INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.379

QR Code Based Vehicle Document Verification

Dr. S. S. Joshi, Padmavati. Hosagoudar, Sushma. Tondihal, Varun S, Shreehari N

UG Students, Dept. of Information Science and Engineering, SDM College of Engg and Tech, Dharwad, Karnataka

Asst. Professor, Dept. of Information Science and Engineering, SDM College of Engg and Tech, Dharwad, Karnataka

ABSTRACT: Most people use their own vehicles these days. Road traffic has greatly increased as a result, increasing the workload of the number of police officers assigned to licence verification has been raised. First, if the owner of the vehicle occasionally forgets to provide the paperwork and runs into trouble while the authorities are conducting an investigation. The second is RTO management, which involves scheduling driving test times for LLR and DLR as well as applying for and renewing a variety of documents that will be handled by admin (and the RTO, if necessary). This technology will be used to address these issues and will replace the present manual procedure for using QR codes to check the vehicle paperwork and user information. Using an Android app, the traffic cop can read the QR code on his phone.The user's information (including driving records, insurance) will be confirmed over phone. The general public is required to preserve the full document and update them on a regular basis by keeping track of renewal/expiration dates; in this case, a notification will be sent to the owner of the vehicle and the checking process will be more authentic. When a car is in violation of a law or government regulation, RFID technology is used to track it. It is also useful in the event that a vehicle is lost or stolen so that the thief may be found.

I. INTRODUCTION

There is a significant population increase in daily life. Nowadays, the majority of peopledrive their own cars. Road traffic has greatly grown as a result. The amount of traffic has increased the amount of police activity.The Regional Transport Office (RTO) is in charge of registering all documents pertaining to vehicles. The documentation required for car registration is a major undertaking for RTO management. We frequently see people forced to stop their cars at traffic lights or toll booths to display their vehicle registration documents. Both the driver and the police, who spend time reviewing the documents before returning them, are wasting their time by doing this. Sometimes the motorist is required to pay a fine because he neglected to carry the necessary paperwork for the vehicle. We addressed every difficulty relating to managing the traffic police in this proposed system.The suggested solution aims to reduce traffic police labour and eliminate the need for drivers to manually carry vehicledocumentation.Vehicle-relateddocumenta-tion was saved as a QR code by the RTO administration.

The project's primary component is the QR code.QR codes, sometimes known as QR codes, are simply 2-D matrix patterns that are utilised as 1-D barcodes. The way that the dark and light parts are arranged in columns and rows creates a QR code that communicates information. You can access a QR code by scanning it and running it through a QR code reader. A scanner can recognise the QR code. The bits are used to encode the message, and depending on the QR code version, there may or may not be some extra space left behind.

II. LITERATURE SURVEY

In the first paper, "Recognition of QR Code with mobile phones" by Liu, Y., Yang, J., & Liu, M., the authors address the issue of the heavy workload faced by RTO employees in tasks such as registration, license issuance, and vehicle transfers. These tasks typically involve a significant amount of paperwork, leading to delays and inconvenience for the public. The paper proposes a system that utilizes mobile phones to scan QR codes on vehicle documents, enabling RTO officials to maintain records systematically and reduce the burden of paperwork and manual effort.

The second paper, "A Review: Challan System with Vehicle Verification" by Apurva Ekhar and Sakshi Sarode, discusses a technique for implementing a challan system. The system involves users providing vehicle details to the RTO database, and QR codes containing comprehensive information about the vehicle are scanned to retrieve the owner's details. Additionally, the system has the capability to detect culprit vehicles. By leveraging QR codes and digital verification, this system aims to enhance the efficiency of the challan process and ensure accurate identification of vehicles involved in violations.

The third paper, "A Survey on Vehicle Document Check System" by Shobha M. S., Akash S., and Aswin J. M., introduces an automated vehicle document check system. The authors suggest that this system would make the process easier for the public by reducing the risk of misplacing or misusing important documents. The system also proposes the implementation of a unique identity for each driver's license, improving document safety and streamlining the verification process.

The fourth paper, titled "Cross verification of vehicle and driver for RTO" by Amruta Bakale and Spoorti Awate, focuses on the cross-verification of driver details and licenses for RTO purposes. The system described in the paper aims to effectively verify documents related to vehicles and licenses. By implementing this system, RTO officials can maintain records systematically, reducing paperwork and manual effort.

