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Traffic Police Management :Vehicle Document Verification System Using QR Code

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Abstract — *This project aims at implementing a vehicle document check system where databases and documents are retrieved by the traffic police by their smartphones and the physical documents are not needed to be carried along thereby saving time in document verification. Initially we assign them unique identity numbers and scan their RC, Insurance, Emission paper, vehicle name, and number and store it in the database at the back end. Using the above information, we create a QR code and stick it on an irreplaceable part of the vehicle. At the front end we create an application with which traffic police can scan the QR code on his phone and all the details about the owner of the vehicle and all the documents earlier stored will be shown on the phone. We can make the driver's license as unique identification if needed for the application query search in case scanner fails to work. We can also detect even if the bike is stolen using an alert message feature which is added along with the details of the user.*

Index Terms *- QR code, Unique Identity, Document Check System.*

I. INTRODUCTION

Regional Transport Office (RTO) is an Indian government bureau which is responsible for the registration of vehicles and issue of Driver's License in India. RTO management will be having lot of work regarding registration of vehicles and issue of driver's license. Similarly, the vehicle owner sometimes forgets to carry the license, and forgets the insurance at the time of enquiry. This paper proposed an approach to solve such problems that is by storing all the information related to vehicle and driver at database by RTO administrator. This application is a service oriented Android application specifically designed for transport department which allows efficiently managing and verifying the documents related to vehicle and license. This project targets to store the information related to vehicle such as insurance, license, emission testing details, persona l details of the applier and registration date. This application would be installed in Android phones of traffic police. And it will provide input fields to traffic police to enter the vehicle number as well as license number in order to retrieve the information related to vehicle and license from database. In case of civil police, a web page will be provided where he can update the stolen status of the vehicle to database to catch the thief. This application also generates fine and stolen status of vehicle. Hence it is completely service oriented application.

This project provides the following advantages:

i) To create different unique identity based on the driver's license.
ii)Store different identities under the same database.
iii)Retrieve information based on the scanners used in smartphones

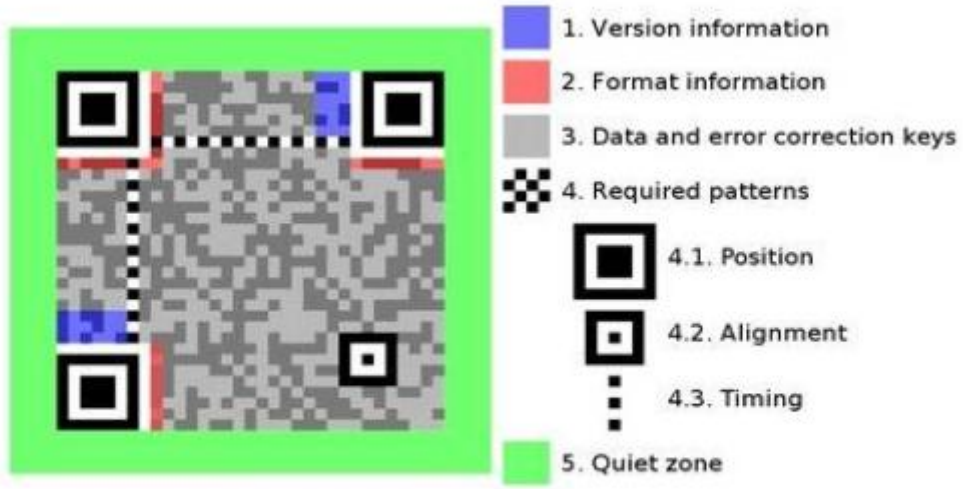
II. RELATED WORK

There are few projects which have implemented traffic police assistance system. But, there is only tracking of officer who is on duty. It offers no modules regarding the rule violation and fine collection and its maintenance. The IEEE paper discusses along with app a smart data analysis center to make a comprehensive and systematic evaluation of employee work performance. Management can obtain the key information quickly and adjust work assignments based on performance. New solutions and algorithms for indoor and outdoor location, GPS deviation improvement, and work performance measurement are put forward details regarding to android application, it is very user based not traffic officer based. It discusses a breadth of applications which range from towing vehicles, location of police station and traffic rules. The IEEE paper has details of the use of GPS technology to locate the location and then file the complaint. This concept is studied in the given paper. The area of concern has been divided in blocks for ease of administration. PS technology can be used to track location exactly. Notifications can be provide to user about their duty. Aim is to make job of officers easy. Data must be properly recorded in server. And must be organized. Complaint can also be filed against officer. The paper discusses major issues and challenges regarding smart application for digitalizing the system.

