Project Report

On

"REGISTRATION AND LICENSING AUTHORITY OF INDIA"

Submitted by Partial fulfillment of Requirement for Degree of Bachelor of Technology

Submitted to:-

MR.GURCHARAN SINGH

Software Trainer at SPIC.

Submitted By:-

Avi Kathuria, Ankit Bhasin, Akshay Prabhakar (B-tech-CSE)



The Society for Promotion of IT in Chandigarh (SPIC)

Chandigarh

CONTENTS

- Declaration.
- Abstract.
- Company Profile.
- Introduction to the language JAVA.
- Introduction to the SQL SERVER
- Introduction to the Net Beans.
- Operating Environment.
- Introduction to the project.
- Bibliography.

DECLARATION

I hereby declare that the project work entitled "RLA" (REGISTRATION AND LICENSING AUTHORITY) is the partial fulfillment of requirement for the award of degree of B-Tech submitted in the department of CSE at Chandigarh Group of Colleges, Gharuan is an authentic record of my own work carried out at SPIC under the guidance of Mr. Gurcharan Singh during a period from 27-may-2013 to 5 -July-2013. The matter presented in this project report has not been submitted in any other University/Institute for the award of B-Tech Degree.

This is to certify that the above statement made by the candidate is correct to the best of your knowledge.

ABSTRACT

The purpose of this report is to give a brief idea about what has been done in the Training project. This report comprises of various activities, orientations and programs.

Our project was initiated to bring together the services of the entire department under one single umbrella and give citizens of Chandigarh a "multi-service"-"single-window" experience. It has user-friendly menu driven environment to ease the use of the system. Overall project is combination of two technologies namely JAVA, SQL SERVER. This project begins with a welcome page showing the Chandigarh Administration Transport Department. It then displays various menus each describing different ways for registration of vehicle and also for applying for driving license.

During this session, we also defined the objectives of our project, goals, scopes and problem statement so that we can complete the project easily referring to it.

During the making of the project, we found that this will not only revolutionize the management of various tasks in the package but also will deliver the required information in a very easy to use and easy to access manner.

COMPANY PROFILE



The Society of Promotion of IT Chandigarh (SPIC) has been set up under aegis the Department of Information Technology, Chandigarh administration or implementing the various plans of the administration to promote the IT industry in Chandigarh. The Chairperson of the society is the Adviser of the administrator.

Objectives:

- The promote application of Information Technology in the Union of in accordance with the IT Policy of Chandigarh Administration.
- To carry out all such activities that are commensurate with the IT vision of the Chandigarh Administration as outlined in IT policy.
- To promote E-Sampark, software Exports, create IT infrastructure; generate jobs in IT mission of the Chandigarh Administration.
- To facilitate the establishment and the functioning of data processing computer centers.
- To provide consultancy services and the impart training in the various disciplines of Information Technology.
- To facilitate the development of software packages as well as related items and undertake turnkey project/ assignment in INDIA and abroad in Information Technology by public and private sector companies in the Union Territory of Chandigarh in order to promote the application of Information Technology for the benefit of citizen of Chandigarh.

Centre of Excellence

SPIC and Microsoft have jointly set up a Centre of Excellence at Punjab Engineering College, Chandigarh. Under the aegis of Department of IT, SPIC and Microsoft have jointly set up a Centre of Excellence at Punjab Engineering College, Chandigarh. The Centre is a state-of-the-art Complex spread over an area of 3500 sq. ft. It consists of a spacious Conference Hall, Hi-tech class rooms, 30 work stations, a Meeting Room, and all the latest technological equipment for Training, Software Development and Presentations.

Under this understanding the partnership will work towards computerizing organizations in Chandigarh U.T., building skilled technical resources, develop expertise in providing technical consultancy, developing custom applications. Microsoft, in return will provide access to training and skills transfer on Microsoft Corporation technology.

The centre is offering various courses like MCSE, MCSD, MCDBA, VB and SQL 2000. Microsoft is carrying out training for the faculty, the students and employees of Chandigarh Administration on its new technologies / products for bench marking and demonstrating an array of Microsoft products, solutions and inter operability with other platforms at this Centre. The Centre of Excellencies being used as a centre for the development of skills for the emerging software industry in the UT. The Center also provides organized short-term courses for corporate executives, including executives from private companies.

