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License Monitoring System

Mirudhula N[1], Priyadarshini V[2], Raveena S[3], Dr. Kala[4] Assistant Professor Ug Scholor,
Department Of Computer Science Engineering,
Hindusthan Institute of Technology, Coimbatore-641032.

ABSTRACT
This project is designed to provide easy access to traffic police department in the security check purpose. Now day's some of the persons uses the duplicate driving license for illegal purpose. It is very difficult to find such a duplicate driving license at the place of check post. This project is very useful to find duplicate driving license. When the person got the license from the RTO office after the preliminary test and procedure the person license number, name, address, date, heavy vehicle driving permission details are upload to the corresponding Form.
This system maintain the details such as no of software license, type of license, license no, license key, no of users, license validity and so on. these details are stored and maintained by the different hardware engineers. The software, which is installed in a particular machine, is rollback whenever the purpose of software is finished.
The rollback & expiry alerts will be given by the projects to the concern person. It will all help the organization to maintain & control the software usages [1]

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I. INTRODUCTION

In this project an integrated system of Android SDK 2.2, Libraries, Linux kernel, and Eclipse & Java Development tools is introduced to provide a license monitoring system. We analysed the solutions currently available for the implementation of APK files.

RTO Information System (RTO) is an online information source developed for Road Transport Authority to facilitate the users in applying for various licenses and registrations. This tool has been designed to facilitate the flow of information within the organization. RTO provides the facility of applying licenses online, insurance of permanent license, tax and receiving RTO The System keeps track of the transactions in the RTO office. It maintains Renewal of learner's License, Renewal of permanent license Issue of learner's license [2].

1.1 Introduction to Android

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. Google Inc. purchased the initial developer of the software, Android Inc., in 2005.

Android's mobile operating system is based on the Linux kernel. Google and other members of the Open Handset Alliance collaborated on Android's development and release.

The Android Open Source Project (AOSP) is tasked with the maintenance and further development of Android. The Android operating system is the world's best-selling Smartphone platform.

The Android SDK provides the tools and APIs necessary to begin developing applications Android platform using the Java programming language. Android has a large community of developers writing applications ("apps") that extend the functionality of the devices. There are currently over 250,000 apps available for Android [7]

1.1.1 Features

- **Application framework** enabling reuse and replacement of components
- **Dalvik virtual machine** optimized for mobile devices
- **Integrated browser** based on the open source WebKit engine
- **Optimized graphics** powered by a custom 2D graphics library; 3D graphics based on the OpenGL ES 1.0 specification (hardware acceleration optional)
- **SQLite** for structured data storage
- **Media support** for common audio, video, and still image formats (MPEG4, H.264, MP3, AAC, AMR, JPG, PNG, GIF)
- **GSM Telephony** (hardware dependent)

- **Bluetooth, EDGE, 3G, and WiFi** (hardware dependent)
- **Camera, GPS, compass, and accelerometer** (hardware dependent)
- **Rich development environment** including a device emulator, tools for debugging, memory and performance profiling, and a plugin for the Eclipse IDE[7]

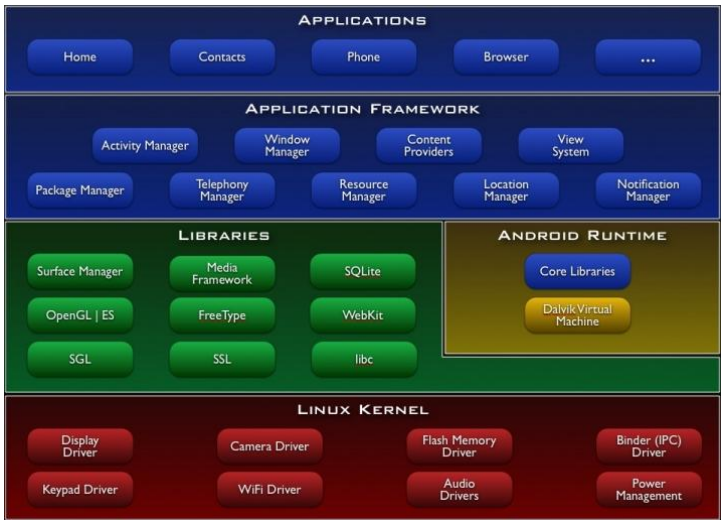


Fig 1.1 Android Architecture

1.1.2 Libraries

Android includes a set of C/C++ libraries used by various components of the Android system. These capabilities are exposed to developers through the Android application framework. Some of the core libraries are listed below:

- **System C library** - a BSD-derived implementation of the standard C system library (libc), tuned for embedded Linux-based devices
- **Media Libraries** - based on PacketVideo's OpenCORE; the libraries support playback and recording of many popular audio and video formats, as well as static image files, including MPEG4, H.264, MP3, AAC, AMR, JPG, and PNG
- **Surface Manager** - manages access to the display subsystem and seamlessly composites 2D and 3D graphic layers from multiple applications
- **LibWebCore** - a modern web browser engine which powers both the Android browser and an embeddable web view
- **SGL** - the underlying 2D graphics engine
- **3D libraries** - an implementation based on OpenGL ES 1.0 APIs; the libraries use either hardware 3D acceleration (where available) or the included, highly optimized 3D software rasterizer
- **FreeType** - bitmap and vector font rendering
- **SQLite** - a powerful and lightweight relational database engine available to all applications[7]

1.2 EXISTING SYSTEM:

The existing system is used manual. The user has been maintaining their system manually is a tedious job. All the process must be done manually.

The users are interested to speed up the Operations and all the operations must be done automatically. Existing system is the manual one which has the following drawbacks [4].

1.2.1 DRAW BACKS:

- Waste of time for manual operations.
- Sometimes the operations done manually will prone to unsecured access.
- Unauthenticated accessing.
- Required information cannot be retrieved easily.
- Manual processes will take time.

1.3 PROPOSED SYSTEM

The proposed system is to Traffic Police computerize for maintaining controlling of the duplicate driving license. The aim of the proposed system is the overcome the difficulties of the existing system [4]

1.3.1 Advantages:

- The required information can be retrieved easily.
- Time will not be wasted in the process.
- Corrections can be made easily.
- High speed.
- Wastage of manpower is reduced.
- Less Timep

II. MODULE DESCRIPTION

This module contains all the information about the authenticated user. User without his username and password can't enter into the login if he is only the authenticated user then he can enter to his login. This module contains all the information about the authenticated user. User without his username and password can't enter into the login if he is only the authenticated user then he can enter to his login. Authentication is the process of verifying the identity of a user by obtaining some sort of credentials and using those credentials to verify the user's identity. If the credentials are valid, the authorization process starts. Authentication process always proceeds to Authorization process. Administrators assume these responsibilities as volunteers who go through a community review process. They are not acting as users. They are never required to use their tools, and must never use them to gain an advantage in a dispute whose need the access for their database in secured way of organization. Administrators should not be confused incoming user registration time and login time. To manage enter organization Services. The purpose of this module is to provide an authentication service, allowing callers to determine whether a username/password combination is valid, and a change-password service, allowing users to change their passwords. This module is created to centralize and encapsulate password management and authentication services [4].

2.1 LOGICAL DEVELOPMENT

Data Flow Diagram

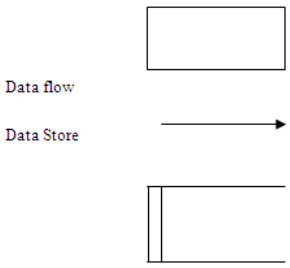
A data flow diagram is graphical tool used to describe and analyze movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams. The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations. A full description of a system actually consists of a set of data flow diagrams. The development of DFD'S is done in several levels. Each process in lower level diagrams can be broken down into a more detailed DFD in the next level

The idea behind the explosion of a process into more process is that understanding at one level of detail is exploded into greater detail at the next level. This is done until further explosion is necessary and an adequate amount of detail is described for analyst to understand the process[7].

2.2 DFD SYMBOLS

- In the DFD, there are four symbols
- A square defines a source(originator) or destination of system data
- An arrow identifies data flow. It is the pipeline through which the information flows
- A circle or a bubble represents a process that transforms incoming data flow into outgoing data flows.
- An open rectangle is a data store, data at rest or a temporary repository of data

Source or Destination of data



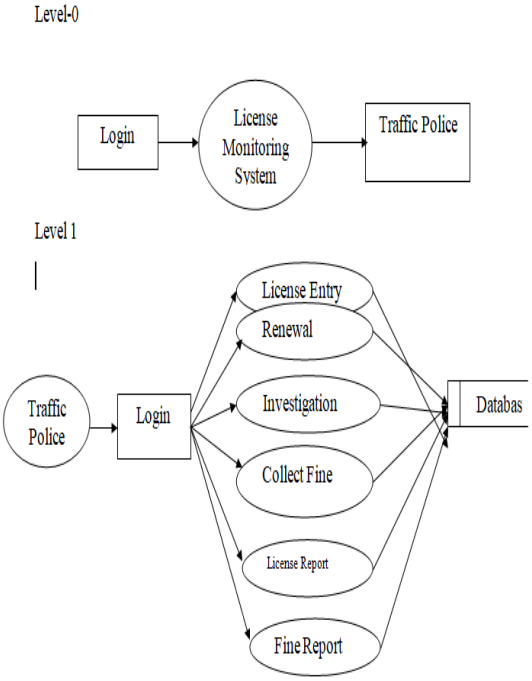
SALIENT FEATURES OF DFD'S

The DFD shows flow of data, not of control loops and decision are controlled considerations do not appear on a DFD.

