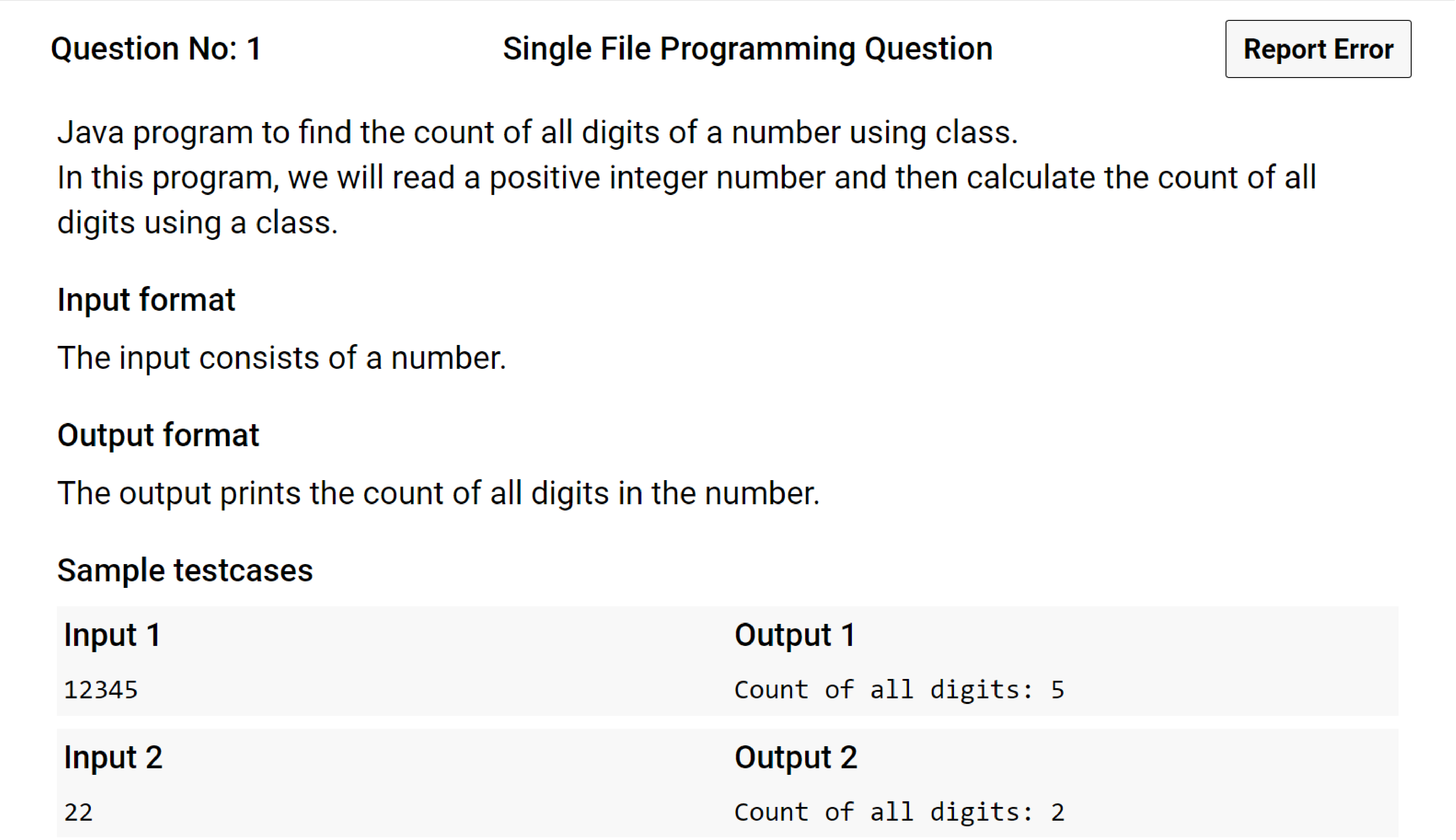


Question No: 1

Single File Programming Question

Java program to find the count of all digits of a number using class.
In this program, we will read a positive integer number and then calculate the count of all digits using a class.

Input format

The input consists of a number.

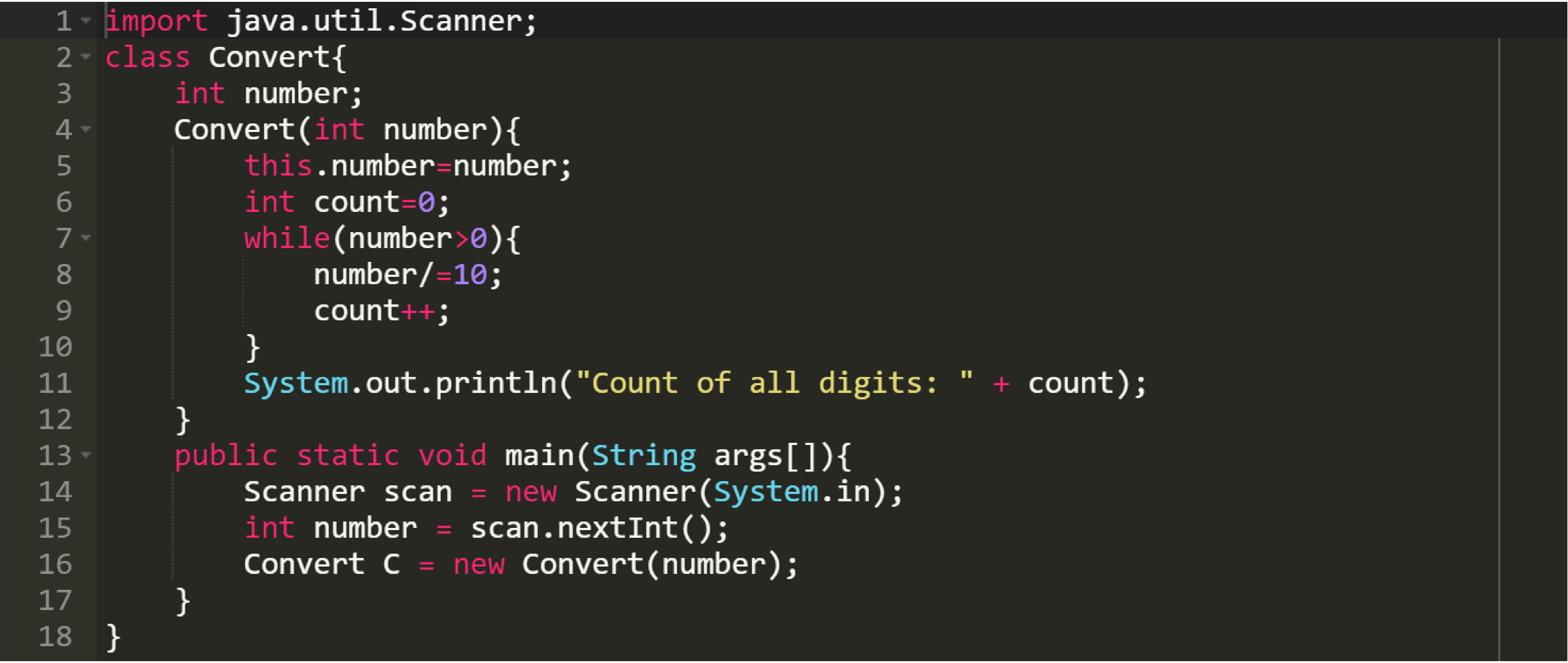
Output format

The output prints the count of all digits in the number.

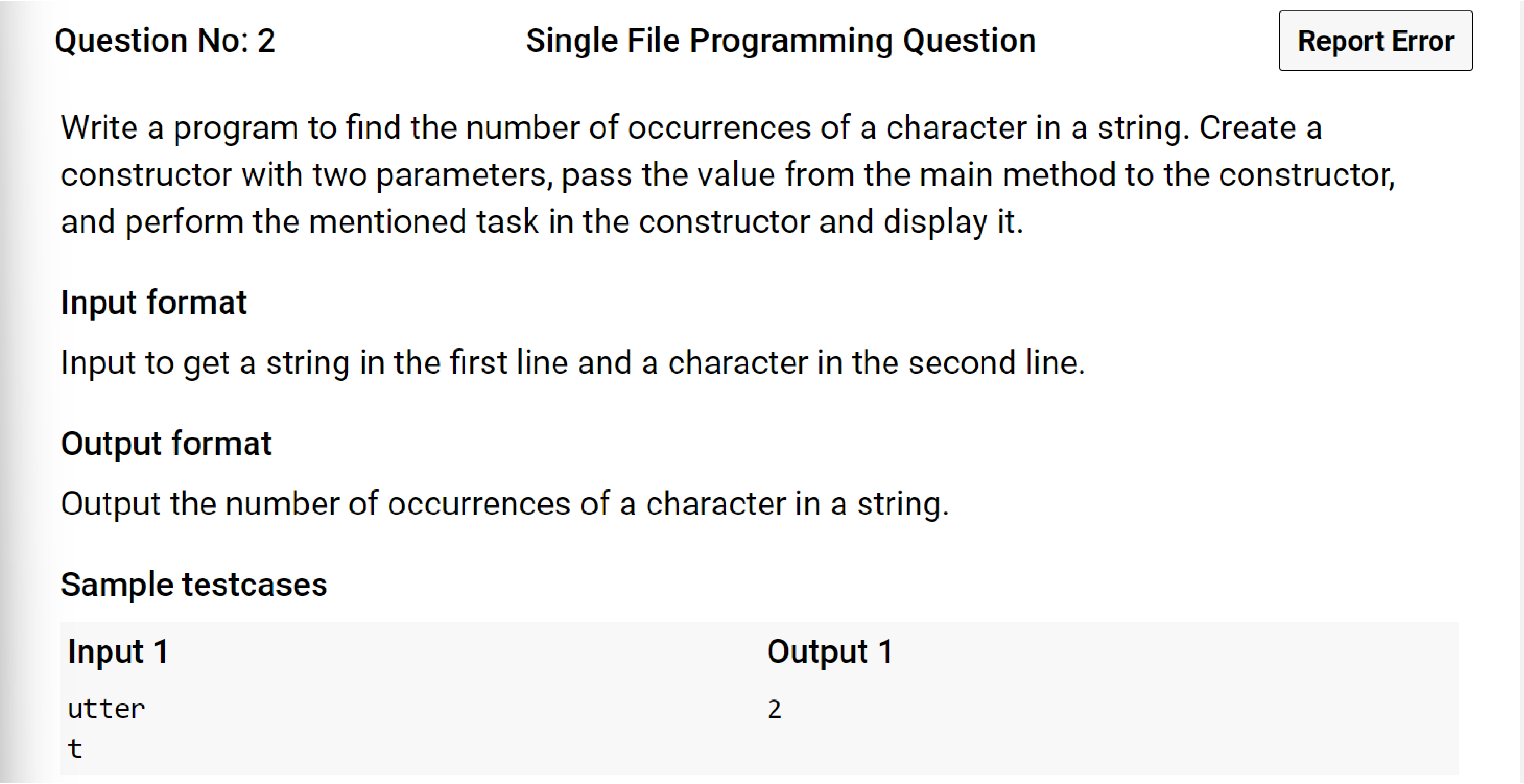
Sample testcases

Input 1	Output 1
`12345`	`Count of all digits: 5`

Input 2	Output 2
`22`	`Count of all digits: 2`



```java
import java.util.Scanner;
class Convert{
    int number;
    Convert(int number){
        this.number=number;
        int count=0;
        while(number>0){
            number/=10;
            count++;
        }
        System.out.println("Count of all digits: " + count);
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        int number = scan.nextInt();
        Convert C = new Convert(number);
    }
}
```



Question No: 2 Single File Programming Question

Write a program to find the number of occurrences of a character in a string. Create a constructor with two parameters, pass the value from the main method to the constructor, and perform the mentioned task in the constructor and display it.

Input format

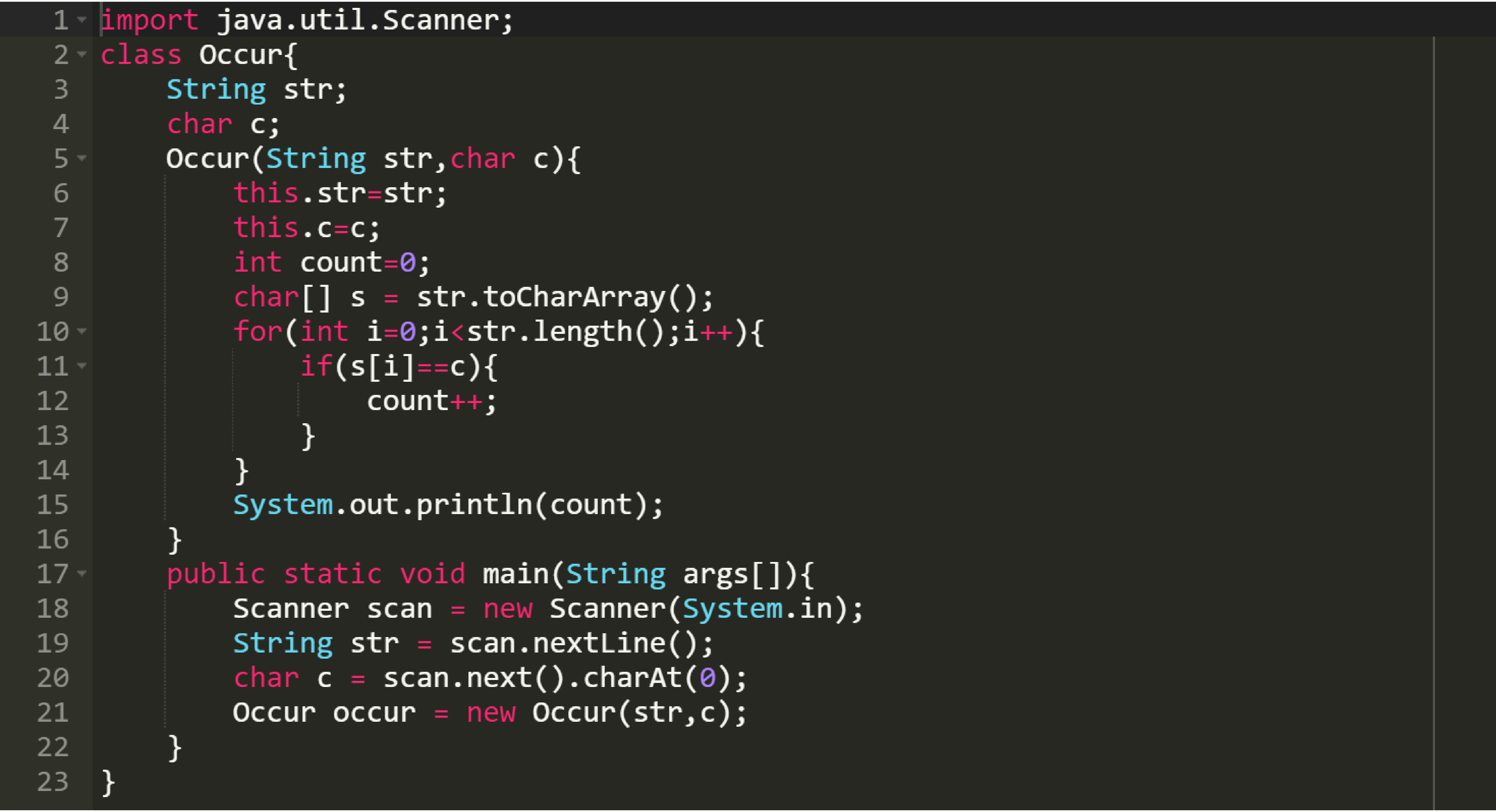
Input to get a string in the first line and a character in the second line.