High-end training is carried out for the executives as per their requirement. Software engineers deployed by the Department of Information Technology and Microsoft are working on various egovernance projects, some government projects like an accounting package for the Chandigarh Pollution Control Committee, projects related to counseling/guidance (Regional Employment Officer), a project on Loan System for the Social Welfare Department, Developing a library software for the Chandigarh College of Architecture, a project for the ITI Chandigarh and also developing website of Chandigarh Administration which includes all public interacting departments of Chandigarh Administration

INTRODUCTION TO JAVA

Java is an object-oriented programming language with a built-in application programming interface (API) that can handle graphics and user interfaces and that can be used to create applications or applets. Because of its rich set of API's, similar to Macintosh and Windows, and its platform independence, Java can also be thought of as a platform in itself. Java also has standard libraries for doing mathematics.

Much of the syntax of Java is the same as C and C++. One major difference is that Java does not have pointers. However, the biggest difference is that you must write object oriented code in Java. Procedural pieces of code can only be embedded in objects. In the following we assume that the reader has some familiarity with a programming language. In particular, some familiarity with the syntax of C/C++ is useful.

In Java we distinguish between applications, which are programs that perform the same functions as those written in other programming languages, and applets, which are programs that can be embedded in a Web page and accessed over the Internet. Our initial focus will be on writing applications. When a program is compiled, a byte code is produced that can be read and executed by any platform that can run Java.

To use this tutorial you should run and study each program as you read along, so that you can see how added features affect the programs.

Objects-:

Object-oriented programming focuses on constructs called "objects." An object consists of data and functions known as *methods* which use or change the data. (Methods are similar to procedures or functions in other languages.) Objects of the same kind are said to have the same type or be in the same class. A *class* defines what data can be in an object, and what operations are performed by the methods. One or more objects can be created or "instantiated" from a class.

Constructors-:

Every class has at least one *constructor*, a method which has the same name as the class. A constructor initializes a new object belonging to the class.

Multiple Constructors-:

The arguments of a constructor specify the parameters for the initialization of an object. Multiple constructors provide the flexibility of initializing objects in the same class with different sets of arguments.

Public and Private Variables-:

Java uses three explicit keywords and one implied keyword to set the boundaries in a class: **public**, **private**, and **protected**. The default access specified for the names of variables and methods is "package visibility" or "friendly," which means that all the other classes in the current package have access to them. (Packages are Java's way of grouping classes to make libraries and will be discussed later.) The access specified **public** means that the variables and methods are available from any package; **private** implies that the variables and methods can only be accessed inside methods of the same class. The keyword **protected** indicates additional access to variables and methods that are available to subclasses. We can clarify its meaning in inheritance.

One reason to make a variable private is to restrict access to it. Access becomes an issue for threading which refers to the sequence of execution of program code. For example, we would want to avoid changing the value of a variable while another portion of the code is trying to read it. Make x private and see what happens when you run My Application.

Extending a class-:

Object oriented programming allows the user to reuse existing code rather than rewrite it. Classes have a hierarchical relationship, allowing the user to extend or modify the behavior of classes derived from base classes using *inheritance*.

Arrays-:

An array is a special object containing a group of contiguous memory locations that have the same name and the same type and a separate variable containing an integer constant equal to the number of array elements. The elements of Java arrays are numbered starting from 0.

An array must be created before it can be used. We first declare a reference or "handle" to an array that permits Java to locate the object in memory when it is needed. Then we create an array object to assign to the reference using the **new** operator. For example, we can write

double x[]; // create an array reference

x = new double[5]; // create array object

Or we can create an array reference and an array object on a single line:

double x[] = new double[5];

The number of elements in the array x is x.length. The elements of the array are written as x[0], x[1], x[2], x[3], x[4].

An array object may be created and initialized when its reference is declared. For example,

double $x[] = \{1.0, 1.4, 1.6, 1.8, 3.0\};$

It is a good idea to declare array sizes using named constants (final variables) so that the length of the arrays can be easily changed.

final int ARRAY_SIZE = 1000;

double $x[] = new double[ARRAY_SIZE];$

Two-dimensional arrays-:

A two-dimensional array is implemented by creating a one-dimensional array each of whose elements is also an array. We first declare a reference to an array of arrays and then create the individual arrays associated with each element. For example

double x[][]; / create reference to an array of arrays

Then we can write for example,

x = new double[3][5]; create array objects

Simple Graphics

A powerful feature of Java is its ability to do graphics relatively simply. The **import** statement allows us to use the Java libraries. The notation java.awt.* means that all the classes in the java.awt package can be used. This package implements the Java Abstract Window Toolkit (AWT) and contains all the classes and interfaces necessary for creating a user interface. Packages are a way of grouping a collection of related classes.

