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Traffic Violation Management Web Application with Online Tracking and Fine Payment

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Abstract: ***Today's frameworks in India are manual and semi-mechanized. Starting at now no constant online or even portable based application is accessible in India. The proposed applications will give a simple interface to all partners of the Traffic Control of India including RTO (Regional Transport Office) Employee. The web application will have functionalities for enlistment of credentials of various citizens, web based tracking of vehicle, online fine payment through application and it will even monitor the violation done by the subject. When vehicle is seized by RTO (Regional Transport Office), robotized warning will be sent to the proprietor of vehicle alongside the area if and just if the resident has officially enrolled itself, so that the proprietor can without much effort can reach to the area where the vehicle is kept. On the off chance that proprietor has paid fine online through the web application, one will recover his vehicle immediately in lawful preparing. This web application likewise gives an element to monitor towed vehicles and keeps up a record on week after week, month to month or yearly premise. The entire information identified with the quantities of violation submitted in the area or state can likewise be seen. This framework can be additionally included with few new functionalities that can incorporate in other activity to control violation. All these should be possible by a little expansion of few gadgets (RFID Tags, CCTV and so on). This system can totally change the working of the traffic violation management system in India.***
Keywords—Vehicle, application, violation, proprietor, India, web and RTO.

I. INTRODUCTION

Generally, traffic system in India has been checked physically by the city's traffic police. This framework experienced clear time and area requirements. Traffic violations in India are reliably on an ascent in India, even in the metropolitan urban communities that are seen to have vigorous components to police and punish traffic guilty parties. The traffic violation management in India is not completely automated at whatever point a violation happens the traffic police charge fine in like manner [1].

This framework is old and it is manual. Utilizing a basic web application, the traffic police can keep the record and subtle elements of the individual and in addition its violation details.

Traffic violation management utilizing a web application makes it truly simple to deal with the infringement records and to monitor every one of the infringement that are carried out. Suppose a person parks the vehicle on a non-parking zone, the vehicle is then towed by the towing representatives and after that it is kept at a place that may be or may not be known. At that point, the following thing the individual would do is go to the close-by police headquarters and check whether the vehicle is there or not. On the off chance that he/she finds the vehicle they pay the fine and the vehicle is handed over. This is a manual procedure and takes a of effort and searching to retrieve vehicle back. To make this entire manual work automated a web application can be made and its database would store the infringement records and wipes out all the printed material, spares time and the entire framework would be lawful.

II. RELATED WORK

The related work gives us all the information that is required to implement the proposed paper. The table shows the list of the websites or online material available is being studied.

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TABLE I
EXISTING SYSTEM AT A GLANCE

Sr. No.	Websites	Implementation methods used
1	Delhi Traffic Police	Provides NOC for commercial vehicles as well as commercial driving licenses. Provides a 'Short term' as well as 'long Term' entry permission for commercial vehicles. Provides parking stickers for physically handicapped person.
2	Traffic Police: Hyderabad	Free SMS alerts (alerts available for all places of Hyderabad only). E-Challan and its status. Vehicle registration. NOC.
3	Ludhiana Traffic: Online Challan portal	E-Challan Online Challan Payment Search Challan Receipt generation
4	Search for Traffic Violations - Bangalore Traffic Police	By entering registration number i.e. vehicle number an individual can check whether he/she has committed violation or not. If the person has any violations they can pay fine using any media they want.
5	Selective Implementation of Intelligent Traffic Solutions in India	The use of technology (computing, communications, and sensors) to optimize the movement of vehicles over transport networks. This optimization covers areas as diverse as traffic signal control, automatic number plate recognition (ANPR), and on-line real-time traffic messaging. With specific reference to the Indian experience, the main problems faced by traffic managers in many of the Indian cities are that of enforcement of traffic rules, and directing traffic through key junctions, to maximize flow. Addressing these problems requires the use of video surveillance technology and specialized software applications. A typical traffic analysis package will deliver to traffic management authorities the following information: ✓ Vehicle detection and classification ✓ Velocities of each detected vehicle ✓ Time taken for traffic to clear up at a junction ✓ Flow statistics ✓ Vehicle trajectory logs
6	E-challan for traffic violation in Mumbai	"This is the first time in the country that a complete cashless form of challan has been introduced. Payments can be made through debit and credit cards. The system ensures transparency between traffic police and the public at large." For those who do not have access to making payments online, "A person can pay the fine at the concerned traffic division. A person's license will be suspended if he or she commits more than four offences. A request for the same will be sent to the RTO. Repeat offenders and those who fail to pay fines penalties, the traffic personnel will trace them and initiate further action."
7	Mobile phones to check traffic rule violations	Project Third Eye utilizes mobile simple, easy-to-operate and cheap mobile technology to keep a close eye on traffic rule violators in Gurgaon. Though beset with some challenges, it is proving to be an increasingly efficient complementary mechanism for the outdoor surveillance system of the Gurgaon Traffic Police.

