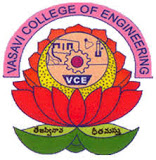
**VASAVI COLLEGE OF ENGINEERING (Autonomous)**

**Department of Computer Science & Engineering**

**MINI PROJECT**



**TITLE:** NUMBER PLATE REGISTRATION

**SUBJECT:** JAVA

**GROUP MEMBERS:**

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**1.1: INTRODUCTION**

A **vehicle registration plate**, also known as a number plate or a license plate  is a metal or plastic plate attached to a motor vehicle  for official identification purposes. All countries require registration plates for road vehicles such as cars, trucks, and motorcycles. Whether they are required for other vehicles, such as bicycles, boats, or tractors, may vary by jurisdiction. The registration identifier is a numeric or alphanumeric ID that uniquely identifies the vehicle owner within the issuing region's vehicle register. In some countries, the identifier is unique within the entire country, while in others it is unique within a state or province. Whether the identifier is associated with a vehicle or a person also varies by issuing agency. There are also [electronic license plates](https://en.wikipedia.org/wiki/Electronic_license_plate).

All motorised road vehicles in [India](https://en.wikipedia.org/wiki/India) are tagged with a registration or license number. The [Vehicle registration plate](https://en.wikipedia.org/wiki/Vehicle_registration_plate) (commonly known as number plate) number is issued by the district-level [Regional Transport Office](https://en.wikipedia.org/wiki/Regional_Transport_Office) (RTO) of respective states — the main authority on road matters. The number plates are placed in the front and back of the vehicle. By law, all plates are required to be in modern [Hindu-Arabic numerals](https://en.wikipedia.org/wiki/Hindu-Arabic_numerals) with [Latin letters](https://en.wikipedia.org/wiki/Latin_letters). Other guidelines include having the plate lit up at night and the restriction of the [fonts](https://en.wikipedia.org/wiki/Fonts) that could be used.

**1.2: OBJECTIVE**

The main objective of this Vehicle Number Plate Registration is to create an application form and based on his/her details like RTO centre, he’ll be alloted a random vehicle number.

**1.3: COMPILER**

We used Eclipse Photon to write and execute the program.

**2.1: MODULES**

**Classes:**

The classes used in this code are:

1. NumberPlateRegistration
2. LicenceException
3. AgeException
4. InsuranceException
5. Main

**Methods:**

The methods used in NumberPlateRegistration are:

1. Void input() throws AgeException, Licence Exception, InsuranceException
2. Void rtainput()
3. Void map()
4. Boolean approval()
5. Public String toString()
6. Public void run()

**3.1: PROGRAM**

**NumberPlateRegistration.java**

import java.io.DataOutputStream;

import java.io.FileInputStream;

import java.io.FileNotFoundException;

import java.io.FileOutputStream;

import java.io.IOException;

import java.io.ObjectInputStream;

import java.io.ObjectOutputStream;

import java.io.Serializable;

import java.util.ArrayList;

import java.util.HashMap;

import java.util.Map;

import java.util.Random;

import java.util.Scanner;

import java.util.Set;

class NumberPlateRegistration extends Thread implements Runnable,Serializable

{ static Scanner scanf = new Scanner(System.in);

static String applicant\_name;

static String father\_name;

static int age;

static String address;

static String class\_of\_vehicle;

static String makers\_name;

static int mfg\_year;

static String chasis\_no;

static String engine\_no;

static String fuel\_type;

static int seating\_capacity;

static float vehicle\_weight;

static float cubic\_capacity;

static String insurance\_no;

static String licence\_no;

static int rtacentre;

static String registration\_no;

NumberPlateRegistration()

{

}

NumberPlateRegistration(int rta)

{

rta = rtacentre;

}

NumberPlateRegistration(String applicant,String father,int age\_yr,String adrs)

{

applicant = applicant\_name;

father = father\_name;

age\_yr = age;

adrs = address;

}

NumberPlateRegistration(String vehicle\_type,String company,int mfg)