Output format

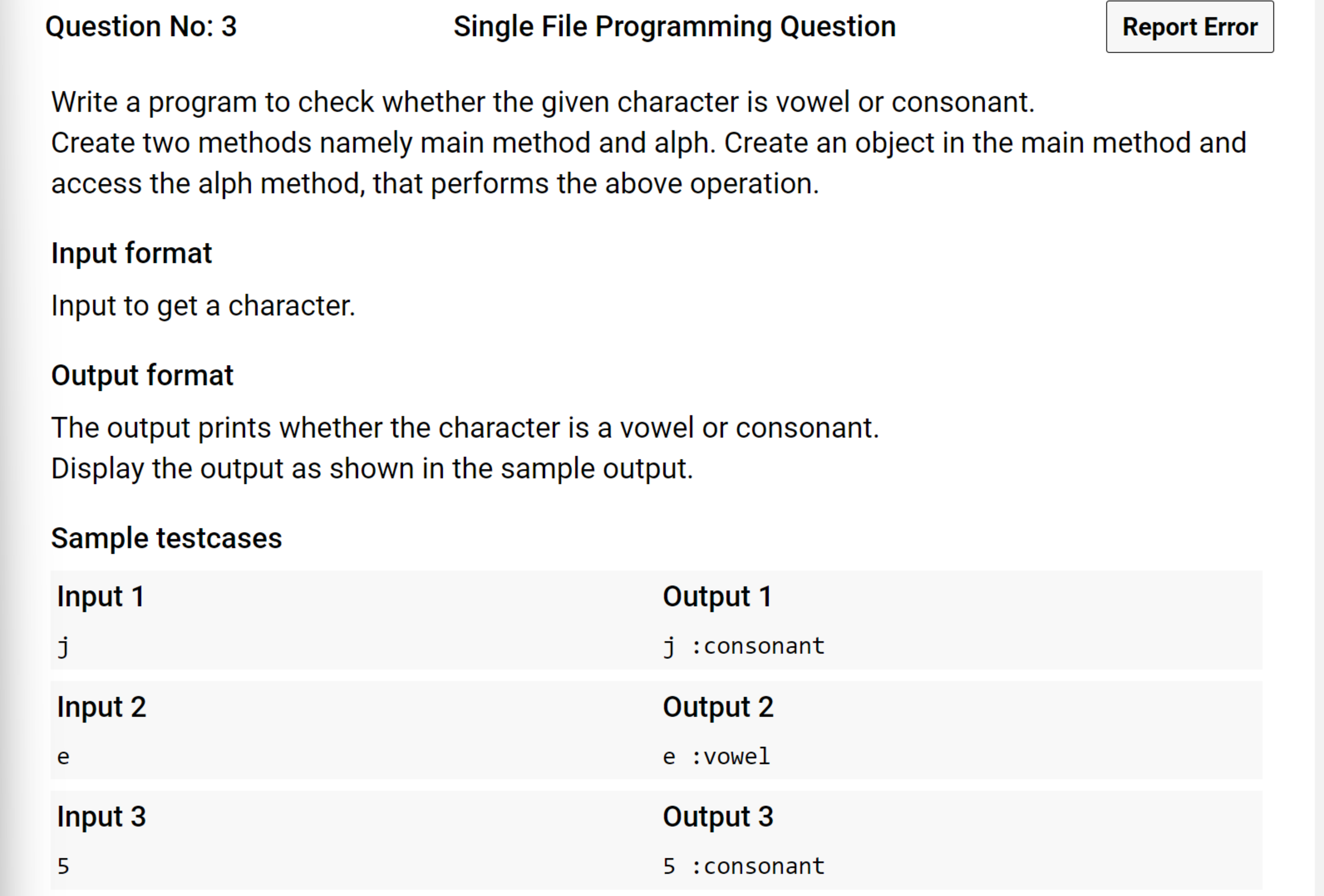
Output the number of occurrences of a character in a string.

Sample testcases

Input 1	Output 1
utter t	2



```java
import java.util.Scanner;
class Occur{
    String str;
    char c;
    Occur(String str,char c){
        this.str=str;
        this.c=c;
        int count=0;
        char[] s = str.toCharArray();
        for(int i=0;i<str.length();i++){
            if(s[i]==c){
                count++;
            }
        }
        System.out.println(count);
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        String str = scan.nextLine();
        char c = scan.next().charAt(0);
        Occur occur = new Occur(str,c);
    }
}
```



Question No: 3 Single File Programming Question Report Error

Write a program to check whether the given character is vowel or consonant.
Create two methods namely main method and alph. Create an object in the main method and access the alph method, that performs the above operation.

Input format

Input to get a character.

Output format

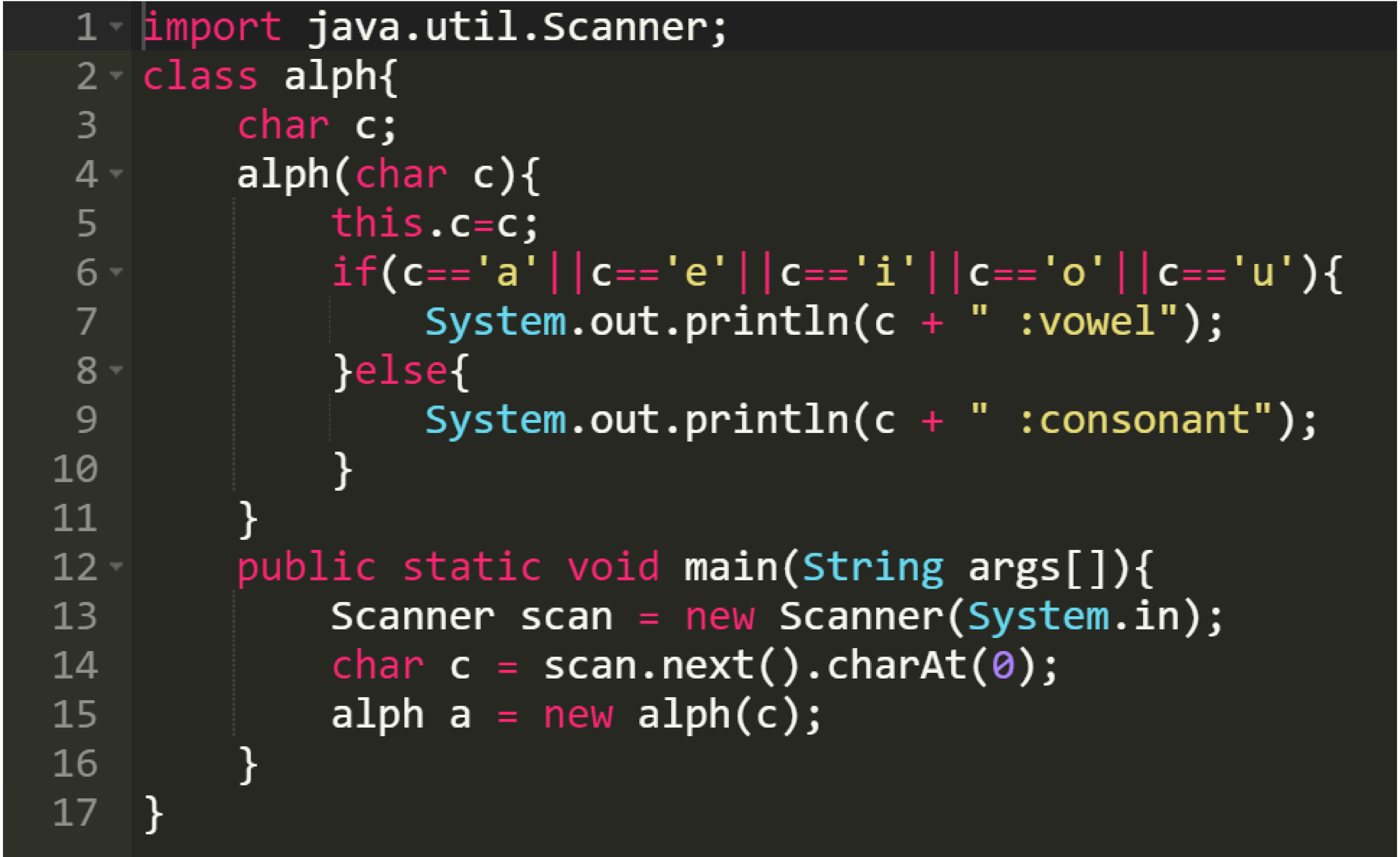
The output prints whether the character is a vowel or consonant.
Display the output as shown in the sample output.

Sample testcases

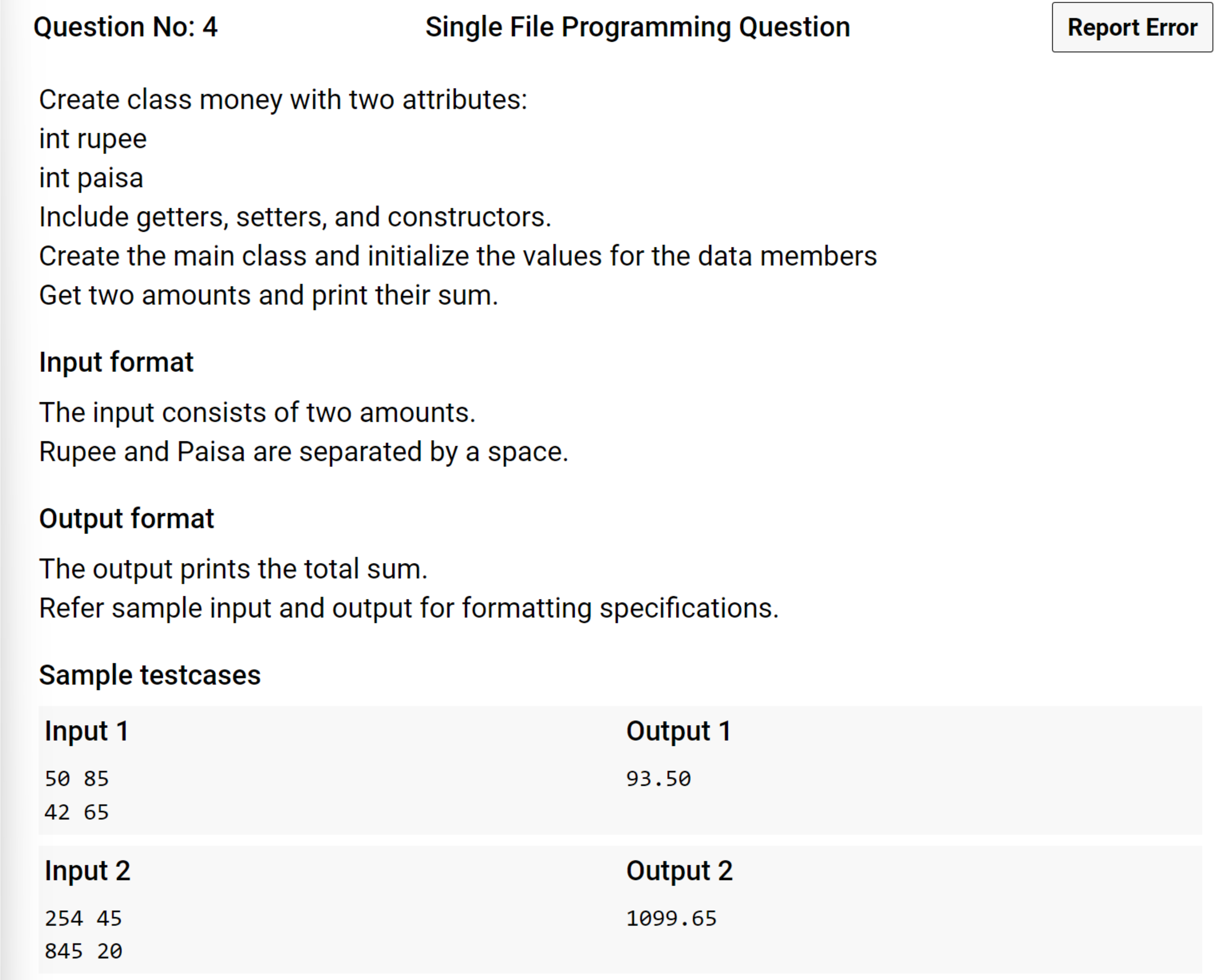
Input 1	Output 1
`j`	`j :consonant`

Input 2	Output 2
`e`	`e :vowel`

Input 3	Output 3
`5`	`5 :consonant`



```java
import java.util.Scanner;
class alph{
    char c;
    alph(char c){
        this.c=c;
        if(c=='a'||c=='e'||c=='i'||c=='o'||c=='u'){
            System.out.println(c + " :vowel");
        }else{
            System.out.println(c + " :consonant");
        }
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        char c = scan.next().charAt(0);
        alph a = new alph(c);
    }
}
```



Question No: 4 Single File Programming Question

Create class money with two attributes:
int rupee
int paisa
Include getters, setters, and constructors.
Create the main class and initialize the values for the data members
Get two amounts and print their sum.

Input format

The input consists of two amounts.
Rupee and Paisa are separated by a space.

Output format

The output prints the total sum.
Refer sample input and output for formatting specifications.