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Delhi Traffic Police [2] is a website that provides NOC for commercial vehicles as well as commercial driving licenses. Provides a 'Short term' as well as 'long Term' entry permission for commercial vehicles. Traffic Police: Hyderabad [3] provides parking stickers for physically handicapped person. Free SMS alerts (alerts available for all places of Hyderabad only), E-Challan and its status, Vehicle registration and NOC. Ludhiana Traffic: Online Challan portal [4] provides E-Challan, Online Challan Payment, Search Challan and Receipt generation. Search for Traffic Violations - Bangalore Traffic Police [5] by entering registration number i.e. vehicle number an individual can check whether he/she has committed violation or not, if the person has any violations they can pay fine using any media they want. Selective Implementation of Intelligent Traffic Solutions in India [6] uses technology (computing, communications, and sensors) to optimize the movement of vehicles over transport networks. This optimization covers areas as diverse as traffic signal control, automatic number plate recognition (ANPR), and on-line real-time traffic messaging. With specific reference to the Indian experience, the main problems faced by traffic managers in many of the Indian cities are that of enforcement of traffic rules, and directing traffic through key junctions, to maximize flow. Addressing these problems requires the use of video surveillance technology and specialized software applications. A typical traffic analysis package will deliver to traffic management authorities the following information: Vehicle detection and classification, Velocities of each detected vehicle, Time taken for traffic to clear up at a junction, Flow statistics, Vehicle trajectory logs. E-challan for traffic violation in Mumbai [7] it is the first online system where payments can be made through debit and credit cards. The system ensures transparency between traffic police and the public at large. For those who do not have access to making payments online, "A person can pay the fine at the concerned traffic division. A person's license will be suspended if he or she commits more than four offences. A request for the same will be sent to the RTO. Repeat offenders and those who fail to pay fines penalties, the traffic personnel will trace them and initiate further action." Mobile phones to check traffic rule violations [8] project provides Third Eye utilizes mobile simple, easy-to-operate and cheap mobile technology to keep a close eye on traffic rule violators in Gurgaon. Though beset with some challenges, it is proving to be an increasingly efficient complementary mechanism for the outdoor surveillance system of the Gurgaon Traffic Police. All this information helped me to form a system that is totally dedicated to traffic violations that are specifically committed by parking the vehicle on the non-parking zones.

III.PROPOSED SYSTEM IMPLEMENTATION

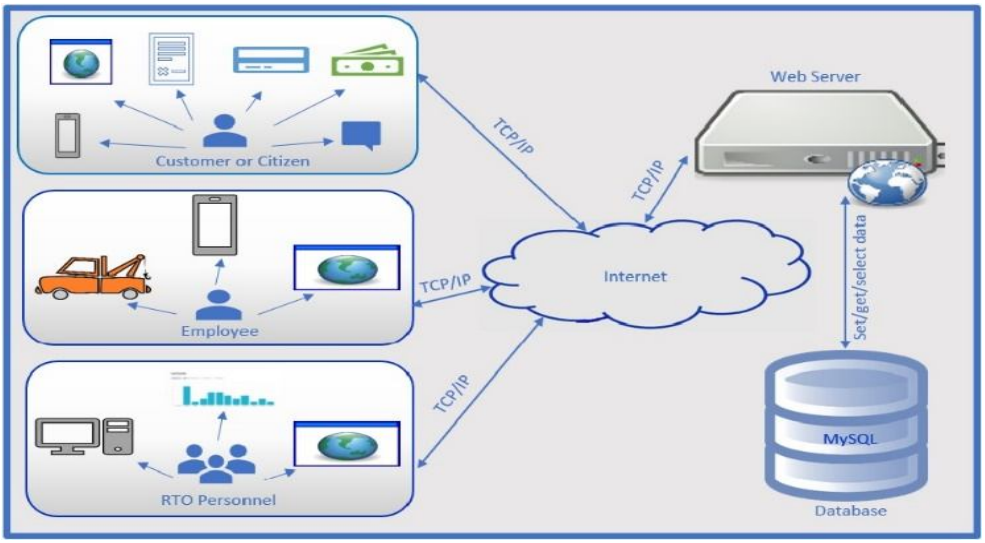

Fig. 1 System architecture

It has three main components named RTO personnel, Citizen and Employee (towing authority).

