

Practical No – 06 (Group C)

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Date : 16/10/2024

Roll No: S211045

Div: A

Batch: A2

Problem Statement :

Write a C++ program using STL for sorting and searching with user defined records such as person record (Name, DOB, Telephone number etc) using vector container.

Program code :

```
#include<iostream>

#include<algorithm>

#include<vector>

using namespace std;

class Item {

public:

char name[10];

int quantity;

int cost,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 del();

void sort();

bool compare(const Item &i1, const Item &i2) {
    return i1.cost<i2.cost;
}

int main() {
    int ch;

    do {
        cout<<"\n 1. Insert \n 2.Display \n 3.Search \n 4.Sort \n 5.Delete \n 6.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<<"Sorted Array is : "<<endl;

display();

break;

case 5:

del();

break;

case 6:

exit(0);

}

}

while (ch !=7);

return 0;

}

void insert()

{

Item i1;
```

```

cout<<"Enter the Product Name : ";

cin>>i1.name;

cout<<"Enter the Product Quantity : ";

cin>>i1.quantity;

cout<<"Enter the Product cost : ";

cin>>i1.cost;

cout<<"Enter the Product Code : ";

cin>>i1.code;

o1.push_back(i1);
}

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

void print(Item &i1)
{
cout<<"Item Name : "<<i1.name<<endl;

cout<<"Item Quantity : "<<i1.quantity<<endl;

cout<<"Item Cost : "<<i1.cost<<endl;

cout<<"Item Code : "<<i1.code<<endl<<endl;
}

void search()
{
vector<Item>::iterator p;

Item i1;

```

```
cout<<"Enter the Product Code to find : ";
```

```
cin>>i1.code;
```

```
p=find(o1.begin(),o1.end(),i1);
```

```
if (p==o1.end())
```

```
{
```

```
cout<<"Not Found"<<endl;
```

```
}
```

```
else
```

```
{
```

```
cout<<"Found"<<endl;
```

```
}
```

```
}
```

```
void del()
```

```
{
```

```
vector<Item>::iterator p;
```

```
Item i1;
```

```
cout<<"Enter the Deletion code :";
```

```
cin>>i1.code;
```

```
p=find(o1.begin(),o1.end(),i1);
```

```
if(p== o1.end())
```

```
{
```

```
cout<<"Not Found"<<endl;
```

```
}
```

```
else
```

```
{
```