III. BRIEF DESCRIPTION ABOUT QR CODES

Quick Response codes, commonly abbreviated as QR codes, started out as an extension of the standard UPC barcode commonly used in retail and production. Unlike a 1-D barcode, a QR code is a 2-D matrix code that conveys information by the arrangement of its dark and light elements in columns and rows [1]. The data in a QR code can be accessed by

taking a picture of the QR code and processing it with a QR code reader. The QR code itself is simply an array of bits to be identified by a scanner. Bits are reserved for the scanner to be able to identify and orient the image, as well as for version and format information (Figure 1). The remaining bits are used to encode the message, and the specific amount of available space leftover is dependent on the version of the QR code, which indicates the number of bits per row/column, and the level of error correction, which introduces redundancy. The most information dense QR codes used today can store just under 3,000 bytes of raw data. [1].



(Figure 1)

In the proposed system, there are three actors like Retailer, Traffic police, police department. Here, Retailer form of all technical documentaries related to the user vehicle. Here, retailers generate the QR code of vehicle documentary. Traffic police, Scan that QR code and retrieve the information in the form of text file. Department police apply tagging algorithm for the extraction purpose and send the verification result to traffic police for further checking.

IV. PROPOSED SYSTEM

The proposed system is intended to overcome the major drawbacks of the currently existing m annual system. This system is easy to design and implement. It is also user friendly and cost effective.

The features of the system are as follows:
1)This system will make sure that data is accurate.
2)Records will be efficiently and accurately stored, maintained and retrieved effectively in a DBMS.

Moreover, the vehicle identification system would consist of two backgrounds that are mentioned below:
I)Vehicle Owner Background
II)Police Background

I) Vehicle owner Background:
Consists of the following modules:

a) Registration:
The user registers for the pass, by submitting the basic details initially. Once registration is done the chassis number is assigned to the person, using which the person can login and submit the required documents that are mandatory.

b) Login:
The user would login to the agency portal with the help of the chassis number to submit the required document or upload the renewed insurance paper.

c) Apply:
Once the login is completed, the application form would be filled, documents should be uploaded and saved in the database.

d) QR Code Generation:
After the required documents are uploaded, a QR code would be assigned with respect to the chassis number.

e) Update Information:
This field will be accessed by the vehicle owner while changing the renewed document.

II) Police owner Background:
Consists of following modules:

a) Registration:
The user will have separate username of area and password along with the details about the station and the officers assigned under it.

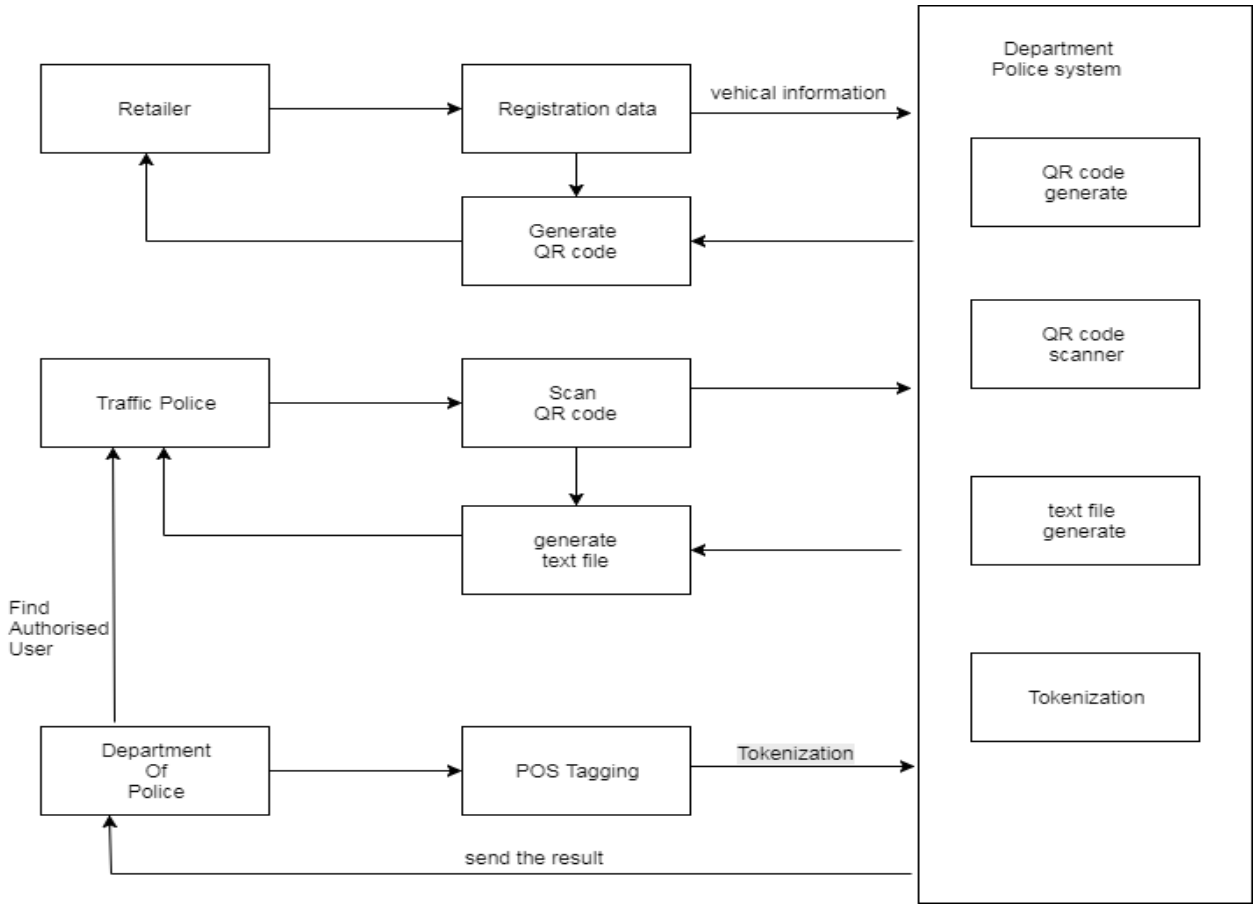
b) Login:
The user once created account in their respective offices can access the database by logging in with their username and password.