- We have used the java.awt.Graphics class which provides drawing and painting methods. The method draw has an argument g of type Graphics. Think of g as a part of the screen (a bit map) where painting will take place and the methods that are associated with it.
- The four principal elements need to create a GUI include:
- Components. A component is a visual object containing text or graphics that can respond to keyboard
 or mouse inputs. Examples of components include buttons, labels, text boxes, check boxes, and lists. A
 blank component is known as a canvas, which can be used as a drawing area for text or graphics. All
 components inherit a common set of methods, the most common of which is paint.
- 2. A **container** is a graphical object that can hold components or other containers. The most important type of container is a **Frame**.
- 3. **Layout Manager**. A layout manager is automatically associated with each container when it is created, but the layout manager can be changed. Examples include BorderLayout, BoxLayout, GridLayout.
- 4. **Event Handlers**. Events, such as the click of a mouse, are handled by creating **listener classes** which implement **listener interfaces**. The standard listener interfaces are injava.awt.event.
- A frame is a very simple window, with a border, a place for a title, and a close window button.
- Note how the {paint method is used. It is not called directly. Instead, whenever the frame is shown, the paint method is called. In addition, if one covers the frame with another window, the paint method will be called kagain when the frame is uncovered. To directly call the paint method, use the repaint() method.
- The Simulation class extends the Frame class. The paint method is called when the Frame is first shown and anytime Frame is brought to the front.
- Java uses a coordinate system whose origin is at the upper left-hand corner with positive x values to the right and positive y values down. Because of this choice of screen coordinate system, we need to convert world coordinates to screen coordinates when drawing an oval to represent the particle. Because

the last two arguments of drawOval are the same, the oval is a circle. (Note that drawOval requires integers.)

- Note the use of the **while** statement which allows all the statements within the braces of the while statement to be executed again and again as long as the argument of the whilestatement (time < tmax) is true.
- An alternative to the while loop is the **for** loop which looks like
- for (int i = 0; i < 10; i++)
- statement;

INTRODUCTION TO SQL SERVER

SQL Server is a comprehensive database platform providing enterprise-class data management with integrated business intelligence (BI) tools. The SQL Server database engine provides more secure, reliable storage for both relational and structured data, enabling you to build and manage highly available, performing data applications that you and your people can use to take your business to the next level.

The SQL Server data engine lies at the core of this enterprise data management solution. Additionally, SQL Server combines the best in analysis, reporting, integration, and notification. This enables your team to build and deploy cost-effective BI solutions with which they can drive data into every corner of your business through scorecards, dashboards, Web services, and mobile devices. Close integration with Microsoft Visual Studio, the Microsoft Office System, and a suite of new development tools, including the Business Intelligence Development Studio, sets SQL Server apart.

Whether you are a developer, database administrator, information worker, or decision maker, SQL Server provides innovative solutions that help you gain more value from your data. The following diagram illustrates the core components in SQL Server, showing how SQL Server is a key part of the Windows Server System in integrating with the Microsoft Windows platform—including the Microsoft Office System and Visual Studio—to offer solutions that deliver data to every corner of your organization.

COMPONENTS

- Enterprise Data Management. SQL Server delivers a more reliable, secure, and productive data platform for line-of-business and analytical applications. This version of SQL Server is the largest version of SQL Server ever, as well as the most dependable and secure version.
- Developer Productivity. SQL Server provides an end-to-end development environment that includes many new technologies that empower developers and significantly increase their productivity.
- Business Intelligence. The comprehensive analytical, integration, and data migration capabilities of SQL
 Server enable companies to extend the value of their existing applications, regardless of the underlying platform. BI solutions built on SQL Server put critical, timely information in the hands of all your people, empowering them to make better decisions faster.

INTRODUCTION TO NETBEANS

Net Beans is an integrated development environment (IDE) for developing primarily with Java, but also with other languages, in particular PHP,C/C++, and HTML5. It is also an application platform framework for Java desktop applications and others.

The Net Beans IDE is written in Java and can run on Windows, OS X, Linux, Solaris and other platforms supporting a compatible JVM.

The Net Beans Platform allows applications to be developed from a set of modular software components called modules. Applications based on the Net Beans Platform (including the Net Beans IDE itself) can be extended by third party developers.