The DFD does not indicate the time factor involved in any process whether the dataflow take place daily, weekly, monthly or yearly.

The sequence of events is not brought out on the DFD[2].

Data Flow Diagram [DFD]



2.3 License Entry

In this module Administrator Add the New License Information using this module. It Contains Information about the License No, Name, Address Vehicle Type, Expiry Date, Date of Birth. It makes easy to integrate Administrator authentication into your Mobile application. The credentials are not stored in your database. All License Details are saved into License Table [1].

License No	varchar(50)	NotNull
Name	varchar(50)	NotNull
Address	varchar(max)	NotNull
Date of Birth	Datetime	NotNull
Vehicle Type	varchar(50)	NotNull
Validity	Datetime	NotNull

Fig 2.3 License Entry

2.4 Renewal

In this module used to renewal details of License Information to be updated. It Contains Information about the License No, Name, Address Vehicle Type, New Expiry Date, Date of Birth. All License renewal Details are saved into renewal Table [1].

Renewal ID	Int	NotNull
Date	varchar(50)	NotNull
License No	varchar(50)	NotNull
Name	varchar(50)	NotNull
Address	varchar(Max)	NotNull
Date of Birth	varchar(50)	NotNull
Vehicle Type	varchar(50)	NotNull
Validity	varchar(50)	NotNull

Fig 2.4 Renewal Entry

2.5 Investigation

Traffic Inspector verifies the license easily. To find if license is original or duplicate using license No. Traffic police open this application and give license number, our application will show entire details of the license. Traffic police compare the details with people license.

2.6 Collect fine

Traffic Inspector verifies the license easily, our application will show entire details of the license. Traffic police compare the details with people license. If details mismatch then traffic police make enquiry and collect fine amount from that people [1].

Fine ID	Int	NotNull
License No	varchar(50)	NotNull
Name	varchar(50)	NotNull
Amount	varchar(MAX)	NotNull
Reason	varchar(50)	NotNull
Date	varchar(50)	NotNull
Inspector Name	varchar(50)	NotNull

Fig 2.6 collect fine

2.7 Report

In Report Module there are two reports are generated. First one is License Report and another one is Fine collection report. The license report is containing information about License No, Name, Address Vehicle Type, Expiry Date, and Date of Birth. All the details retrieve from database. Same as fine collection report contain information about license no, fine amount, date, reason.

III. SYSTEM TESTING

3.1 Types of Testing Done

Testing is a series of different tests that whose primary purpose is to fully exercise the computer based system. Although each test has a different purpose, all work should verify that all system element have been properly integrated and performed allocated function. Testing is the process of checking whether the developed system works according to the actual requirement and objectives of the system.

The philosophy behind testing is to find the errors. A good test is one that has a high probability of finding an undiscovered error. A successful test is one that uncovers the undiscovered error. Test cases are devised with this purpose in mind. A test case is a set of data that the system will process as an input. However the data are created with the intent of determining whether the system will process them correctly without any errors to produce the required output [11].

Types of Testing:

3.1.1 Unit Testing:

All modules were tested and individually as soon as they were completed and were checked for their correct functionality.

3.1.2 Integration Testing:

The entire project was split into small program; each of these single programs gives a frame as an output. These programs were tested individually; at last all these programs where combined together by creating another program where all these constructors were used. It give a lot of problem by not functioning is an integrated manner. The user interface testing is important since the user has to declare that the arrangements made in frames are convenient and it is satisfied. When the frames where given for the test, the end user gave suggestion. Based on their suggestions the frames where modified and put into practice.

This integration testing is performed in login page, admin home page and user home page.[10]

3.1.3 Validation Testing:

Validation is the process of evaluating a software system or component during or at the end of the development cycle in order to determine whether it satisfies specified requirements. Validation is usually associated with traditional execution-based testing, that is, exercising the code with test cases. At the culmination of the black box testing software is completely assembled as a package. Interfacing errors have been uncovered and corrected and a final series of test i.e., Validation succeeds when the software function in a manner that can be reasonably Accepted by the customer.

Validation testing is performed in account creation page, registration page and deposit form.

