/*

Title: -Write C++ program using STL for sorting and searching user defined records such as Item records (Item code, name, cost, quantity etc) using vector container.

.

Roll No:-

Class:-SE Computer

Sub:-OOPL & CGL

Date:-
**/

Program-

```
#include <iostream>
#include<list>
using namespace std;
class record
{
    list<string>name,dob,phone,ni;
    list<string>::iterator it1,it2,it3,j,k,l,c,n;
    list<string>code;
    list<int>number;
    list<float>cost;
    list<int>::iterator no,j1;
    list<float>::iterator f,i;
public:
    void getp();
    void display();
    void searchp(string);
    void sortp();
    void checkempty();

    void getlist();

    void displayit();

    void searchlist();

    void sortitem();


};

void record::getp()

{

    int count;

    string n,d,p;

    cout<<"Enter the number of members in record:"<<endl;

    cin>>count;

    for(int i=1;i<=count;i++)

    {

        cout<<"Enter name:"<<endl;

        cin>>n;

        name.push_back(n);

        cout<<"Enter date of birth:"<<endl;

        cin>>d;

        dob.push_back(d);

        cout<<"Enter phone number:"<<endl;

        cin>>p;

        phone.push_back(p);

    }
```

```
}
void record::searchp(string data)
{
    int flag=0;
    it1=name.begin();
    it2=dob.begin();
    it3=phone.begin();
    while(it1!=name.end()&&it2!=dob.end()&&it3!=phone.end())
    {
        if(*it1==data)
        {
            cout<<"Record found!"<<endl;
            cout<<"Corresponding D.O.B: "<<*it2<<endl;
            cout<<"Corresponding phone number: "<<*it3<<endl;
            flag=1;
            break;
        }
        if(*it2==data)
        {
            cout<<"Record found!"<<endl;
            cout<<"Corresponding name "<<*it1<<endl;
            cout<<"Corresponding phone number: "<<*it3<<endl;
            flag=1;
            break;
        }
        if(*it3==data)
        {
            cout<<"Record found!"<<endl;
            cout<<"Corresponding name: "<<*it1<<endl;
            cout<<"Corresponding D.O.B: "<<*it2<<endl;
            flag=1;
            break;
        }
        it1++;
        it2++;
        it3++;
    }
    if(flag==0)
        cout<<"Record not found."<<endl;
}
void record:: display()
{
    it1=name.begin();
    it2=dob.begin();
    it3=phone.begin();
    while(it1!=name.end())
    {
        cout<<*it1<<"\t"<<*it2<<"\t"<<*it3<<endl;
        it1++;
        it2++;
        it3++;
    }
}
void record::sortp()
{
    string temp;
    it1=name.begin();
    it2=dob.begin();
    it3=phone.begin();
    j=it1;
    k=it2;
    l=it3;
    j++;
    k++;
    l++;
    while(it1!=name.end())
    {
        while(j!=name.end())
        {
            if(*it1>*j)
            {
                temp=*it1;
                *it1=*j;
                *j=temp;
                temp=*it2;
                *it2=*k;
                *k=temp;
                temp=*it3;
                *it3=*l;
                *l=temp;
            }
            j++;
            k++;
            l++;
        }
        it1++;
        it2++;
        it3++;
    }
}
void record::getlist()
{
    cout<<"Enter the number of items:"<<endl;
    int c,no;
    string n;
    float f;
    cin>>c;
    for(int i=1;i<=c;i++)
    {
        cout<<"Enter item name:"<<endl;
        cin>>n;

        ni.push_back(n);

        cout<<"Enter item code:"<<endl;

        cin>>n;

        code.push_back(n);

        cout<<"Enter cost:"<<endl;

        cin>>f;

        cost.push_back(f);

        cout<<"Enter the quantity:"<<endl;

        cin>>no;

        number.push_back(no);

    }

}

void record::displayit()

{

    c=code.begin();

    n=ni.begin();

    no=number.begin();

    f=cost.begin();

    while(c!=code.end())

    {

        cout<<*c<<"\t"<<*n<<"\t"<<*no<<"\t"<<*f<<endl;

        c++;

        n++;

        no++;
        f++;
    }
}
void record::sortitem()
{
    string temp;
    int tempno;
    float tempf;
    c=code.begin();
    n=ni.begin();
    no=number.begin();
    f=cost.begin();
    i=f;
    j1=no;
    k=c;
    l=n;
    i++;
    j1++;
    k++;
    l++;
    while(f!=cost.end())
    {
        while(i!=cost.end())
        {
            if(*f>*i)
    {
      tempf=*f;
      *f=*i;
      *i=tempf;

      temp=*n;
      *n=*l;
      *l=temp;

      temp=*c;
      *c=*k;
      *k=temp;

      tempno=*no;
      *no=*j1;
      *j1=tempno;
    }
    i++;
    j1++;
    k++;
    l++;
}
f++;
n++;
no++;
```

```
        c++;
    }
}
void record::searchlist()
{
    string key;
    cout<<"Enter the item code:"<<endl;
    cin>>key;
    c=code.begin();
    n=ni.begin();
    no=number.begin();
    f=cost.begin();
    while(c!=code.end())
    {
        if(key==*c)
        {
            cout<<"Item available!"<<endl;
            cout<<"Item name: "<<*n<<endl;
            cout<<"Item quantity: "<<*no<<endl;
            cout<<"Item cost: "<<*f<<endl;
        }
        c++;
        n++;
        no++;
        f++;
    }
}
int main()
{
    record obj;
    string key;
    int ch,chr;
    char x='y';
    do
    {
    cout<<"1. Personal record\n2. Item record\nEnter choice:\n";
    cin>>ch;
    do
    {
    if(ch==1)
    {
        cout<<"1. Enter details\n2. Display\n3. Search entry\n4. Sort records\nEnter choice\n";
        cin>>chr;
        switch(chr)
        {
        case 1:
            obj.getp();
            obj.display();
            break;
        case 2:
```

```
        obj.display();
        break;
    case 3:
        cout<<"Enter either name, d.o.b or phone number you want to find\n";
        cin>>key;
        obj.searchp(key);
        break;
    case 4:
        obj.sortp();
        obj.display();
        break;
    default:
        cout<<"Wrong choice"<<endl;
    }
}
else if(ch==2)
{
    cout<<"1. Enter details\n2. Display\n3. Search entry\n4. Sort records\nEnter choice\n";
    cin>>chr;
    switch(chr)
    {
    case 1:
        obj.getlist();
        obj.displayit();
        break;
    case 2:
        obj.displayit();
        break;
    case 3:
        obj.searchlist();
        break;
    case 4:
        obj.sortitem();
        obj.displayit();
        break;
    default:
        cout<<"Wrong choice"<<endl;
    }
}
else
{
    cout<<"Wrong choice"<<endl;
    break;
}
cout<<"Do you wish to continue? Y or N\n";
cin>>x;
}while(x=='y'||x=='Y');
cout<<"Do you wish to select another type of record? Y or N\n";
cin>>x;
}while(x=='y'||x=='Y');
```

```
    return 0;

}
```

