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();
```

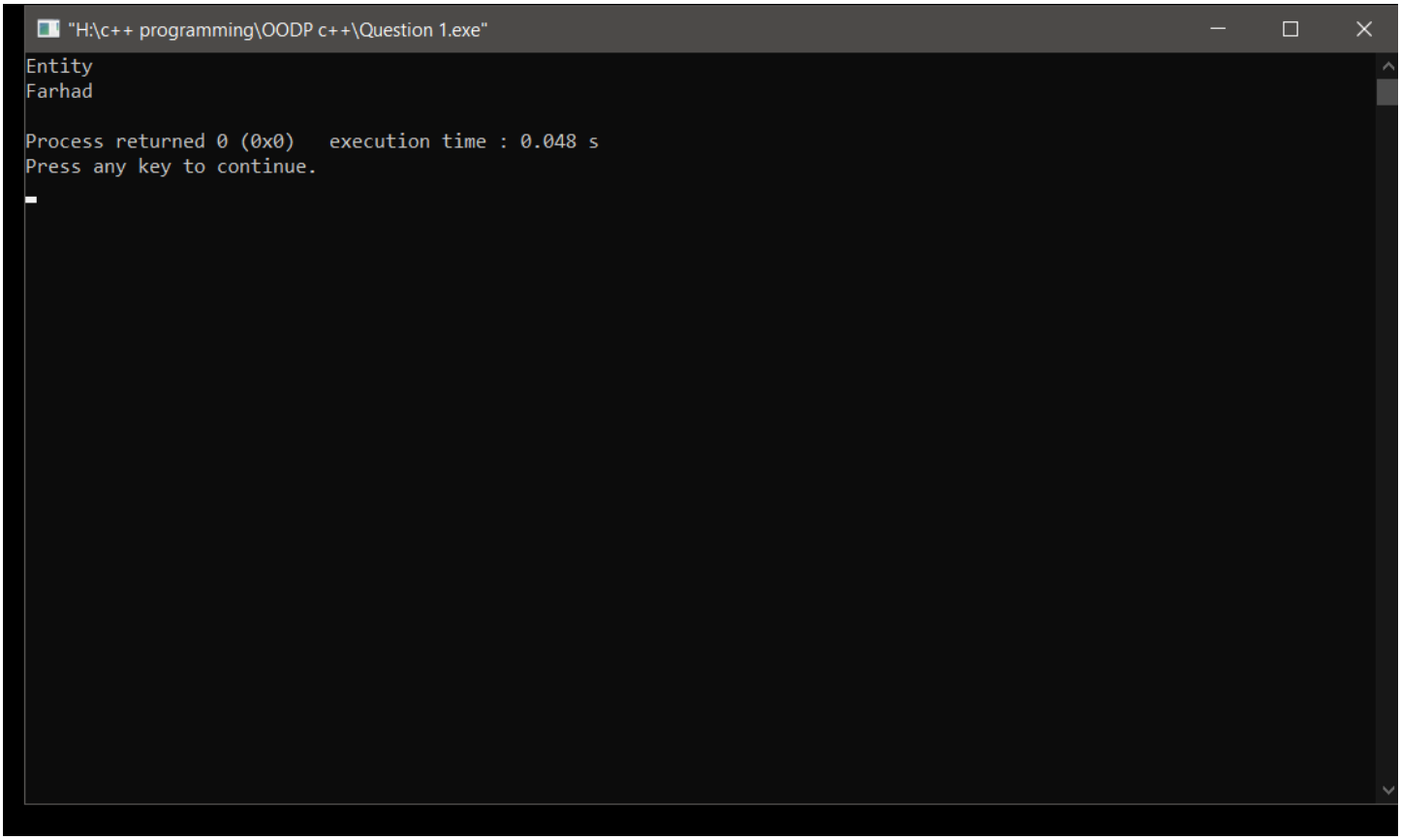
```
 player* p=new player("Farhad");

 show(e);

   show(p);

