

# Hospital.java

```

1 package problem6;
2
3 import java.util.*;
4
5 class Hospital {
6     ArrayList<Patient> pt;
7     ArrayList<Doctor> doc;
8
9     // Constructor
10    public Hospital() {
11        pt = new ArrayList<>();
12        doc = new ArrayList<>();
13    }
14
15    // Function to check if a doctor is in list
16    public int checkDoctor(int id) {
17        int pos = -1;
18        for (Doctor i : doc) {
19            if (i.getId() == id)
20                return ++pos;
21            pos++;
22        }
23        return -1;
24    }
25
26    // Function to check if a patient is in list
27    public int checkPatient(int id) {
28        int pos = -1;
29        for (Patient i : pt) {
30            if (i.getId() == id)
31                return ++pos;
32            pos++;
33        }
34        return -1;
35    }
36
37    // Function to add new doctor
38    public void addDoctor() {
39        Scanner sc = new Scanner(System.in);
40        System.out.println("Enter name of doctor");
41        String name = sc.nextLine();
42
43        Doctor dr = new Doctor(name);
44        dr.display();
45        doc.add(dr);
46    }
47
48
49    // Function to add new patient
50    public void addPatient() {
51        Scanner sc = new Scanner(System.in);
52        System.out.println("Enter name of patient");
53        String name = sc.nextLine();
54        int pos, id;
55
56        do {
57            System.out.println("Enter doctor id to assign to");
58            id = sc.nextInt();
59            pos = checkDoctor(id);
60            if (pos == -1)
61                System.out.println("Invalid doctor id");
62        } while (pos == -1);

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63     String docname = doc.get(pos).getName();
64     Patient p = new Patient(name, id, docname);
65     pt.add(p);
66
67 }
68
69 // Function to take readings
70 public void takeReadings() {
71     int pos, id, ubp, lbp;
72     double temp;
73     Scanner sc = new Scanner(System.in);
74     do {
75         System.out.println("Enter patient id");
76         id = sc.nextInt();
77         pos = checkPatient(id);
78         if (pos == -1)
79             System.out.println("Invalid patient id");
80     } while (pos == -1);
81     if (!pt.get(pos).isChecked()) {
82         System.out.println("Patient is no longer in hospital");
83         return;
84     }
85
86     do {
87         System.out.println("Enter upper and lower blood pressure");
88         ubp = sc.nextInt();
89         lbp = sc.nextInt();
90
91         if (ubp <= lbp)
92             System.out.println("Invalid pressure");
93
94     } while (ubp <= lbp);
95
96     do {
97         System.out.println("Enter body temperatur in fahrenheit");
98         temp = sc.nextInt();
99
100         if (temp < 90 || temp > 110)
101             System.out.println("Invalid temperature");
102
103     } while (temp < 90 || temp > 110);
104
105     Readings r = new Readings(ubp, lbp, temp);
106     Patient p = pt.get(pos);
107     p.setRecord(r);
108     pt.set(pos, p);
109 }
110
111 // Function to checkout a patient
112 public void patientCheckout() {
113     Scanner sc = new Scanner(System.in);
114     int pos, id;
115
116     do {
117         System.out.println("Enter patient id..enter -1 to exit");
118         id = sc.nextInt();
119         pos = checkPatient(id);
120         if (pos == -1)
121             System.out.println("Invalid patient id");
122     } while (pos == -1 && id != -1);
123     if (id == -1)
124         return;

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125
126     if (!pt.get(pos).isChecked())
127         System.out.println("Patient already checked out");
128     else {
129         Patient p = pt.get(pos);
130         p.checkOut();
131         pt.set(pos, p);
132         System.out.println("Patient successfully checked out");
133     }
134
135 }
136
137 // Function to display all readings of a patient
138 public void displayReadings() {
139     Scanner sc = new Scanner(System.in);
140     int pos, id;
141
142     do {
143         System.out.println("Enter patient id");
144         id = sc.nextInt();
145         pos = checkPatient(id);
146         if (pos == -1)
147             System.out.println("Invalid patient id");
148     } while (pos == -1);
149
150     Patient p = pt.get(pos);
151     p.showReadings();
152 }
153
154 }
```