Sample testcases

Input 1

```
50 85
42 65
```

Output 1

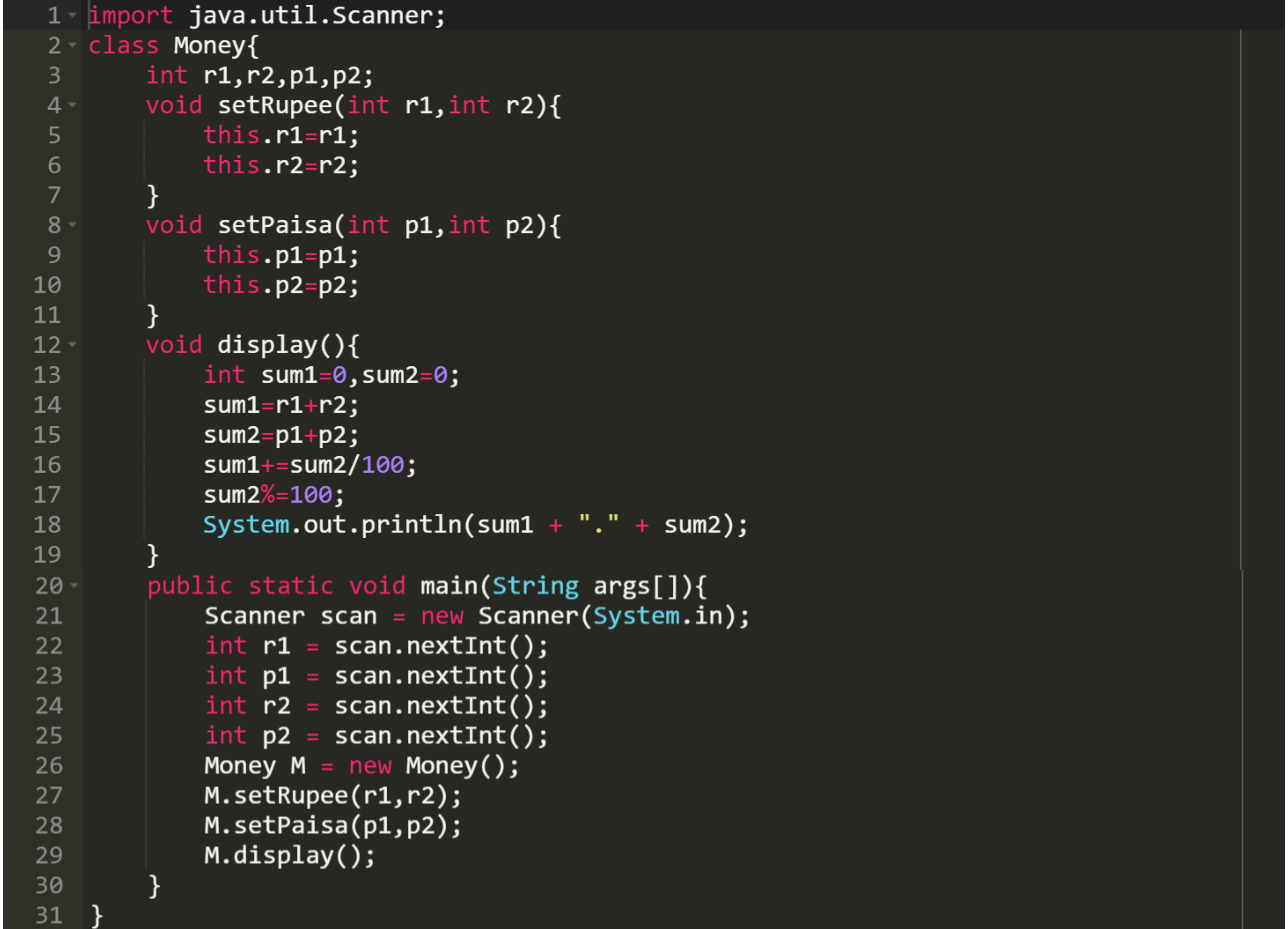
```
93.50
```

Input 2

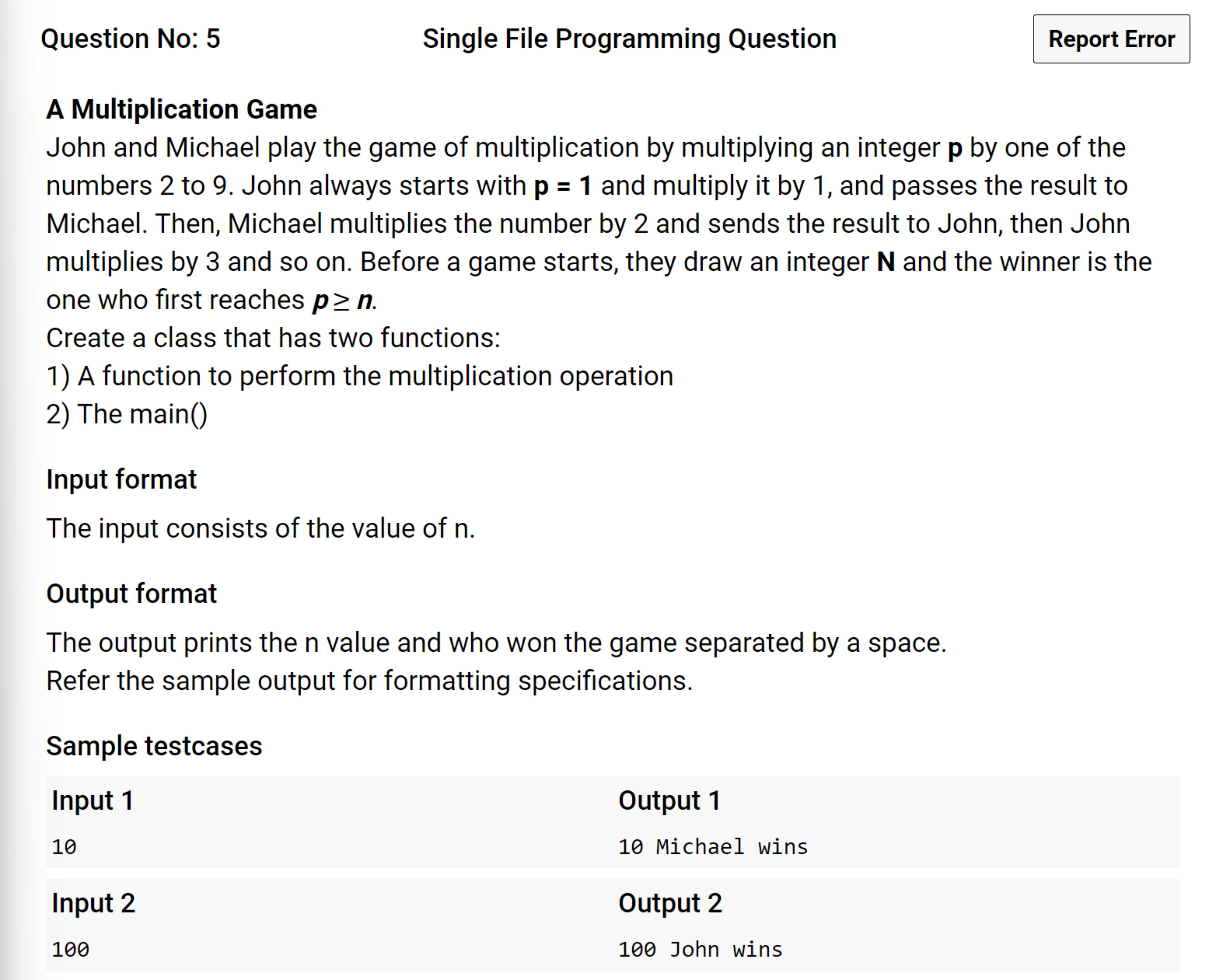
```
254 45
845 20
```

Output 2

```
1099.65
```



```java
import java.util.Scanner;
class Money{
    int r1,r2,p1,p2;
    void setRupee(int r1,int r2){
        this.r1=r1;
        this.r2=r2;
    }
    void setPaisa(int p1,int p2){
        this.p1=p1;
        this.p2=p2;
    }
    void display(){
        int sum1=0,sum2=0;
        sum1=r1+r2;
        sum2=p1+p2;
        sum1+=sum2/100;
        sum2%=100;
        System.out.println(sum1 + "." + sum2);
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        int r1 = scan.nextInt();
        int p1 = scan.nextInt();
        int r2 = scan.nextInt();
        int p2 = scan.nextInt();
        Money M = new Money();
        M.setRupee(r1,r2);
        M.setPaisa(p1,p2);
        M.display();
    }
}
```



Question No: 5 Single File Programming Question

A Multiplication Game

John and Michael play the game of multiplication by multiplying an integer **p** by one of the numbers 2 to 9. John always starts with **p = 1** and multiply it by 1, and passes the result to Michael. Then, Michael multiplies the number by 2 and sends the result to John, then John multiplies by 3 and so on. Before a game starts, they draw an integer **N** and the winner is the one who first reaches $p \geq n$.

Create a class that has two functions:

1) A function to perform the multiplication operation

2) The main()

Input format

The input consists of the value of n.

Output format

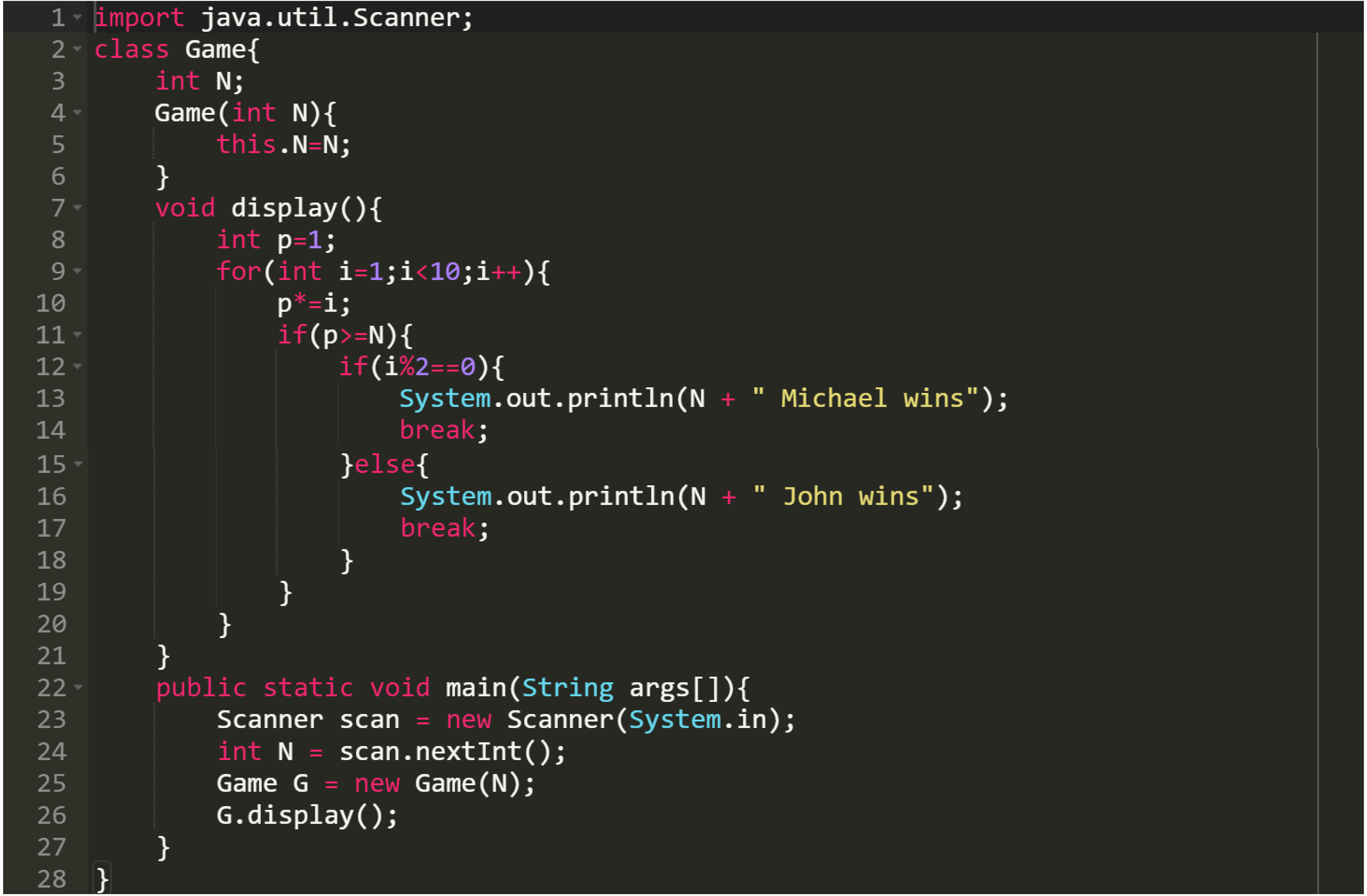
The output prints the n value and who won the game separated by a space.

Refer the sample output for formatting specifications.

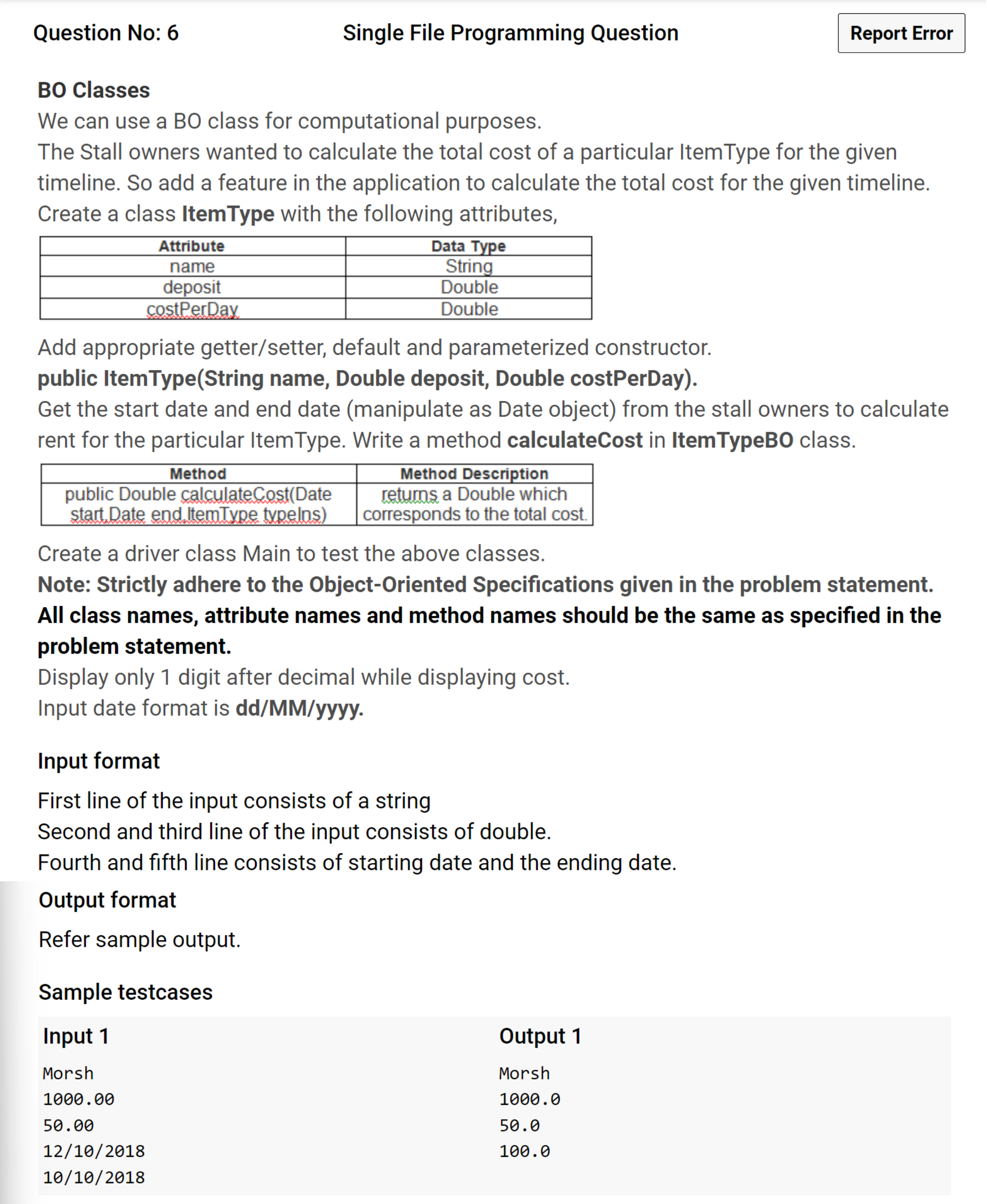
Sample testcases

Input 1	Output 1
`10`	`10 Michael wins`

Input 2	Output 2
`100`	`100 John wins`



```java
import java.util.Scanner;
class Game{
    int N;
    Game(int N){
        this.N=N;
    }
    void display(){
        int p=1;
        for(int i=1;i<10;i++){
            p*=i;
            if(p>=N){
                if(i%2==0){
                    System.out.println(N + " Michael wins");
                    break;
                }else{
                    System.out.println(N + " John wins");
                    break;
                }
            }
        }
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        int N = scan.nextInt();
        Game G = new Game(N);
        G.display();
    }
}
```



Question No: 6 Single File Programming Question

BO Classes

We can use a BO class for computational purposes.

The Stall owners wanted to calculate the total cost of a particular ItemType for the given timeline. So add a feature in the application to calculate the total cost for the given timeline.

Create a class **ItemType** with the following attributes,

Attribute	Data Type
name	String
deposit	Double
costPerDay	Double

Add appropriate getter/setter, default and parameterized constructor.

public ItemType(String name, Double deposit, Double costPerDay).

Get the start date and end date (manipulate as Date object) from the stall owners to calculate rent for the particular ItemType. Write a method **calculateCost** in **ItemTypeBO** class.

Method	Method Description
public Double calculateCost(Date start,Date end,ItemType typeIns)	returns a Double which corresponds to the total cost.

Create a driver class Main to test the above classes.

Note: Strictly adhere to the Object-Oriented Specifications given in the problem statement.

All class names, attribute names and method names should be the same as specified in the problem statement.

Display only 1 digit after decimal while displaying cost.

Input date format is **dd/MM/yyyy.**

Input format

First line of the input consists of a string

Second and third line of the input consists of double.

Fourth and fifth line consists of starting date and the ending date.

Output format

Refer sample output.