}
```

Answer Screenshot:



QUESTION 2.

CODE:

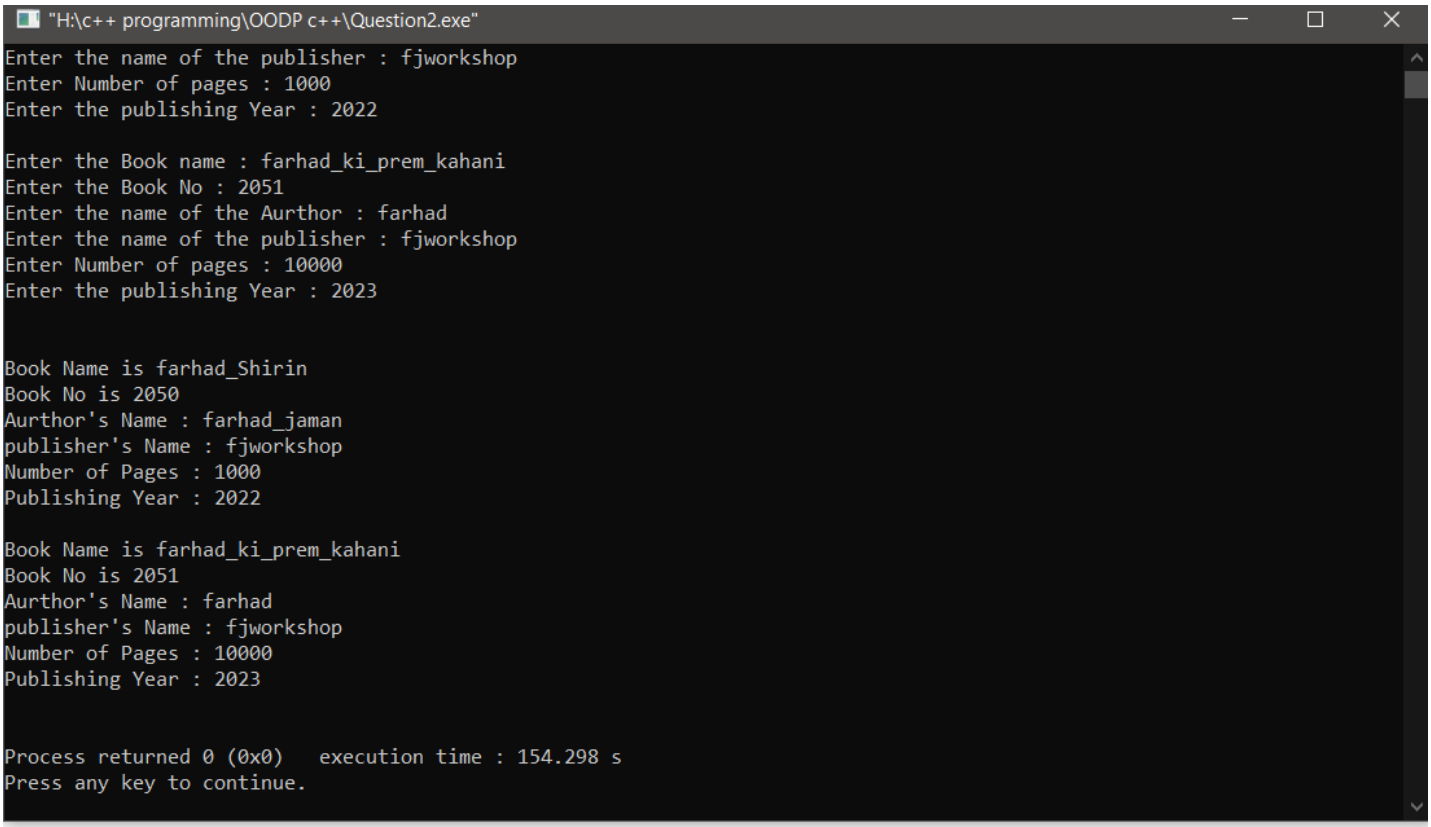
```
#include<iostream>
using namespace std;
#define rep(i,n) for(int i=0;i<n;i++)

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:



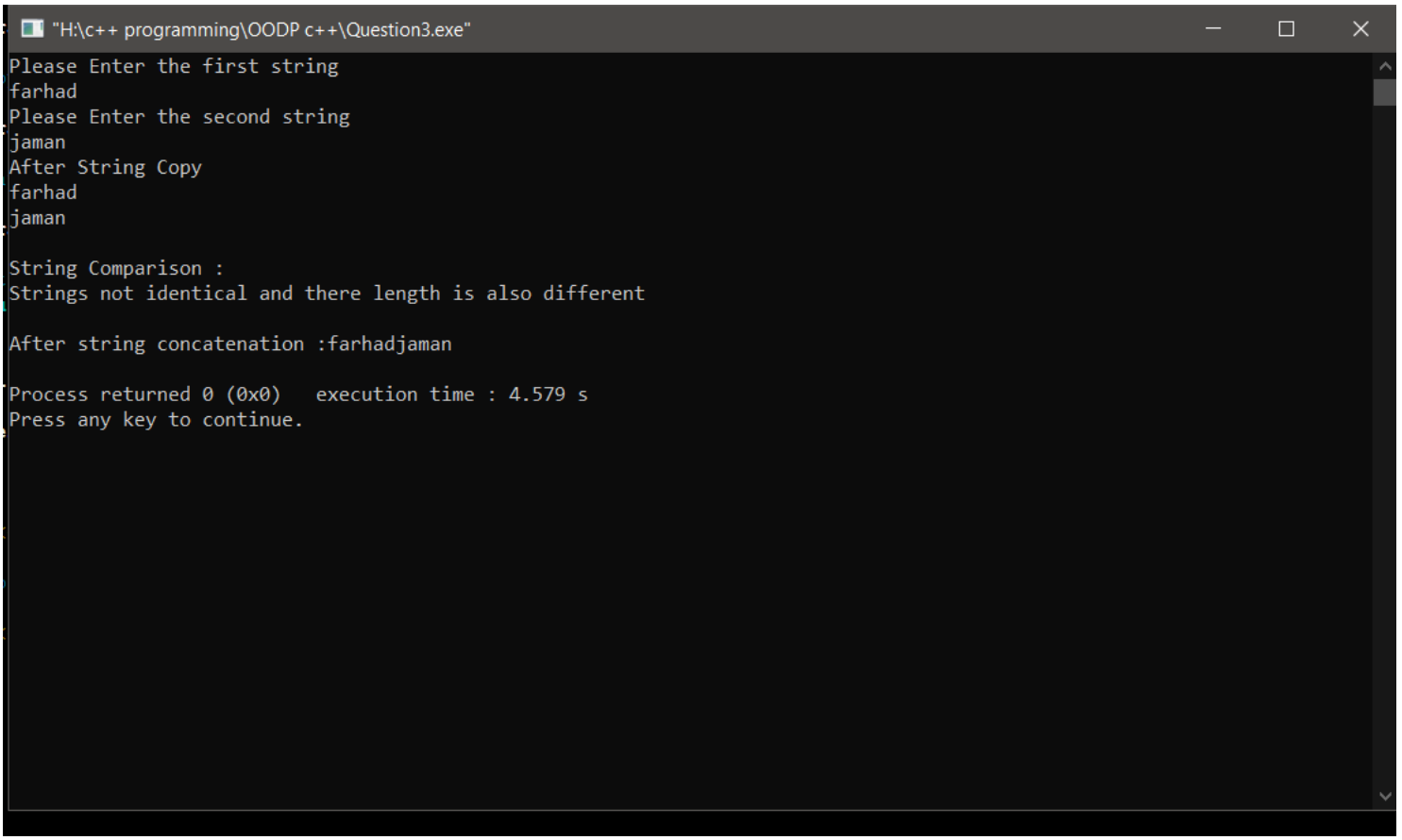
QUESTION 3.