A. Citizen

This part is furnished with functionalities, for example, pay fine, see infringement, see fine status, track the vehicle area and check whether the vehicle is towed. Web application will permit to pay fine web based utilizing credit card or debit card and after the fine is payed its status will be refreshed and an electronic receipt will be produced. This e-receipt can be printed or it can be downloaded. Utilizing this receipt, they will have the capacity to recover their vehicle. They can even utilize an inquiry alternative to check whether their vehicle is being towed. If the vehicle is towed they can see the area where it is put away, this would dispose of the

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looking time. One more capacity is made accessible that is you can see your own infringement subtle elements.

B. Employee

This segment is given functionalities, for example, enter towing vehicles subtle elements, view towing details and view profile. The worker while towing the vehicle will utilize this web application to enter details of the vehicle that he is towing and will enter the putting away and towing area. The web application will likewise give an element to enroll all the towing done inside a month or a year.

C. RTO Personnel

This part is given functionalities, for example, seeing the details of employees (Towing authorities) alongside the towing details and the subtle elements of the subjects who has done infringement. Another component that is given is to see the infringement insights as indicated by the year, area, state or in overall India. This will help the traffic authorities to keep the track of violations that are occurring. Significantly another capacity is given that utilizing the vehicle number RTO staff can search and check the fine status and can likewise pay fine on the spot and the expert will update the fine status of the individual.

IV. EXPERIMENTAL RESULT

The images given below shows the online web application for traffic violation management.