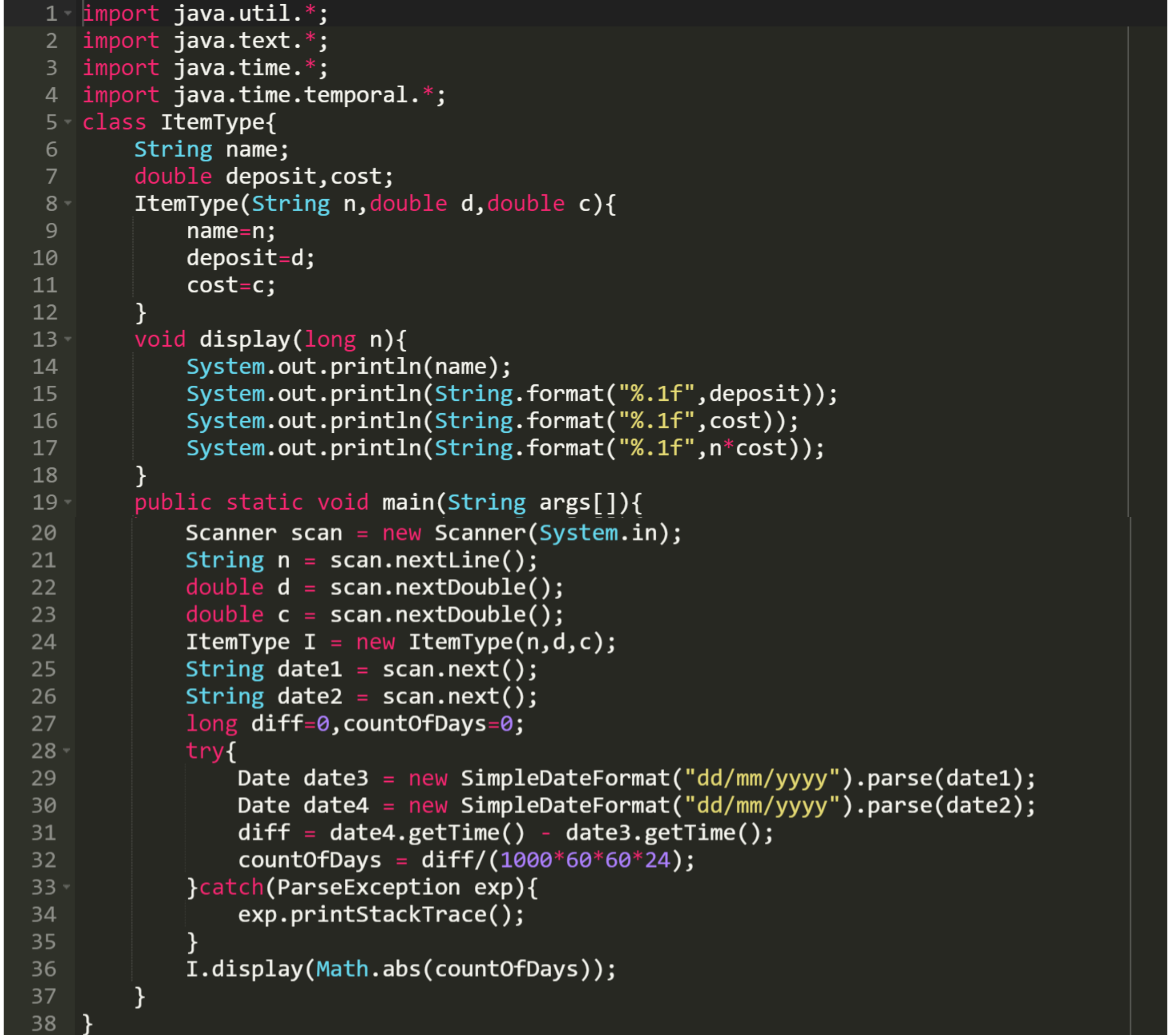
Sample testcases

Input 1

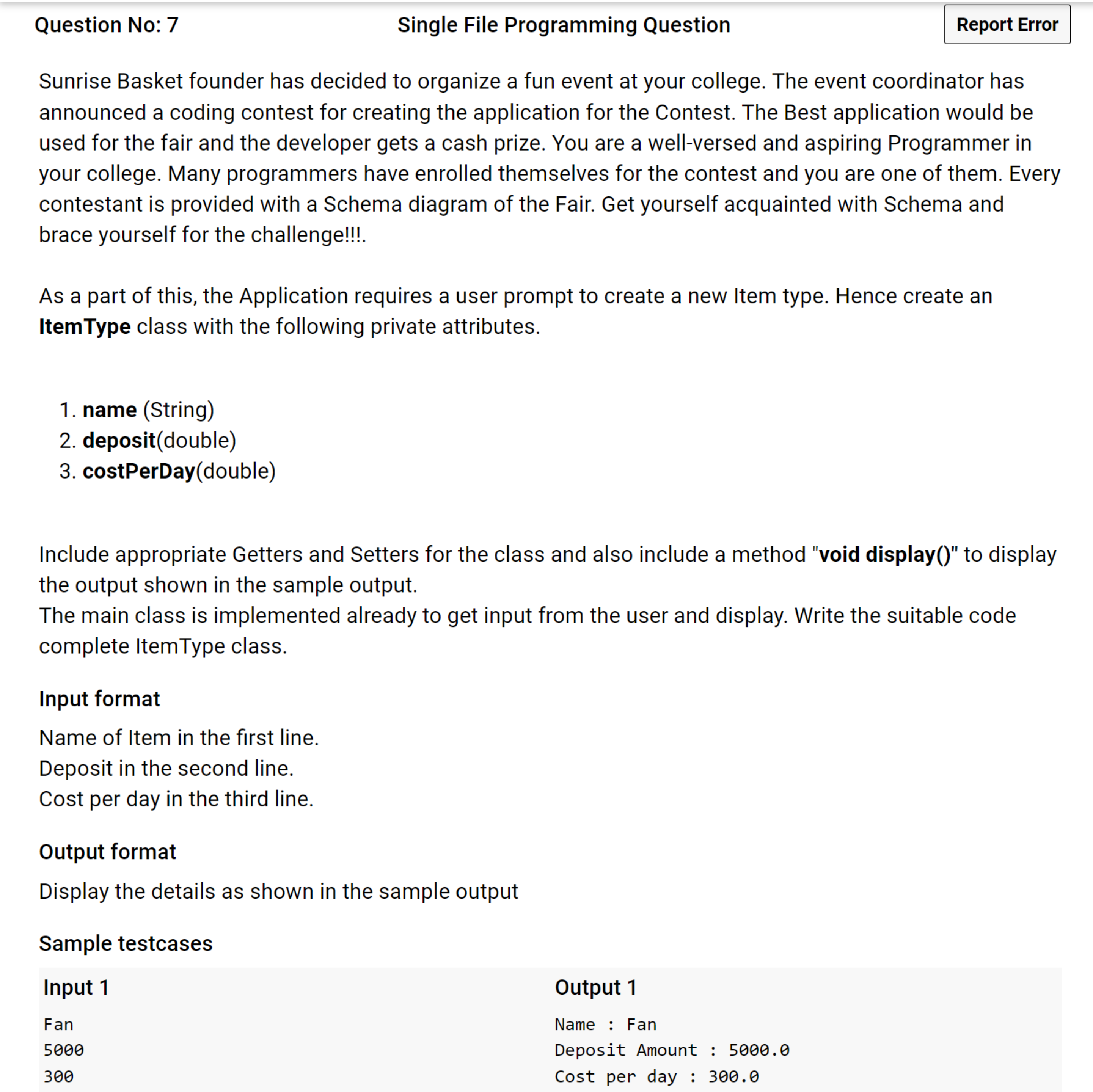
```
Morsh
1000.00
50.00
12/10/2018
10/10/2018
```

Output 1

```
Morsh
1000.0
50.0
100.0
```



```java
import java.util.*;
import java.text.*;
import java.time.*;
import java.time.temporal.*;
class ItemType{
    String name;
    double deposit,cost;
    ItemType(String n,double d,double c){
        name=n;
        deposit=d;
        cost=c;
    }
    void display(long n){
        System.out.println(name);
        System.out.println(String.format("%.1f",deposit));
        System.out.println(String.format("%.1f",cost));
        System.out.println(String.format("%.1f",n*cost));
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        String n = scan.nextLine();
        double d = scan.nextDouble();
        double c = scan.nextDouble();
        ItemType I = new ItemType(n,d,c);
        String date1 = scan.next();
        String date2 = scan.next();
        long diff=0,countOfDays=0;
        try{
            Date date3 = new SimpleDateFormat("dd/mm/yyyy").parse(date1);
            Date date4 = new SimpleDateFormat("dd/mm/yyyy").parse(date2);
            diff = date4.getTime() - date3.getTime();
            countOfDays = diff/(1000*60*60*24);
        }catch(ParseException exp){
            exp.printStackTrace();
        }
        I.display(Math.abs(countOfDays));
    }
}
```



Question No: 7 | Single File Programming Question | Report Error

Sunrise Basket founder has decided to organize a fun event at your college. The event coordinator has announced a coding contest for creating the application for the Contest. The Best application would be used for the fair and the developer gets a cash prize. You are a well-versed and aspiring Programmer in your college. Many programmers have enrolled themselves for the contest and you are one of them. Every contestant is provided with a Schema diagram of the Fair. Get yourself acquainted with Schema and brace yourself for the challenge!!!.

As a part of this, the Application requires a user prompt to create a new Item type. Hence create an **ItemType** class with the following private attributes.

1. **name** (String)
2. **deposit**(double)
3. **costPerDay**(double)

Include appropriate Getters and Setters for the class and also include a method "**void display()**" to display the output shown in the sample output.
The main class is implemented already to get input from the user and display. Write the suitable code complete ItemType class.

Input format

Name of Item in the first line.
Deposit in the second line.
Cost per day in the third line.

Output format

Display the details as shown in the sample output

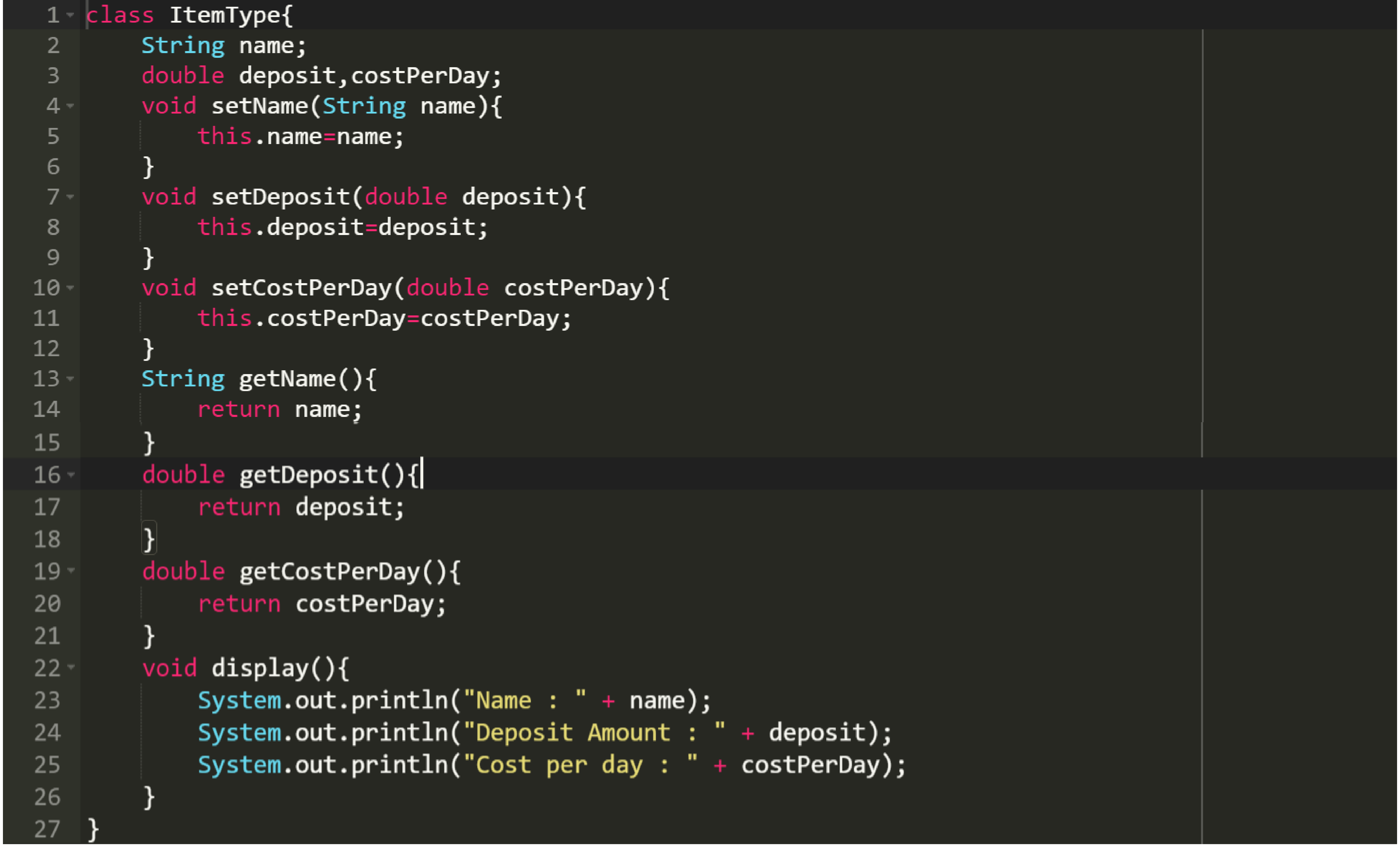
Sample testcases

Input 1

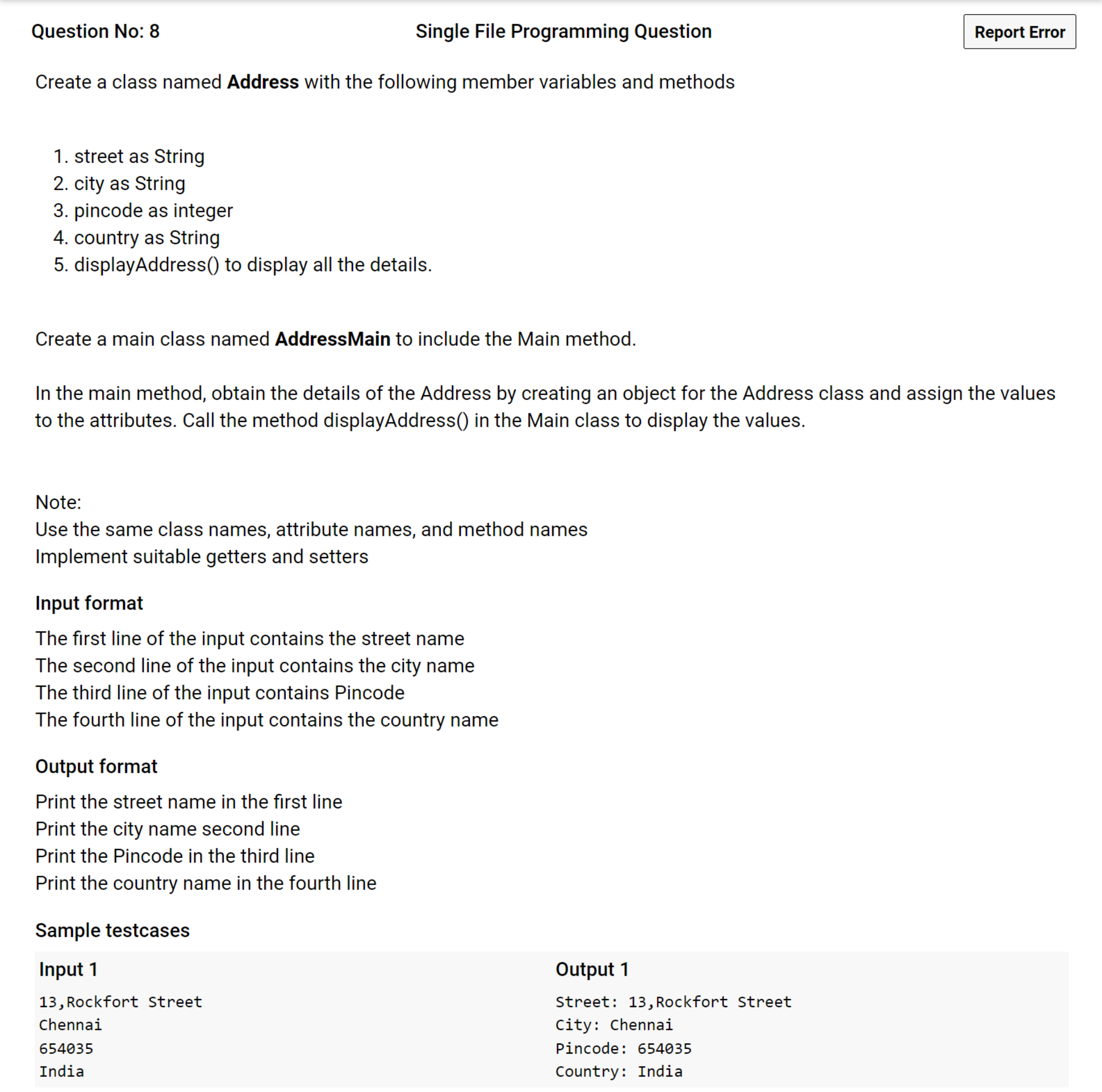
```
Fan
5000
300
```

Output 1

```
Name : Fan
Deposit Amount : 5000.0
Cost per day : 300.0
```



```java
class ItemType{
    String name;
    double deposit,costPerDay;
    void setName(String name){
        this.name=name;
    }
    void setDeposit(double deposit){
        this.deposit=deposit;
    }
    void setCostPerDay(double costPerDay){
        this.costPerDay=costPerDay;
    }
    String getName(){
        return name;
    }
    double getDeposit(){
        return deposit;
    }
    double getCostPerDay(){
        return costPerDay;
    }
    void display(){
        System.out.println("Name : " + name);
        System.out.println("Deposit Amount : " + deposit);
        System.out.println("Cost per day : " + costPerDay);
    }
}
```



Question No: 8 **Single File Programming Question**

Create a class named **Address** with the following member variables and methods

1. street as String
2. city as String
3. pincode as integer
4. country as String
5. displayAddress() to display all the details.

Create a main class named **AddressMain** to include the Main method.

In the main method, obtain the details of the Address by creating an object for the Address class and assign the values to the attributes. Call the method displayAddress() in the Main class to display the values.

