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Traffic Management System Using QR Code

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ABSTRACT: Now a day's population has become an important factor to consider as a result the number of vehicles grows by increasing vehicle registration issues, license registration, emission testing and insurance validity for RTO departments and verification of vehicle documents . RTO employees who have a lot of workload to perform registration, licensing, transfer, etc., which requires a lot of paperwork. As a result, people can not do things at the right time, which is the loss of time and energy. Likewise, the owner of the vehicle sometimes forgets to carry the license and forgets the insurance at the time of the investigation.

To overcome such a problem we design Traffic management system. The proposed system consists of four components:

- 1) Driver which Provide Vehicle and personal information and get QR code.
- 2) RTO administrator which stores all the information related to vehicle and driver and generates QR code.
- 3) Traffic police scan the QR code and retrieve vehicle and license information .Also check user past details i.e how many times he/she perform unauthorized events (like break the traffic rules),according to that generate fine.
- 4) Civil police plays an important role, since a web page will be provided to civil police in order to update the stolen status to the RTO database.

Our system also generate message when license get expired.

KEYWORDS- QR code, Road Traffic Management, RTO system Security

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, personal 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 in order to catch the thief. This application also generates fine and stolen status of vehicle. Hence it is completely service oriented application.



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II.GOALS AND OBJECTIVE

Goals:

Proposed system will be enhanced on traffic management system.

Objectives:

1. To achieve Security by generating QR code .
2. To provide fine grained access control to Traffic police.
3. To reduce the work burden of RTO administrator.
4. To improve safety.
5. To reduce cost.

III.MOTIVATION

RTO employees having lot of work burden of making registration, license issue, transfer etc., which requires lot of paper work. As a result people can't get the things done in right time, which is the waste of time and energy. Similarly the vehicle owner sometimes forgets to carry the license, and forgets the insurance at the time of enquiry. To overcome such a problem we design Traffic management system using QR code .

IV. LITERATURE SURVEY

Garima Pandey, Diksha Dani (2014) has developed Android Mobile Application Build on Eclipse. Android is now the most used mobile operating system in the world. Android now has more users, more phones and more tablets worldwide than any other mobile operating system. The Google Play app store has been growing at breakneck speed and with almost as many apps as the Apple app store. This, for entrepreneurs and developers, is the chance of a lifetime to make even more money and reach an even broader audience base. This paper gives a complete knowledge of how to start working on eclipse and develop an application and get it run on emulator.[1]

Manjunath S. Patil, Basavaraj K. Madagouda, Vinod C. Desai(2013) has developed E-RTO Management System. The author develop a system which directly provides services driving license, insurance, vehicle registration etc. Administrator is power user. He has the power to verify the data entered by the user, processing of data and provide appropriate solutions. Any person who have been authorized by the administrator. An authorized user should have a user name and password to access detailed information from the site excluding or accessing general information in shared, public pages. User is the person who gets the full benefits of this application.[2]

Suhas Holla, Mahima M. Katti(2012) has represents Android Based Mobile Application Development and Its SecurityIn this paper, Android mobile platform for the mobile application development, layered approach and the details of security information for Android is discussed. Google released Android which is an open-source mobile phone operating system with Linux-based platform. It consists of the operating system, middleware, and user interface and application software. Certainly, Android is about to become the most widely used OS on mobile phones, but with Android comes a security vulnerability that few users take into account. [3].

Tahmid Tanzi Alam, Ahmad Naquib Chowdhury, Mohammad Zahidur Rahman(2016) has developed AN INTELLIGENT ROAD TRAFFIC MANAGEMENT SYSTEM USING NVIDIA GPU. The main goal of this paper was to solve traffic jam which is one of the current issues of both developing and developed countries. It is not possible to build new roads or infrastructure to match the traffic load over the night and thus we figured a solution to minimize it and take people to their destination at the shortest time. We also had to keep in mind that the result should be quick and as accurate as possible [4].



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Amani A. Saad, Heshem A. El Zouka, Sadek A. Al-Soufi(2016) has represents Secure and Intelligent Road Traffic Management System Based on RFID Technology. In this paper an intelligent traffic management system that uses passive RFID tags is proposed. It overcomes most of the disadvantages of existing systems like passive RFID tags which have long lifetime, and consequently, it provides low cost, low power consumption and low maintenance [5].

Syed Misbahuddin, Junaid Ahmed Zubairi, Abdulrahman Saggaf, Jihad Basuni, Sulaiman A-Wadany and Ahmed Al-Sofi(2011) has developed IoT Based Dynamic Road Traffic Management for Smart Cities. In this paper, The author have investigated the possibility of using embedded PCs in dynamic traffic light controlling through Web IOPI REST API in smart cities. The approach presented can be easily extended for more complex traffic controlling algorithm. The scheme presented in this paper can be further improved if the traffic situational information is automatically passed to the RPi unit controlling the lights at an intersection so that the authorities can make and implement quick decision [6].

Monika Singh, Dr. A.K.Sharma, Ruhi Saxena(2015) has represents Towards the formalization of Road Traffic Management System for safety critical properties by Z notation. In this paper, formal analysis of road traffic management system is done and the Z/EVES tool is used for analyzing the scenario of Traffic Police, which is one of the main entity in road traffic management system [7].