3.2 Test Data and Output

Taking various types of data has been applied in the above testing. Preparation of test data plays a vital role in system testing. After preparing of test data the system under the study is tested using the test data. While testing the system by using the test data, errors are again uncovered and corrected by using the above testing and correction methods.[11]

The system has been verified and validation by running with both the following:

3.2.1Test data

3.2.2Live data

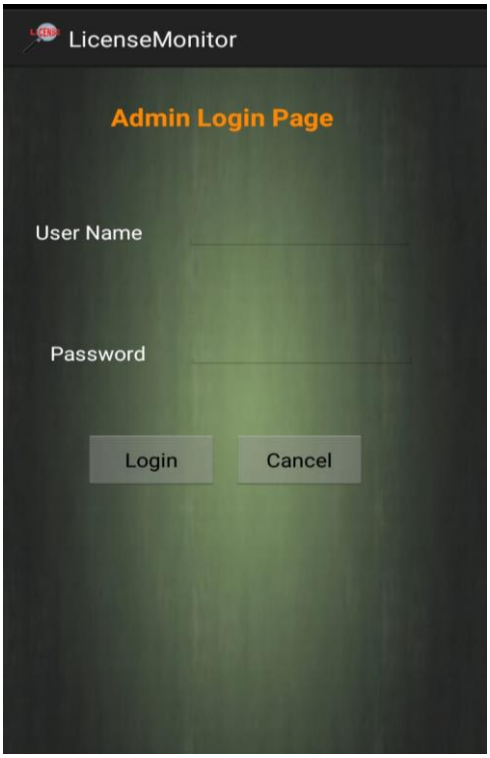
3.2.1 Run with Test Data:

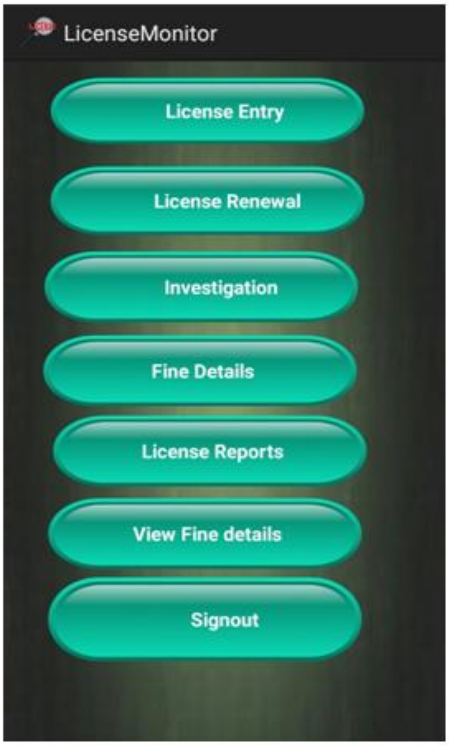
In this case the system was run with some sample data. Specification testing was also done for each condition.

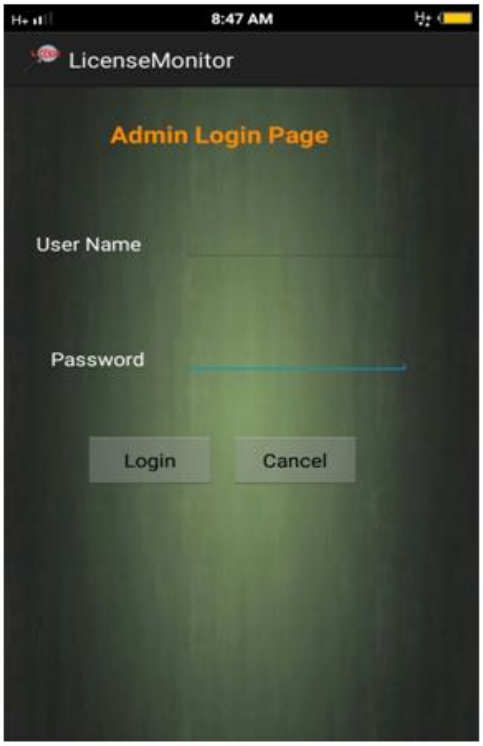
3.2.2 Run with Live Date:

The system was tested with the data of the old system for a particular period. Then the new reports were verified with the old one.