III. MOTIVATION

The motivation is to digitize all documents and record of the residents and make them available on real time basis.

To Design the proposed technique there are following:

• Minimize the Use of Physical Documents it is so hard to carry the original Documents. It reduces the administration overhead of Government Departments by minimizing the use of papers.

• Ensure authenticity of documents and there eliminate the use of fake documents.

• Improve the security of original documents using a QR code.

• People Forgets to renew the expired documents on correct time.

•Can track the stolen vehicle too, using RFID technology.

IV. PROBLEMSTATEMENT

The main problem involves people stopping their vehicles on the road or toll booth to show their documents for their vehicles. Sometimes the driver fails to carry the documents due to some reason and therefore has to put up with a fine and alsoif the vehicle is stolen, can't be tracked using the current traffic rule and regulations, which are not very strongest and the implementation methods are severely flawed. Due to these, bribery has become rampant.

V. HARDWARE AND SOFTWARE REQUIREMENTS

Hardware:

• Hard Disk: 10GB minimum

• RAM: 1GB minimum

• 3 or 5 mega pixel camera

Software:

• 64-bit operating System

• x-64 based processor

• IDE: Android Studio

• Database: MySql

Technology:

• Front-end: HTML, CSS, JavaScript, Python

• Back-end: Java and OS

VI. OBJECTIVE OF THE PROPOSED IDEA

An easy-to-use and practical android application that grants permission for vehicle identification. In order to prevent misuse, it also offers two-way mutual authentication between the police and users. The car number plates include this produced QR code in them. The QR Reader built into smart devices is used to scan the QR code. Using QR codes, police officers can examine a vehicle's details and report incidents of theft, accidents, and traffic law breaches. The car owner receives a renewal warning about the payment deadline in addition to auto insurance payments and renewals. By issuing alert signals, the non-permitted cars might be blocked at the following checkpoint. Vehicle can be tracked and prevented from being stolen.

VII. METHODOLOGY OF THE PROPOSED IDEA

Proposed system mainly consists of four modules:

- Driver/Owner: Give the RTO administrator your name, address, licence number, cell phone number, adhaar number, car number, bill of sale, etc. in order to obtain a QR code.
- RTO administrator: The RTO administrator creates QR codes and RFIDs and records all the data pertaining to the vehicle and the driver. Additionally, when a stolen car is discovered, an alert message is immediately sent to the police and the owner of the vehicle.
- Traffic police: Scan the QR code to get user and vehicle data.Check the user's past information, such as how many times they have broken traffic laws, as that information will be used to determine the amount of the fine.
- Civil Police: Civil police plays an important role, since a web page will be provided to civil police in order to update the stolen vehicle status to the RTO database.
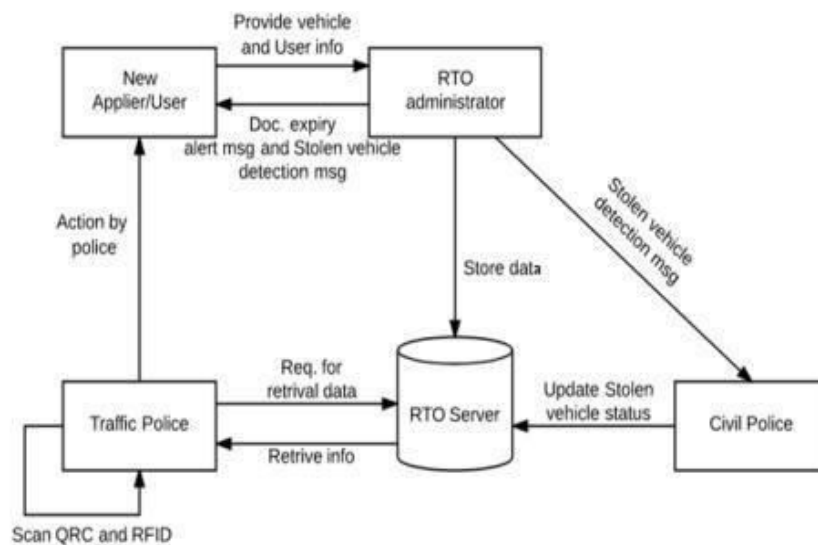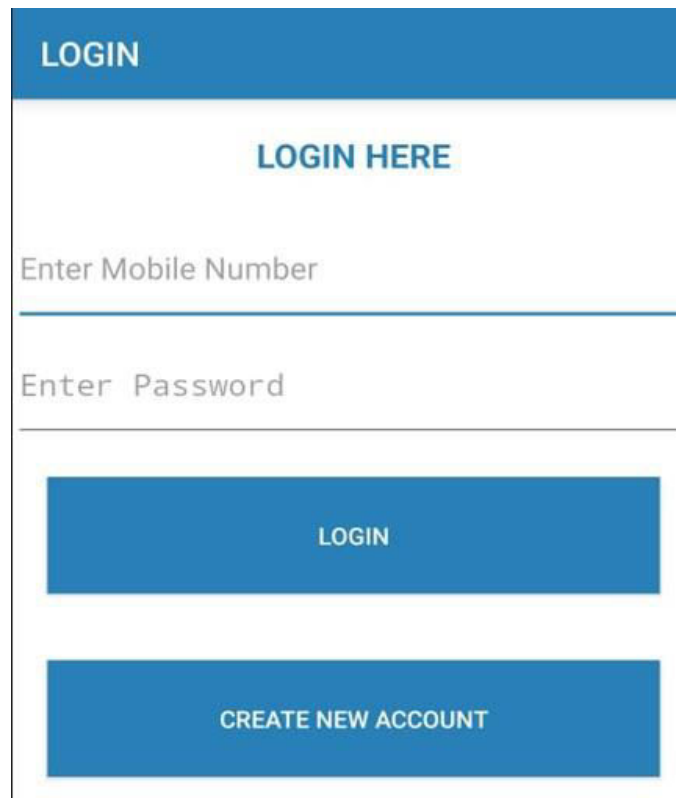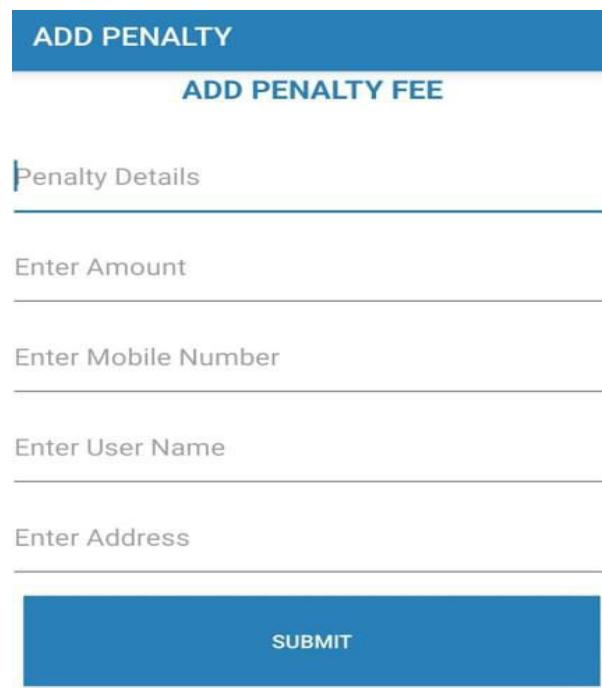

Figure1. System Architecture

VIII. EXPECTED OUTCOME OF THE PROPOSED IDEA

We've successfully demonstrated how theSmartphones with cameras are becoming more sophisticated. hence, QR code recognitionBased on Smartphone is becoming increasingly significant in real life situations. It is practical and simple to use. Here, there is little manual labour involved. The technology utilised here does automatic recognition for car documents while also providing high speed accuracy. RFID is utilised to track down where a stolen vehicle is. Thus, the traffic and civil police, as well as the users, all benefit from this system.

