JAVA INOVATIVE ASSIGNMENT

```
/*
```

Definition-

We have created a 'Hospital Management System' which we provide a service to patients. It will give real time Scenario of no of beds available in hospital as well as give the correct time to visit the hospital where they will no longer wait for 1-2 hours earlier.

This service includes Emergency case,opd case,Viral fever,Fracture etc.

Description:

We have used queues to show patients no of case after which their turn will comes and provide the correct timing when the doctor will give time to them.

We have used class where patients name,age,gender will be in one class,and the other class will be emergency case,opd case etc.

The patients check-in and checkout using enqueue and dequeue.

A static varaiable will be created to show the time to the patients whenever thier turn comes i.e (at every enqueue we will increase the time by 15-20 min).

```
*/
```

//main.java

```java
import java.util.Scanner;

public class Main
{
        public static void main(String[] args){
                patient general[]=new patient[50];   //Creating the array of objects
                patient covid[]=new patient[25];
                patient bp[]=new patient[15];
                patient m=new patient();
                m.set();   //Intaializing the time
                Scanner sc=new Scanner(System.in);
                boolean hospital=true;
                newcase g=new newcase();   //making new cases for each object
                newcase c=new newcase();
                newcase e=new newcase();
                System.out.printf("-------------------------------------------------------------------------------
\n\n");
```

```java
System.out.printf("\t\t\t|       INNOVATIVE ASSIGNMENT       |\n\n");

System.out.printf("\t\t\t| OBJECT ORIENTED PROGRAMMING - 2CS302 |\n\n");

System.out.printf("\t\t\t|   SUBMITTED TO : Prof.KAVITA TEWANI   |\n\n");

System.out.printf("\t\t\t| SUBMITTED BY : SAMARIYA DARSH 19BCE236 |\n\n");

System.out.printf("\t\t\t|        RUDHRANSH VYAS 19BCE228 |\n\n");

System.out.printf("\t\t\t|        RONAK SAXENA  19BCE244 |\n\n");

System.out.printf("-------------------------------------------------------------------------
\n");

System.out.printf("\n\n\n\n\t\t\t--------------------------------");
System.out.printf("\n\t\t\t|        WELCOME TO        |");

System.out.printf("\n\t\t\t| NIRMA HOSPITAL MANAGEMENT SYSTEM |");

System.out.printf("\n\t\t\t--------------------------------\n\n");


while(hospital)
{
 System.out.printf("WELCOME TO NIRMA HOSPITAL MANAGEMENT SYSTEM\n");
 System.out.print("\n_____\n");

System.out.print("| Press 1. GENERAL CASE    | \n");
 System.out.print("|_____| \n\n");

 System.out.print(" _____ \n");

System.out.print("| Press 2. COVID-19 CONSULTING CASE      | \n");
 System.out.print("|_____| \n\n");

 System.out.print(" _____ \n");

 System.out.print("| Press 3. ACCIDENT OR RELATED EMERGENCY CASE       | \n");
 System.out.print("|_____|
\n\n");

 System.out.print(" _____\n");

 System.out.print("| Press 4. TO EXIT THE APPLICATION      | \n");
 System.out.print("|_____|
\n\n");

int y=sc.nextInt();  //taking input as per users choice
switch(y)
{
case 1:
```

```java
                {
                        String s1="GENERAL";

                        String s2="Dr Piyush Patel";

                        String s3="A Block";

                        g.NEW(y,general,s1,s2,s3);   //All details going in Method NEW

                        break;                //and therby performing operartion as per user's choice
                }
                case 2:
                {

                        String s1="COVID-19";

                        String s2="Dr Kalpesh Agarwal";

                        String s3="B Block";

                        c.NEW(y,covid,s1,s2,s3);

                        break;
                }
                case 3:
                {

                        String s1="ACCIDENT OR RELATED EMERGENCY CASE";

                        String s2="Dr Rahul Mishra";

                        String s3="C Block";

                        e.NEW(y,bp,s1,s2,s3);

                        break;
                }
                case 4:
                  {
                     hospital=false;
                     break;
                  }


                }
                }
        }
}
```

