NAME:SHRUTI MUKUND PAWAR
DIV:C
BATCH:C1
ROLL NO S213003
SUBJECT:OOP

PROBLEM STATEMENT:
                    Write C++ program using STL for sortingand searching with user defined records such as personrecord(Name,DOB,Telephonenumber etc) using vector. container.

CODE:

```cpp
#include <iostream>
#include <algorithm>
#include <vector>
using namespace std;
class Item
{
public:
char name[10];
int quantity;
int cost;
int code;
bool operator==(const Item& i1)

{

if(code==i1.code)
return 1;
return 0;
}

bool operator<(const Item& i1)
{
if(code<i1.code)
return 1;
return 0;
}

};

vector<Item> o1;
```

```cpp
void print(Item &i1);
void display();
void insert();
void search();
void dlt();

bool compare(const Item &i1, const Item &i2)
{

return i1.cost < i2.cost;
}

int main()
{
int ch;
do
{
cout<<"\n* * * * * Menu * * * * *";
cout<<"\n1.Insert";
cout<<"\n2.Display";
cout<<"\n3.Search";
cout<<"\n4.Sort";
cout<<"\n5.Delete";
cout<<"\n6.Exit";
cout<<"\nEnter your choice : ";
cin>>ch;

switch(ch)
{
case 1:
insert();
break;

case 2:
display();
break;

case 3:

search();
break;

case 4:
sort(o1.begin(),o1.end(),compare);
cout<<"\n\n Sorted on Cost : ";
display();
break;
```

```cpp
case 5:
dlt();
break;

case 6:
exit(0);
}

}while(ch!=7);
return 0;
}
void insert()
{
Item i1;
cout<<"\nEnter Item Name : ";
cin>>i1.name;
cout<<"\nEnter Item Quantity : ";
cin>>i1.quantity;

cout<<"\nEnter Item Cost : ";
cin>>i1.cost;
cout<<"\nEnter Item Code : ";
cin>>i1.code;
o1.push_back(i1);
}

void display()
{
for_each(o1.begin(),o1.end(),print);
}

void print(Item &i1)
{
cout<<"\n";
cout<<"\nItem Name : "<<i1.name;
cout<<"\nItem Quantity : "<<i1.quantity;
cout<<"\nItem Cost : "<<i1.cost;
cout<<"\nItem Code : "<<i1.code;
cout<<"\n\n";
}

void search()
{
vector<Item>::iterator p;
Item i1;
cout<<"\nEnter Item Code to search : ";

cin>>i1.code;
```

```cpp
p=find(o1.begin(),o1.end(),i1);
if(p==o1.end())
{
cout<<"\nNot found!!!";
}
else
{
cout<<"\nFound!!!";
}
}

void dlt()
{
vector<Item>::iterator p;
Item i1;
cout<<"\nEnter Item Code to delete : ";
cin>>i1.code;
p=find(o1.begin(),o1.end(),i1);
if(p==o1.end())
{
cout<<"\nNot found!!!";
}
else
{
o1.erase(p);
cout<<"\nDeleted!!!";

}
}
```

INPUT/OUTPUT:

gg

lk

```
Enter your choice : 2


Item Name : notebook
Item Quantity : 5
Item Cost : 300
Item Code : 2




Item Name : pencil
Item Quantity : 10
Item Cost : 100
Item Code : 4


* * * * * Menu * * * * * *
1.Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter your choice : 3

Enter Item Code to search : 4

Found!!!
* * * * * Menu * * * * * *
1.Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter your choice : 4


 Sorted on Cost :

Item Name : pencil
Item Quantity : 10
Item Cost : 100
Item Code : 4

student@student-OptiPlex-3070:~$
```