Net Beans IDE is an open-source integrated development environment. Net Beans IDE supports development of all Java application types (Java SE(including Java FX), Java ME, web, EJB and mobile applications) out of the box. Among other features are an Ant-based projectsystem, Mavensupport, refactorings, version

control (supporting CVS, Subversion, Mercurial and Clear case).

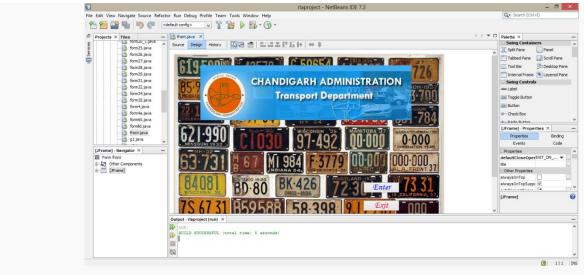
Modularity: All the functions of the IDE are provided by modules. Each module provides a well defined function, such as support for the Java language, editing, or support for the CVS versioning system, and SVN. Net Beans contains all the modules needed for Java development in a single download, allowing the user to start working immediately. Modules also allow Net Beans to be extended. New features, such as support for other programming languages, can be added by installing additional modules. For instance, Sun Studio, Sun Java Studio Enterprise, and Sun Java Studio Creator from Sun Microsystems are all based on the Net Beans IDE.

Net Beans Profiler

The Net Beans Profiler is a tool for the monitoring of Java applications: It helps developers find memory leaks and optimize speed. Formerly downloaded separately, it is integrated into the core IDE since version 6.0.

The Profiler is based on a Sun Laboratories research project that was named JFluid. That research uncovered specific techniques that can be used to lower the overhead of profiling a Java application. One of those techniques is dynamic byte code instrumentation, which is particularly useful for profiling

large Java applications. Using dynamic byte code instrumentation and additional algorithms, the Net Beans Profiler is able to obtain runtime information on applications that are too large or complex for other profilers. Net Beans also support Profiling Points that let you profile precise points of execution and measure execution time.



Net Beans GUI Builder

GUI design tool

Formerly known as project Matisse, the GUI design-tool enables developers to prototype and design Swing GUIs by dragging and positioning GUI components.

The GUI builder has built-in support for JSR 295 (Beans Binding technology), but the support for JSR 296 (Swing Application Framework) was removed in 7.1.

Net Beans JavaScript editor

The Net Beans JavaScript editor provides extended support for JavaScript, Ajax, and CSS.

JavaScript editor features comprise syntax highlighting, refactoring, code completion for native objects and functions, generation of JavaScript class skeletons, generation of Ajax callbacks from a template; and automatic browser compatibility checks.

CSS editor features comprise code completion for styles names, quick navigation through the navigator panel, displaying the CSS rule declaration in a List View and file structure in a Tree View, sorting the outline view by name, type or declaration order (List & Tree), creating rule declarations (Tree only), refactoring a part of a rule.

INTRODUCTION TO PROJECT

RLA is Registering and Licensing Authority.

We have a project that will cover information about how to make various licenses and online registration of vehicles similar to that for sector-17Chandigarh Administration Transport Department.

In a bid to check circulation of fake receipts and identify employees issuing slips to the public to give driving licenses, registration cards, transfer of vehicles, booking of numbers and other work, the registration and licensing authority (RLA) has initiated a system under which the name of the employee issuing a slip will automatically be generated on the receipt. The new system has been introduced in all counters of the authority.

The RLA project will have the prominent features including:

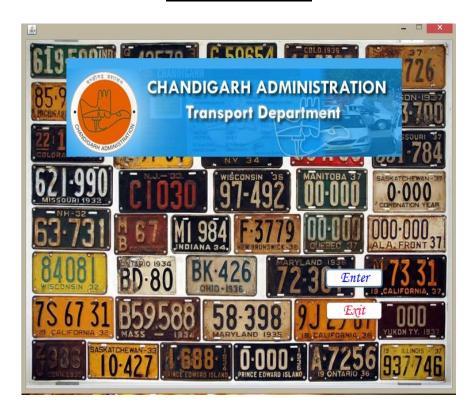
- > Providing online information about licenses.
- Online making of licenses and registration of vehicles.
- User can register with website.
- Can even mail the query to administrator.