Figure 2. Login Page

Figure 3.Home Page
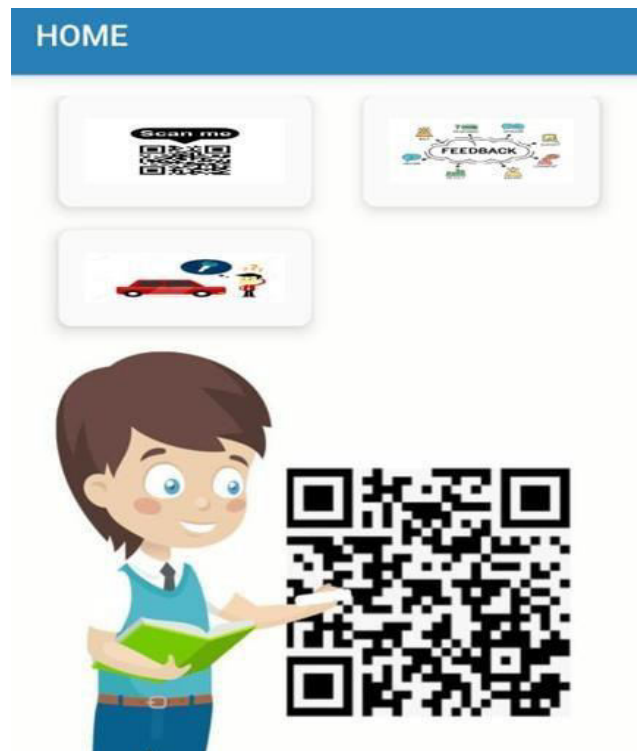
Figure 4. Information Page

Figure 5. Penalty Receipt Page

IX. APPLICATION

This application can be used by:

- RTO Administrator
- Insurance company
- Civil police
- Traffic police

In short Government and common people can make use of this application.

X.CONCLUSION

We frequently see people forced to stop their cars at traffic lights or toll booths to display their vehicle registration documents. Both the driver and the police, who spend time reviewing the documents before returning them, are wasting their time by doing this. By using a QR code, this technology will be used to validate the car paperwork and user information, replacing the present manual method.Android app that allows traffic officers to verify all of the user's information (driving licences, insurance, Adharcard, etc.) by scanning the QR code on the user's phone. A tracker will be used to find the stolen car.Both the owner of the vehicle and the police will receive an immediate alert message. The general public is required to retain the full document and update them frequently by keeping track of the renewal or expiration date; in this instance, the vehicle owner will be notified.We can work on performing the entire process offline in future projects. Giving people the option to tell the police via alert messages when their vehicle is taken will allow us to implement other modifications.

REFERENCES

[1]. Manjunath S Patil, Basavaraj K Madagouda, Vinod C Desai "E-RTO Management System" In IJERT ISSN: 2278-0181 V2IS70177 Vol. 2 Issue 7, July 2013.

[2]. Jayalakshmi J, Ambily O A "Vehicle Tracking Using RFID" (IJERGS) Volume 4, Issue 2, March-April, 2016 ISSN 2091- 2730.

[3].Amrutabakale,spoortiawate,"Cross verification of vehicle and driver for RTO (IJETCSE) volume 14,Issue 2 april 2015, ISSN: 0976- 1353.

[4]. Liu, Y., Yang, J., & Liu, M. (2008, July). Recognition of QR Code with mobile phones. In Control and Decision Conference, 2008. CCDC2008. Chinese(pp. 203-206). IEEE.

[5]. Apurva Ekhar, Sakshi Sarode, "A Review:challen system with vehicleverification" , issue 6-ICRTEST January 2017 p-ISSN: 2394-8280.

[6]. Raed M. Bani-Hani, Yarub A. Wahsheh "QR code system", IEEE,2014

[7]. Kiruthika.R,AmitKrishna.S "Automated Intellectual Road management System Using RFID Technology," IEEE Transactions on Systems, Man, and Cybernetics: Systems, vol. 6, no. 4,pp. 2321–3361, April 2016.

[8]. Shobha M.S, Akash S, Aswin J.M, "A Survey on Vehicle Document Check System," Vol. 4, Issue 2, February 2016.

[9]. Sunil khode,P.R.Gumble,"Authentic detection in moving Object tracking system by using RFID",(IJERT), ISSN:2278- 0181,Vol.1,Issue 6,August-2012.

[10]. SuriyaniAriffin, RamlanMahmod, Ratini Rahmat, NuzulAnnisa Idris, SMS Encryption using 3D-AES Block Cipher on Android Message Application, IEEE(CPS), 2013, pp.310-314.

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

9940 572 462   6381 907 438   ijircce@gmail.com

Scan to save the contact details