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:



Question 4:

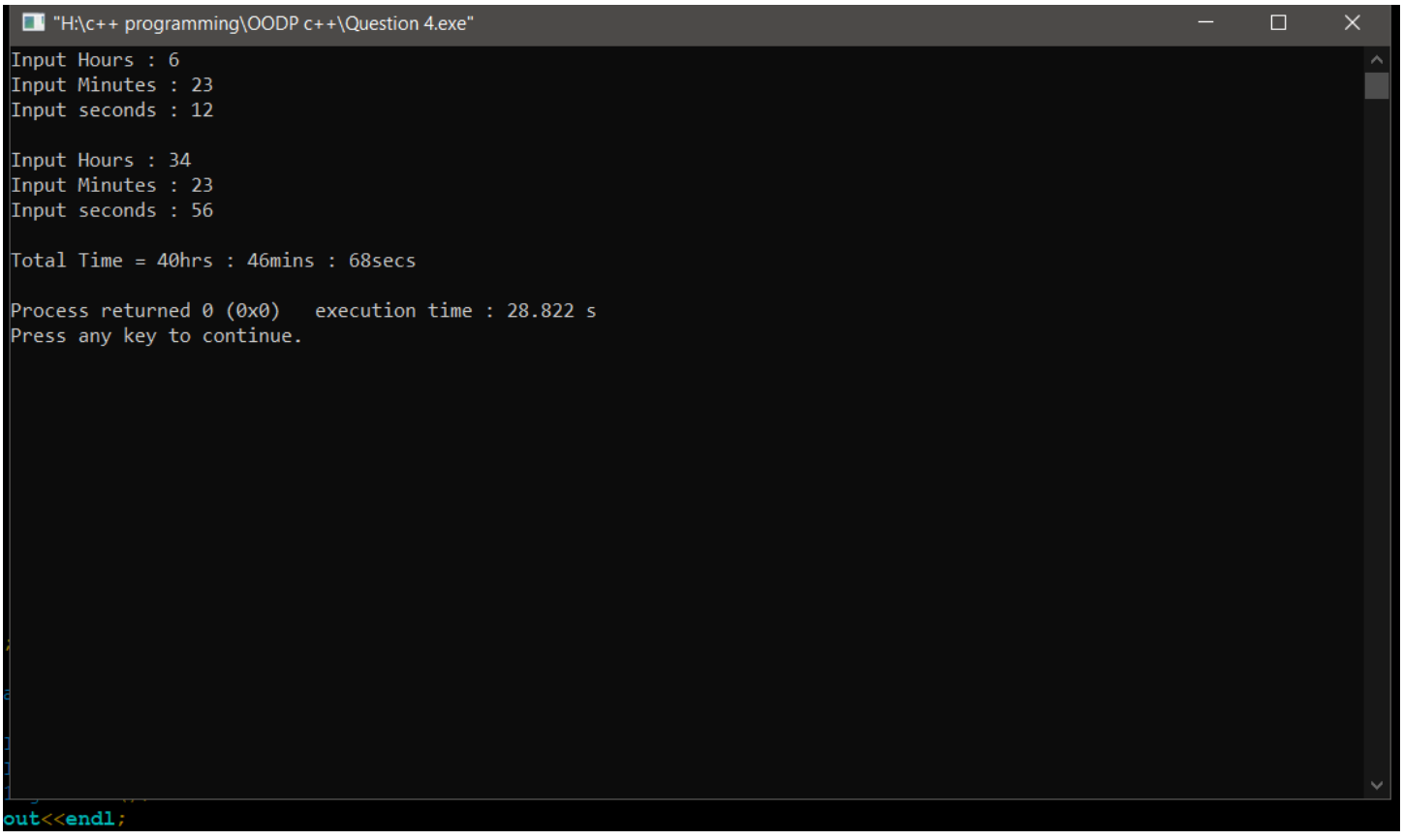
Code:

```
#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:



Question-5

Code:

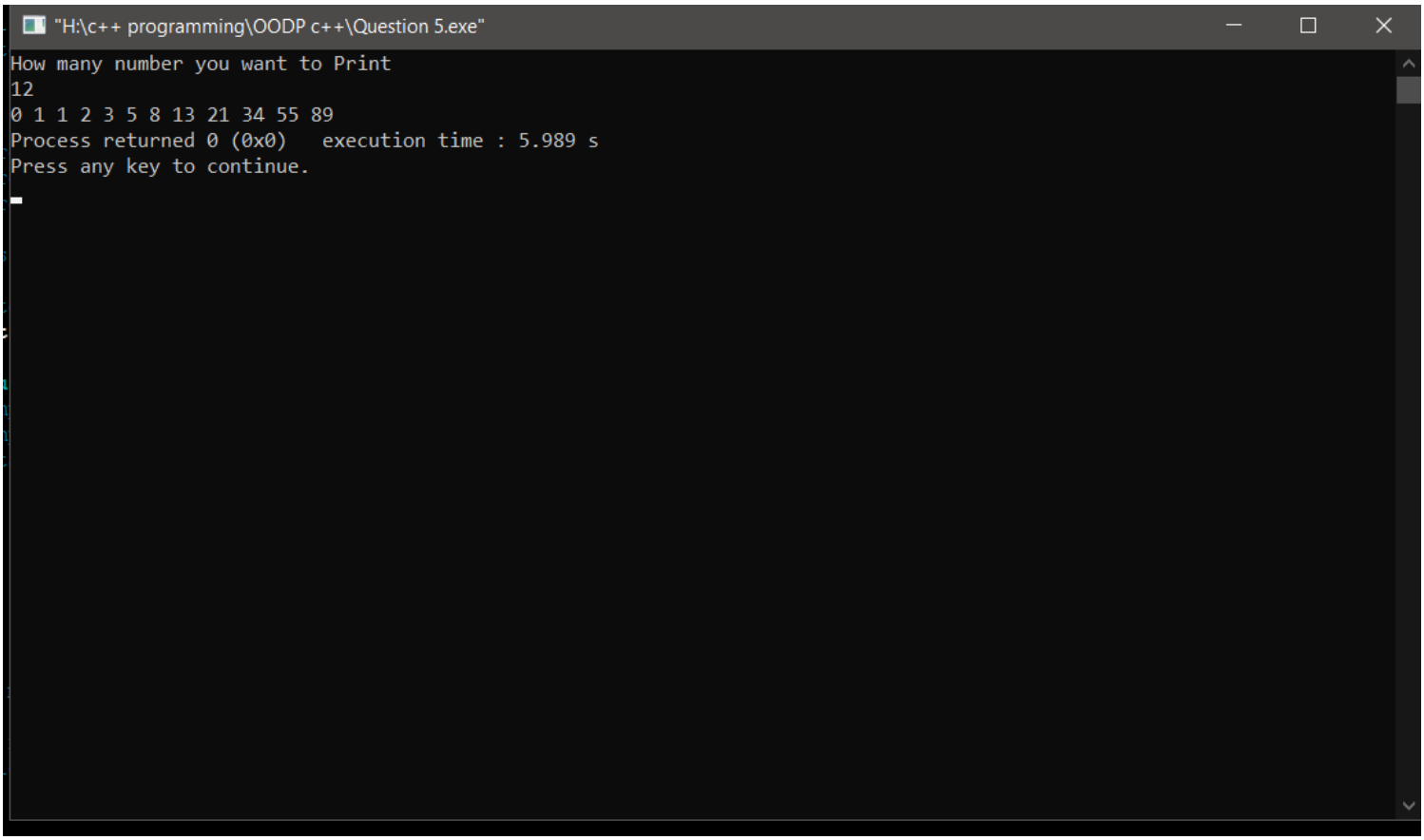
```
#include<iostream>
using namespace std;
class fibonacchi
{
   unsigned long int temp1,temp2,total;
public:
   fibonacchi()
   {
      temp1=0;
      temp2=1;
      total=temp1+temp2;
   }
   fibonacchi (fibonacchi &ref1)
   {
      temp1=ref1.temp1;
      temp2=ref1.temp2;
      total=ref1.total;
   }
   void series(int n)
   {
      cout<<temp1<<" "<<temp2<<" ";
      for(int i=0;i<n-2;i++)
      {
         cout<<total<<" ";
         temp1=temp2;
         temp2=total;
```

```
        total=temp1+temp2;


      }


   }
};
int main ()
{
   int n;
   cout<<"How many number you want to Print"<<endl;
   cin>>n;
   fibonacchi number;
   number.series(n);
}
```

Output Screenshot:



THANK YOU