Hospital Billing Management System

Problem statement:

Develop a Java program to streamline patient management and billing processes for a hospital. The program should facilitate the input of patient details, selection of diseases, choice of specialists, ICU admission, calculation of bills, application of GST (Goods and Services Tax), and provision of discounts based on certain conditions.

Description:

The **Hospital Billing Management System** is a Java-based console application designed to manage patient details and automate hospital billing processes. It allows users to enter patient information, select diseases and specialists, calculate ICU charges, apply GST, and offer discounts. The system ensures accurate billing and helps reduce manual errors, making hospital operations more efficient.

Technologies Used:

- **Java** – Core language used to build the application
- **OOP Concepts** – Utilized classes, objects, inheritance, interfaces, and encapsulation
- **Scanner Class** – For handling user input via console
- **Exception Handling** – Used to manage invalid inputs (e.g., InputMismatchException)
- **Console-Based UI** – Simple text-based interaction for data input and output

Code:

```java
import java.util.*;
interface tax
{
  public void gst(double g);
}
class maintenance
{
    int m = 1500;

}
class Hospital extends maintenance implements tax
{
   String name;
   int age;
```

```java
    String gender;
    int phno;
    String address;
    int ICU = 1200;
    double bal =m;

    Hospital()
    {
        System.out.println("Welcome to the Hospital");
    }

    void get_details()
    {
        Scanner scr = new Scanner(System.in);
        System.out.println("Enter the Customer information");
        System.out.println("Enter Name:");
        name = scr.nextLine();
        System.out.println("Enter Age:");
        age = scr.nextInt();
        System.out.println("Enter Gender:");
        gender = scr.next();
        System.out.println("Enter Phone Number:");
        phno = scr.nextInt();
        System.out.println("Enter Address:");
        address = scr.next();
    }
    void total(int t)
    {
        bal = bal+t;
    }
public void gst(double g)
    {
        g=g/100*bal;
        bal+=g;
    }
    int z;
    void discount(double f)
    {
        z=(int)f;
        f=f/100*bal;
        bal -=f;
```

```java
    }
    void print_details()
    {
      System.out.println("Getting the Customer information");
      System.out.println("Name : " + name);
      System.out.println("Age :" + age);
      System.out.println("Gender : " + gender);
      System.out.println("Mobile Number:" + phno);
      System.out.println("Address :" + address);
      System.out.println("Total payable bill(incl with GST 5% and Discount "+ z +"%) : " +bal);
    }
}

class one
{
  public static void main(String ar[])throws InputMismatchException
  {

    int i, n, a = 0, b = 0;
     Scanner sc = new Scanner(System.in);
    System.out.println("Enter the no.of patients:");
    n= sc.nextInt();
    Hospital h[] = new Hospital[n];
    for (i = 0; i < n; i++)
       h[i] = new Hospital();
    for (i = 0; i < n; i++)
    {
      h[i].get_details();
      System.out.println("List of diseases:");
      System.out.println("1. Cancer\n2. Skin related\n3. Cardiac disease\n4. Eye related\n5. Tooth related\n6.
Bone related\n7. Urinary tract related\n8. Nervous system related\n9. Female reproductive health related\nEnter
the Valid Choice: ");
      a = sc.nextInt();
      switch (a)
       {
         case 1:
            h[i].total(80000);
            break;
         case 2:
            h[i].total(10000);
```

```java
            break;
        case 3:
            h[i].total(5000);
            break;
        case 4:
            h[i].total(2500);
            break;
        case 5:
            h[i].total(2000);
            break;
        case 6:
            h[i].total(2500);
            break;
        case 7:
            h[i].total(3000);
            break;
        case 8:
            h[i].total(4000);
            break;
        case 9:
            h[i].total(5000);
            break;
        default:
            System.out.println("Enter a valid choice");
            break;
    }

    System.out.println("Select the Specialist:");
    System.out.println("1. Oncologist\n2. Dermatologist\n3. Cardiologist\n4. Ophthalmologist\n5. Dentist\n6. Orthopedist\n7. Urologist\n8. Neurologist\n9. Gynecologist\nEnter your choice: ");
    b = sc.nextInt();
    switch (b)
    {
        case 1:
        case 2:
            h[i].total(1500);
            break;
        case 3:
        case 4:
            h[i].total(1000);
            break;
```

```java
            case 5:
            case 6:
            case 7:
                h[i].total(500);
                break;
            case 8:
            case 9:
                h[i].total(2000);
                break;
            default:
                System.out.println("Enter a valid choice");
                break;
        }
        System.out.println("If you have been admitted to the ICU by typing YES or NO if not:");
        String c = sc.next().toUpperCase();
        if (c.equals("YES"))
        {
            System.out.println("Enter no.of days :  ");
            int d = sc.nextInt();
            int amu = h[i].ICU * d;
            h[i].total(amu);
        }
        if(h[i].bal>=5000)
        {
            System.out.println("Enter the GST percentage:");
            int Gst=sc.nextInt();
            h[i].gst(Gst);
        }
        if(h[i].bal>=5000)
        {
            System.out.println("Enter the dicount percentage:");
            int dis=sc.nextInt();
            h[i].discount(dis);
        }

        h[i].print_details();
    }

  }
}
```

Output:

```
Command Prompt          ×    +   ∨

Microsoft Windows [Version 10.0.22631.3374]
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C:\Users\b-cse-218-17>cd\

C:\>cd s.java

C:\s.java>javac one.java

C:\s.java>java one
Enter the no.of patients:
1
Welcome to the Hospital
Enter the Customer information
Enter Name:
ragavi
Enter Age:
19
Enter Gender:
female
Enter Phone Number:
12345678
Enter Address:
blr
List of diseases:
1. Cancer
2. Skin related
3. Cardiac disease
4. Eye related
5. Tooth related
6. Bone related
7. Urinary tract related
8. Nervous system related
9. Female reproductive health related
Enter the Valid Choice:
4
Select the Specialist:
1. Oncologist
2. Dermatologist
3. Cardiologist
4. Ophthalmologist
5. Dentist
6. Orthopedist
7. Urologist
```

```
8. Neurologist
9. Gynecologist
Enter your choice:
4
If you have been admitted to the ICU by typing YES or NO if not:
no
Enter the GST percentage:
5
Enter the dicount percentage:
5
Getting the Customer information
Name : ragavi
Age :19
Gender : female
Mobile Number:12345678
Address :blr
Total payable bill(incl with GST 5% and Discount 5%) : 4987.5
```

Conclusion:

The **Hospital Billing Management System** simplifies hospital billing by automating patient data entry, disease and specialist selection, ICU charges, GST, and discounts using Java. It reduces manual effort, improves accuracy, and ensures transparency in billing. This project serves as a basic model for future improvements like GUI integration or database support.

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