The site offers facilities to create various types of licenses:

- Learner license
- Regular license
- Duplicate license
- Renewal of duplicate license
- International license
- Addition of another class of vehicle

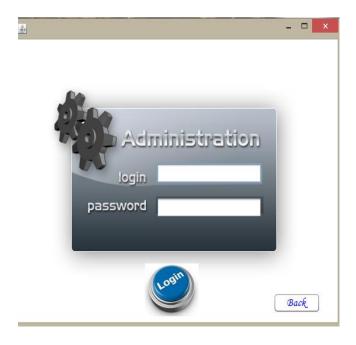
SNAPSHOTS:

WELCOME PAGE



This is home page in which we have given a logo of our project. When we will click on "ENTER" button next frame is displayed on the screen.

ADMINISTRATION LOGIN



This is the **administration login page** in which **login id** and **password** is to be given. By clicking on the **login** button the next page will be displayed.

By clicking on **BACK** button the previous screen will return.

USER LOGIN



This is the **user login page** in which the user has to enter his **username** and **password** and then click on **go** button to login.

TRAFFIC RULES



This is the next page in which various options are displayed. Here the user wants information about the traffic rules, so he has clicked on the **traffic rules menu**. Further required information can be obtained by clicking on the displayed 4 options.

- General
- Road signs
- Traffic signals
- Traffic hand signals

GENERAL TRAFFIC RULES AND REGULATIONS



This screen is displayed when user clicks on **GENERAL** option in the drop down menu of **TRAFFIC RULES.** This frame gives the user information about the general traffic rules.

MANDATORY ROAD SIGNS



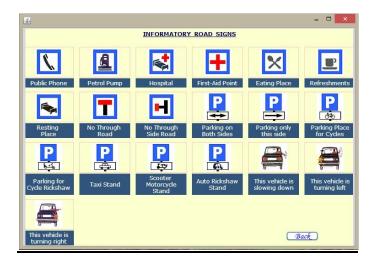
When user clicks on the **ROAD SIGNS** option in the drop down menu for **TRAFFIC RULES** the above screen is displayed. This frame allows user to learn about various mandatory road signs. Clicking in the **BACK** button helps us resume back to the previous screen.

CAUTIONARY ROAD SIGNS



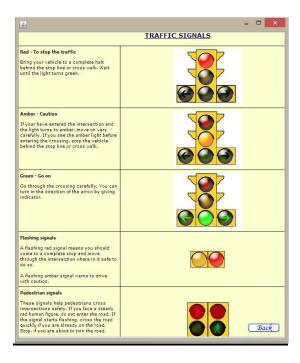
This frame displays the **CAUTONARY ROAD SIGNS.** By clicking on the back button the user can resume back to the previous screen.

INFORMATORY ROAD SIGNS



This frame displays the various **INFORMATORY ROAD SIGNS.** By clicking on the **BACK** button user can resume back to the previous screen.

TRAFFIC SIGNALS



This frame is displayed when user clicks on **TRAFFIC SIGNAL** option in the drop down menu of traffic rules menu. It gives the user information about various traffic rules. By clicking on the **BACK** button the previous screen is resumed.

This is a frame where you enter your details to be stored in the database. This frame stores the details for the convenience of the agent. On clicking on submit button the details of the customer automatically is stored in data bases. On clicking on log out this frame is disposed and login page is appears on the screen of the user.

TRAFFIC POLICE HAND SIGNALS



This frame is displayed when user clicks on the **TRAFFIC HAND SIGNALS** option in the drop down menu of **TRAFFIC RULES.** This frame displays various traffic police hand signals. Again the **BACK** button helps to resume back to the previous screen.

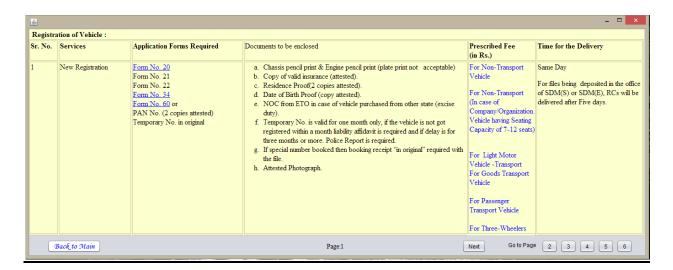




Here user has clicked on the **FORMS AND PROCEDURE** menu. A drop down menu appears displaying two options

- Vehicle registration
- Driving license

REGISTRATION OF VEHICLE



After clicking on the **VEHICLE REGISTRATION** option the above frame appears. This frame provides various services to the user.