c) Check documents:
The user will be able to check the documents by scanning the QR code or typing in the chassis number of the vehicle.

V. USED HARDWARE AND SOFTWARES

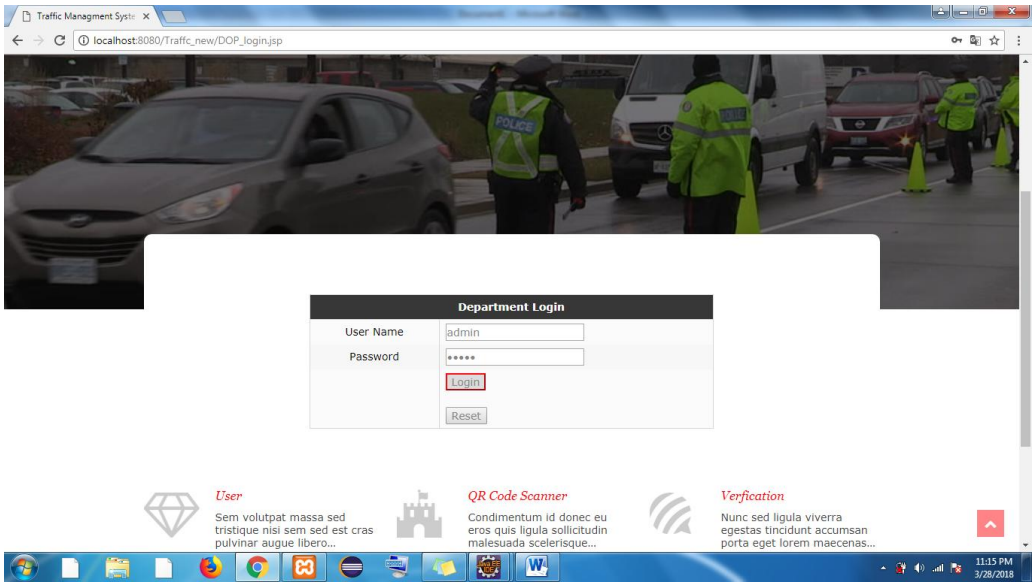
- System: Pentium IV 2.4 GHz.
- Hard Disk: 40 GB.
- Ram: 512 Mb.
- Operating system: Windows XP/7.
- Coding Language: JAVA/J2EE
- IDE: Eclipse Kepler, Android SDK.
- Database: MySQL, SQLite.

