

❑ Source Code(Solution):

MINHAZ(1904004).cpp

```
1  #include<bits/stdc++.h>
2  using namespace std;
3  //=====HOSPITAL CLASS=====
4  class Hospital{
5      string user, password;
6      public:
7          Hospital(){ //=====CONSTRUCTOR=====
8              user = "admin";
9              password = "CUET";
10         }
11         virtual void show(){}
12         virtual void get_data(){}
13         friend int Admin(Hospital admin); //====ADMIN LOGIN=====
14         friend void main_menu(); //=====MAIN MENU=====
15         friend istream & operator >> (istream &din, Hospital &s);
16     };
17     istream & operator >> (istream &din, Hospital &s){ //OPERATOR OVERLOADING
18         cin>>s.user;
19         cin>>s.password;
20     }
21     void main_menu(){
22         cout<<"\n\t-----CUET MEDICAL CENTER-----";
23         cout<<"\n\tAre you a doctor/ patient/ admin: ";
24         cout<<"\n\t1.Doctor";
25         cout<<"\n\t2.Patient";
26         cout<<"\n\t3.Admin";
27         cout<<"\n\t4.Exit";
28         cout<<"\n\t";
29     }
30     int Admin(Hospital admin){
31         string name, pass;
32         cout<<"\n\tEnter username: ";
33         cin>>name;
34         cout<<"\tEnter Password: ";
35         cin>>pass;
36         if(name == admin.user && pass == admin.password){
37             return 1;
38         }
39         else {
40             cout<<"\tInvalid User!\n\n";
41             return 0;
42         }
43     }
```

```

44 //=====DOCTORS CLASS=====
45 class Doctors:public Hospital{
46     string name, time, day;
47     int room, contact, id;
48     public:
49         string catagory;
50         void get_data(){
51             cout<<"\tEnter name: ";
52             getline(cin>>ws, name);
53             cout<<"\tEnter ID: ";
54             cin>>id;
55             cout<<"\tEnter Catagory: ";
56             getline(cin>>ws, catagory);
57             cout<<"\tEnter duty day: ";
58             getline(cin>>ws, day);
59             cout<<"\tEnter presence time: ";
60             getline(cin>>ws, time);
61             cout<<"\tEnter room no: ";
62             cin>>room;
63             cout<<"\tEnter contact no: ";
64             cin>>contact;
65         }
66         void show(){
67             cout<<"\n\tDoctor's Name: "<<name;
68             cout<<"\n\tDoctor's ID: "<<id;
69             cout<<"\n\tAvailable day: "<<day;
70             cout<<"\n\tAvailable time: "<<time;
71             cout<<"\n\tRoom No.: "<<room;
72             cout<<"\n\tContact No: "<<contact<<" BDT";
73         }
74         friend int doc(Doctors d);
75     };
76 int doc(Doctors d){ //=====RETURNS PRIVATE MEMBER=====
77     return d.id;
78 }
79 //=====PATIENTS CLASS=====
80 class patients: public Hospital{
81     public:
82         string name, catagory, gender, age;
83         void get_data(){
84             cout<<"\tEnter patient name: ";
85             getline(cin>>ws, name);
86             cout<<"\tEnter age: ";
87             getline(cin>>ws, age);
88             cout<<"\tEnter gender(M or F): ";
89             getline(cin>>ws, gender);
90             cout<<"\tEnter catagory: ";
91             getline(cin>>ws, catagory);
92         }
93         string cat(){
94             return catagory;
95         }
96         void show(){
97             cout<<"\n\tName: "<<name;
98             cout<<"\n\tAge: "<<age;
99             cout<<"\n\tGender: "<<gender;
100             cout<<"\n\tCatagory: "<<catagory;
101         }
102     };

