

```
//programme 1
```

```
/* "Declare a class called bird having private data members name and weight. Define following functions :
```

- default constructor for reading data members from keyboard
- overloaded constructor with two arguments to be used for initialization of data members.
- display function to display data members.
- overloaded member operator >= to compare weight of two bird objects, returning false if weight of first bird object is less than that of the second & true otherwise. Define main to illustrate use of above functions."

```
*/
```

```
#include<stdio.h>
```

```
#include<iostream>
```

```
#include<string.h>
```

```
using namespace std;
```

```
class bird{
```

```
private:
```

```
    char name[50];
```

```
    float weight;
```

```
public:
```

```
    bird(){}
```

```
    bird(char a[],float w){
```

```
        strcpy(name,a);
```

```
        weight=w;
```

```

    }

    void display();

    int operator >=(bird);
};

void bird:: display(){
    cout << "name : " << name << endl << "weight : " << weight ;
}

int bird :: operator >=(bird b)
{
    if(weight< b.weight){
        cout << "\n false ";
        return 0;}
    else{
        cout << "\n true ";
        return 1;}
}

int main()
{
    bird b1,b2;

    int b1_weight,b2_weight;
    char nameb1[50],nameb2[50];

    cout << "\n Enter name and weight of bird 1 : ";

    cin >> nameb1 >> b1_weight;

    cout << endl;

    cout << "\n Enter name and weight of bird 2 : ";

    cin >> nameb2 >> b2_weight;

    b1=bird(nameb1,b1_weight);

```

```

b2=bird(nameb2,b2_weight);

cout << "\n 1st bird detail ";

    b1.display();

cout << "\n 2nd bird detail ";

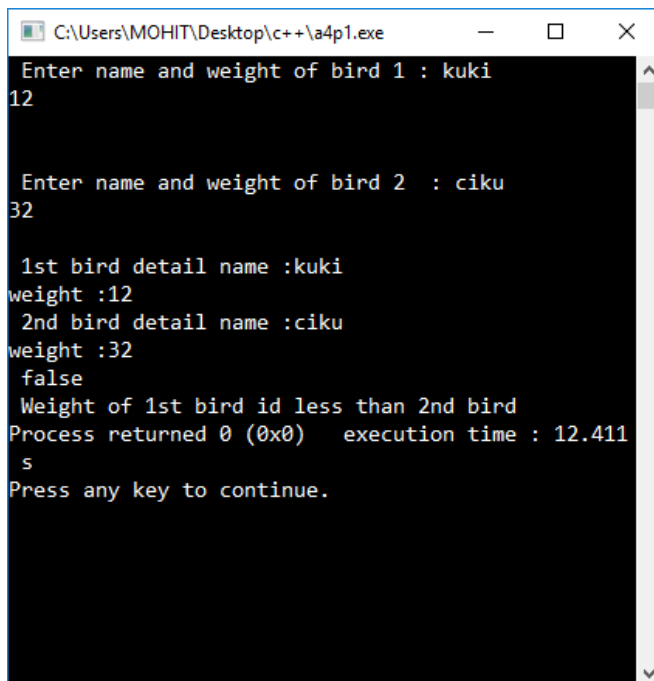
    b2.display();

    if(b1>=b2)
    {
        cout << "\n Weight of 2nd bird id less than 1st bird ";
    }

    else{
        cout << "\n Weight of 1st bird id less than 2nd bird ";
    }

    return 0;
}

```



The screenshot shows a Windows command prompt window titled "C:\Users\MOHIT\Desktop\c++\a4p1.exe". The program prompts the user to enter the name and weight of two birds. The first bird is named "kuki" with a weight of 12. The second bird is named "ciku" with a weight of 32. The program then displays the details for both birds and compares them. Since the weight of the first bird (12) is less than the weight of the second bird (32), the program outputs "false" and "Weight of 1st bird id less than 2nd bird". The process returns 0 and the execution time is 12.411 seconds. The window ends with a prompt to press any key to continue.

```

C:\Users\MOHIT\Desktop\c++\a4p1.exe
Enter name and weight of bird 1 : kuki
12

Enter name and weight of bird 2 : ciku
32

1st bird detail name :kuki
weight :12
2nd bird detail name :ciku
weight :32
false
Weight of 1st bird id less than 2nd bird
Process returned 0 (0x0)   execution time : 12.411
s
Press any key to continue.

