

# Traffic Police Management and Detection of Stolen Vehicle Using QR Code

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## Abstract:

*This project focus on using QR code of a vehicle document check system where databases and documents are Retrieved by the traffic police by their smart phones and the physical documents are not needed to be carried along there by 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 simply create a QR code and stick it on an any part of the vehicle which is irreplaceable. Using the front end we create an application with which traffic police can scan the QR code on his Android phone and all the details which we provided about the owner of the vehicle and all the documents earlier stored will be shown on the our Android phone. We can also make the driver's license as unique identification if needed for the application query search in case scanner fails to work. In this Application, System mainly focuses on traffic police management for no need to carry the document of vehicles. Here, System Use QR code technique for the documentary purpose. In this system, the main actor is retailer, traffic police, department police. Through this actor our system become very helpful to user and government also.*

**Keywords:** QR Code, Android, AES Algorithm, Encryption, Decryption.

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## INTRODUCTION

Traffic police management becomes issue nowadays. It becomes hectic to manage documents manually. So, QR code makes it easy. We make documentary of vehicle and generate one QR code, it will help to police management easily.

The cases of road accidents have gone up as the number of vehicles increased multifold. Over speeding and traveling without necessary documents is a common sight now and to deal with this, traffic cops have to do vehicle verification every now and then. Yet, the process is not devoid of challenge.

Firstly, stopping a driver and verifying each document manually is a tedious task. It consumes a lot of time and effort. Secondly, it is difficult to determine the authenticity of the documents. The driver may show a fake or duplicate document and get cleared. The whole process to validate the genuineness of traffic documents is a taxing job. Thirdly, with

the thefts going up, it's becoming quite difficult to track the stolen vehicles. So, it's time to make the vehicle verification process more quick and efficient. And one of the solutions is to use QR Code technology. In existing system, all manual process is available. Documentary maintenance is very hectic.

## OBJECTIVE

Now we see everywhere Vehicle security is biggest issue in our society. for vercome this issue of vehicle security in pulic places and private places. In any cases the license plate number is not there or unwanted in some cases how to find that particular vehicle information and about documentation is very big challenge for traffic police management.

Today, QR Codes are being used worldwide across various industries. These include aviation, chemicals, sports, product packaging, and transportation.

This system is very faster for detecting and describing features of a vehicle image, In an android application using QR We get all information about vehicle. After describing of

QR code it fires the query on database for searching information in the database. For real time system ,Real time android applications are the real challenges Which face all vehicle owner and system of traffic police management.

**PROPOSED SYSTEM**

- In the proposed system, there are three actors like Retailer, Traffic police/police department, Admin at Toll
- Here, Retailer form of all technical documentary related to the user vehicle.
- Here, retailer generate the QR code of owner vehicle documents.
- System ofTraffic police Management and also Admin of toll Scan that QR code and get all the information in the form of decrypted format means text format.

**METHODOLOGY**

Vehicle security is biggest issue in private and public socity in now a days.. for overcomingthis problem of vehicle security in private and socity places. Sometimes the license plate number is removingand sometimes unknown then how to find the vehicle information is really a big issue for traffic police and toll admins and it not detect correct information to owner and management system. To overcome this problem, we are making Vehicle Identification System which gives all information about vehicle owner and vehicle and using this information we make QR code based system that will help in searching andidentifying the vehicle in private or public society places like Traffic signal,biggest Malls and Society alsoDMart buildings, parking in every places respectively.

We are making an application that replaces all that issues which face vehicle owner and traffic police management. We are making an Android + web application which is namely Traffic Police Management which will be help us and beneficial for all people to help for no need to carry documents of vehicle while travelling and yet get all information about the document.

**APPLICATIONS**

This project focus on providing information of vehicle document check whole system . Documents and database are retrieved by the traffic police by their Android or smart phones and the no need to give them physical documents and also not need to be carried it with along us .It saving our time in document verification. Firstly we assign them unique identity numbers which is licene holder name and scan their Insurance,RC, Emission paper, vehicle name, and number and store it in the database at the back end. Using the all information, we create a

QR code and stick it on any part of vehicle which is irreplaceable part of the vehicle. 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 Android phone using Front end technology. We can also detect even if the bike is stolen using an alert message feature which is added along with the details of the vehicle.We can make the driver’s license as unique identification if needed for the application query search in case scanner fails to work..