```

```

103 //=====MAIN FUNCTON STARTS=====
104 int main()
105 {
106     Doctors d[50];
107     Hospital admin, *ptr;
108     patients p;
109     int total_doc = 0, choice, c;
110     while(1){
111         main_menu();
112         cin>>choice;
113         switch(choice){
114             case 1: //=====DOCTORS MENU=====
115                 cout<<"\n\n\t*****DOCTOR*****"<<endl;
116                 cout<<"\n\t1.Login";
117                 cout<<"\n\t2.EXIT\n\t";
118                 int i;
119                 cin>>c;
120                 if(c==1) {
121                     cout<<"\n\tEnter your ID: ";
122                     int pass;
123                     cin>>pass;
124                     for(i=0; i<total_doc;i++){
125                         if(doc(d[i]) == pass){
126                             ptr = &d[i];
127                             ptr->show();
128                             break;
129                         }
130                     }
131                     if(i==total_doc) cout<<"\tInvalid ID\n\n";
132                 }
133                 break;
134             case 2: //=====PATIENTS MENU=====
135                 cout<<"\n\n\t*****PATIENT*****"<<endl;
136                 cout<<"\n\t1.ADMIT";
137                 cout<<"\n\t2.EXIT\n\t";
138                 cin>>c;
139                 if(c==1){
140                     ptr = &p;
141                     ptr->get_data();
142                     string s = p.cat();
143                     cout<<"\n\tAvailable doctors for you: \n";
144                     for(int i=0; i<total_doc; i++){
145                         if(d[i].catagory == s){
146                             ptr = &d[i];
147                             ptr->show();
148                         }
149                     }
150                 }
151                 break;

```

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case 3://=====ADMIN MENU=====
    if(Admin(admin)){
        cout<<"\n\n\t*****ADMIN*****"<<endl;
        cout<<"\n\t1.Add doctors";
        cout<<"\n\t2.Set New user and password";
        cout<<"\n\t3.Exit\n\t";
        int c;
        cin>>c;
        if(c==1) {
            cout<<"\n\tEnter the number of doctors you want to add: \n\t";
            int n;
            cin>>n;
            int total = total_doc;
            for(int i=0+total_doc; i<n+total; i++){
                cout<<"\tEnter the information of doctor "<<i+1<<endl;
                ptr = &d[i];
                ptr->get_data();
                total_doc++;
            }
        }
        else if (c == 2){
            cout<<"\n\tNew Admin user and password: \n\t";
            cin>>admin;
        }
    }
    break;
case 4:
    exit(0);
    break;
default:
    cout<<"\n\tInvalid input\n\n";
}
}
}

//=====MAIN FUNCTON ENDS=====

```

Sample Input/ Output:

 C:\Users\minha\Documents\MINHAZ(1904004).exe

```
-----CUET MEDICAL CENTER-----  
Are you a doctor/ patient/ admin:  
1.Doctor  
2.Patient  
3.Admin  
4.Exit
```

1. Main Menu

```
*****DOCTOR*****  
  
1.Login  
2.EXIT
```

2. Doctor's Menu

```
*****PATIENT*****  
  
1.ADMIT  
2.EXIT
```

3.Patient's Menu

```
*****ADMIN*****  
  
1.Add doctors  
2.Set New user and password  
3.Exit
```

4.Admin Menu

```
-----CUET MEDICAL CENTER-----  
Are you a doctor/ patient/ admin:  
1.Doctor  
2.Patient  
3.Admin  
4.Exit  
3
```

```
Enter username: admin  
Enter Password: CUET
```

5.Admin Login

```
*****ADMIN*****
```

```
1.Add doctors
2.Set New user and password
3.Exit
2
```

```
New Admin user and password:
Minhaz
1904004
```

6. Set new user name and password

```
1.Add doctors
2.Set New user and password
3.Exit
1
```

```
Enter the number of doctors you want to add:
2
Enter the information of doctor 1
Enter name: Dr. Yasin karim
Enter ID: 101
Enter Catagory: Heart
Enter duty day: Mon - Wed
Enter presence time: 12.00 - 17.00
Enter room no: 204
Enter contact no: 123456
Enter the information of doctor 2
Enter name: Dr. Fazlul Tajwear
Enter ID: 102
Enter Catagory: Eye
Enter duty day: Sun - Thu
Enter presence time: 14.00 - 18.00
Enter room no: 105
Enter contact no: 123457
```

7. Adding Doctors

```
1.Login
2.EXIT
1
```

```
Enter your ID: 102
```

```
Doctor's Name: Dr. Fazlul Tajwear
Doctor's ID: 102
Available day: Sun - Thu
Available time: 14.00 - 18.00
Room No.: 105
Contact No: 123457
```

8. Doctor Login using ID

```
1.ADMIT
2.EXIT
1
Enter patient name: Nabil
Enter age: 21
Enter gender(M or F): M
Enter catagory: Heart

Available doctors for you:

Doctor's Name: Dr. Yasin karim
Doctor's ID: 101
Available day: Mon - Wed
Available time: 12.00 - 17.00
Room No.: 204
Contact No: 123456
```

9. Admit patient and show doctor of that category

```
Enter username: AdMiN
Enter Password: cueT
Invalid User!
```

10. Invalid user Admin

```
1.Login
2.EXIT
1

Enter your ID: 420
Invalid ID
```

11. Invalid doctor login