

Lab Exercise 6 CSE 1007

-Aishwarya S 19BCE1709

1.

CODE:

```
import java.util.*;
import java.lang.*;
class lab61
{
    String phone, regno;

    public void checkregno(String regno)
    {
        String error;

        try{
            if(regno.length() != 9)
                throw new IllegalArgumentException("Invalid\n");

            if(!regno.matches("[0-9a-zA-Z]+$"))
                throw new NoSuchElementException(" Invalid\n");
            else
            {
                this.regno = regno;
                System.out.print("Valid\n");
            }
        }
        catch( NoSuchElementException ex)
        {
            System.out.println(ex);
        }
        catch(IllegalArgumentException ex)
        {
            System.out.println(ex) ;
        }
    }

    public void checkphone(String phone)
    {
        try
        {
            if(phone.length() != 10)
                throw new IllegalArgumentException("Invalid");
            double a = Double.parseDouble(phone);
        }
    }
}
```

```

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

    } catch (NumberFormatException ex)
    {
        System.out.println("Invalid "+ex);
    }
    catch (IllegalArgumentException ex)
    {
        System.out.println(ex) ;
    }

}

public static void main(String args[])
{
    Scanner s= new Scanner(System.in);
    lab61 inst = new lab61();
    System.out.print("Aishwarya S 19BCE1709 Lab 6 Program 1\n");
    System.out.print("Enter the register number: ");
    String r=s.nextLine();
    inst.checkregno(r);
    System.out.print("Enter the phone number: ");
    r=s.nextLine();
    inst.checkphone(r);

}
}

```

OUTPUT:

TEST CASE 1:

```
Desktop — -zsh — 80x24
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % javac lab61.java
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab61
Aishwarya S 19BCE1709 Lab 6 Program 1
Enter the register number: 19BCE1709
Valid
Enter the phone number: 9887712345
Valid
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

TEST CASE 2:

```
Desktop — -zsh — 80x24
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % javac lab61.java
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab61
Aishwarya S 19BCE1709 Lab 6 Program 1
Enter the register number: 19BC1212
java.lang.IllegalArgumentException: Invalid

Enter the phone number: 988771234
java.lang.IllegalArgumentException: Invalid
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

TEST CASE 3:

```
Desktop — -zsh — 80x24
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % javac lab61.java
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab61
Aishwarya S 19BCE1709 Lab 6 Program 1
Enter the register number: !!BCE1709
java.util.NoSuchElementException: Invalid

Enter the phone number: 98844XXXXX
Invalid java.lang.NumberFormatException: For input string: "98844XXXXX"
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

2.

APPROACH:

Scraping the data from wikipedia and loading it into a csv file.

Loading the csv data into a hashmap in java

CSV:

A	B
State or Union Territory	Code
Andaman and Nicobar Islands	AN
Andhra Pradesh	AP
Arunachal Pradesh	AR
Assam	AS
Bihar	BR
Chandigarh	CH
Chhattisgarh	CG
Dadra and Nagar Haveli and Daman and Diu	DD
Delhi	DL
Goa	GA
Gujarat	GJ
Haryana	HR
Himachal Pradesh	HP
Jammu and Kashmir	JK
Jharkhand	JH
Karnataka	KA
Kerala	KL
Ladakh	LA
Lakshadweep	LD
Madhya Pradesh	MP
Maharashtra	MH
Manipur	MN
Meghalaya	ML
Mizoram	MZ
Nagaland	NL
Odisha	OD
Puducherry	PY
Punjab	PB
Rajasthan	RJ
Sikkim	SK
Tamil Nadu	TN
Telangana	TS
Tripura	TR
Uttar Pradesh	UP
Uttarakhand	UK
West Bengal	WB

CODE:

```
import java.util.*;
import java.lang.*;
import java.io.*;
import java.util.regex.Pattern;
import java.util.regex.Matcher;
class udexception extends Exception
```

```

{

    String a;
    udexception(String b) {
        a=b;
    }
    public String toString(){
        return (a) ;
    }
}