**LITERATURESURVEY**

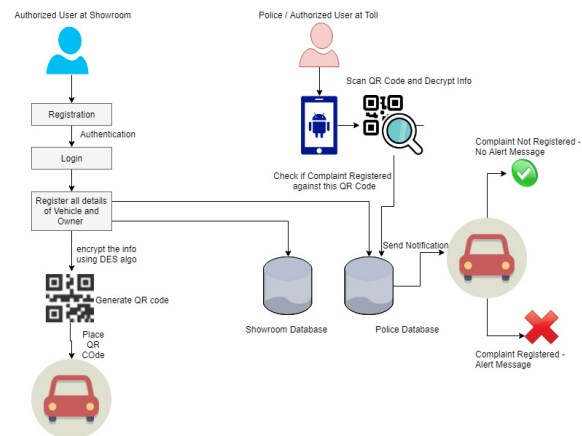
**1.PAPER NAME: E-RTO MANAGEMENT SYSTEM**

This paper describes author surveyed problem of RTO, RTO employees having lot of work burden of making registration, license issue, transfer, etc. which requires lots of paper work. As a result people cannot get things done right time. This system helpful for RTO officials to maintain record systematically and reduce lots of paper work and manual efforts

**2.PAPER NAME : VEHICLE TRACKING USING RFID**

This paper describes technique has been discussed for challan system. Here, user provides details to RTO database. By scanning QR code which contain overall information of the vehicle. We get vehicle owner details. This system also detects culprit vehicle.

**SYSTEM ARCHITECTURE**



A description of the program architecture is presented. Subsystem design or Block diagram, Package Diagram, Deployment diagram with description is to be presented.

When we buy a vehicle then authorized person of showroom take our all details regarding the vehicle and register all the

details of vehicle and owner of vehicle. Then taking all the details QR code is generated for that vehicle holding that particular information about that vehicle using encryption algorithm. That QR code is placed on vehicle also the owner of vehicle can also have a soft copy in mobile while travelling at any time. At a time when we have to show the documents to the traffic police then they can simply scan that QR code and can examine all the documents.

Using this system, we can also find the stolen vehicles. Suppose our car is missed from our place, we can register the complaint to any near by police station. Then by taking the details they can activate the complaint i.e. the car is stolen. By then any car that come across with such specification is verified and the car can be found out.

## ALGORITHM

We use AES Algorithm for making QR code. In this algorithm we use Encryption and Decryption. We Encrypt all information in QR code using Encryption. This information is not understandable for anyone whenever We not decrypt this information

### 1. AES ALGORITHM:

The AES algorithm is a symmetric-key cryptographic algorithm and a block cipher. This algorithm uses the same key to encrypt and decrypt.

The Steps for AES algorithm-

- a. Sub-Bytes: bytes substitution by using the substitution table
  - b. Shift-Rows: shifting state array rows by wrapping.
  - c. Mix-Columns: scrambles the data in each state array column.
  - d. Add Round-Key: performs XOR between the current states with round key.
3. Final Round. Process for the last round: a. Sub Bytes b. Shift Rows c. Add Round Key

### 1. Encryption

It is a conversion of plaintext data into ciphertext and not readable to anyone

Each round comprises of 4 steps:

- Sub Bytes
- Shift Rows
- Mix Columns
- Add Round Key

### Decryption

The conversion of cipher text into plaintext is known as decryption. It helps us to read the information of QR code that's why we get all information of our documents which are placed in QR code.

The Steps of each round in decryption is as follows :

- Add round key
- Inverse MixColumns
- ShiftRows
- Inverse SubByte

### ADVANTAGES:

1. QR code technology makes easy the task for User and Police department also.
2. Efficiency is very high.
3. Time complexity is very low.
4. It can be used for document verification in any organization.
5. It is not necessary to carry the documents every time.
6. System is user friendly

### MATHEMATICAL MODELLING:

- Let S be the Whole system which consists:
- Let S be the Whole system  $S = \{IP, Pro, OP\}$
- Where,
- A. IP is the input of the system.
- B. Pro is the procedure applied to the system to process the given input.
- C. OP is the output of the system.
- Where,
- A. Input:
- $IP = \{u, p, r\}$ .
- Where,
- 1. u be the user or retailer.
- 2. p be finding authorized user i.e. traffic police.
- 3. r be send result to traffic police.
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### CONCLUSION

By using this System no need to carry all documents with us while travelling and license every time. Simply We can carry QR code in your Smartphone or placed it to our vehicle part which is not replacible. Using this system the user goes through the verification process through Very effectively . User can get QR code by simply registering with the

system.Using this system We can also find the stolen vehicle.

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