Note:
Use the same class names, attribute names, and method names
Implement suitable getters and setters

Input format

The first line of the input contains the street name
The second line of the input contains the city name
The third line of the input contains Pincode
The fourth line of the input contains the country name

Output format

Print the street name in the first line
Print the city name second line
Print the Pincode in the third line
Print the country name in the fourth line

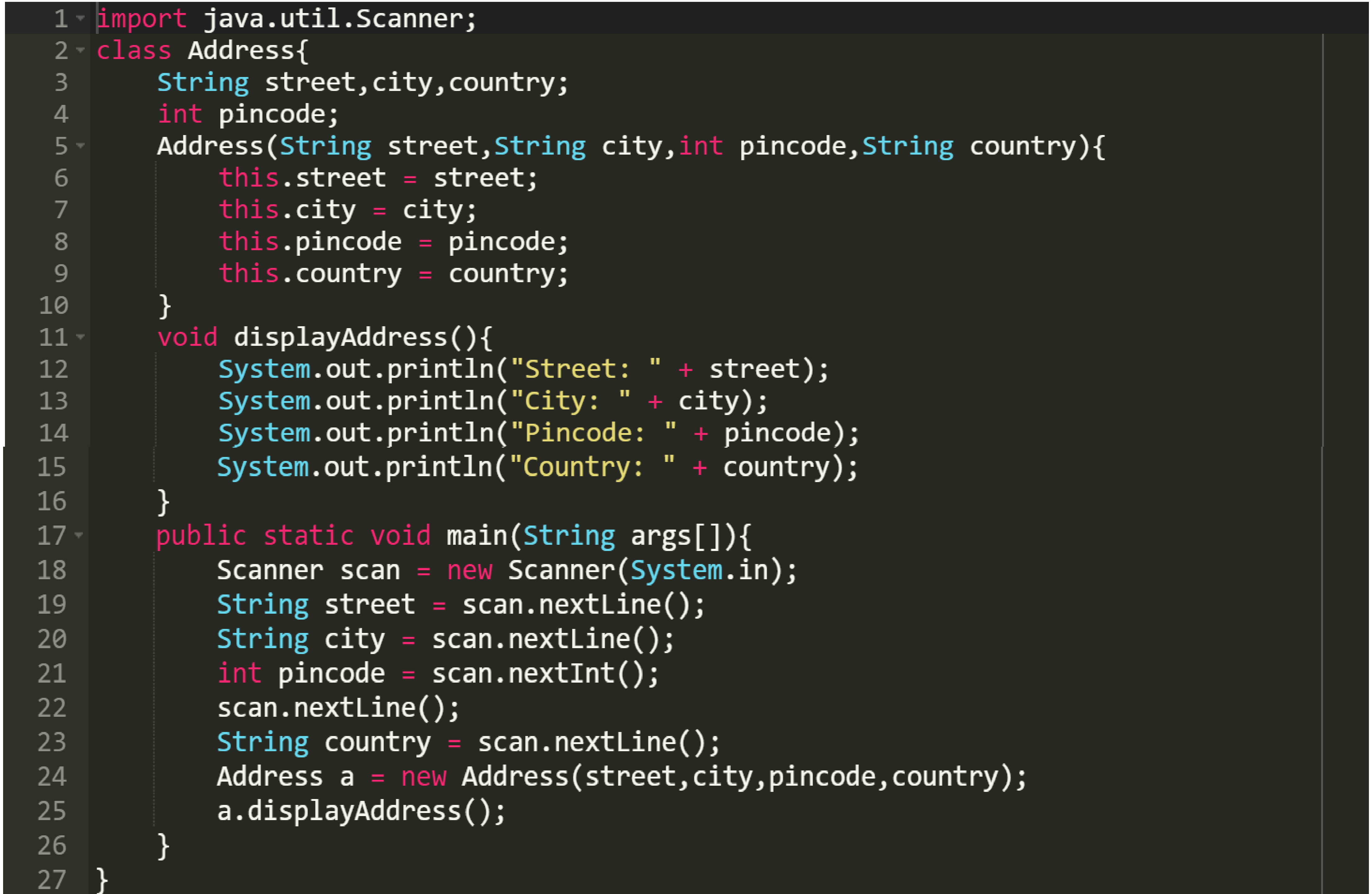
Sample testcases

Input 1

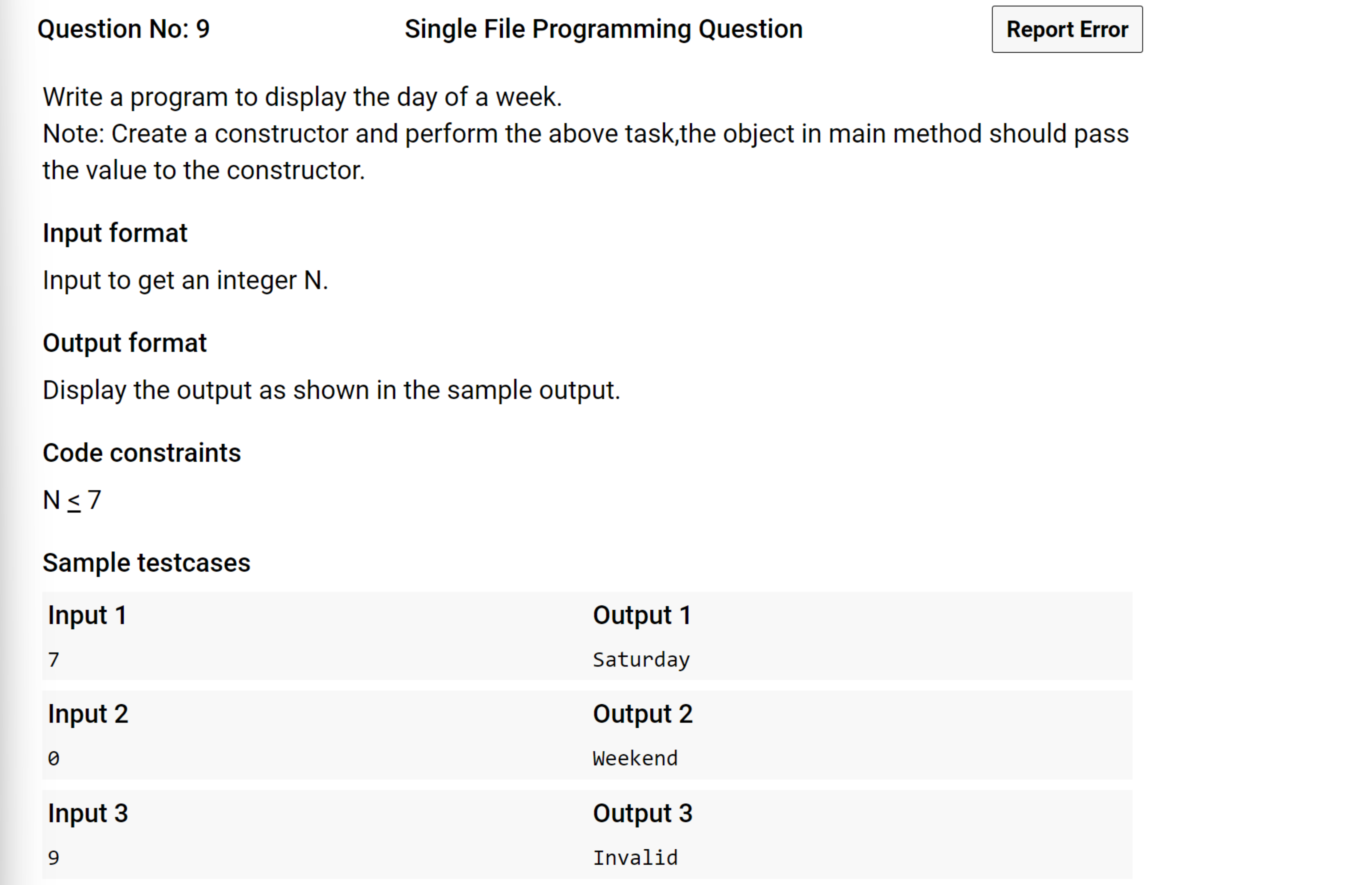
```
13,Rockfort Street
Chennai
654035
India
```

Output 1

```
Street: 13,Rockfort Street
City: Chennai
Pincode: 654035
Country: India
```



```java
import java.util.Scanner;
class Address{
    String street,city,country;
    int pincode;
    Address(String street,String city,int pincode,String country){
        this.street = street;
        this.city = city;
        this.pincode = pincode;
        this.country = country;
    }
    void displayAddress(){
        System.out.println("Street: " + street);
        System.out.println("City: " + city);
        System.out.println("Pincode: " + pincode);
        System.out.println("Country: " + country);
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        String street = scan.nextLine();
        String city = scan.nextLine();
        int pincode = scan.nextInt();
        scan.nextLine();
        String country = scan.nextLine();
        Address a = new Address(street,city,pincode,country);
        a.displayAddress();
    }
}
```



Question No: 9 **Single File Programming Question**

Write a program to display the day of a week.
Note: Create a constructor and perform the above task,the object in main method should pass the value to the constructor.

Input format

Input to get an integer N.

Output format

Display the output as shown in the sample output.

Code constraints

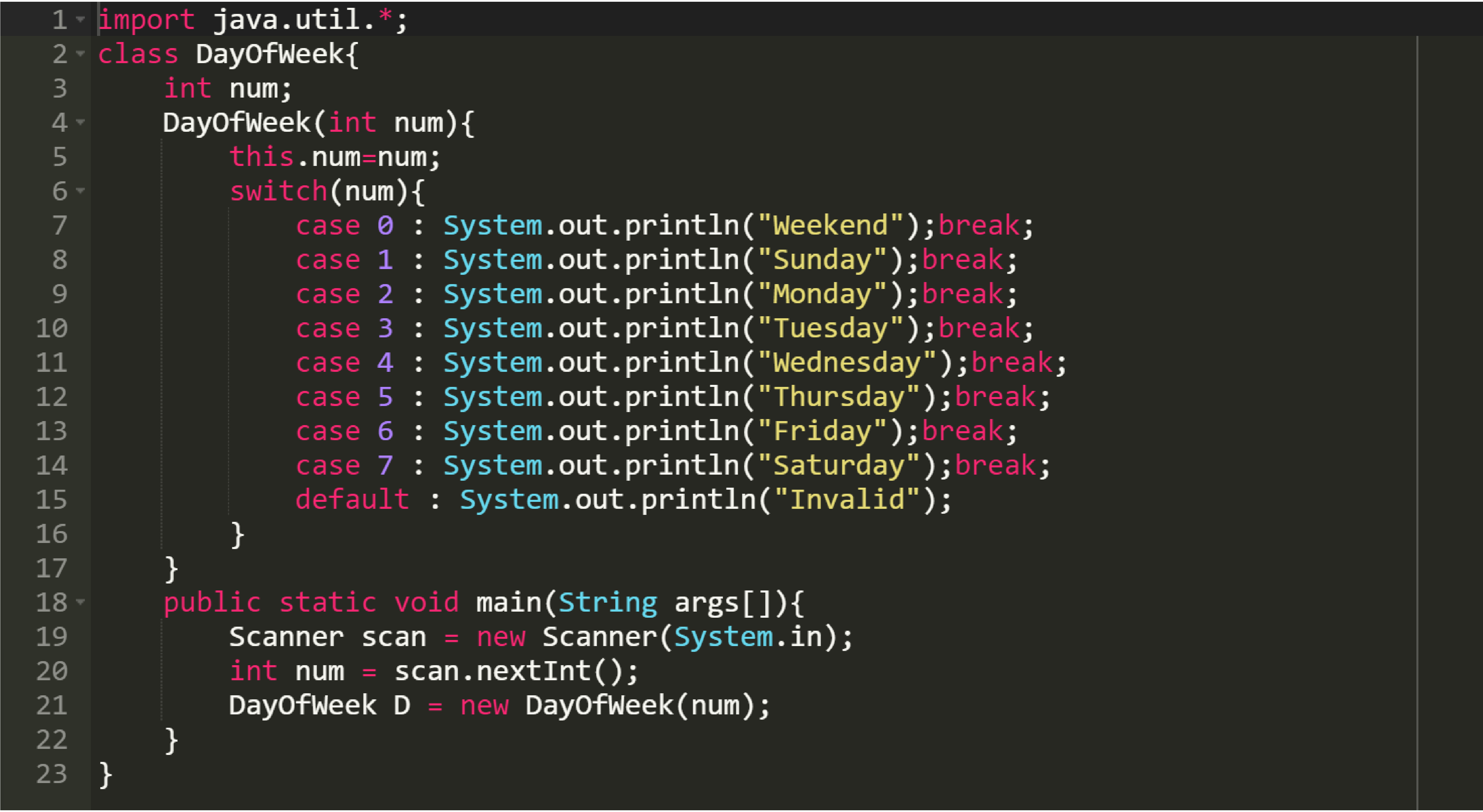
N $\leq$ 7

Sample testcases

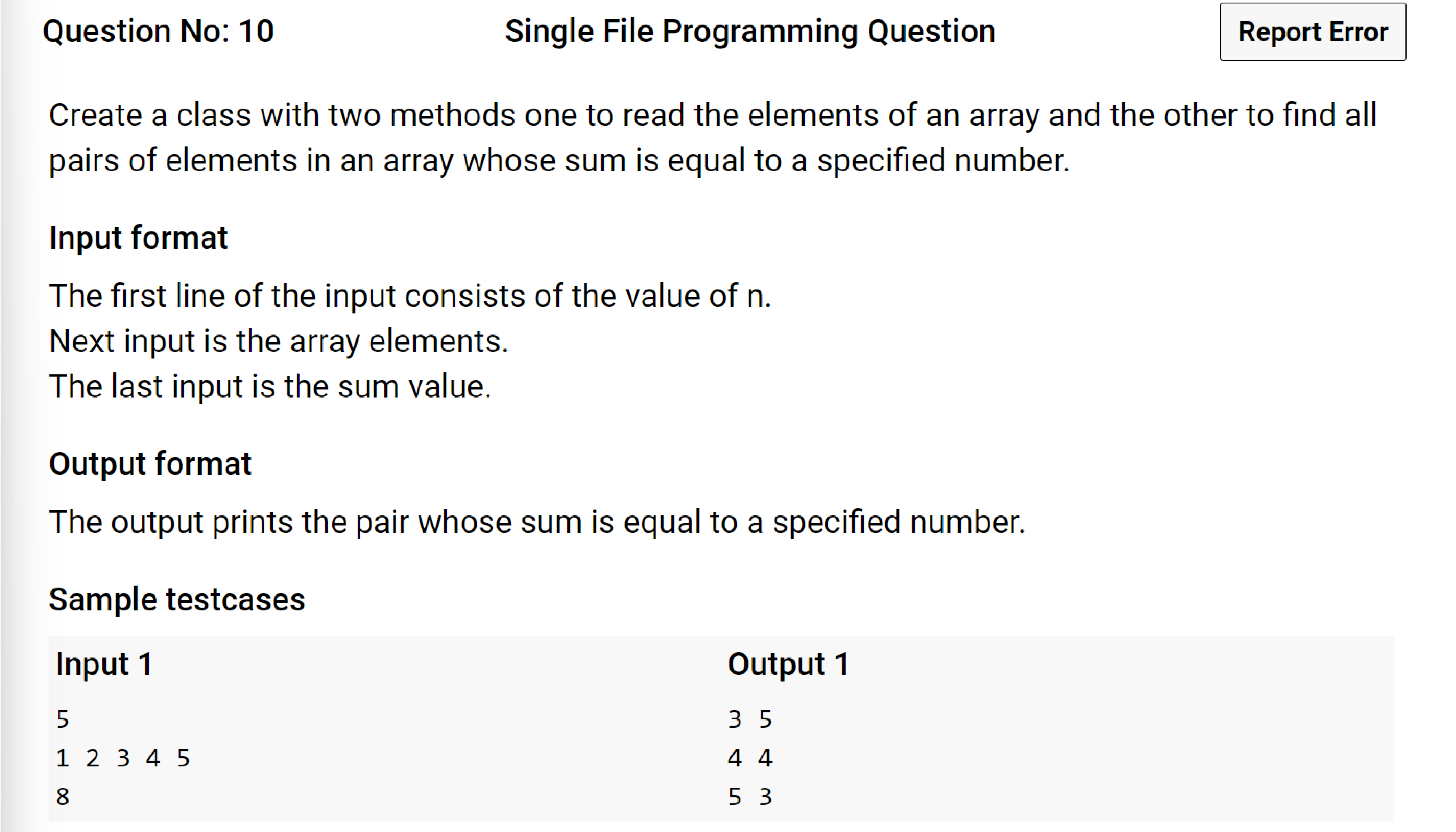
Input 1	Output 1
`7`	`Saturday`

Input 2	Output 2
`0`	`Weekend`

Input 3	Output 3
`9`	`Invalid`



```java
import java.util.*;
class DayOfWeek{
    int num;
    DayOfWeek(int num){
        this.num=num;
        switch(num){
            case 0 : System.out.println("Weekend");break;
            case 1 : System.out.println("Sunday");break;
            case 2 : System.out.println("Monday");break;
            case 3 : System.out.println("Tuesday");break;
            case 4 : System.out.println("Wednesday");break;
            case 5 : System.out.println("Thursday");break;
            case 6 : System.out.println("Friday");break;
            case 7 : System.out.println("Saturday");break;
            default : System.out.println("Invalid");
        }
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        int num = scan.nextInt();
        DayOfWeek D = new DayOfWeek(num);
    }
}
```



Question No: 10 Single File Programming Question Report Error

Create a class with two methods one to read the elements of an array and the other to find all pairs of elements in an array whose sum is equal to a specified number.

Input format

The first line of the input consists of the value of n.
Next input is the array elements.
The last input is the sum value.

Output format

The output prints the pair whose sum is equal to a specified number.