```

```
// programme 2
```

```
/*"Define a class complex with real and imaginary as two data member,  
add
```

```
necessary constructors and member function to initialize and display  
data of
```

```
class. Class should overload the + operator to add two complex objects  
and
```

```
return the results. Invoke the statements like C3=C1+C2 in main ()." */
```

```
#include<iostream>
```

```
using namespace std;
```

```
class complex{
```

```
    float x,y;
```

```
public:
```

```
    complex(){}
```

```
    complex(float real,float imag){
```

```
        x=real;
```

```
        y=imag;
```

```
    }
```

```
    complex operator +(complex);
```

```
    void display();
```

```
};
```

```
complex complex :: operator +(complex c){
```

```
    complex temp;
```

```

        temp.x=x+c.x;

        temp.y=y+c.y;

        return temp;
    }

void complex:: display()
{
    cout << x << " +j" << y;
}

int main()
{
    int real,imag;

    complex c3;

    cout << "\n Enter 1st complex number :";

    cin >> real >> imag;

    complex c1(real,imag);

    cout << "\n Enter 2nd complex number :";

    cin >> real >> imag;

    complex c2(real,imag);

    c3=c1+c2;

    cout << "c1 is :"; c1.display(); cout << endl;

    cout << "c2 is :"; c2.display(); cout << endl;

    cout << "c3 is :"; c3.display(); cout << endl;

    return 0; }

```

```

C:\Users\MOHIT\Desktop\c++\a2p2.exe
Enter 1st complex number :12
32
Enter 2nd complex number :21
34
c1 is :12 +j32
c2 is :21 +j34
c3 is :33 +j66
Process returned 0 (0x0) execution time : 5.602 s
Press any key to continue.

```

```
// programme 3
```

```
/* Declare a class called book having members like book_title, publisher  
and author_name. Overload extractor and inserter operators ( >> and  
<< ) for class book.
```

```
*/
```

```
#include<iostream>
```

```
using namespace std;
```

```
class book{
```

```
    string book_title;
```

```
    string publisher;
```

```
    string author_name;
```

```
public:
```

```
    friend istream& operator >>(istream&,book&);
```

```
    friend ostream& operator <<(ostream&,book&);
```

```
};
```

```
istream & operator >> (istream &in, book &b1){
```

```
    in >> b1.book_title >> b1.publisher >> b1.author_name;
```

```
}
```

```
ostream & operator << (ostream &out, book &b1){
```

```
    out << "\n book title" << b1.book_title << "\n author name " << b1.author_name << "\n  
publisher " << b1.publisher ;
```

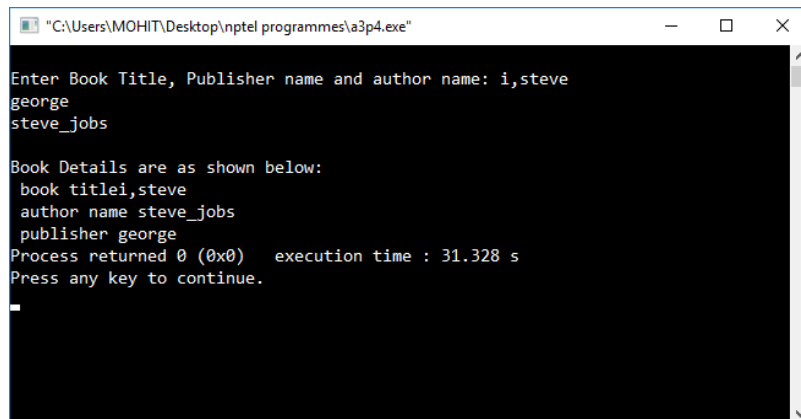
```
}
```

```
int main()
```

```
{
```

```
    book b;
```

```
    cout << "\nEnter Book Title, Publisher name and author name: ";  
    cin >> b;  
    cout << "\nBook Details are as shown below:";  
    cout << b;  
    return 0;  
}
```



```
"C:\Users\MOHIT\Desktop\nptel programmes\a3p4.exe"  
Enter Book Title, Publisher name and author name: i,steve  
george  
steve_jobs  
Book Details are as shown below:  
book titlei,steve  
author name steve_jobs  
publisher george  
Process returned 0 (0x0)   execution time : 31.328 s  
Press any key to continue.  
-
```

