#include <iostream>

using namespace std;

class student

{

public:

int ID;

char lastName[100];

char firstName[100];

};

class course

{

public:

int CRN;

int n;

student\* C;

course();

course(int crn, int x);

void print() const;

void set();

bool contains(student & st);

student\* common(course & cr, int &nb);

};

course::course()

{

CRN=0;

n=0;

C=NULL;

}

course::course(int crn, int x)

{

CRN=crn;

n=x;

C=new student[n];

}

void course:: print() const

{

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

cout<<C[i].lastName<<" "<<C[i].firstName<<endl;

}

void course::set()

{

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

{

cout<<"Student "<<i<<":"<<endl;

cout<<"Please enter first name: ";

cin>>C[i].firstName;

cout<<"Please enter last name: ";

cin>>C[i].lastName;

cout<<"Please enter ID: ";

cin>>C[i].ID;

}

}

bool course:: contains(student & st)

{

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

{

if(C[i].ID==st.ID)

return true;

}return false;

}

student\* course::common(course & cr, int & nb)

{

student\* commonCourse = new student[n];

int counter=0;

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

{

if(cr.contains(C[i]))

{

commonCourse[counter]=C[i];

counter++;

}

}

nb=counter;

return commonCourse;

}

int main()

{

course c1(1111,2);

course c2(2222,3);

c1.set();

c2.set();

cout<<endl;

cout<<"course 1:"<<endl;

c1.print();

cout<<"course 2:"<<endl;

c2.print();

cout<<endl;

student s1;

s1.ID= 1;

strcpy(s1.firstName, "Ghassan");

strcpy(s1.lastName, "Zughaib");

bool x= c1.contains(s1);

if (x==true)

cout<<"Course 1 contains Ghassan"<<endl;

else if (x==false)

cout<<"Course 1 doesn't contan Ghassan"<<endl;

cout<<endl;

int studs=0;

student\* commonStud= c1.common(c2,studs);

cout<<"C1 & C2 have these common students : "<<endl;

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

{

cout<<commonStud[i].firstName<<" "<<commonStud[i].lastName<<" "<<commonStud[i].ID<<endl;

}

system("pause");

return 0;

}