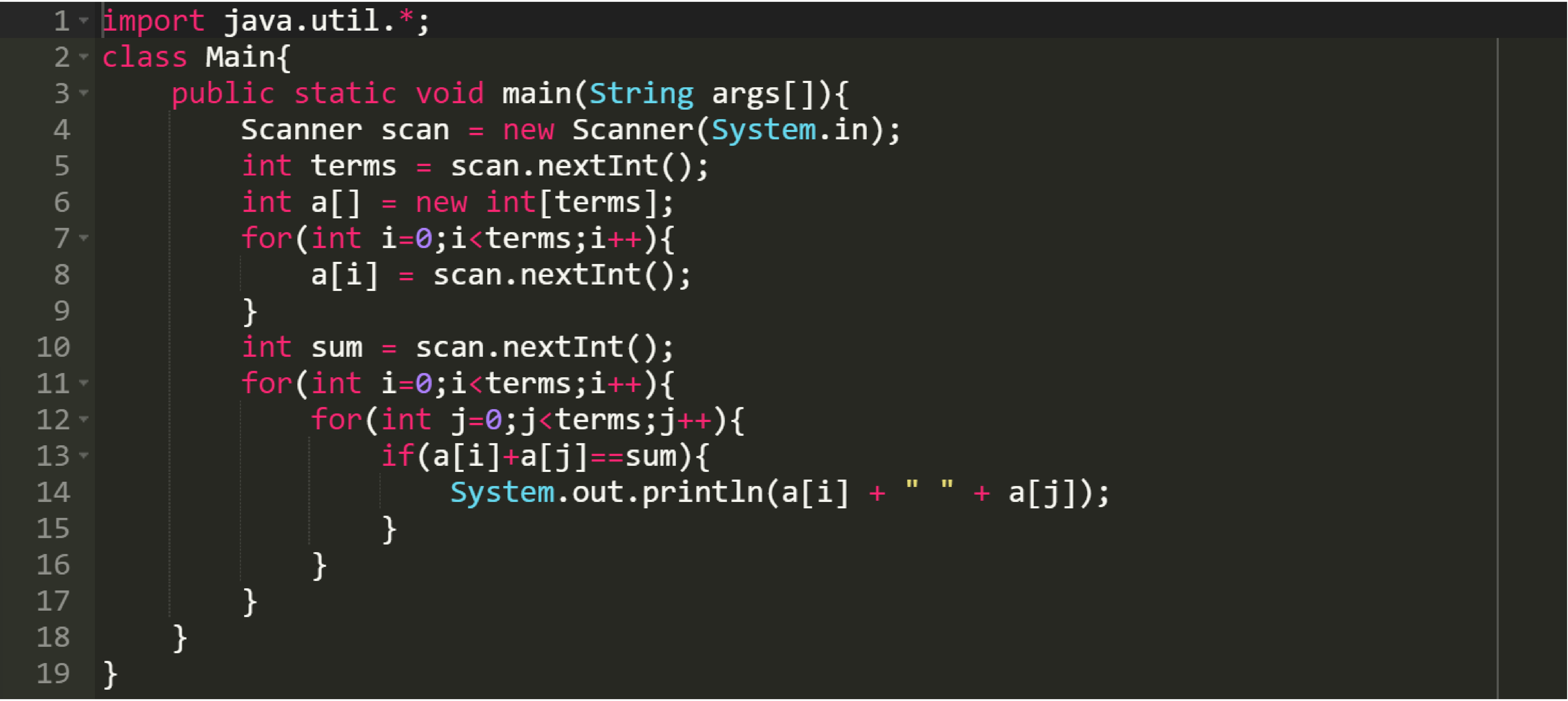
Sample testcases

Input 1

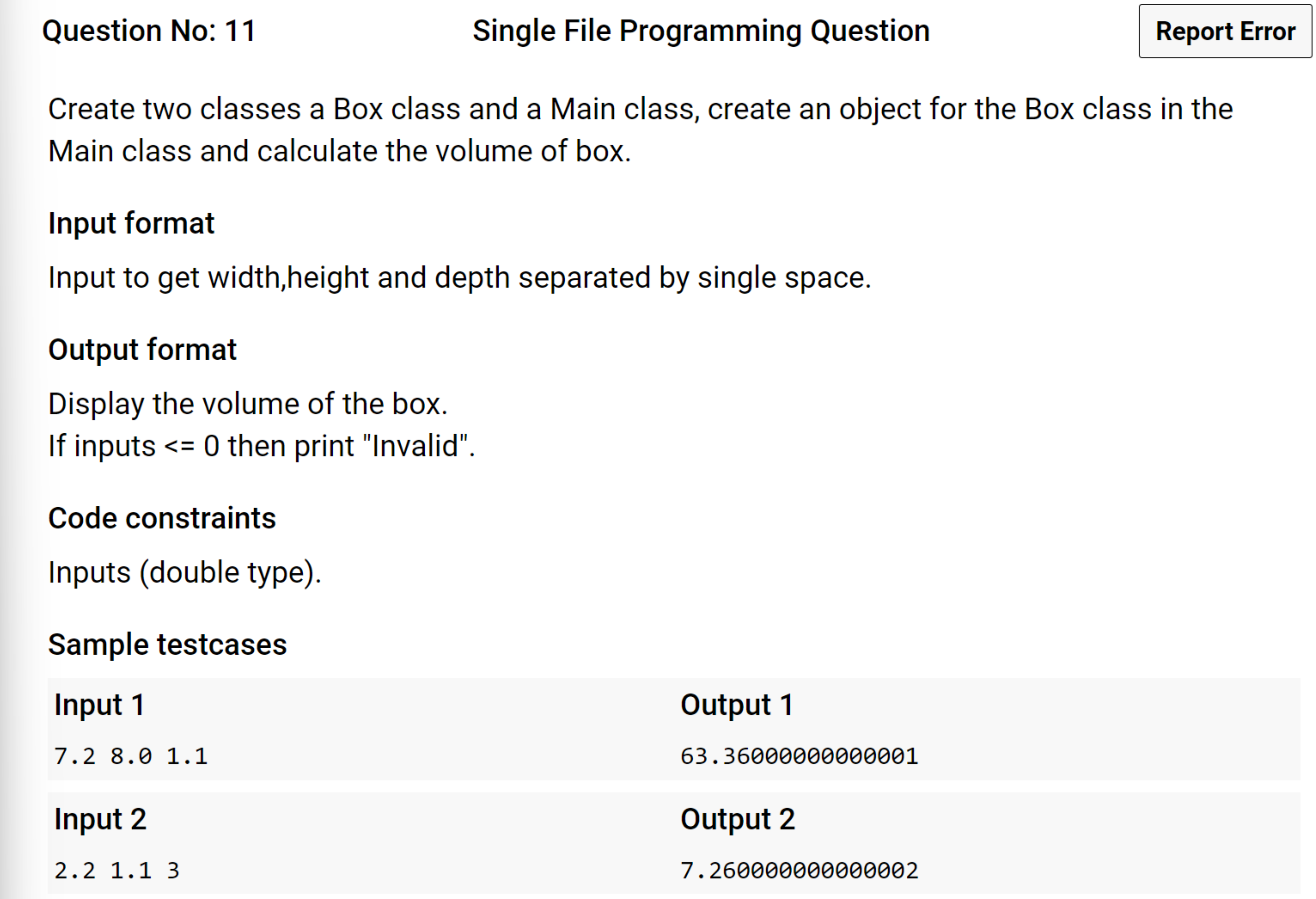
```
5
1 2 3 4 5
8
```

Output 1

```
3 5
4 4
5 3
```



```java
import java.util.*;
class Main{
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        int terms = scan.nextInt();
        int a[] = new int[terms];
        for(int i=0;i<terms;i++){
            a[i] = scan.nextInt();
        }
        int sum = scan.nextInt();
        for(int i=0;i<terms;i++){
            for(int j=0;j<terms;j++){
                if(a[i]+a[j]==sum){
                    System.out.println(a[i] + " " + a[j]);
                }
            }
        }
    }
}
```



Question No: 11

Single File Programming Question

Create two classes a Box class and a Main class, create an object for the Box class in the Main class and calculate the volume of box.

Input format

Input to get width,height and depth separated by single space.

Output format

Display the volume of the box.
If inputs <= 0 then print "Invalid".

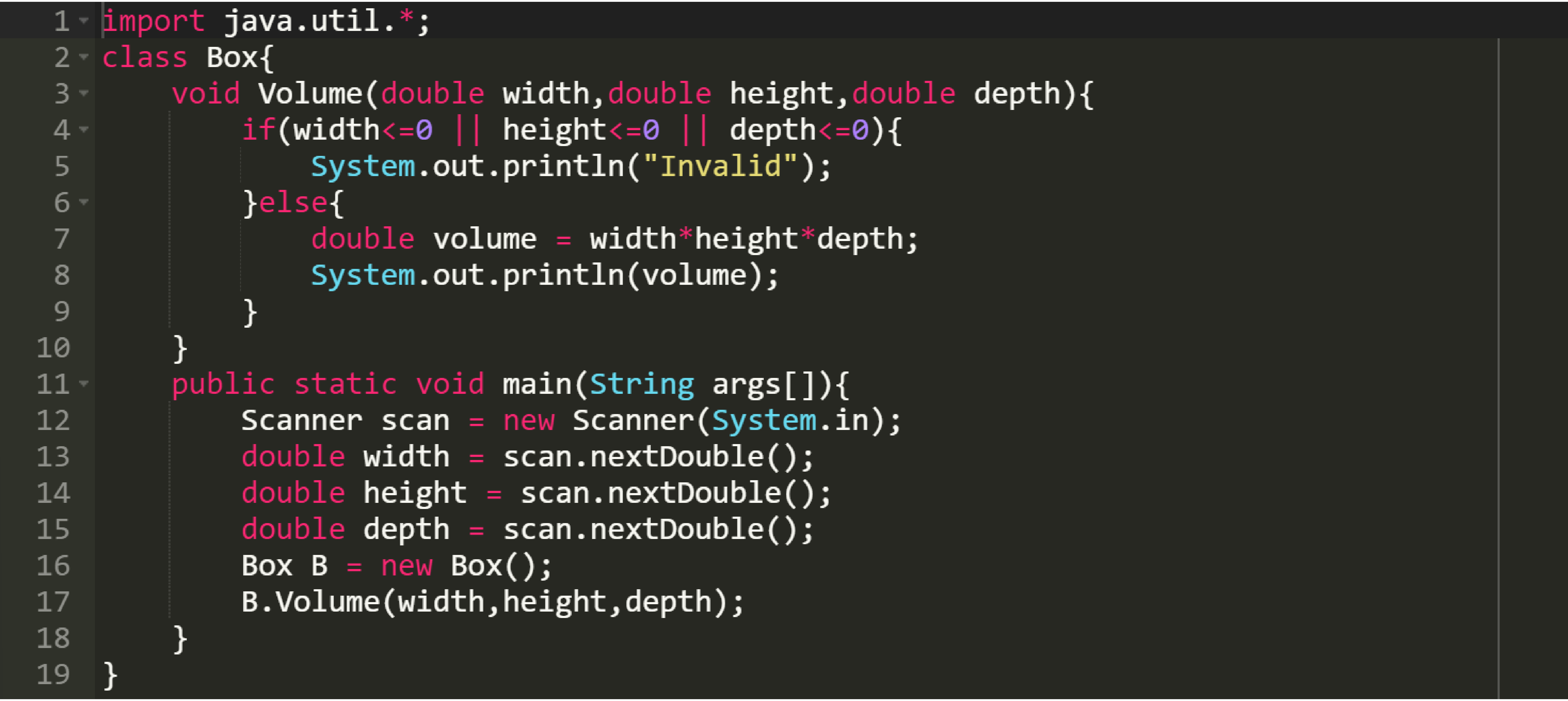
Code constraints

Inputs (double type).

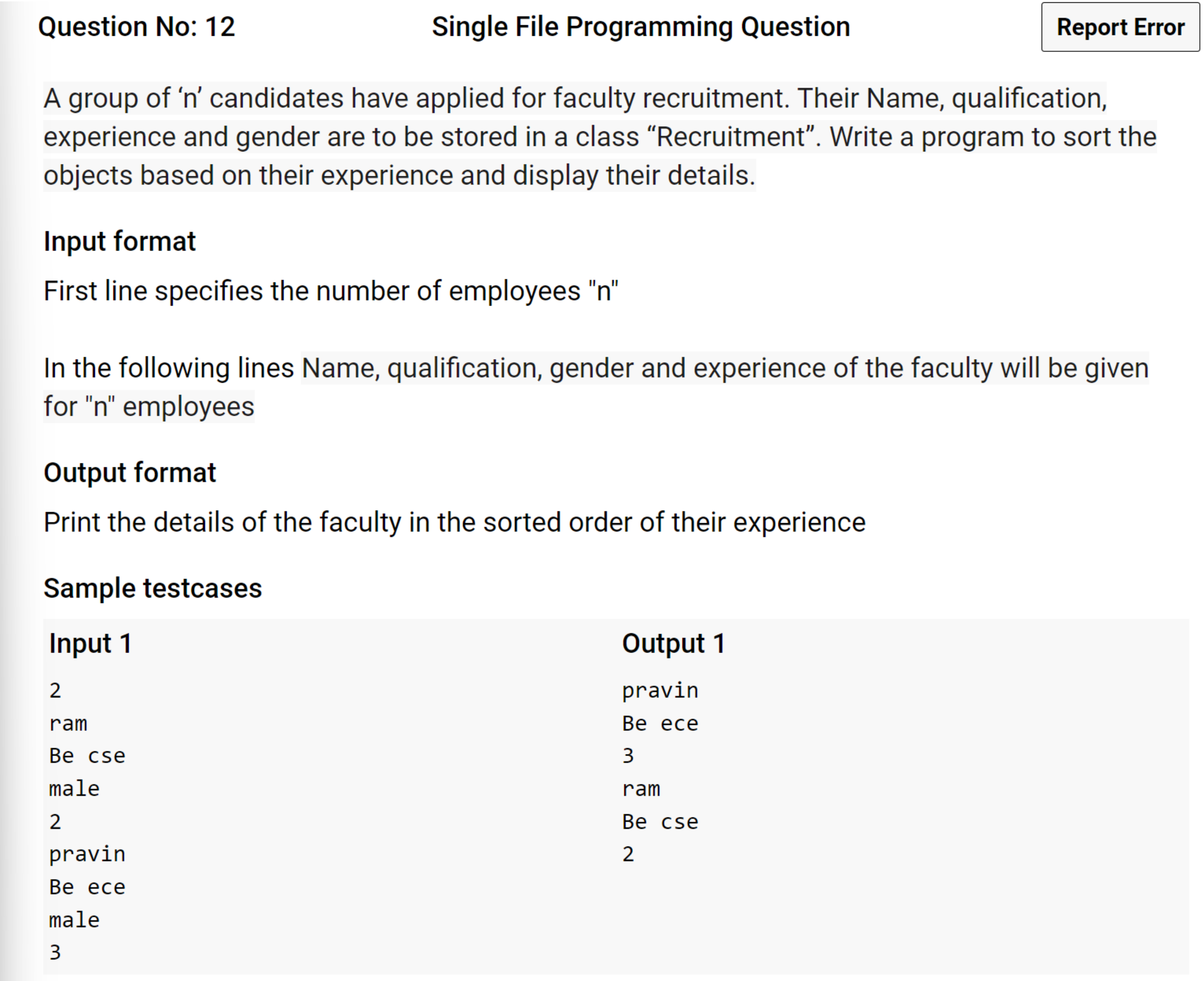
Sample testcases

Input 1	Output 1
`7.2 8.0 1.1`	`63.36000000000001`

Input 2	Output 2
`2.2 1.1 3`	`7.260000000000002`



```java
import java.util.*;
class Box{
    void Volume(double width,double height,double depth){
        if(width<=0 || height<=0 || depth<=0){
            System.out.println("Invalid");
        }else{
            double volume = width*height*depth;
            System.out.println(volume);
        }
    }
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        double width = scan.nextDouble();
        double height = scan.nextDouble();
        double depth = scan.nextDouble();
        Box B = new Box();
        B.Volume(width,height,depth);
    }
}
```



Question No: 12 Single File Programming Question

A group of ‘n’ candidates have applied for faculty recruitment. Their Name, qualification, experience and gender are to be stored in a class “Recruitment”. Write a program to sort the objects based on their experience and display their details.