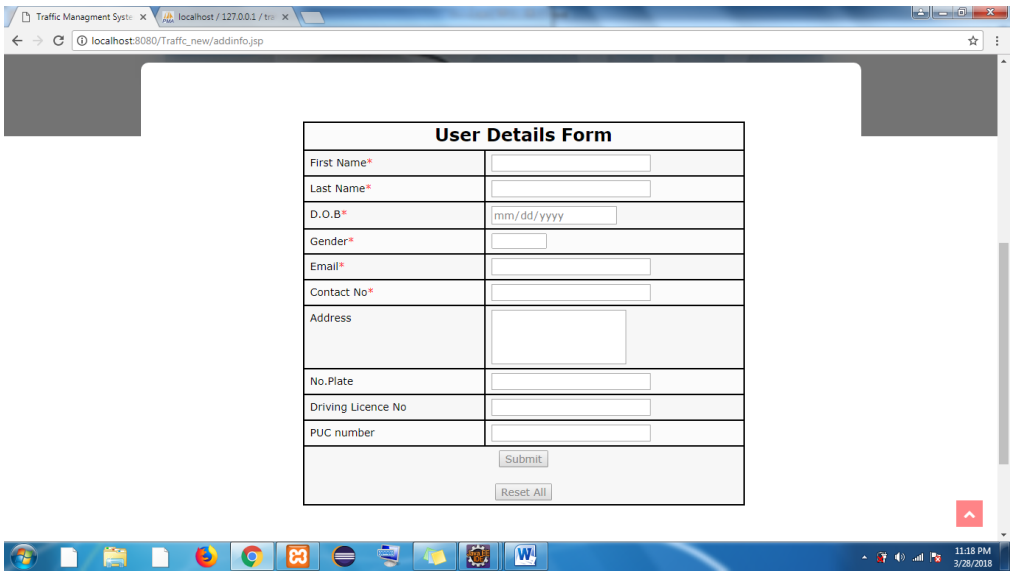
VI. BLOCK DIAGRAM



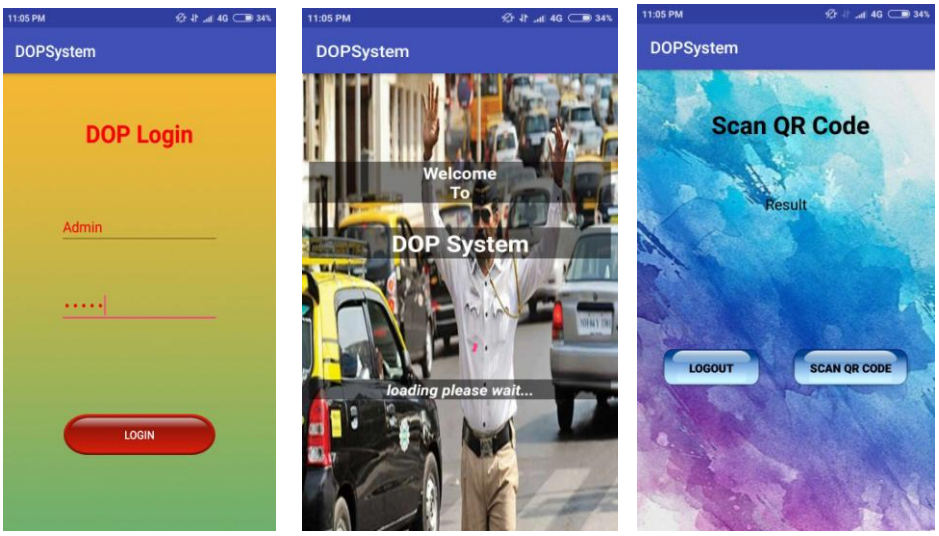
VII. RESULTS

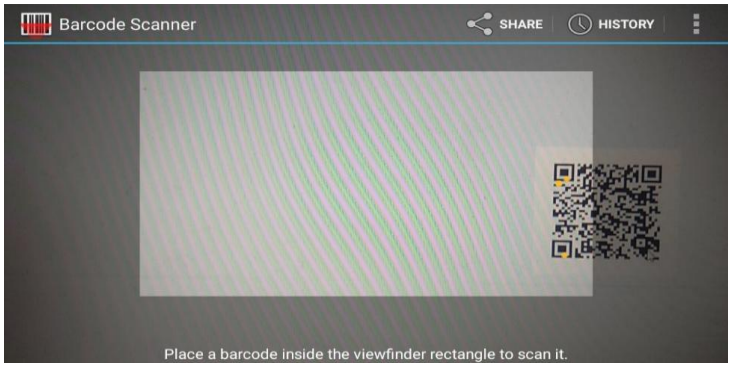
1.Web Portal





2.Android Application





VIII. SUMMERY AND CONCLUSION

By using this application, it is not necessary to carry all the documents and license every time. Simply you have to carry QR code in your Smartphone. By using our system, the driver goes through the verification process through a reliable and efficient manner. QR code is being widely used for implanting messages such that people can easily use their Smartphone's to capture the QR code and gain relevant data from OR code reader. User can get QR code by simply registering with the system.

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