A.Sowmiya, N .Prabhu Ram (2015) has developed AN INTELLIGENT APPROACH FOR EFFECTIVE ROAD TRAFFIC MANAGEMENT. The IR sensor module is used to detect the vehicle and Hall Effect sensor module is used to sense speed of the vehicle for estimating the speed to minimize the number of stops of the vehicle near the traffic signal and to reduce the CO2 emissions. In this simulation, the vehicle data is collected by using the PIC 16F877 A with digital potentiometer [8].

wei yuan1, pan deng1, chao yang1, (member, ieee), jiafu wan2, (member, ieee), daqiang zhang3, (senior member, ieee), xiantong chen4, chaofan bi1, and yali liu4(2015) have developed A Smart Work Performance Measurement System for Police Officers[9]. This paper also puts forward some technical and research solutions for outdoor and indoor location calculation, data quality control and work performance measurement. The efficiency of the system is demonstrated in one City Traffic Management Bureau in a medium-size Chinese city, helping governments to better regulate traffic operation and reduce associated costs [9].

V. EXISTING SYSTEM APPROACH

In existing system, traffic management and traffic control system are totally working on road traffic, employee attendances etc. This system can work manually also. The design of the application plays a critical role in performance and scalability. This system is intended to be continuously improved by the expansion of system capabilities. The system primarily consists of three parts: a mobile operation APP working on the Android system to collect information; a data warehouse placed in the police department for data storage; and an efficient and stable data analysis center running in the backend. The mobile operation APP is based on the Android system and can support versions 4.0 and higher. It is designed to collect officer data for work performance evaluation and can upload the data to the data warehouse continuously.

VI. PROPOSED SYSTEM APPROACH

In the System, Traffic Management system 4 modules User, RTO Admin, Traffic Police, Civil Police

User:- Provide Vehicle and personal information and get QR code .

RTO administrator:- Stores all the information related to vehicle and driver and generates QR code.

Traffic police:- Scan the QR code and retrieve vehicle and license information .Also check user past details i.e how many times he/she perform unauthorized events (like break the traffic rules), according to that generate fine.

Civil police:- Plays an important role, since a web page will be provided to civil police in order to update the stolen status to the RTO database.

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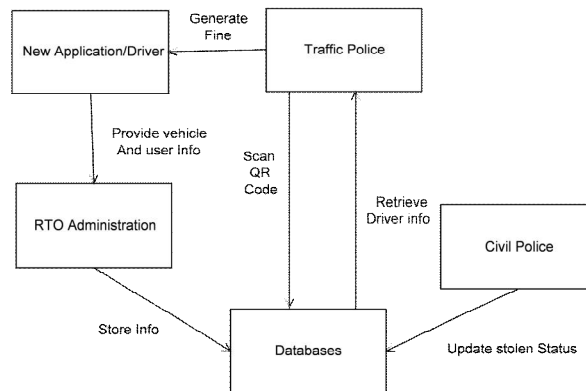


Fig.1 Block Diagram of Proposed System

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, personal 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 in order to catch the thief. This application also generates fine and stolen status of vehicle. Hence it is completely service oriented application.

VI. SYSTEM ANALYSIS

In existing system experimental setup In a following table we show the 4 different rules like Helmet, Signal Cross, Wrong Side, No Parking. Following tables shows 20 users pay for helmet. shows ,15 users pay for signal cross, shows 13 users pay for Wrong side and shows 17 users for No parking.

Sr.No	Rules	Number of Users
1	Helmet	20
2	Signal cross	15
3	Wrong side	13
4	No parking	17

Table1: No of users Rule break

In experimental setup in a following graph we show the 4 different rules like Helmet, Signal Cross, Wrong Side, No Parking. Following tables shows 20 users pay for helmet. Shows ,15 users pay for signal cross, shows 13 users pay for Wrong side and shows 17 users for No parking .

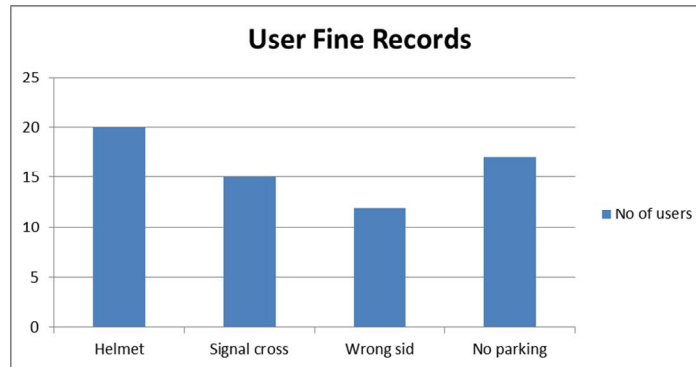


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Graph 1: user fine records.

In experimental setup, a following graph we show the 4 different rules for collect user fines like Helmet, Signal Cross, Wrong Side, No Parking. Following tables shows 20 users pay for helmet. Shows ,15 users pay for signal cross, shows 13 users pay for Wrong side and shows 17 users for No parking .

VII. CONCLUSION

This system, perform traffic management system using android App. Increasing vehicles in cities in worlds and increasing rules breaker of traffic as well as signals. That's why we work on this for maintaining data of user breaking rules. In this system also performing generating QR code for security for vehicle owner details like personal documents, vehicles documents and driving license. RTO administrator which stores all the information related to vehicle and driver and generates QR code. Traffic police scan the QR code and retrieve vehicle and license information .Also check user past details i.e. how many times he/she perform unauthorized events (like break the traffic rules),according to that generate fine. .For checking previous record of this vehicle. Civil police plays an important role, since a web page will be provided to civil police in order to update the stolen status to the RTO database.

The proposed system mainly works for following works:

- 1) Driver which Provide Vehicle and personal information and get QR code.
- 2) RTO administrator which stores all the information related to vehicle and driver and generates QR code.
- 3) Traffic police scan the QR code and retrieve vehicle and license information. Also check user past details i.e. how many times he/she perform unauthorized events (like break the traffic rules),according to that generate fine.
- 4) Civil police plays an important role, since an application civil police will be provided in order to update the stolen status to the RTO database.

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