Input format

First line specifies the number of employees "n"

In the following lines Name, qualification, gender and experience of the faculty will be given for "n" employees

Output format

Print the details of the faculty in the sorted order of their experience

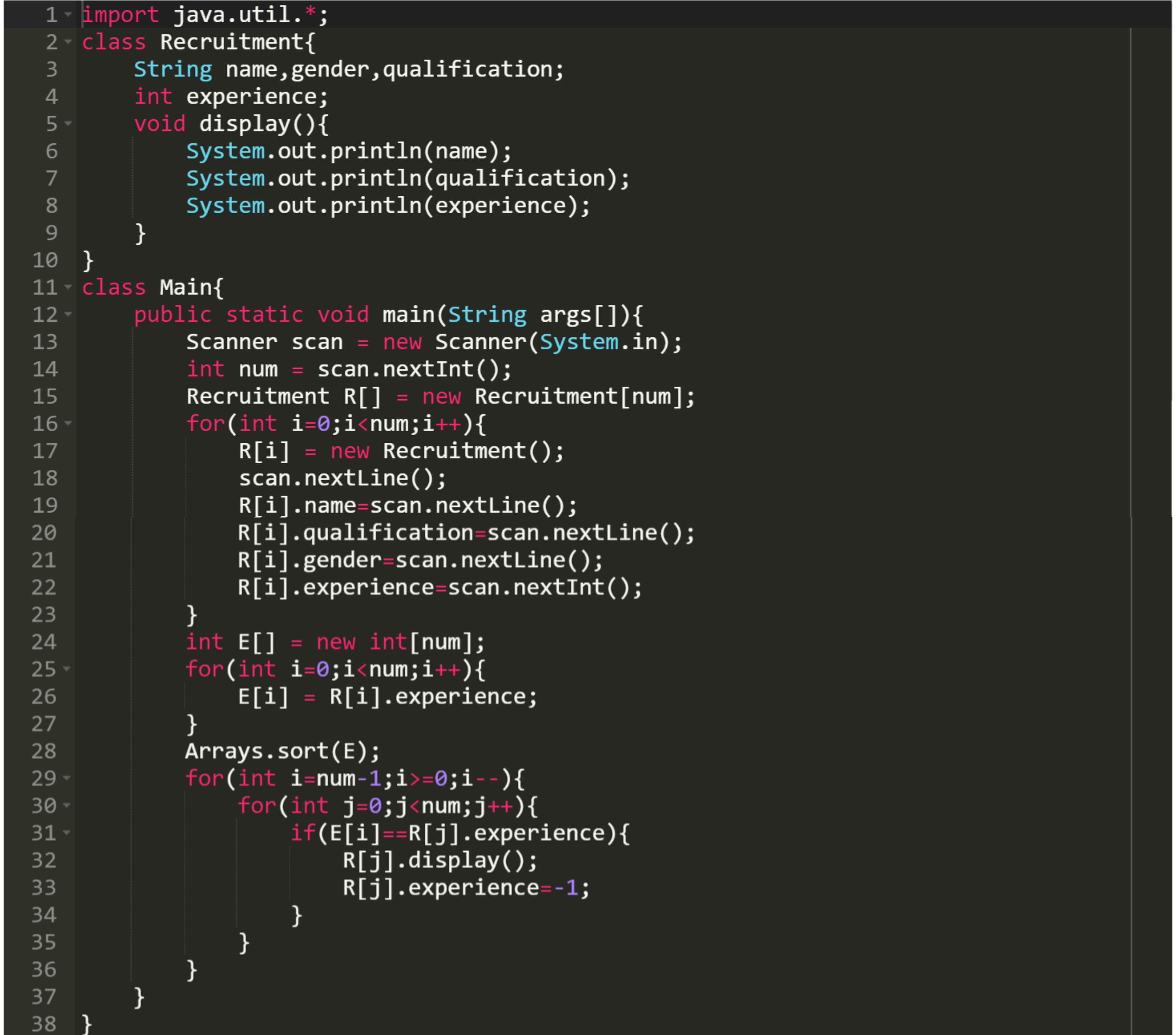
Sample testcases

Input 1

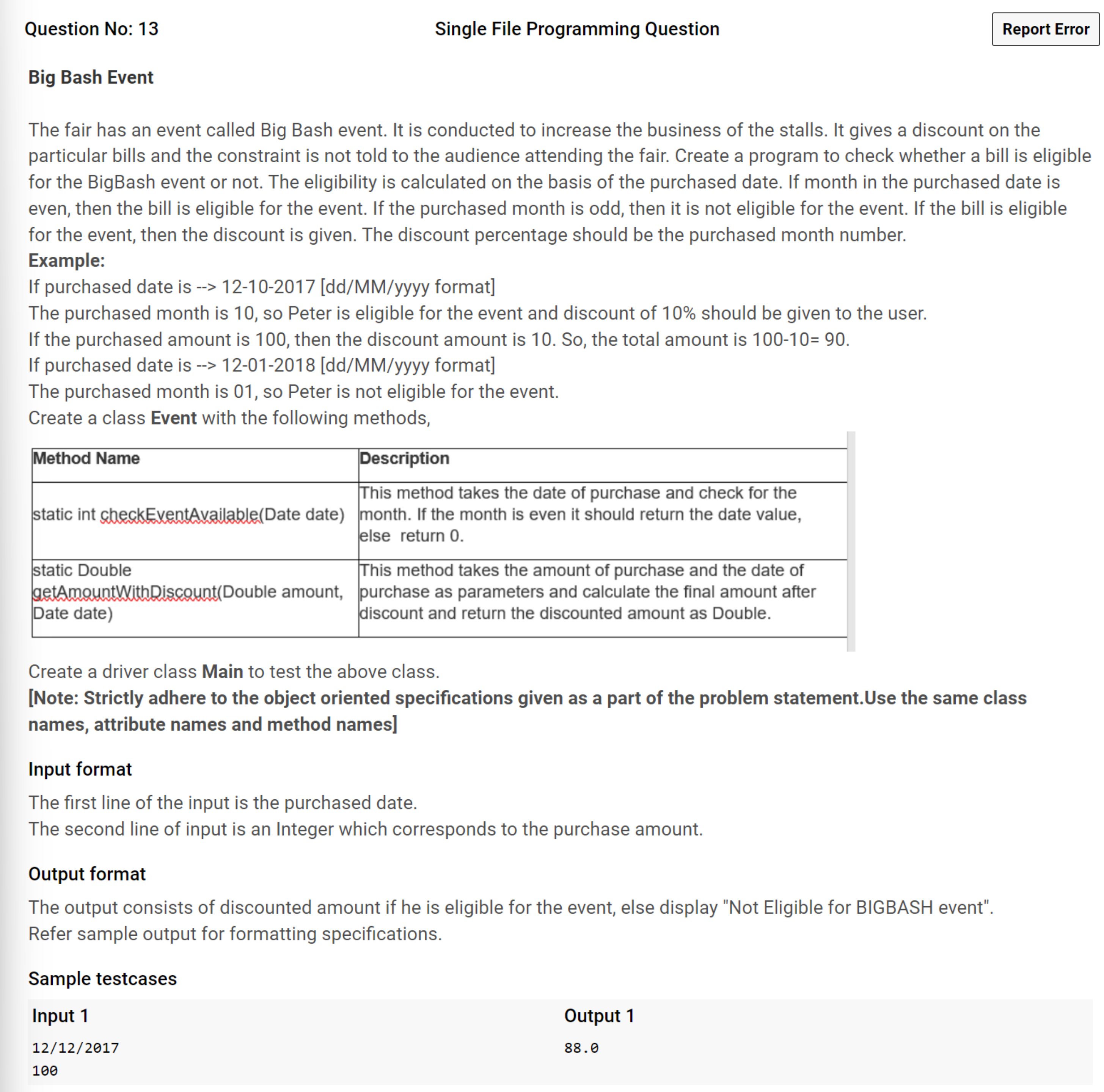
```
2
ram
Be cse
male
2
pravin
Be ece
male
3
```

Output 1

```
pravin
Be ece
3
ram
Be cse
2
```



```java
import java.util.*;
class Recruitment{
    String name,gender,qualification;
    int experience;
    void display(){
        System.out.println(name);
        System.out.println(qualification);
        System.out.println(experience);
    }
}
class Main{
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        int num = scan.nextInt();
        Recruitment R[] = new Recruitment[num];
        for(int i=0;i<num;i++){
            R[i] = new Recruitment();
            scan.nextLine();
            R[i].name=scan.nextLine();
            R[i].qualification=scan.nextLine();
            R[i].gender=scan.nextLine();
            R[i].experience=scan.nextInt();
        }
        int E[] = new int[num];
        for(int i=0;i<num;i++){
            E[i] = R[i].experience;
        }
        Arrays.sort(E);
        for(int i=num-1;i>=0;i--){
            for(int j=0;j<num;j++){
                if(E[i]==R[j].experience){
                    R[j].display();
                    R[j].experience=-1;
                }
            }
        }
    }
}
```



Question No: 13 Single File Programming Question Report Error

Big Bash Event

The fair has an event called Big Bash event. It is conducted to increase the business of the stalls. It gives a discount on the particular bills and the constraint is not told to the audience attending the fair. Create a program to check whether a bill is eligible for the BigBash event or not. The eligibility is calculated on the basis of the purchased date. If month in the purchased date is even, then the bill is eligible for the event. If the purchased month is odd, then it is not eligible for the event. If the bill is eligible for the event, then the discount is given. The discount percentage should be the purchased month number.

Example:

If purchased date is --> 12-10-2017 [dd/MM/yyyy format]

The purchased month is 10, so Peter is eligible for the event and discount of 10% should be given to the user.

If the purchased amount is 100, then the discount amount is 10. So, the total amount is 100-10= 90.

If purchased date is --> 12-01-2018 [dd/MM/yyyy format]

The purchased month is 01, so Peter is not eligible for the event.

Create a class **Event** with the following methods,

Method Name	Description
static int checkEventAvailable(Date date)	This method takes the date of purchase and check for the month. If the month is even it should return the date value, else return 0.
static Double getAmountWithDiscount(Double amount, Date date)	This method takes the amount of purchase and the date of purchase as parameters and calculate the final amount after discount and return the discounted amount as Double.

Create a driver class **Main** to test the above class.

[Note: Strictly adhere to the object oriented specifications given as a part of the problem statement.Use the same class names, attribute names and method names]

Input format

The first line of the input is the purchased date.

The second line of input is an Integer which corresponds to the purchase amount.

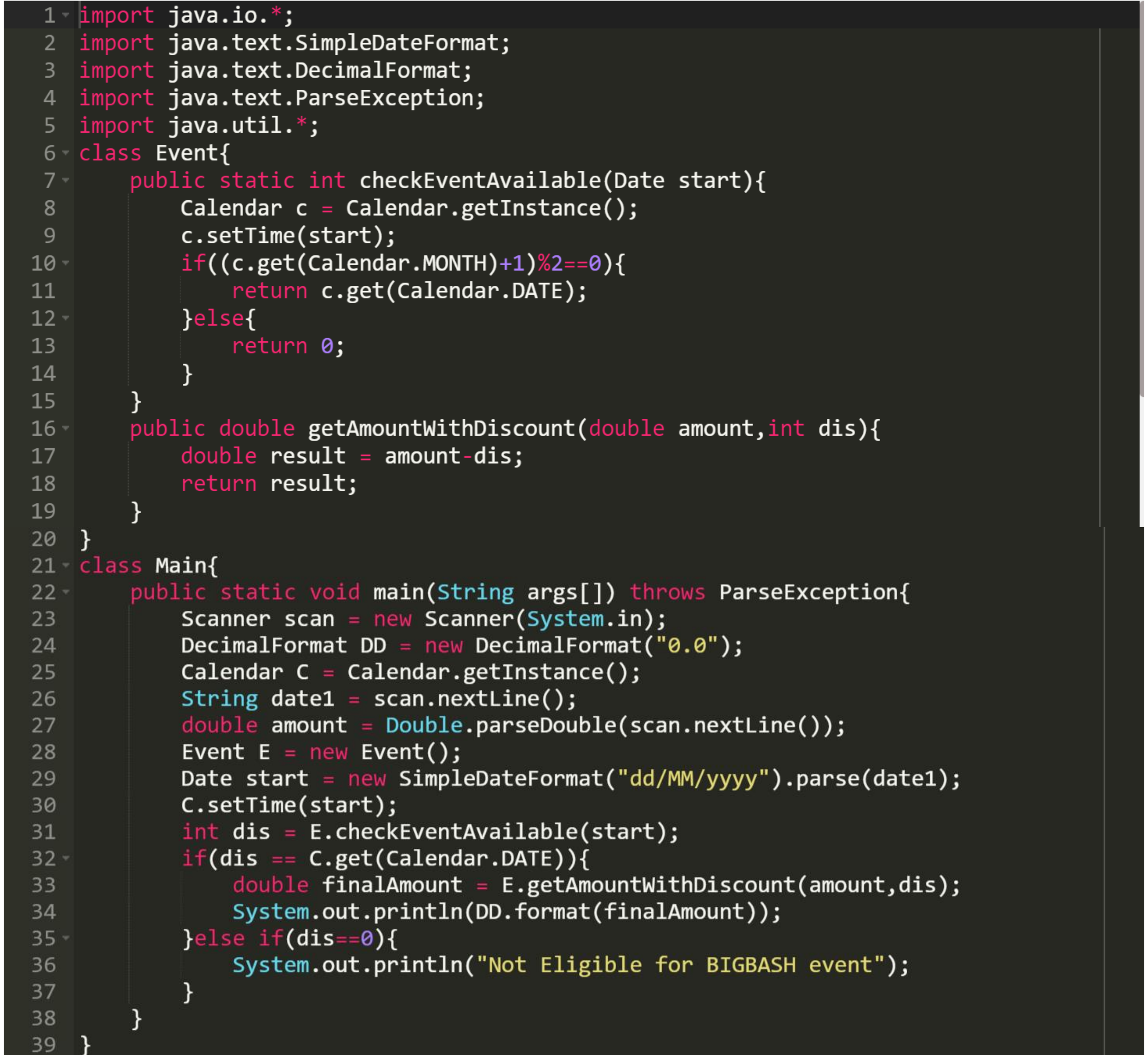
Output format

The output consists of discounted amount if he is eligible for the event, else display "Not Eligible for BIGBASH event".

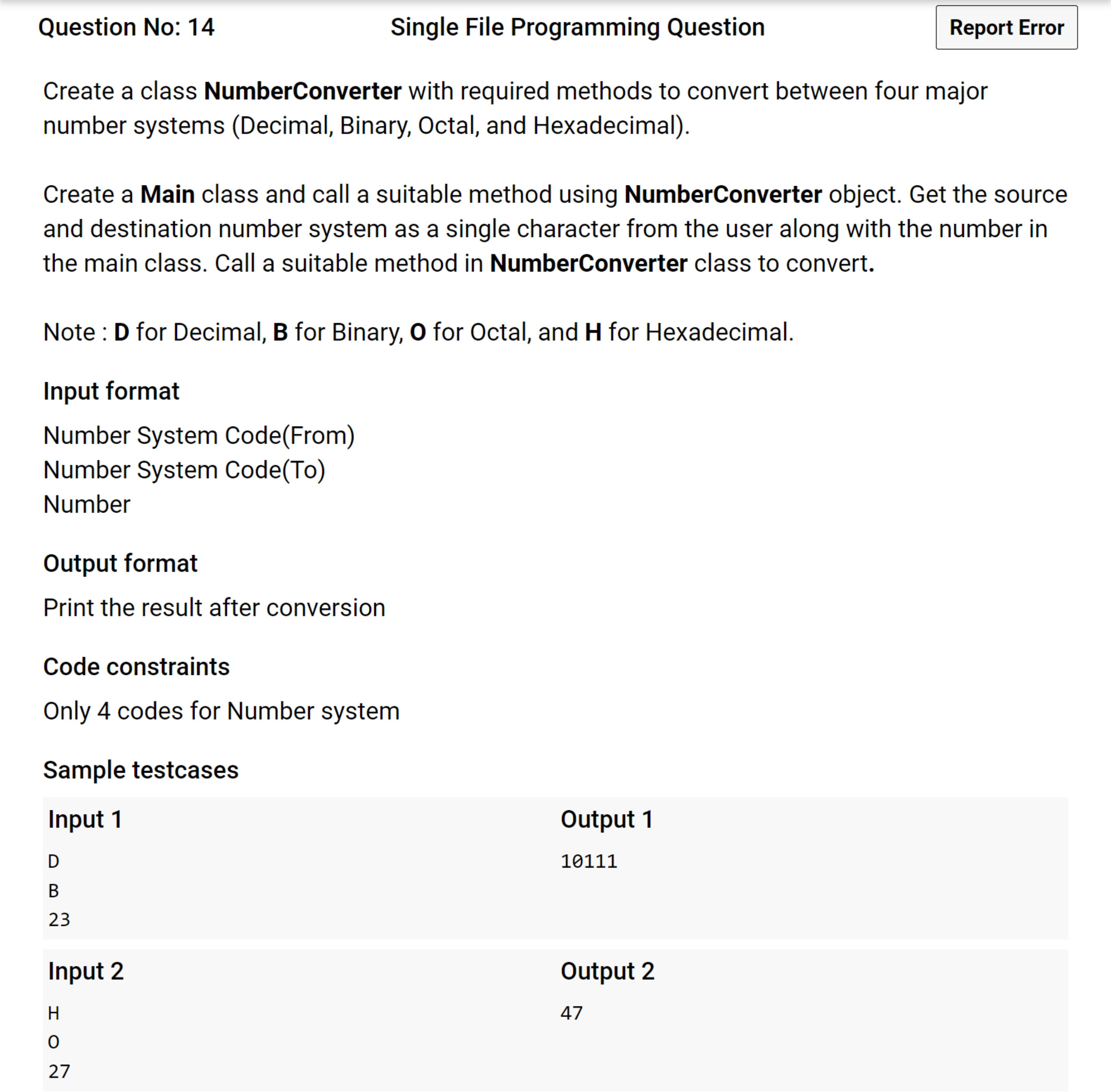
Refer sample output for formatting specifications.