// person.java

```java
import java.util.Scanner;

import java.sql.*;

abstract class person {      //use of abstarct class of class name person

 String name,city;

int age;

long  phone;

abstract void details();

abstract void display(int i,int y,String s1,String s2,String s3);



}
class patient extends person
{
        static int hour[]=new int[4];

        static int minute[]=new int[4];   //making an static array as hour,minute is same for all objects

        static int second[]=new int[4];

        int h,m,s;



        static void set()
                {
                for(int i=1;i<4;i++)
                        {
                                hour[i]=10;     //setting the starting time of the hospital

                                minute[i]=0;

                                second[i]=0;



                        }
                }
        int sethour(int y)
         {
                 return hour[y];
```

```java
        }
    int setminute(int y)
    {
            return minute[y];
    }


    Scanner sc=new Scanner(System.in);



    void increase(int y)     //increase the time slot for next patient
    {
            if(y==1 || y==2)
            {
            minute[y]=minute[y]+15;  //if general or covid increase by 15 minutes
            }
            if(y==3)
            {
                    minute[y]=minute[y]+20;  //for bp related increase time by 20 min
            }


    }
void  details()
        {
            System.out.printf("(1) Enter your name :- ");  //taking inputs from patients
            name=sc.nextLine();
            System.out.printf("(2) Enter your age :- ");
            age=sc.nextInt();
            System.out.print("(3) Enter your phone no :-");
            phone=sc.nextLong();
            System.out.printf("(4) Enter your city :- ");
            String d=sc.nextLine();
        city=sc.nextLine();
    }
```

```java
void display(int i,int y,String s1,String s2,String s3)  //displaying patients data
{

          h=sethour(y);
          m=setminute(y);
          java.sql.Time time=new java.sql.Time(h,m,s);  //use of java sql for Time management
          System.out.printf("Your %s case token no is :%d\n",s1,i);
          System.out.printf("--------------------------------------------------------\n");
          System.out.printf("Name :%s | Age :%d | Phone Number :%d | City :%s | \n",name,age,phone,city);
          System.out.printf("--------------------------------------------------------\n");
          System.out.println("Please Meet "+s2+" in "+s3+" At time "+time.toString());


          System.out.printf("\n");


}
void timedisplay(int n,int y,String s1,String s2,String s3)  //same it also displays time by not the user details
{

          java.sql.Time time=new java.sql.Time(this.h,this.m,s);
          System.out.printf("Your %s case token no is :%d\n",s1,n);
          System.out.println("Please Meet "+s2+" in "+s3+" At time "+time.toString());
          System.out.printf("\n");
}



}
```