Here information about **NEW REGISTRATION** service is provided. It tells the user which all forms are to filled, which documents are to be enclosed ,what is the fee in order to register for a new vehicle.

BACK TO MAIN button takes the user back to the main menu.

NEXT button takes the user to the next page.

The buttons 2, 3, 4, 5, 6 takes the user to the desired page.

FORM 20

	FORM 20		
Form of Application f	or Registration of Motor Vehicle		
To The Registering Authority			
Full name of person to be registered as register		Age of the person to be registered as registered owner	
owner Son / Wife / Daughter of		(proof of age to be attached) File Upload	
3. Permanent address of the to be registered as registered		4. Temporary address of the person to registered as	
owner		registered owner	
5. Name and address of the Dealer or manufacturer from		6. If ex-army vehicle or imported vehicle enclose proof. If	
whom the vehicle was purchased (Sales Certificate and Certificate or road worthiness issued by the		locally manufactured Trailer/Semi trailer enclose the approval and note the proceeding number and date of	
manufacturer to be enclosed) File Upload		approval File Upload	
7. Class of Vehicle		8. The Motor Vehicle is	
(If motor Cycle, whether with or without gear)			
9. Type of Body		10. Type of Vehicle	
11. Maker's Name		12. Month and year of manufacture	
13. Number of Cylinders		14. Horse Power	
15. Cubic Capacity		16. Maker's classification or it not known, wheel base	
17. Chassis number		18. Engine Number	
19. Seating Capacity (Including Driver)		20. Fuel used in engine	
21. Unloaded weight		22. Particulars of previous registration and registered	
23. Colour or colours of body wings and front end		24. Type of Body	
25. Unloading Weight		26. Number, Description and size of tyres on each axle	
27. maximum axle weight in respect of each axle		Submit Clear next ->	



PAGE2 OF VEHICLE REGISTRATION



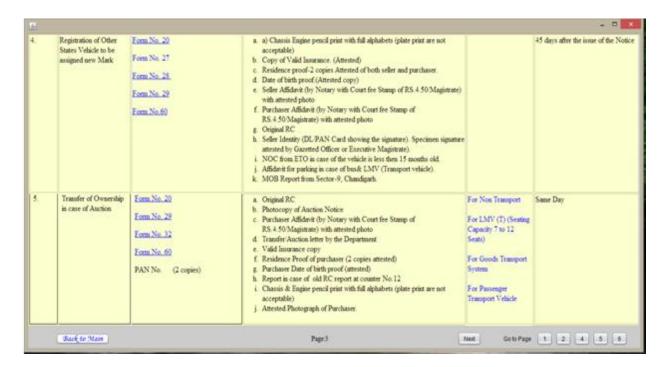
This frame provides user 2 services

- Renewal of RC
- Duplicate RC

This frame provides complete procedure of renewing RC and making a duplicate RC.

By clicking on Form No. 20 the particular form will be displayed.

PAGE3 OF VEHICLE REGISTRATION



This frame similarly allows user for

- Registration of other state vehicle to be assigned new mark
- Transfer of ownership in case of auction