Sample testcases

Input 1	Output 1
12/12/2017 100	88.0



```java
import java.io.*;
import java.text.SimpleDateFormat;
import java.text.DecimalFormat;
import java.text.ParseException;
import java.util.*;
class Event{
    public static int checkEventAvailable(Date start){
        Calendar c = Calendar.getInstance();
        c.setTime(start);
        if((c.get(Calendar.MONTH)+1)%2==0){
            return c.get(Calendar.DATE);
        }else{
            return 0;
        }
    }
    public double getAmountWithDiscount(double amount,int dis){
        double result = amount-dis;
        return result;
    }
}
class Main{
    public static void main(String args[]) throws ParseException{
        Scanner scan = new Scanner(System.in);
        DecimalFormat DD = new DecimalFormat("0.0");
        Calendar C = Calendar.getInstance();
        String date1 = scan.nextLine();
        double amount = Double.parseDouble(scan.nextLine());
        Event E = new Event();
        Date start = new SimpleDateFormat("dd/MM/yyyy").parse(date1);
        C.setTime(start);
        int dis = E.checkEventAvailable(start);
        if(dis == C.get(Calendar.DATE)){
            double finalAmount = E.getAmountWithDiscount(amount,dis);
            System.out.println(DD.format(finalAmount));
        }else if(dis==0){
            System.out.println("Not Eligible for BIGBASH event");
        }
    }
}
```



Question No: 14

Single File Programming Question

Report Error

Create a class **NumberConverter** with required methods to convert between four major number systems (Decimal, Binary, Octal, and Hexadecimal).

Create a **Main** class and call a suitable method using **NumberConverter** object. Get the source and destination number system as a single character from the user along with the number in the main class. Call a suitable method in **NumberConverter** class to convert**.**

Note : **D** for Decimal, **B** for Binary, **O** for Octal, and **H** for Hexadecimal.

Input format

Number System Code(From)
Number System Code(To)
Number

Output format

Print the result after conversion

Code constraints

Only 4 codes for Number system

Sample testcases

Input 1

```
D
B
23
```

Output 1

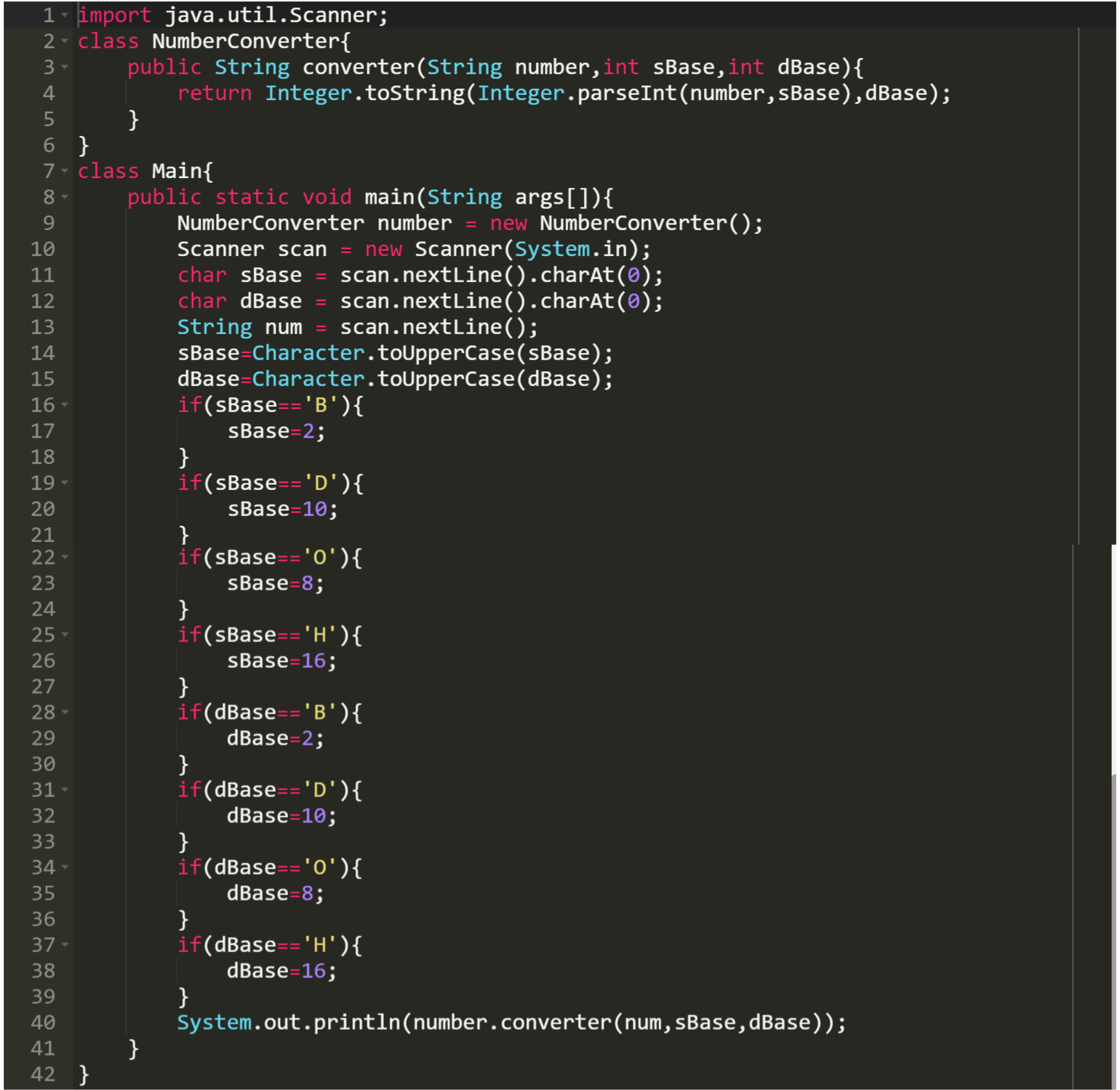
```
10111
```

Input 2

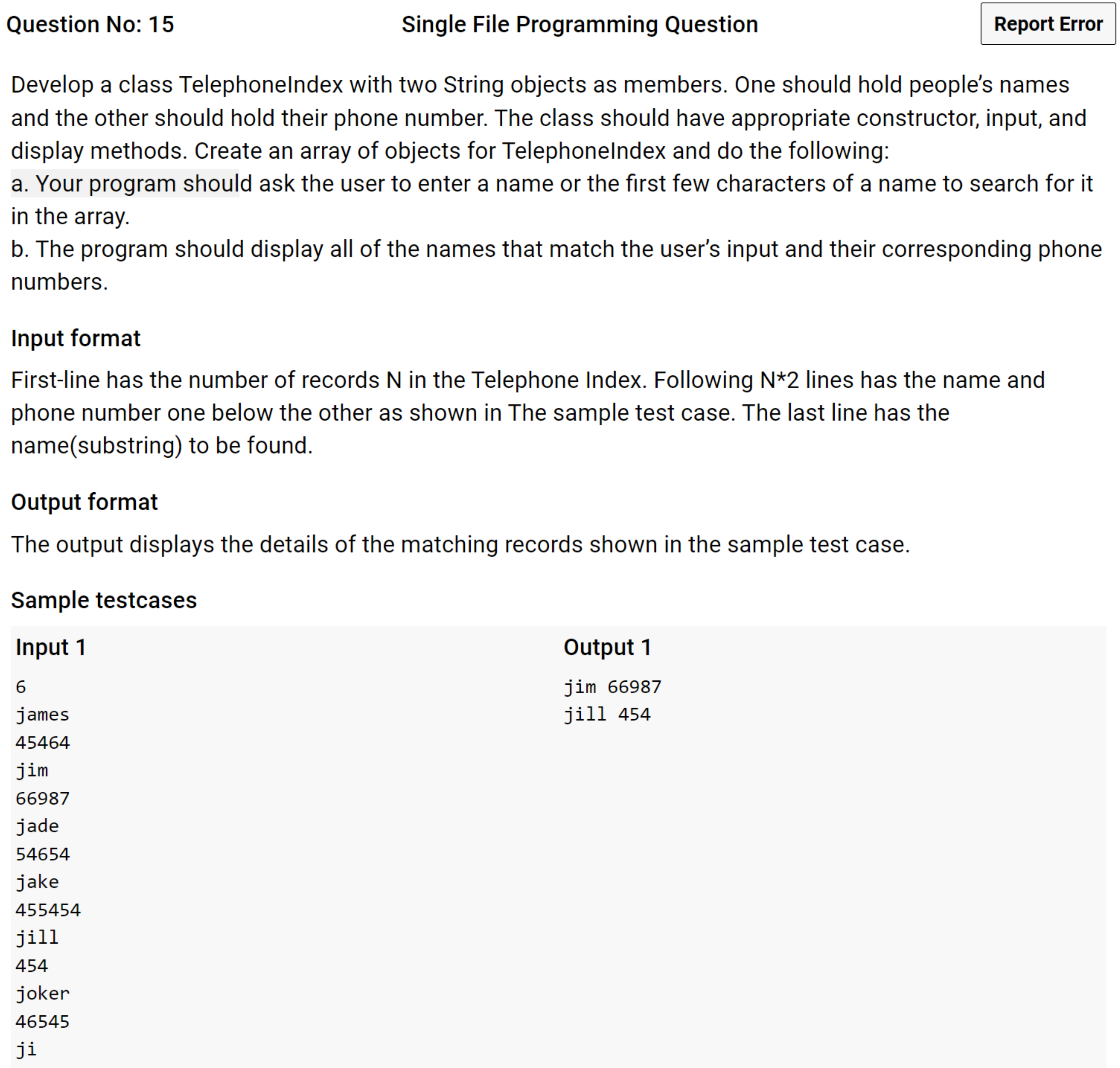
```
H
O
27
```

Output 2

```
47
```



```java
import java.util.Scanner;
class NumberConverter{
    public String converter(String number,int sBase,int dBase){
        return Integer.toString(Integer.parseInt(number,sBase),dBase);
    }
}
class Main{
    public static void main(String args[]){
        NumberConverter number = new NumberConverter();
        Scanner scan = new Scanner(System.in);
        char sBase = scan.nextLine().charAt(0);
        char dBase = scan.nextLine().charAt(0);
        String num = scan.nextLine();
        sBase=Character.toUpperCase(sBase);
        dBase=Character.toUpperCase(dBase);
        if(sBase=='B'){
            sBase=2;
        }
        if(sBase=='D'){
            sBase=10;
        }
        if(sBase=='O'){
            sBase=8;
        }
        if(sBase=='H'){
            sBase=16;
        }
        if(dBase=='B'){
            dBase=2;
        }
        if(dBase=='D'){
            dBase=10;
        }
        if(dBase=='O'){
            dBase=8;
        }
        if(dBase=='H'){
            dBase=16;
        }
        System.out.println(number.converter(num,sBase,dBase));
    }
}
```



Question No: 15 Single File Programming Question

Develop a class TelephoneIndex with two String objects as members. One should hold people's names and the other should hold their phone number. The class should have appropriate constructor, input, and display methods. Create an array of objects for TelephoneIndex and do the following:

a. Your program should ask the user to enter a name or the first few characters of a name to search for it in the array.

b. The program should display all of the names that match the user's input and their corresponding phone numbers.

Input format

First-line has the number of records N in the Telephone Index. Following N*2 lines has the name and phone number one below the other as shown in The sample test case. The last line has the name(substring) to be found.

Output format

The output displays the details of the matching records shown in the sample test case.

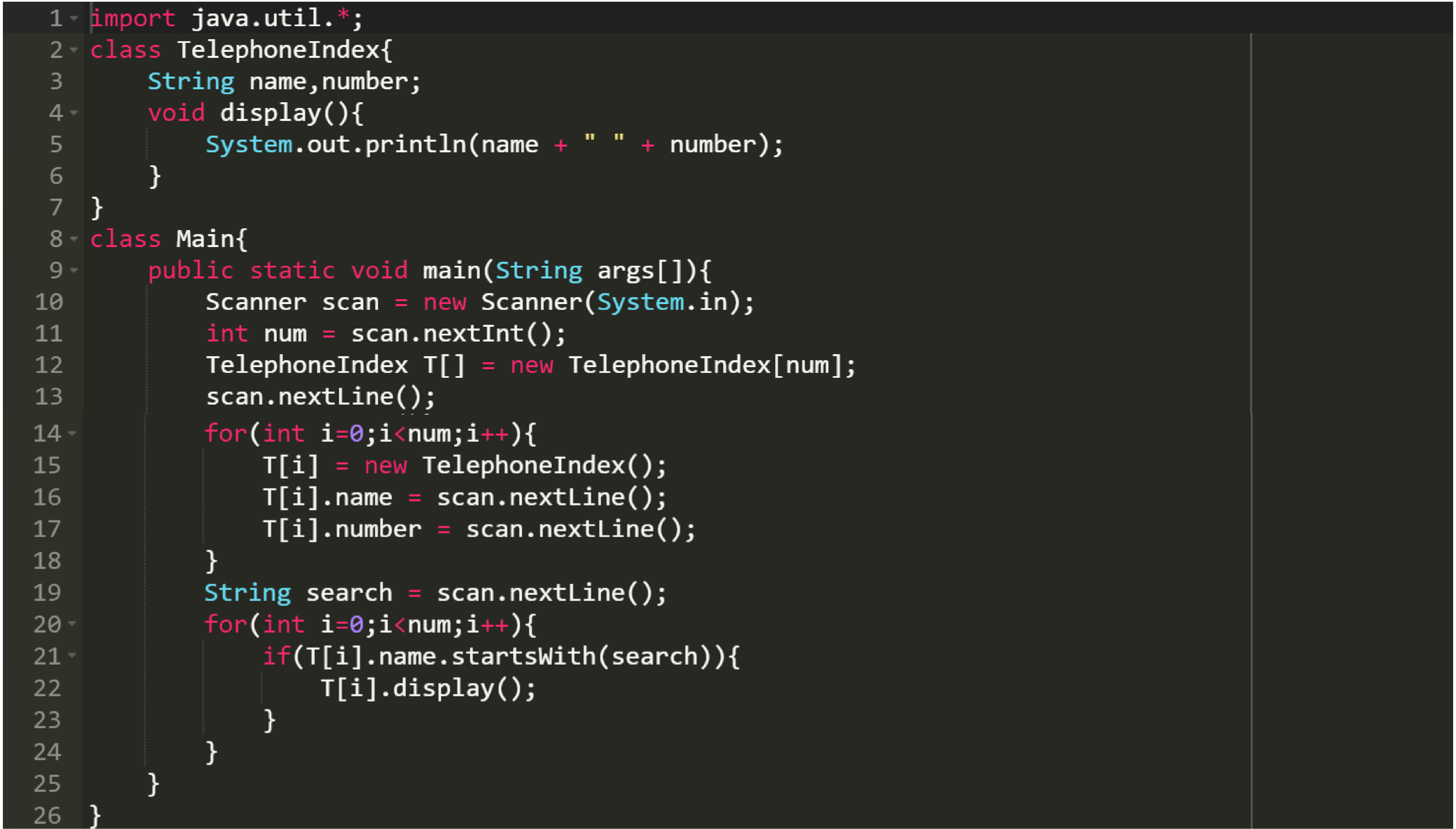
Sample testcases

Input 1

```
6
james
45464
jim
66987
jade
54654
jake
455454
jill
454
joker
46545
ji
```

Output 1

```
jim 66987
jill 454
```



```java
import java.util.*;
class TelephoneIndex{
    String name,number;
    void display(){
        System.out.println(name + " " + number);
    }
}
class Main{
    public static void main(String args[]){
        Scanner scan = new Scanner(System.in);
        int num = scan.nextInt();
        TelephoneIndex T[] = new TelephoneIndex[num];
        scan.nextLine();
        for(int i=0;i<num;i++){
            T[i] = new TelephoneIndex();
            T[i].name = scan.nextLine();
            T[i].number = scan.nextLine();
        }
        String search = scan.nextLine();
        for(int i=0;i<num;i++){
            if(T[i].name.startsWith(search)){
                T[i].display();
            }
        }
    }
}
```