/*Output:-

```
[student@localhost ~]$ g++ C3.cpp
[student@localhost ~]$ ./a.out
1. Personal record
2. Item record
Enter choice:
1
1. Enter details
2. Display
3. Search entry
4. Sort records
Enter choice
1
Enter the number of members in record:
2
Enter name:
abc
Enter date of birth:
5/6/1993
Enter phone number:
22556
Enter name:
pqr
Enter date of birth:
9/7/1993
Enter phone number:
22076
abc    5/6/1993    22556
pqr    9/7/1993    22076
Do you wish to continue? Y or N
y
1. Enter details
2. Display
3. Search entry
4. Sort records
```

```
Enter choice
2
abc    5/6/1993    22556
pqr    9/7/1993    22076
Do you wish to continue? Y or N
y
1. Enter details
2. Display
3. Search entry
4. Sort records
Enter choice
3
Enter either name, d.o.b or phone number you want to find
abc
Record found!
Corresponding D.O.B: 5/6/1993
Corresponding phone number: 22556
Do you wish to continue? Y or N
y
1. Enter details
2. Display
3. Search entry
4. Sort records
Enter choice
4
abc    5/6/1993    22556
pqr    9/7/1993    22076
Do you wish to continue? Y or N
n
Do you wish to select another type of record? Y or N
n
[student@localhost ~]$ */
```