FORM 28

	FORM 28					
Form of Applicat	tion for "No Objection Certificatie" an	d grant of certificate				
o be made in triplicate copy and the triplicate copy will	th the endorsement of the Registerie	ig Authority to be returned to the owner of the vehicle and registe	ring authority	ie whose jurisc	Siction the vehic	Se :
to be removed, respectively)						
	PART-1					
The Registering Authority						
We intend to transfer the vehicle to the jurisdiction of t	he Registering Authority					
We intend to sell the vehicle to Shri-SmitKamari						
		who resides in the jurisdiction of the Registering Authority				
the state of	.1 NVe thereof request for	the issue of a No Objectice Certificate for mylour vehicle the part	iculars of whi	ch are ferreshe	id below:	
Neme :		Z. SowWife, Daughter of :				
Name : Vehicle Registration No. :		2. Son-Wife, Daughter of : 4. Class of Vehicle. :			=	
					=	
Vetacle Registration No. :		4. Class of Vehicle.:			=	
Velociv Registration No. : Registration Authority which :		4. Class of Vehicle.:				
Velicle Regularition No. : Regularition Authority which : Originally regulatered the vehicle		4. Class of Vehicle.: 6. Engine No :				
Vetacle Registration No. : Registration Authority which : Originally registered the vehicle Charisis No :		4. Class of Vehicle.; If. Engine No : II. Period of stay in the state;				
Velacle Registration No. : Registration Authority which : Originally registered the vehicle Chansia No : Period up to which motor :		4. Class of Vehicle.: 6. Engine to : 8. Period of stay in the state : 50. Whether any demand for tax is :				
Velacle Registration No. : Registration Authority which : Originally registered the velacle Chassis No : Period up to which motor : shicle tax has been paid		4. Class of Vehicle.: 6. Engine No.: 8. Period of stay in the state: 50. Whether any demant for tax is: peoling, 8 so, give details				
Vehicle Registration No.: Registration Authority which: Originally registered the vehicle Chassis No: Period up to which motor: which tax has been paid I. Whether the vehicle is involved in any:		4. Class of Websie.: 6. Engine No.: 8. Period of stay in the state: 55. Whether any demand for tax is: pending, if no, give details: 13. Whether the vehicle involved in any:				
Vehicle Registration No.: Registration Authority which: Originally registered the vehicle Chassis No: Period up to which motor: which tax has been paid I. Whether the vehicle is involved in any:		4. Class of Vehicle.; (6. Engine No : (8. Period of stay in the state : (50. Whether any demand for tax is : pending, if so, give details 13. Whether the vehicle involved in any : case of inamport of prohibited goods, if				

FORM 29



FORM 32



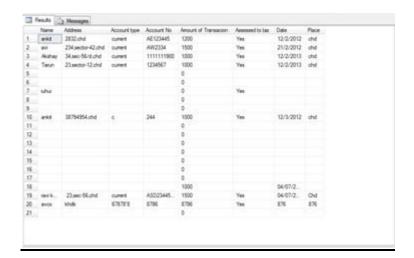
DATABASE OF FORM 32



FORM 60



DATABASE OF FORM 60



PAGE 4 OF VEHICLE REGISTRATION



This frame provides the user the following services

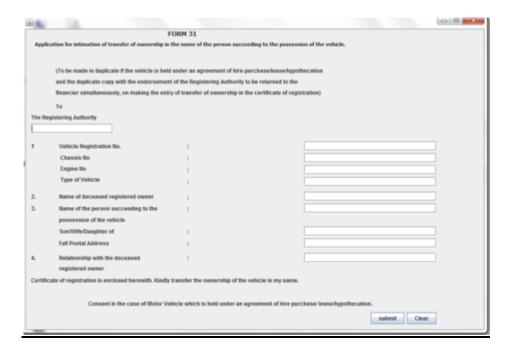
- Transfer of ownership within state
- Transfer of ownership in death case



DATABASE OF FORM 29



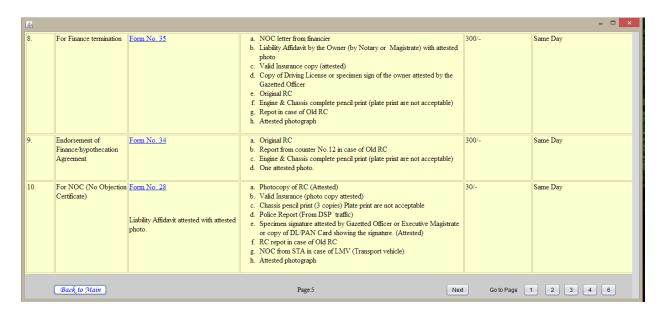
FORM 31



DATABASE OF FORM 31



PAGE 5 OF VEHICLE REGISTRATION



This frame provides the following services

- For finance termination
- Endorsement of finance hypothecation agreement
- For NOC (No Objection Certificate)

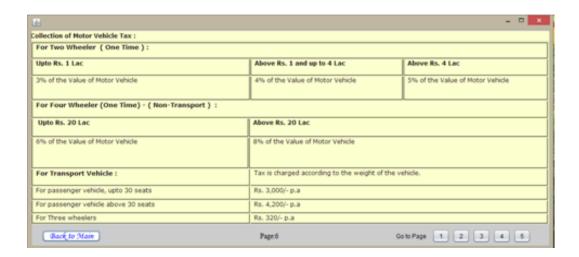
FORM 35



DATABASE OF FORM 35

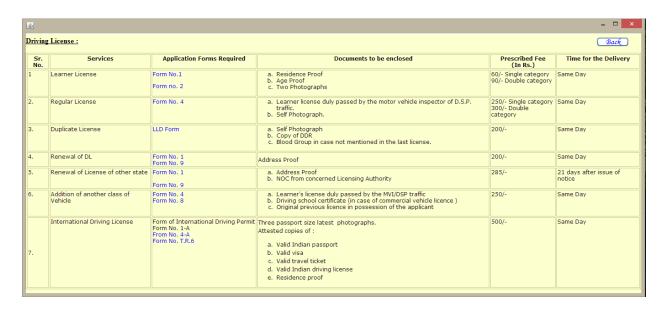


PAGE6 OF VEHICLE REGISTRATION



This is the page 6 of vehicle registration. It gives information about the vehicle taxes.

