# SMART E-CHALLAN SYSTEM

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**Abstract:** E-Challan System is an online platform which basically aims at providing a wide range of support in monitoring and managing the traffic penalties, helping the users regarding the problems which they might face in paying their challan. The E-challan System is basically an online platform or an app which helps in interacting between Police and drivers easily. The prototype of this project describes how challan becomes so easy for users through keeping it online. This online platform basically aims to bring down the manual process, paperwork and helps in increasing the convenience for the users.

**Keywords:** E-Challan, Flutter, Android Studio, Accident detection

## I. INTRODUCTION

Governance is a challenge in a diverse, vast and rapidly developing country like India. India needs a novel and latest technology for large-scale transformation and implementation of government plans. While India is among the rapid developing economies in the world, India's unbiased growth remains a critical imperative. For a country like India this project Smart E-challan is an attempt in the direction of e-governance which has high density and a large population. Since 1951 the road network of India has grown-up at the annual rate of 4%. Along with the rural and urban population density the density of roads has get up in India. The rising population has overcomes with more vehicles on roads. This has led to a giant rate of accidents. One of the vital reasons for high number of road mishaps is that traffic rules are violated and are not followed. According to a survey, 78% of the accidents happens because of the violation of traffic rules by the vehicle driver such as driving speeding under the influence of drugs or alcohol and hit and run cases. So India needs a foolproof system to prevent accidents and basically manage the traffic on the roads. It is a system which will makes the people to follow specific rules and drive safely, without violating rules. The Smart E-Challan system is a foolproof regulated system. This Smart system is basically an online E-governance system which ease the traffic managers to handle the traffic violation as well as for drivers to manage the penalties charged to driver. It is a decentralized information system which basically allows all the stakeholders to access the information from any place.

## II.REVIEW LITERATUR

A detailed survey of existing projects was studied and done to arrive on a foolproof and successful outcome of model. The paper discusses an electronic governance model of electronic challan and traffic penalty system by 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 flutter. The model scan the QR code that is available on vehicles 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 on our app also which user have to pay online. The project vitally focuses on the data extraction from multiple databases. The paper discusses the traffic violation detection using computer vision. The model extracts the QR code which is used to scan the code and place the challan. The vehicle number is basically detected and owner's information is extracted. The information is used to generate an E-Challan and an instant appropriate fine message is sent to the owner on app. Implementation and the execution of the whole model and system is very efficient and requires very less human intervention. By using a picode a new approach is suggesting an innovative e-challan application using encoding and decoding of the picode. The paper has discussed and illustrated an efficient method to read the picode and generate a challan for the traffic violators using QR code encoder. The paper suggests a useful web- based application using a database program that records all the traffic offenses committed throughout the nation. To keep the adequate record and provides an online payment facility to the violators they maintains a centralized database. The project is developed using HTML, CSS, Bootstrap, JavaScript, MySQL, PHP and Flutter. A novel approach is discussed in the paper proposing an efficient e-challan generation technique using QR, generating challan using android application. The application works by Scanning the QR, then fetching the details from the database and generating the challan. A similar approach is used

by suggesting the need of an efficient and smart automated traffic penalty generation system. The authors suggest the retrieval and extraction of information/data of vehicles from the official database using smartphones by scanning the QR code. The officer can then generate an e-challan with the app and the challan will be sent to the driver using app by sending message to driver on user portal which is available on app. If the driver fails to pay the charges in a given time the RTO may suspend or hang the license of the driver. The system give rise to a challan and sends the notification to the driver's phone. The application is developed mainly for regulating the horn violation. The paper discusses the disadvantages of manual e-challan generating process, the problem of fake challans, loss to the government and inconvenience caused to the driver. The system can Scan the QR code using Scanner and the official can generate a challan using the information of the vehicle saved in the database which will be then sent to the owner of the vehicle. The System also help the driver to prevent death that is happen by road accident by scanning the QR code on vehicle of particular person who meet the accident, and then by scanning QR code of accidental person the other user can able to send the location and information of accidental person and place to the well-wisher of victim. This well-wisher are the family or friends of driver which is mentioned by the user/driver the time of app registration.

## III. RESEARCH METHOD

The paper presents a web-application developed with a step by step procedure as discussed below. Define the shareholders of this web-application.

There are 3 different type of users on the platform namely:

**Controller**: The registered employee of the traffic police who can issue the challans to the drivers who have violated or break any traffic rules across
the city.
**User:** The licensed people who have been permitted to drive the vehicles across the city and have been issued a challan due to violation of any traffic rules. These people can pay and manage or run their issued challan on the platform.
**Admin:** The system admin is responsible for the management of accounts of the above users and is responsible for issuing login credentials to the traffic police controller, and insertion of new vehicle, driver and license details in the database.

