PROGRAM :

```
#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;
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;

 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;
}
void search()
{
 vector<Item>::iterator p;
 Item i1;
 cout<<"\nEnter Item Code to search:";
 cin>>i1.code;
 p=find(o1.begin(),o1.end(),i1);
 if(p==o1.end())
 {
 cout<<"\nNot found.";
 }
 else
 {
 cout<<"\nFound."<<endl;
 cout<<"Item Name : "<<p ->name<<endl;
 cout<<"Item Quantity : "<<p ->quantity<<endl;
 cout<<"Item Cost : "<<p ->cost<<endl;
```

```
 cout<<"Item Code: "<<p ->code<<endl;
 }
}
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.";
 }
}
```

OUTPUT :

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

Enter Item Name:Scale

Enter Item Quantity:150

Enter Item Cost:15

Enter Item Code:21

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

Enter Item Name:Paper

Enter Item Quantity:2000

Enter Item Cost:2

Enter Item Code:22

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

```
Enter your choice:1

Enter Item Name:Pen

Enter Item Quantity:100

Enter Item Cost:15

Enter Item Code:23

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


Item Name:Scale
Item Quantity:150
Item Cost:15
Item Code:21

Item Name:Paper
Item Quantity:2000
Item Cost:2
Item Code:22

Item Name:Pen
Item Quantity:100
Item Cost:15
Item Code:23
*** Menu ***
1.Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter your choice:3
```

```
Enter your choice:3

Enter Item Code to search:21

Found.
Item Name : Scale
Item Quantity : 150
Item Cost : 15
Item Code: 21

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


 Sorted on Cost

Item Name:Paper
Item Quantity:2000
Item Cost:2
Item Code:22

Item Name:Scale
Item Quantity:150
Item Cost:15
1.Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter your choice:5

Enter Item Code to delete:23

Deleted.
```

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


Item Name:Paper
Item Quantity:2000
Item Cost:2
Item Code:22

Item Name:Scale
Item Quantity:150
Item Cost:15
Item Code:21
*** Menu ***
1.Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter your choice:6
```