{

vehicle\_type = class\_of\_vehicle;

company = makers\_name;

mfg = mfg\_year;

}

NumberPlateRegistration(String chasis,String engine,String fuel,int seats,float weight,float cc)

{

chasis = chasis\_no;

engine = engine\_no;

fuel = fuel\_type;

seats = seating\_capacity;

weight = vehicle\_weight;

cc = cubic\_capacity;

}

NumberPlateRegistration(String insurance,String licence)

{

insurance = insurance\_no;

licence = licence\_no;

}

void input() throws AgeException,InsuranceException,LicenceException

{

scanf = new Scanner(System.in);

System.out.println("Fill the below Application Form: ");

System.out.println("Enter the Applicant's Name: ");

applicant\_name = scanf.next();

System.out.println("Enter your Father's Name: ");

father\_name = scanf.next();

System.out.println("Enter your Address: ");

address = scanf.next();

System.out.println("Enter the class of your Vehicle: ");

class\_of\_vehicle = scanf.next();

System.out.println("Enter the makers name of your vehicle: ");

makers\_name = scanf.next();

System.out.println("Enter the manufacturing year: ");

mfg\_year = scanf.nextInt();

System.out.println("Enter the Chasis number: ");

chasis\_no = scanf.next();

System.out.println("Enter the Engine number: ");

engine\_no = scanf.next();

System.out.println("Enter the fuel type: ");

fuel\_type = scanf.next();

System.out.println("Enter the seating capacity: ");

seating\_capacity = scanf.nextInt();

System.out.println("Enter the weight of the vehicle: ");

vehicle\_weight = scanf.nextFloat();

System.out.println("Enter the Cubic Capacity: ");

cubic\_capacity = scanf.nextFloat();

System.out.println("Enter your age in years : ");

age = scanf.nextInt();

System.out.println("Enter vehicle's Insurance Number: ");

insurance\_no = scanf.next();

System.out.println("Enter your Driving Licence Number: ");

licence\_no = scanf.next();

}

void rtainput()

{

System.out.println("The List of Registering Authority is: ");

System.out.println("1.Adilabad");

System.out.println("2.Karimnagar");

System.out.println("3.Warangal");

System.out.println("4.Khammam");

System.out.println("5.Nalgonda");

System.out.println("6.Mahaboobnagar");

System.out.println("6.Rangareddy");

System.out.println("8.Medchal");

System.out.println("9.Hyderabad");

System.out.println("10.Sangareddy");

System.out.println("11.Nizamabad");

System.out.println("12.Kamareddy");

System.out.println("13.Nirmal");

System.out.println("14.Mancherial");

System.out.println("15.Komrambheem");

System.out.println("16.Jaityal");

System.out.println("17.Peddapalli");

System.out.println("18.Rajanna");

System.out.println("19.Warangal Rural");

System.out.println("20.Jayashankar");

System.out.println("21.Mahabubabad");

System.out.println("22.Jangoan");

System.out.println("23.Bhadradri");

System.out.println("24.Suryapet");

System.out.println("25.Yadadri");

System.out.println("26.Nagarkurnool");

System.out.println("27.Wanaparthy");

System.out.println("28.Jogulamba");

System.out.println("29.Vikarabad");

System.out.println("30.Medak");

System.out.println("31.Siddipet");

}

void map()

{

System.out.println("Enter number of your Registrating Authority from the above list :");

rtacentre=scanf.nextInt();

