E-CHALLAN: ONLINE TRAFFIC RULES VIOLATION PENALTY AND MANAGEMENT SYSTEM

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ABSTRACT

The objective of this article is to create an online platform to facilitate the drivers and the traffic police to handle the penalties for traffic infractions. E-Challan System is the online platform geared at offering a broad variety of assistance in controlling and monitoring the traffic fines, enabling users about the difficulties people encounter in paying for their challan. The E-challan System is essentially an interaction between Police and drivers simply via an internet portal or an app. This project prototype explains how challan becomes easier for people by keeping it online. The online platform seeks to minimize the paperwork, manual procedure and boost the convenience for the users.A system which makes the people obey the laws and drive safely, without breaking any regulations. E-Challan is that foolproof controlled mechanism. E-Challan is an online governance system to enable the traffic administrators to handle the traffic infraction as well as for the drivers to manage the penalties.

KEYWORDS: *E-penalty, E-challan, Online, Network, Traffic Violation.*

1. INTRODUCTION

Governance is a problem in a nation as varied, large and rapidly growing as India. India requires a fresh and latest technology for large-scale transformation and implementation of government objectives. While India is among the fastest developing economies in the world, India's fair growth remains a key priority. This initiative is an effort in this very direction of e-governance for a nation like India with a large population and high density.India's road network has expanded at an annual average of 4 percent since 1951. Along with the rural and urban population density the density of roadways has increased in India.

The increasing population has resulted in more cars on roadways. This has led to a high rate of accidents. One of the main causes for the large number of accidents on the road is that traffic regulations are broken and not followed. According to a study, 78 percent of the accidents happen due to violation of traffic laws by the driver such as speeding, driving under the influence of alcohol or drugs, and hit and run instances[1–6].

India requires a highly controlled failsafe system of governance to prevent these preventable accidents and manage the traffic on the roadways. E-Challan offers a broad variety of assistance needed for handling and monitoring traffic fines. It is also a type of decentralized information system which enables all the stakeholders to obtain the required information anytime anywhere.

This Project is primarily about an e-governance management system which offers various features to the stakeholders related to challan, car information and licensing details. The software contains various kinds of users that are reliant on search other for the complete functioning of the program. The software enables to build and manage a database containing information about various registered users, their license details and challans issued. The system also keeps a database of cars which are registered with the local RTO.This information may be utilized to check drivers and in case of any infraction of traffic regulations to issue a challan to the motorist.

Also, the software enables the system administrator to access \sand update the databases when a new driver or vehicle is registered. The system admin also generates initial login credentials for the traffic department employees. The administrator is the only authority who can modify all the information in these databases.

The paper discusses an electronic governance model of electronic challan and traffic penalty system using an integrated existing method of penalty in India. A similar approach is followed by which implements the model using an automatic challan system using MATLAB. The model captures the image of the vehicle and extracts the number plate of the vehicle which breaches the traffic law. The model further processes to generate an automatic E-Challan which can be directly paid by the driver at RTO office or can avail other online payments also. The project mainly focuses on the individual data extraction from multiple databases. The paper discusses the traffic violation detection using computer vision. The model extracts the license plate using a new deep learning network structure which is used to detect and locate the license plate automatically. The vehicle no is detected and the information of the owner is extracted. The information is used to generate.

2. DISCUSSION

An E-Challan and an instant appropriate fine message is sent to the owner. Implementation of the whole model is very efficient and requires very less human intervention. A new approach is suggested by [4] using a pi-code suggesting an innovative e-challan application using encoding and decoding of the pi-code. The paper has discussed and illustrated an efficient method to read the pi-code and generate a challan for the traffic violators using QRcode encoder.
The project has utilized a number of front and back end frameworks for implementations such as:

1. HTML: For front-end development
2. CSS: For front-end development
3. JS: For animations and display time
4. Php: For front and back end connections, session creation and inquiries
5. AJAX: With Ajax, web application may transmit and receive data from a server asynchronously without interfering with the appearance and behavior of the existing page.
6. jQuery: For animations
7. MySQL: Back end development

The program offers a variety of functions such as show vehicle information, display driver details, pay challan and issue challan.It maintains a centralized database to preserve accurate records and offers offenders an online payment option. Django, Jquery, Sql, PHP, and Scipy are used to create the project.

On the site, there are three different types of users:

1. *Traffic Police Personnel:* A traffic police officer who is a registered employee and may issue challans to drivers who have broken any traffic regulations in the city.
2. *Drivers:* Licensed individuals who have been given permission to drive cars around the city and have been issued a challan for violating any traffic regulations. These individuals may use the site to pay for and manage their issued challans.
3. *System Administrator:* The system administrator is in charge of managing the accounts of the aforementioned users, as well as providing login credentials to traffic cops and entering new car, driver, and license information into the database[7–13].

A. Traffic Police Personnel:

1. The new personnel SHALL be issued an initial login ID and a password by system administrator.
2. The new personnel SHALL be able to generate his/her login ID and a password
3. The personnel SHALL be able to login using his or her ID and password.
4. The personnel SHALL be able to reset his or her password in-case he or she forgets it.
5. The personnel SHALL be able to input the details of the license.
6. The personnel SHALL be able to get the details of the owner of the license.
7. The personnel SHALL be able to input the details of
8. the vehicle.
9. The personnel SHALL be able to get the details of the owner of the vehicle.
10. The personnel SHALL be able to input the details required for issuing the challan like offence, location, time and comments.
11. The personnel SHALL be able to issue a challan successfully.
12. The personnel SHALL be able to see the challan history of the driver.
13. The personnel SHALL be able to see the challans issued by himself or herself.

B. System Administrator:

1. The Administrator SHALL be able to login using his or her ID and password.

2. The Administrator SHALL be able to reset his or her password in-case he or she forgets it.

3. The Administrator SHALL be able to generate new admins by issuing them an initial login ID and password.

4. The Administrator SHALL be able to insert the details of the new vehicle registered.

5. The Administrator SHALL be able to insert the details of the new license registered.

6. The Administrator SHALL be able to generate new personnel credentials by issuing them an initial login ID and password.

7. The Administrator SHALL be able to get the details of personnel.

3. CONCLUSION

The project primarily focuses on issuing and view or pay challan along with details extraction of cars, license numbers and challan information. The project may be expanded to a full stack functional website in future offering additional services such as license creation, RTO car registrations and many more.

The system may also be changed by utilizing the latest technologies as mentioned in the literature study like QR code sand RFID scanner. This will minimize human involvement and will result in a more efficient model of the current system.

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