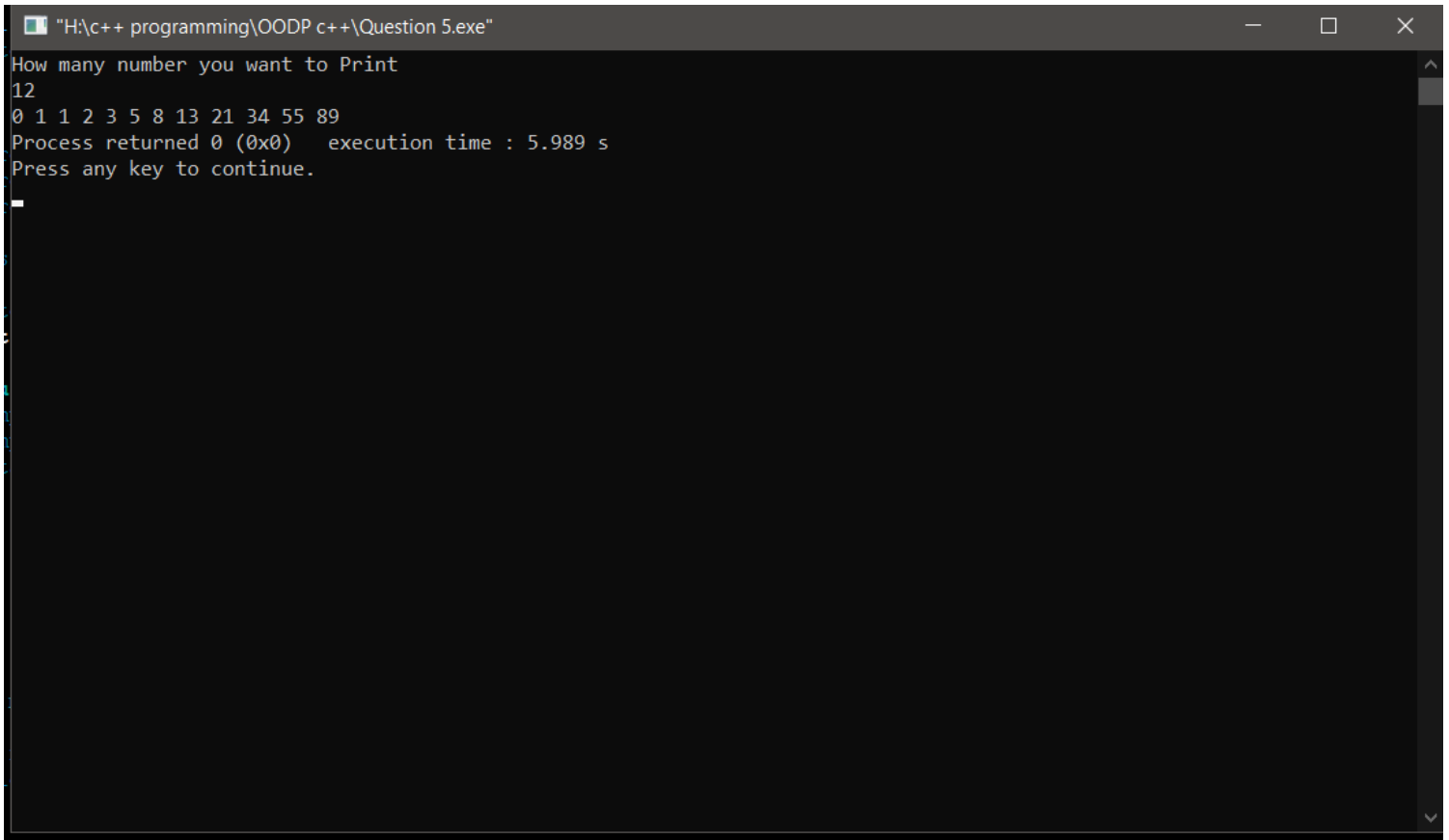
    fibonacci number;

    number.series(n);

}

```

Output Screenshot:



```

H:\c++ programming\OODP c++\Question 5.exe
How many number you want to Print
12
0 1 1 2 3 5 8 13 21 34 55 89
Process returned 0 (0x0)   execution time : 5.989 s
Press any key to continue.

```

THANK YOU