IV. LICENSE MONITORING SYSTEM APK




LicenseMonitor
License Entry
License Renewal
Investigation
Fine Details
License Reports
View Fine details
Signout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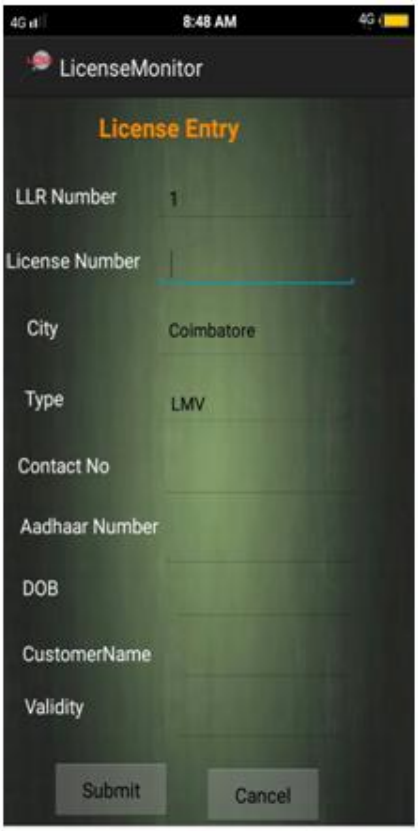
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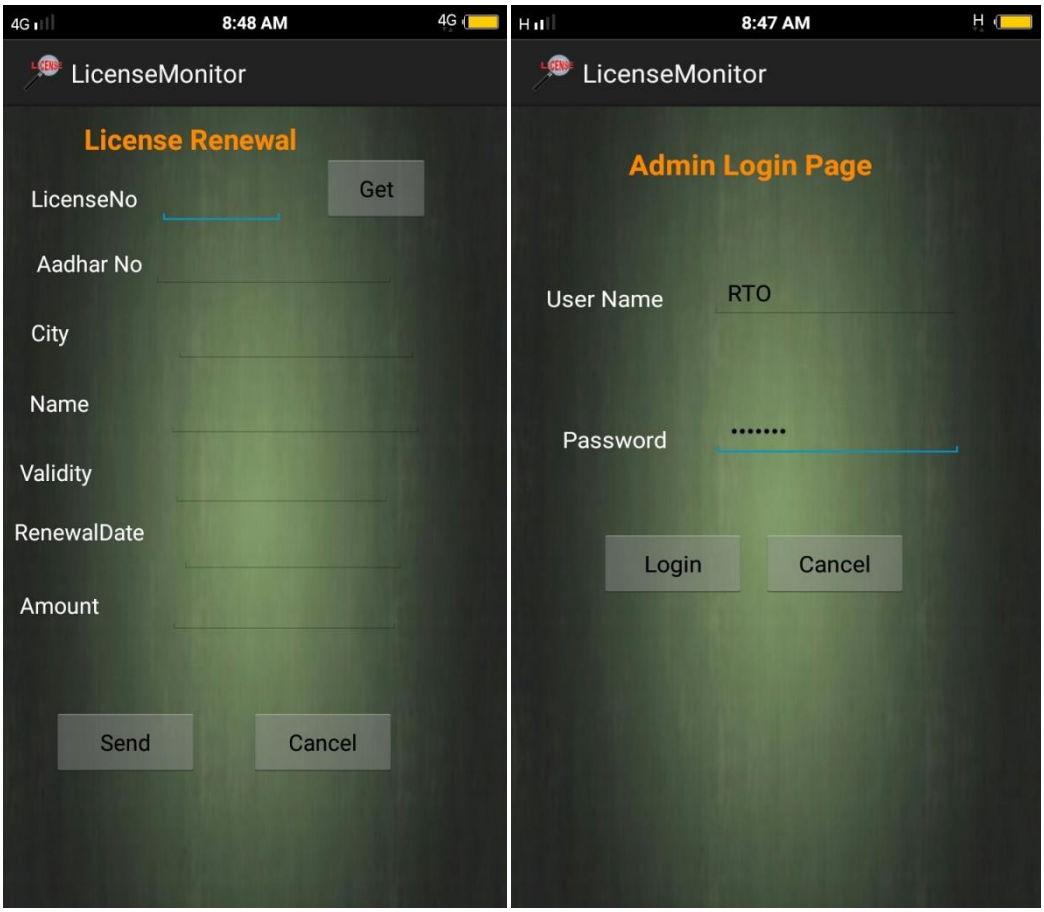

V. CONCLUSION

The "**License Monitoring System**" has been developed to satisfy all proposed requirements. The process is maintained more simple and easy. The system is highly scalable and user friendly. Almost all the system objectives have been met. The system has been tested under all criteria. The system minimizes the problem arising in the existing manual system and it eliminates the human errors to zero level. The design of the database is flexible ensuring that the system can be implemented. It is implemented and gone through all validation. All phases of development were conceived using methodologies. User with little training can get the required report. The software executes successfully by fulfilling the objectives of the project. Further extensions to this system can be Made required with minor modifications

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