A Survey on Vehicle Document Check System

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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.

KEYWORDS: QR code, Unique Identity, Document Check System.

I. INTRODUCTION

On a regular basis we often observe people have to stop their vehicles on the road or toll booth to show their documents for their vehicles and then continue their journey. This not only waste of valuable time for the driver but also for the police who take time in checking the documents and return them back. Sometimes the driver fails to carry the desired documents due to some reason and therefore has to put up with a hefty fine. Many existing system like Automatic Number Plate Recognition System is used only for traffic violations. Smart cards is another system that contains information like details of vehicles and registration numbers, but does not include the insurance papers. The project is entirely motivated on making the life of people easier by using a smartphone for searching the unique identity and retrieve all the documents and information related to the driver.

This project deals with solving the above mentioned drawbacks and 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

Lots of research has been done in this field. By referring various transactions, books, conference papers a lot of information can be obtained from previous works, latest and the advancement that need to applied.

1.   "Effective   Algorithm   and   Methods   for   Automatic   Number   Plate   Recognition-AmirgaliyevBeibut,KairanbayMagzhan, KenshimovChingiz, ABY Applied SystemsAlmaty, Kazakhstan*."*

This paper talks about the Automatic Number Plate Recognition (ANPR) system is commonly deployed on the road networksand used in field of safety and security systems. It involves using the following approaches

i)   Plate area detection
ii)   Segmentation and extraction of characters from number plate

iii)   Optical character recognition of extracted symbol[2]

2.   "Automatic Vehicle Number Plate Detection and Recognition.2014 International Conference on Control, Instrumentation, Communication and Computational Technologies (ICCICCT) -Priyanka Prabhakar, Anupama P, Resmi S R.*"

  This paper proposes using segmentation in the ANPR system. Segmentation plays a very important role, accuracy of the recognition depends on how the segmentation is done.The steps involved are:
i)   Preprocessing-Initially changed to grey scale, changes are created to optimum values to enhance the quantity plate and its characters.
ii)   Localization-This technique is used to identify the vehicle plate region from the given image.
iii)   Segmentation-Involves the detection of the number plate area.
iv)   Recognition-Numbers segmented are compared with data bases victimization totally different algorithmic rule and recognized. Image obtained once segmentation is done is Grayscale.[3]

3.   "Vehicle Detection from Three Line Scanner-SompochPuntavungkour, RoysukeShibasaki"

  It presents the algorithms of vehicle monitoring from Three Line Scanner Imagery. In our contribution, the framework consists of three steps: vehicle detection, moving/parking vehicle discrimination and vehicle parking identification. It focuses on vehicle detection by Nadir-Single TLS images [4]. Firstly, segmented image is created by region and non-vehicle regions are removed. Secondly, it detects the cue of vehicle from the raw image and generate vehicle candidate from vehicle likely region from segmented image by frame detector expansion technique. At the last step, vehicle in the image will be verified and detected by vehicle model matching. [4].

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 orientthe 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].
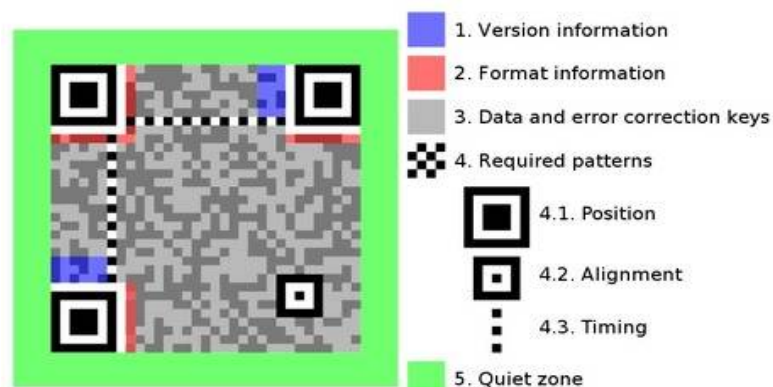
(Figure 1)

Commercial Uses of QR code:

Adding QR codes to your business cards. You can include your business name and address, website, blog, or even links to your social media properties.

Including QR codes in advertising. Assigning a URL specific to the QR code in the ad with a re-direct is a great way to track how much traffic came to that page through your print advertisement.

Adding QR codes to product packaging, and link customers to a page with useful resources – like customer service phone numbers, user manuals, and related items.

Using QR codes for company or customer-facing events. Add a QR code to an event ticket and link to a Google map, and RSVP page, or materials that attendees need to bring along.

IV. PROPOSED SYSTEM

The proposed system is intended to overcome the major drawbacks of the currently existing manual 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.
3) In case of a vehicle being stolen, alert messages will be sent to the nearby police stations.

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 thebasic 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.

f) *Theft Alert:*

In case of vehicle being stolen,the user can log in to his/her account and notify about the theft of the vehicle to the traffic police.

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.

d. Check alert messages:

In case of theft, alert messages will be received by the area traffic police which will be shown while checking for the document.

V. CONCLUSION

It is a real time project that would be useful for the public who are facing problems with the currently existing manual system wherein the user of the vehicle should carry all the required documents. The proposed system would make it easier for the public as it becomes an automated process. Thereby, relieving the stress imposed on the public. As the documents need not be carried, it wouldn't be misplaced and also misused. Hence ensuring the safety of the documents. The proposed system also provides an additional feature to the user of the vehicle, the alert message feature, if his/her vehicle is stolen. It provides the means to retrieve the stolen vehicle.

REFERENCES

[1]Kevin Peng, Harry Sanabria, Derek Wu, Charlotte Zhu, Massachusetts Institute of Technology,"*Security Overview of QR Codes",*6.857 Computer and Network Security.

[2]AmirgaliyevBeibut, KairanbayMagzhan, KenshimovChingiz, ABY Applied SystemsAlmaty, Kazakhstan,"Effective Algorithm and Methods for Automatic Number Plate Recognition".

[3]*Priyanka Prabhakar, Anupama P, Resmi S R.Automatic," Vehicle Number Plate Detection and Recognition. International Conference on Control,Instrumentation,Communication and Computational Technologies(ICCICCT) "(2014).*

[4]SompochPuntavungkour, RoysukeShibasaki, Member, IEEE*,"Vehicle Detection from Three Line Scanner"*(2003).