//newcase.java

```java
import java.util.Scanner;
class newcase {
        int i[]=new int[4];
        int r[]=new int[4];
        int f[]=new int[4];
        int size[]=new int[4];
        newcase()   //constructor
        {
                for(int j=1;j<=3;j++)
                {
                        i[j]=r[j]=f[j]=0;
                }
                size[1]=50;
                size[2]=25;
                size[3]=15;
        }
public void NEW(int y,patient p[],String s1,String s2,String s3)   //method NEW
        {
         Scanner sc=new Scanner(System.in);
         boolean hos=true;
         while(hos)
         {
                System.out.println("YOU ARE VIEWING "+s1+" CASE"+" APPLICATION ");
                System.out.print("\n _____ \n");
          System.out.print("|  1. ADMINISTRATOR     | \n");
                System.out.print("|_____| \n\n");
                System.out.print("_____ \n");
          System.out.print("|  2. PATIENT        | \n");
                System.out.print("|_____| \n\n");
                System.out.print(" _____\n");
                System.out.print("|  3. EXIT "+s1+ " APPLICATION     | \n");
                System.out.print("|    AND GO BACK TO  MAIN MENU    | \n");
                System.out.print("|_____| \n\n");

                System.out.println("Enter your choice from 1 to 3:- ");
                int temp=sc.nextInt();
                switch(temp)
                {
                case 1:
                {
        System.out.printf("PRESS: " );
        System.out.printf("\n _____ \n");
                System.out.printf("|  1-> TO VIEW All PATIENT  RECORD FOR  THIS CASE | \n");
                        System.out.printf("|_____| \n");
                System.out.printf("|   0-> to EXIT                   | \n");
                        System.out.printf("|_____| \n\n");
        int k=sc.nextInt();
        if(k==1)
        {
            if(f[y]==0)
            {
                    System.out.println("NO DATA TO DISPLAY");
            }
            else {
            for(int j=f[y];j<r[y];j++)
                    {
                        System.out.printf("---------------------------------------------------------------\n ");
                            System.out.printf(" NAME = %s    |    CITY = %s   |   AGE = %d | PHONE = %d | \n
",p[j].name,p[j].city,p[j].age,p[j].phone);
                            p[j].timedisplay(j,y,s1,s2,s3);
```

```java
                    System.out.printf("----------------------------------------------------------------\n");
                }
        hos=true;}
    }
    else hos=true;
    break;
                }
                    case 2:
                    {
                            boolean todo=true;

                                while(todo)
                                {
                                        System.out.println();
                                        if(f[y]==0)
                                        {
                                                System.out.println("NO CASE REGISTERED  TODAY in "+s1+"
Case");
                                        }                       //showing total/current cases that are registered
today
                                        else {
                                        System.out.printf("CURRENT TOKEN  for %s IS %d/%d\n",s1,f[y],size[y]);
                                        }
                                System.out.printf(" PRESS\n");
                                System.out.printf(" 1| For new %s case \n 2| To find Your Time Slot \n 3| IF your
token is same as current token \n 4| To go back\n:->",s1);
                                int k=sc.nextInt();
                                switch(k)
                                {
                                case 1:             //for new case
                                {
                                if(i[y]==0)
                                {
                                        r[y]=1;
                                        f[y]=1;
                                        i[y]=1;
                                }
                                if(i[y]==size[y])           //checking all the formalities if the new case token no is not
exceeding
                                {
                                        System.out.println("FULL NO MORE  CASES TAKEN TODAY");
                                        todo=false;
                                        break;
                                }
                                 p[i[y]]=new patient();          //making a object of patient
                                        p[i[y]].details();
                                         System.out.println("Your slot is SUCCESSFULLY Confirmed");
                                         p[i[y]].display(i[y],y,s1,s2,s3);             //all methods are stored in class
patient
                                        p[i[y]].increase(y);         //increasing the time slot for other patient
                                        i[y]++;
                                        r[y]++;

                                        todo=false;
                                        break;

                                }
                                case 2:
                                {
                                        System.out.println("Enter patient token");  //making a service of showing
Time for a particular token
                                        int n=sc.nextInt();
                                        if(n<=i[y]-1)
```

```java
                {
                p[n].timedisplay(n,y,s1,s2,s3);
                }
                else
                {
                        System.out.println("Data not found");
                }
                todo=false;
                break;
        }
        case 3:
        {
                System.out.printf("Current token is %d\n",f[y]);    //For check-in in the
following case
                System.out.println("Enter ur token no");        //means if token matches
with current token
                int g=sc.nextInt();                     //then it has service to check-in
                if(f[y]==r[y])
                {
                        System.out.println("TOKEN size exceed");
                        todo=false;
                        break;
                }
                if(f[y]==size[y])
                {
                        System.out.println("TOKEN size exceed");
                        todo=false;
                        break;
                }
                if(g==f[y])
                {
                        boolean tome=true;
                        while(tome)
                        {
                        System.out.println("Enter your Phone no. for verification
purpose");  //for extra security by entering their name
                        long l=sc.nextLong();
                        if(l==p[f[y]].phone)
                        {
                                System.out.printf("Verification Successful and You can
GO IN \n");
                                p[f[y]].timedisplay(f[y],y,s1,s2,s3);
                                p[f[y]]=null;
                                        f[y]++;

                                break;
                        }
                        else
                        {
                                System.out.println("Verification UNSUCCESSFULL");
//if name not matches then patients entry will not be valid
                                System.out.println("To Re-Enter your Name press 1
(OR 0 to EXIT)");
                                int z=sc.nextInt();
                                if(z==1) tome=true;
                                else tome=false;

                        }
                        }
                }

                else
                {
```

```java
                            System.out.println("TOKEN NOT MATCHED");
                        }
                        todo=false;
                        break;
                    }
                    case 4:
                    {
                     todo=false;
                     break;
                    }

                    }
                }
                    hos=true;
                    break;

                }
        case 3:
        {
             hos=false;
             break;
        }
        }
        }

}
}
```

//THANK YOU