DRIVING LICENSE



This frame is displayed by clicking on the **DRIVING LICENSE** option in the drop down menu of **FORMS AND PROCEDURE** menu.

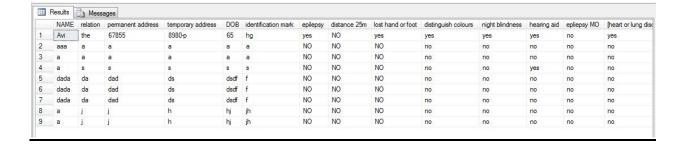
It allows the user to make a no. of licenses

- Learner license
- Regular license
- Duplicate license
- Renewal of DL
- Renewal of license of other state
- Addition of another class of vehicle
- International driving license

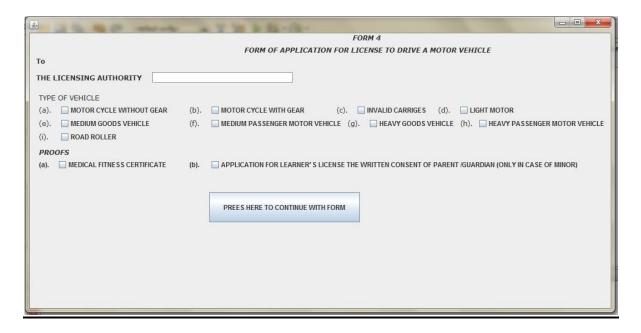
FORM 1



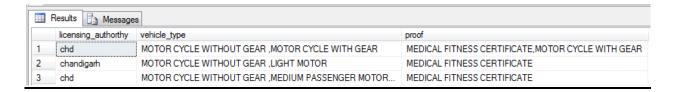
DATABASE OF FORM 1



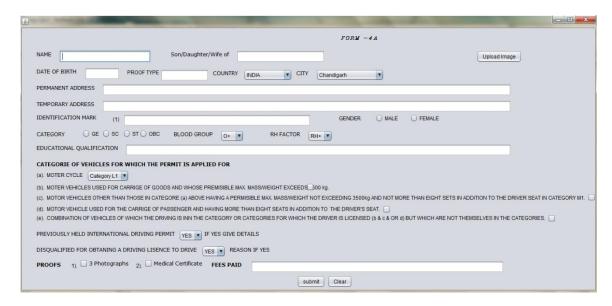
FORM 4



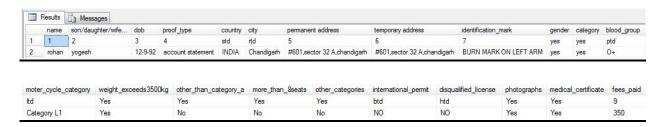
DATABASE OF FORM 4



FORM 4A



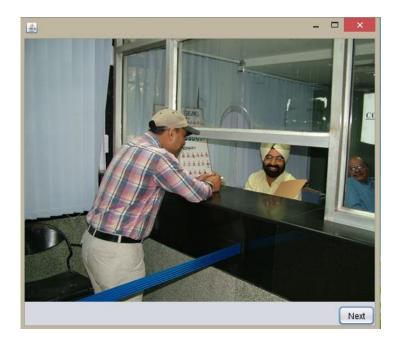
DATABASE OF FORM 4A



GALLERY



Here user has clicked on the **Gallery menu**



Click on the **NEXT** button to view the next picture.











BIBLIOGRAPHY

Books

Java 2 Complete Reference.

Core Java 2 Seventh Edition by Cay S. Horstmann and Gary Cornell.

Advanced Java by Balaguruswamy.

Programming using Java by David. J. ECK.

Java Design Patterns by James W. Cooper

Sites

www.google.com

www.wikipedia.com

www.engineersarchive.com

www.dreamincode.net