

	AIR UNIVERSITY
	DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
	EXPERIMENT NO 6

Lab Title: Composition in C++ _____

Student Name: _____ **Reg. No:** _____

Objective: _____

LAB ASSESSMENT:

Attributes	Excellent (5)	Good (4)	Average (3)	Satisfactory (2)	Unsatisfactory (1)
Ability to Conduct Experiment					
Ability to assimilate the results					
Effective use of lab equipment and follows the lab safety rules					

Total Marks: _____

Obtained Marks: _____

LAB REPORT ASSESSMENT:

Attributes	Excellent (5)	Good (4)	Average (3)	Satisfactory (2)	Unsatisfactory (1)
Data presentation					
Experimental results					
Conclusion					

Total Marks: _____

Obtained Marks: _____

Date: _____

Signature: _____

Lab Task #3

```
1  #include <iostream>
2  using namespace std;
3
4  class player
5  {
6      string name,age;
7      public:
8      void input()
9      {
10         cout<<"\nPlease enter name of the player: ";
11         cin>>name;
12         cout<<"\nPlease enter age of the player: ";
13         cin>>age;
14     }
15     void display()
16     {
17         cout<<"The name of the player : "<<name<<endl;
18         cout<<"The age of the player : "<<age<<endl;
19     }
20 };
21
22 class timetable
23 {
24     string train_hours,sleep_hours;
25     public:
26     void input()
27     {
28         cout<<"Please enter training hours: ";
29         cin>>train_hours;
30         cout<<"Please enter sleeping hours: ";
31         cin>>sleep_hours;
32     }
33     void display()
34     {
35         cout<<"The number training hours : "<<train_hours<<endl;
36         cout<<"The number of sleeping hours : "<<sleep_hours<<endl;
37     }
38 };
```

```

40 class team
41 {
42     string num_players;
43     player p;
44     timetable t;
45     public:
46     void input()
47     {
48         cout<<"Please enter the number of players: ";
49         cin>>num_players;
50         t.input();
51         p.input();
52     }
53     void display()
54     {
55         cout<<"The number of players : "<<num_players<<endl;
56         t.display();
57         p.display();
58     }
59 };
60
61
62 int main()
63 {
64     team t;
65     t.input();
66     cout<<"\n\n\n";
67     t.display();
68     cout<<"\n\n\n";
69     return 0;

```

Output

```

Please enter the number of players: 3
Please enter training hours: 2
Please enter sleeping hours: 6

Please enter name of the player: Ali
Please enter age of the player: 22

The number of players : 3
The number training hours : 2
The number of sleeping hours : 6
The name of the player : Ali
The age of the player : 22

```

Lab Task #4

```
1  #include <iostream>
2  using namespace std;
3
4  class location
5  {
6      int X,Y;
7      public:
8      void input()
9      {
10         cout<<"Please enter the x-coordinate: ";
11         cin>>X;
12         cout<<"Please enter the y-coordinate: ";
13         cin>>Y;
14     }
15     void display()
16     {
17         cout<<"The x-coordinate: "<<X<<endl;
18         cout<<"The y-coordinate: "<<Y<<endl;
19     }
20 };
21
22 class house
23 {
24     string owner_name,num_room;
25     public:
26     void input()
27     {
28         cout<<"\nPlease enter the owner name: ";
29         cin>>owner_name;
30         cout<<"\nPlease enter the number of rooms: ";
31         cin>>num_room;
32     }
33     void display()
34     {
35         cout<<"The owner name is "<<owner_name<<endl;
36         cout<<"The number of rooms are "<<num_room<<endl;
37     }
38 };
```

```

39 class society
40 {
41     int num_houses;
42     location l;
43     house h;
44     public:
45     void input()
46     {
47         cout<<"\nPlease enter the number of houses: ";
48         cin>>num_houses;
49         l.input();
50         h.input();
51     }
52     void output()
53     {
54         cout<<"\nThe number of houses in the society are "<<num_houses<<endl;
55         l.display();
56         h.display();
57     }
58 };
59
60 int main()
61 {
62     society s;
63     cout<<"\n\n\n";
64     s.input();
65     s.output();
66     cout<<"\n\n\n";
67     return 0;

```

OUTPUT

```

Please enter the number of houses: 2
Please enter the x-coordinate: 3
Please enter the y-coordinate: 5

Please enter the owner name: Suhaib

Please enter the number of rooms: 12

The number of houses in the society are 2
The x-coordinate: 3
The y-coordinate: 5
The owner name is Suhaib
The number of rooms are 12
n

```

Conclusion:

In this lab I learned how to perform object composition in classes. I also learned about the 'has-a' relationship between two objects with the help of object composition. Moreover, I created a main class and created small classes that were used in the main class which is the meaning composition in C++.