Map<Integer,String> map = new HashMap<>();

map.put(1,"TS01TS");

map.put(2,"TS02TS");

map.put(3,"TS03TS");

map.put(4,"TS04TS");

map.put(5,"TS05TS");

map.put(6,"TS06TS");

map.put(7,"TS07TS");

map.put(8,"TS08TS");

map.put(9,"TS09TS");

map.put(10,"TS15TS");

map.put(11,"TS16TS");

map.put(12,"TS17TS");

map.put(13,"TS18TS");

map.put(14,"TS19TS");

map.put(15,"TS20TS");

map.put(16,"TS21TS");

map.put(17,"TS22TS");

map.put(18,"TS23TS");

map.put(19,"TS24TS");

map.put(20,"TS25TS");

map.put(21,"TS26TS");

map.put(22,"TS27TS");

map.put(23,"TS28TS");

map.put(24,"TS29TS");

map.put(25,"TS30TS");

map.put(26,"TS31TS");

map.put(27,"TS32TS");

map.put(28,"TS33TS");

map.put(29,"TS34TS");

map.put(30,"TS35TS");

map.put(31,"TS36TS");

Set<Integer> set = map.keySet();

for(int i:set)

{

if(rtacentre==i)

{

Random r = new Random();

registration\_no = map.get(i)+r.nextInt(10000);

System.out.println("Your Registration Number is : "+registration\_no);

}

}

}

boolean approval()

{

if((age>=18)&&(insurance\_no.length()==9)&&(licence\_no.length()==13))

{

return true;

}

return false;

}

ArrayList<NumberPlateRegistration> a = new ArrayList<>();

public String toString()

{

return "Name: "+applicant\_name+" Registration Number: "+registration\_no;

}

@Override

public void run()

{

NumberPlateRegistration n1 = new NumberPlateRegistration();

try {

n1.input();

} catch (AgeException e) {

// TODO Auto-generated catch block

e.printStackTrace();

} catch (InsuranceException e) {

// TODO Auto-generated catch block

e.printStackTrace();

} catch (LicenceException e) {

// TODO Auto-generated catch block

e.printStackTrace();

}

if(approval()==false)

{

if(age<18)

{

try {

throw new AgeException();

} catch (AgeException e) {

// TODO Auto-generated catch block

e.printStackTrace();

}

}

if(insurance\_no.length()!=9)

{

try {

throw new InsuranceException();

} catch (InsuranceException e) {

// TODO Auto-generated catch block

e.printStackTrace();

}

}

if(licence\_no.length()!=13)

{

try {

throw new LicenceException();

} catch (LicenceException e) {

// TODO Auto-generated catch block

e.printStackTrace();

}

}

}

if(approval())

{

n1.rtainput();

n1.map();

a.add(n1);

try

{

FileOutputStream f = new FileOutputStream("F:\\JAVA LAB\\java programs eclipse\\file.txt");

ObjectOutputStream o = new ObjectOutputStream(f);

for(NumberPlateRegistration j:a)

{

o.writeObject(j);

}

o.close();

/\*ObjectInputStream o2 = new ObjectInputStream(new FileInputStream("F:\\JAVA LAB\\java programs eclipse\\file.txt"));

NumberPlateRegistration obj = (NumberPlateRegistration)o2.readObject();

System.out.println(obj);\*/

}

catch(Exception e)

{

System.out.println("File Not Found");

}

}

}

}

**LicenceExcetion.java**

**public** **class** LicenceException **extends** Exception

{

**public** String toString()

{

**return** "Registratin reh=jected because Licence Number should be 13 characters long Ex:TS12345678901";

}

}

**InsuranceException.java**

**public** **class** InsuranceException **extends** Exception

{

**public** String toString()

{

**return** "Registration rejected because Insurance Number should be 9 characters long";

}

}

**AgeException.java**

**public** **class** AgeException **extends** Exception

{

**public** String toString()

{

**return** "Registration rejected because Age should be above 18";

}

}

**Main.java**

import java.io.FileNotFoundException;

import java.io.FileOutputStream;

import java.io.IOException;

import java.io.ObjectOutputStream;

public class Main

{

public static void main(String args[]) throws AgeException,InsuranceException, LicenceException, InterruptedException

{

//Thread t1 = new Thread(new NumberPlateRegistration(),"n1");

//t1.start();

for(int i =0;i<2;i++)

{

NumberPlateRegistration object = new NumberPlateRegistration();

object.start();

object.join();

}

}

}

**4.1: OUTPUT**