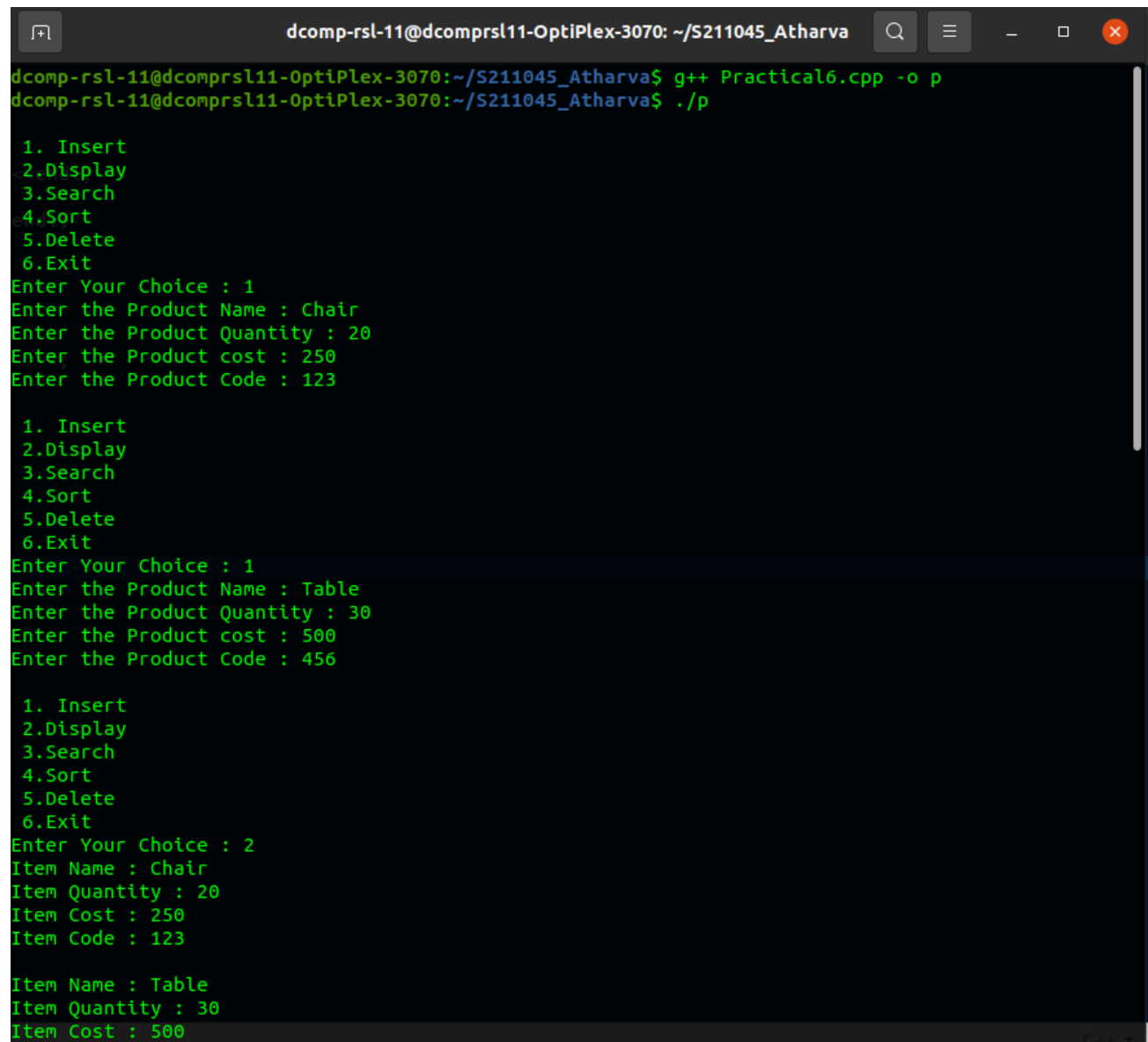
```
o1.erase(p);

cout<<"Deleted"<<endl;

}

}
```

Output :

A terminal window with a dark background and green text. The window title is 'dcomp-rsl-11@dcomprsl11-OptiPlex-3070: ~/S211045_Atharva'. The user has compiled a C++ program 'Practical6.cpp' into an executable 'p' and then runs it. The program displays a menu with six options: 1. Insert, 2. Display, 3. Search, 4. Sort, 5. Delete, and 6. Exit. The user first chooses option 1 and enters 'Chair' as the product name, 20 as the quantity, 250 as the cost, and 123 as the code. Then, the user chooses option 2, and the program displays the details of the 'Chair' item. Next, the user chooses option 1 again and enters 'Table' as the product name, 30 as the quantity, 500 as the cost, and 456 as the code. Finally, the user chooses option 2, and the program displays the details of the 'Table' item.

```
dcomp-rsl-11@dcomprsl11-OptiPlex-3070: ~/S211045_Atharva
dcomp-rsl-11@dcomprsl11-OptiPlex-3070:~/S211045_Atharva$ g++ Practical6.cpp -o p
dcomp-rsl-11@dcomprsl11-OptiPlex-3070:~/S211045_Atharva$ ./p

1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 1
Enter the Product Name : Chair
Enter the Product Quantity : 20
Enter the Product cost : 250
Enter the Product Code : 123

1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 1
Enter the Product Name : Table
Enter the Product Quantity : 30
Enter the Product cost : 500
Enter the Product Code : 456

1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 2
Item Name : Chair
Item Quantity : 20
Item Cost : 250
Item Code : 123

Item Name : Table
Item Quantity : 30
Item Cost : 500
```

```
1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 3
Enter the Product Code to find : 123
Found
```

```
1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 4
Sorted Array is :
Item Name : Chair
Item Quantity : 20
Item Cost : 250
Item Code : 123
```

```
Item Name : Table
Item Quantity : 30
Item Cost : 500
Item Code : 456
```

```
1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 5
Enter the Deletion code :123
Deleted
```

```
1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 2
Item Name : Table
Item Quantity : 30
Item Cost : 500
Item Code : 456
```

```
1. Insert
2.Display
3.Search
4.Sort
5.Delete
6.Exit
Enter Your Choice : 6
dcomp-rsl-11@dcomp-rsl11-OptiPlex-3070:~/S211045_Atharva$
```