}

class lab62
{
    public static void main(String args[]) throws FileNotFoundException,
    IOException
    {
        Scanner s= new Scanner(System.in);
        HashMap<String, String> statec = new HashMap<String, String>();

        BufferedReader br = new BufferedReader(new FileReader("statecode.csv"));
        String bl=br.readLine();

        while(bl!=null)
        {
            String col[] = bl.split(",");
            statec.put(col[1], col[0]);
            bl=br.readLine();
        }

        System.out.print("Aishwarya S 19BCE1709 Lab 6 Program 2\n");
        System.out.print("Enter the registration number\n");
        String regis= s.nextLine();
        final String regex =
"([A-Z]{2})(?!00)(?!0[A-Z])([0-9]{1,2})([A-Z]{1,2})([0-9]{4})";
        final String regex1="([0-9]*)([A-Z]*)";
        int f;

        try
        {
            if(regis.length()>10|| regis.length()<8)
                throw new IllegalArgumentException("Boundary condition has
been violated\n");
            if(!regis.matches("^([0-9A-Z]*)$"))
                throw new IllegalArgumentException("Invalid, contains
special characters\n");

            if(regis.matches(regex))
            {
                if(statec.containsKey(regis.substring(0,2)))

```

```

        throw new udexception("Valid, State: "+
statec.get(regis.substring(0,2)));
        else
            throw new udexception("Invalid, State code does not
exist\n");
    }
    f=regis.length()-6;

    if(!statec.containsKey(regis.substring(0,2)))
        throw new udexception("Invalid, State code does not
exist\n");
    if(!regis.substring(2+f, regis.length()).matches("[0-9]{4}"))
        throw new udexception("Invalid, Deficiency in last four
digits\n");
    if(regis.substring(2,2+f).matches("[A-Z]*$"))
        throw new udexception("Invalid, RTO code missing\n");
    if(regis.substring(2,2+f).matches("0[A-Z]+$|00[A-Z]+"))
        throw new udexception("Invalid, RTO number cannot be all
zeroes\n");
    if(regis.substring(2,2+f).matches("[0-9]+"))
        throw new udexception("Invalid, Series number missing\n");

} catch(udexception ex)
{
    System.out.println(ex) ;

}

catch(IllegalArgumentException ex)
{
    System.out.println(ex) ;

}

}
}

```

OUTPUTS:

VALID TEST CASES

```
Desktop — -zsh — 80x24
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % javac lab62.java
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
TN11AA1234
Valid, State: Tamil Nadu
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

```
Desktop — -zsh — 80x24
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
KL2A1234
Valid, State: Kerala
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

```
Desktop — -zsh — 80x24
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
MZ01AA1234
Valid, State: Mizoram
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

INVALID TEST CASES

TOO MANY CHARACTERS:

```
Desktop — -zsh — 80x24
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
TN11AA12345
java.lang.IllegalArgumentException: Boundary condition has been violated
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

INVALID STATE CODE

```
Desktop — -zsh — 80x24
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
ZZ12AA1234
Invalid, State code does not exist
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

RTO NUMBER ALL ZEROS

```
Desktop — -zsh — 80x24
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
KL00AA1234
Invalid, RTO number cannot be all zeroes
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

DEFICIENCY IN LAST FOUR DIGITS

```
Desktop — -zsh — 80x24
((base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
TN01A123
Invalid, Deficiency in last four digits
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```


RTO CODE MISSING

```
Desktop — -zsh — 80x24
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
KLAA1234
Invalid, RTO code missing

(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

SERIES NUMBER MISSING

```
Desktop — -zsh — 80x24
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
TN111234
Invalid, Series number missing

(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

CONTAINS SPECIAL CHARACTERS:

```
Desktop — -zsh — 80x24
[(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab62
Aishwarya S 19BCE1709 Lab 6 Program 2
Enter the registration number
**12AA1234
java.lang.IllegalArgumentException: Invalid, contains special characters

(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```