

A Real-Time Vehicular Offence Detection Approach for Better Socio-Government Economic Cause

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ABSTRACT

India is the second most popular country in the world and is a fast-growing economy. It is seeing terrible road congestion problem in its cities. Breaking traffic rules is a major issue now a days. Breaking traffic rules in any sense is bound to attract punishment. The severity of this punishment depends upon the nature of the committed offence. Breaking rules in India can lead to accidents and even death in severe cases. With regards to breaking traffic rules, citizens can be asked to pay a fine, serve a jail term or face disqualification in the form of a ban from driving any vehicle. Now a days the penalties are increased for breaking traffic rules, the key objective behind higher penalties was to increase road discipline among citizens as India remains one of the top accident-prone nations in the world but the higher penalties will be overburden to people, many states have said it, and also it leads to higher corruption.

Keywords : Violation, Higher Authority, License.

I. INTRODUCTION

This project is designed for successful basic building aim to reduce traffic rules violence service to the state, city or some area. It is a web-based system that is designed to store, process, retrieve and analyse information concerned with the traffic management by maintaining all the information pertaining to one who violates the rules of traffic and make them to follow those by certain methods. It provides transparency in this field, make the process hassle free, corruption free solutions related with violated traffic rules in this project like,

- Riding without Helmet
- Driving without licence
- Drink and Drive
- Unregistered vehicle
- Emission testing
- Insurance

The aim of this research is to reduce the violation of traffic rules, by producing the required things to those citizens who have broken the particular rule which is built with some exact solutions, we have come up with and make the system effective.

1. Riding without Helmet: People neither value their own life nor that of others. Most of the people who die in road traffic accidents while riding a motorcycle/scooter are those who neglect to wear helmet. Thus, people who don't have helmet should pay penalty, where half of this penalty will be taken by government in terms of its revenue and with same money the citizen is given an acknowledgment to take a helmet that is produced by government.
2. Driving without license: There are several reasons why an individual may be caught without a license. Often, the driver may simply never have applied for a

driver's license during this condition, we take the individual details and give them an acknowledgment so that it will be easy for citizens to apply for DL. If this violation of rules is continuously done more than 3 times than their vehicle would cease the vehicle.

3. Drink and Drive: Alcohol may cause attention to driving to decrease and /or drowsiness to occur. Alcohol can hinder the ability to make rational decisions. It also reduces eye/hand/foot coordination can be caused by drinking too much alcohol. Thus, if the citizen violates this rule, he should pay penalty. As the person will be consumed alcohol he will be sent to his home by cab or a message will be sent to one of his family members.

4. Unregistered Vehicle: If somebody met an accident with someone who is at fault but has no license or registered, it will be difficult to find the details of the person who met with accident; thus, it is necessary to register the vehicle to fetch details. Thus, our application will help register the vehicle and give an acknowledgment.

5. Emission Testing: Over time, the emission control systems degrade and pollution increases. Keeping vehicle well-maintained with regular tune-ups will prolong the efficiency of engine and its emission control systems. Automobile emission testing programs are designed to ensure that vehicles are polluting as little as possible. Thus, we have come up with this idea of emission testing i.e. by testing and then sending to emission testing centre.

6. Insurance: If there causes an accident without insurance, we have to pay all the damage to our vehicle out of our pocket. Thus, insurance will help during this time.

This application will make the job easier for citizens and government that is by generating revenue to government and also by helping the citizens by providing helmets, by providing acknowledgment to apply for Driving License, learning license, by registering the unregistered vehicle, giving an acknowledgment to apply for insurance, emission

testing to reduce the pollution and providing home service to drink and drive cases, thus this all services are been given by government by using the same penalty that is paid by citizen for their offences.

As we maintain all the information pertaining to one who violates the rules of traffic and their detailed data of that person. Thus, maintaining will help traffic police to find the one who violating rule again and again and easily accomplish the necessary actions regarding it.

II. LITREATURE REVIEW

This project is socially relevant to manage the traffic system. Existing system of manual booking of traffic violation cases consumes lot of time and energy. Manual system of booking of traffic violation case is not transparent. It facilitates corrupt practices. In manual system, there is no record of previous traffic violations by the vehicle. Due to this, repeat offenders escape higher penalties. There is a scope of pilferage and misappropriation of fine amount collected by Traffic Police. Many a times, unscrupulous police officers use duplicate receipt books.

The system aims at harnessing strength of technology and minimize human intervention to bring about the speed and transparency in the whole process of traffic regulation which will go a long way in solving the problems of traffic on roads to a great extent. In order to bring transparency in the whole process of older methods of challenging traffic violations. Thus, observing all this problems occurring in day today life a new system is developed that is by charging the penalty for violating traffic rule, and with this penalty is in turned used by government to help for users in some method and also this penalty is one of the source for generating revenue. As we maintain the data of all the offenses happened, thus it will be easy to find which person have violated traffic rule

and how many times he have violated, if the person has violated traffic rules more than 3 times at that time the system send an automatic message to RTO and Higher authority office with details of that person so that future action will be taken. Like this we have followed some solutions for some specific violation of traffic rules.