A variety of distinct functionalities/features and resources have been provided to each of the users which they can use on the online platform with verified login credentials.
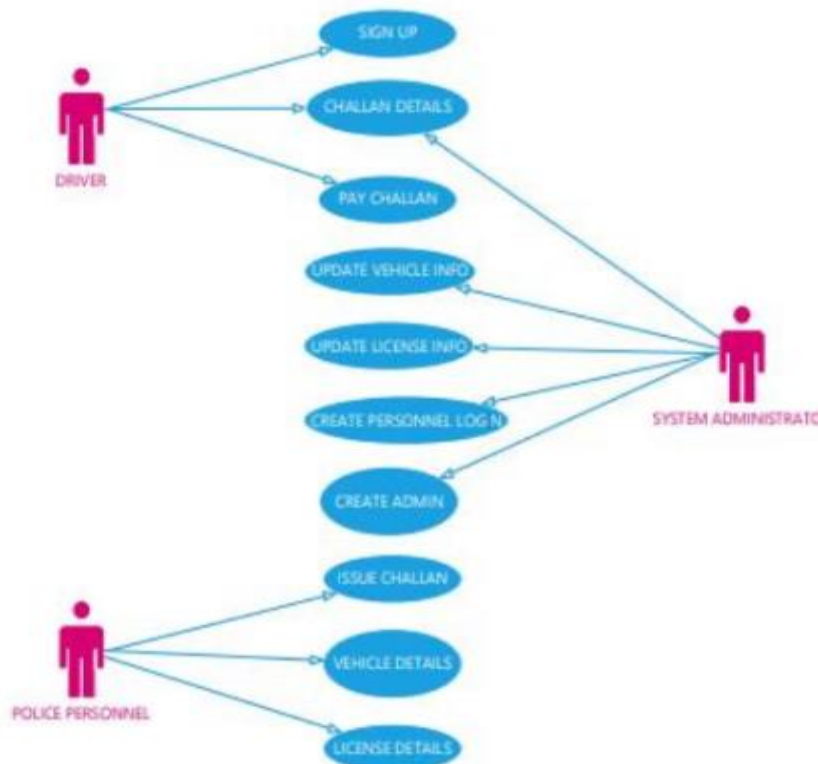
**Determining the requirements of the stakeholders**

**CONTROLLER**:
- The new controller SHALL be issued an initial login ID and a password by system administrator.
- The new controller SHALL be able to generate his/her login ID and a password.
- The controller SHALL be able to login using his or her ID and password.
- The controller SHALL be able to reset his or her password in-case he or she forgets it.
- The controller SHALL be able to scan the QR to put challan on violators.
- The controller SHALL be able to get the details of the owner of the vehicle.
- The controller SHALL be able to input the details of the vehicle.
- The controller SHALL be able to get the details of the owner of the vehicle.
- The controller SHALL be able to input the details required for issuing the challan.
- The controller SHALL be able to issue a challan successfully.
- The controller SHALL be able to see the challan history of the driver.
- The controller SHALL be able to see the challans issued by himself or herself.

**DRIVER**:
- A new driver SHALL be able to sign-up himself/herself using his/her general information like his email and phone number, well- wishers email, Vehicle detail.
- The new driver SHALL be able to generate his/her login ID and a password
- The driver SHALL be able to login using his or her ID and password.
- The driver SHALL be able to reset his or her password in-case he or she forgets it.
- The driver SHALL be able to view his challan history
- The driver SHALL be able to view the challans issued to him by the traffic personnel.
- The driver SHALL be able to pay the issued challans due for payment.
- The driver SHALL be able to scan the QR code of another driver who meet the accident and send the notification to that victims well-wisher that victim mentioned while registered.

**SYSTEM ADMINISTRATOR:**
- The Admin SHALL be able to login using his or her ID and password.
- The Admin SHALL be able to reset his or her password in-case he or she forgets it.
- The Admin SHALL be able to insert the details of the new vehicle registered.
- The Admin SHALL be able to insert the details of the new user/driver.
- The Admin SHALL be able to generate new personnel credentials by issuing them an initial login ID and password.
- The Admin SHALL be able to get the details of personnel.
- The Admin SHALL be able to insert and edit the details of the challans.

Using Technical Specs develop the web-application.
The project has used a variety of front and backend frameworks for implementations such as:

**HTML:** For front-end development
**CSS:** For front-end development
**JS:** For animations and display time
**PHP:** For frontend and backend connections, session creation and queries
**Flutter:** Flutter is an open-source UI software development kit developed by Google. To develop cross platform applications for Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web from a single codebase it is used.
**jQuery:** For animations
**MySQL:** Backend development

## IV. FUTURE SCOPE

The system line up to provide a ideal solution for the current challenges which the transport departments is facing with respect to issuance of traffic challans, heading records/ back-end operations, tracking offence history, payments, reports etc. by leveraging brand new technologies which are easy to use, adapt and implement at the ground level. This system keeping down time and efforts of citizen in making payments or follow-up actions which they face after getting challan on road. This system is easy and efficient challenging option for Transport Enforcement Officers and Traffic Police officers Completely customizable as per state/ department requirements. This system connecting all the shareholders through a common system which is ensuring data integrity, reliability and transparency. End to end computerization of

the process will ensure efficiency at each level of users. 100% digitization and documentation of records/data will help in improving the visibility on offenders, types of offences frequently committed, payments received on time etc.

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