III. RESEARCH GAP

The designed system focuses only on keeping track of traffic violated rules using GSM modules and sending information of vehicle and its owner to the central database through GPRS communications.

It focuses only on problem of tracking culprit fake registered vehicle which break the traffic rules, detecting culprit vehicle by which accident has happened and reduce fake calls for ambulance.

This system focuses on problem of congestion control, emergency vehicle clearance and stolen vehicle detection. To solve these problems, they proposed three parts, first part has automatic signal control system, second part is emergency vehicle clearance and third is responsible for stolen vehicle detection using RFID.

Project focuses on four wheelers that too on two parameters i.e. seat belt and over speed. Firstly, the detection of over speed and location of vehicle has been determined via GPS, and the measured speed is then compared to the set speed limit.

Hence, by the observation of above all referenced papers we come to know that all of them have monitored to keep track of those vehicles which violate the rules and control the congestion problem. But as observed there is no effective solution in making the citizens to follow the rules.

So, we have proposed a system that helps to make the citizens to follow the traffic rules like if he rides

without the helmet he will be fined as well as the helmet will be provided and if he drives without license he will insisted to apply for license there itself. And in case of drink drive he will be fined with ceasing his vehicle and also one of his family members will be made aware of it and many more.

A. Target Audience

Here we are targeting the citizens and traffic police, where we should make sure that the citizen follows traffic rules. And moreover, we are reducing the manual work on traffic police.

It also provides transparency in the field of traffic violation management, make the process hassle free, corruption free and make the system effective.

IV. METHODOLOGY

- We are developing the web portal where we need to login the system and select the city.
- Based the selected city, we need to choose the type of the offence, where we need to choose appropriate offence type.
- Fill the details of the offender and generate a receipt for the penalty.
- When you login to his account, it will show you all his previous offence committed/violation.
- If the violation is greater than two, then his vehicle seized.

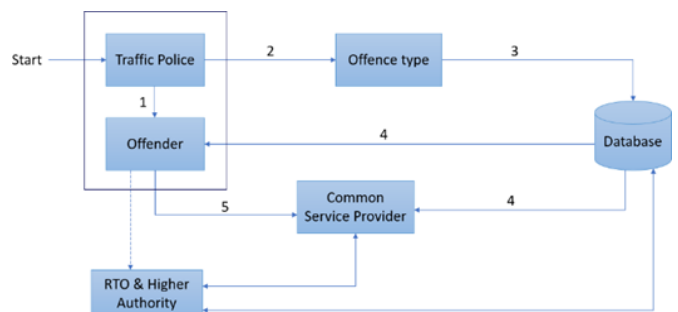


Figure 1: Block diagram of traffic violation system

When the offender gets caught by the traffic policeman, they will check his/her previous record of

violation, if it exceeds two then his/her vehicle will get seized.

If the violation is not greater than two, then a memo will be sent to common service provider and one copy to the offender.

Common service provider is the one which, helps in all aspects. Where they will give solution to the customer, which reduces the burden on the RTO.

If the problem or offence is quite major, then they will tell the offender that they should go to RTO or Higher Authority as per the offence in concerned.

Only RTO and Higher Authority will have the permission to access the Database (Read and Write).

But where the Common Service Provider is concerned, they can only read and add new data.

V. Results

- By adopting the proposed system, it creates “employability” from common service Provider Center, where the employee will take a fixed nominal service charge based on the customer violation.
- Will result in reduction of rash and negligent driving.
- Will avoid conflicts between police and public.
- Will Increase awareness of traffic rules and regulations.
- Will reduce processing and disposal time of traffic violations. Will bring transparency in enforcement of traffic laws and rules.
- Will be used as effective tool of e-governance to manage, monitor and administer.
- Will empower traffic police personnel who monitor the traffic on the field by giving them wider reach and capability to penalize the erring motorists.
- Will be great facilitator in identifying frequent violators and initiating appropriate correctable action.

- Will help in gathering complete data of motor vehicle owner’s address, license holders and violation.

VI. CONCLUSION

We conclude that compared to the existing systems used for Traffic violation are less future compared to our proposed system. The motivation behind this research is to propose a relatively low-cost solution to assist enforcement authorities in monitoring traffic offences and also correcting them. This system on successful deployment in the real world will help reduce the traffic rules violation to a greater extent. As this system capable of tracking offence in real time will reduce the number of accidents and can easily track the culprit.

- To reduce the violation of traffic rules.
- To reduce burden over citizens.
- To help government by generating revenue.
- To create employability.
- To help police to reduce manual work of maintaining data.

From the current problem section, it can be seen that, existing technology are insufficient to handle the problem of traffic management. So, to solve these problems, we proposed this system. It mainly consists of methods like what solution can be provided and overcome the violation of particular rule.

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