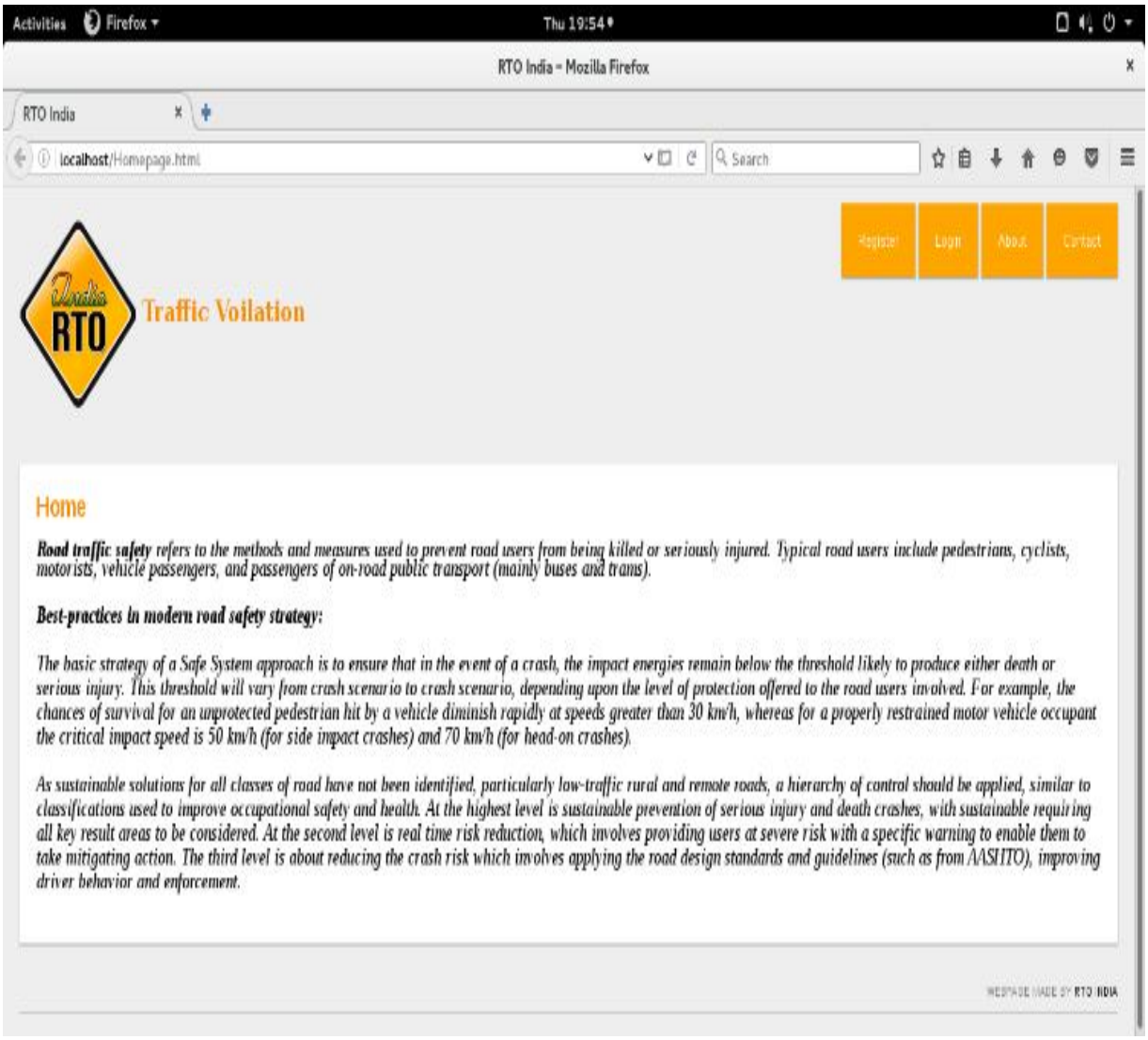

Fig.2 Homepage

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ISSN: 2321-9653

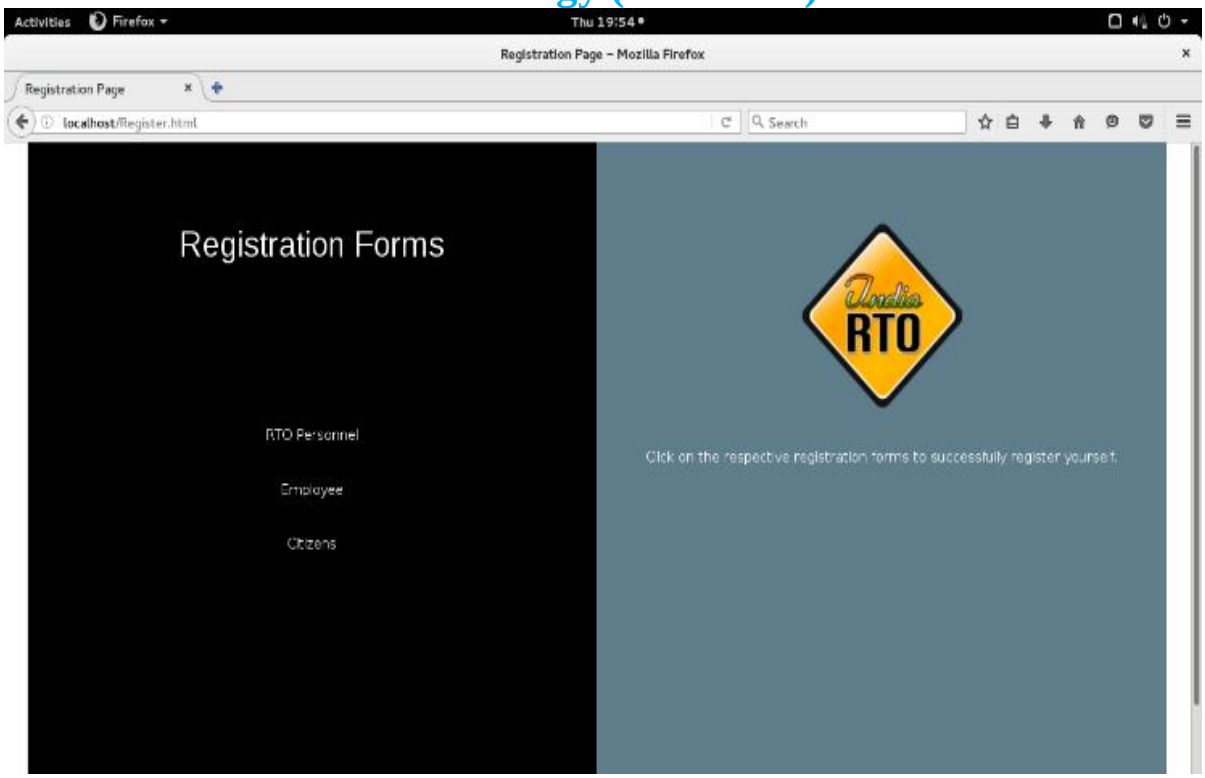

Fig.3 Registration

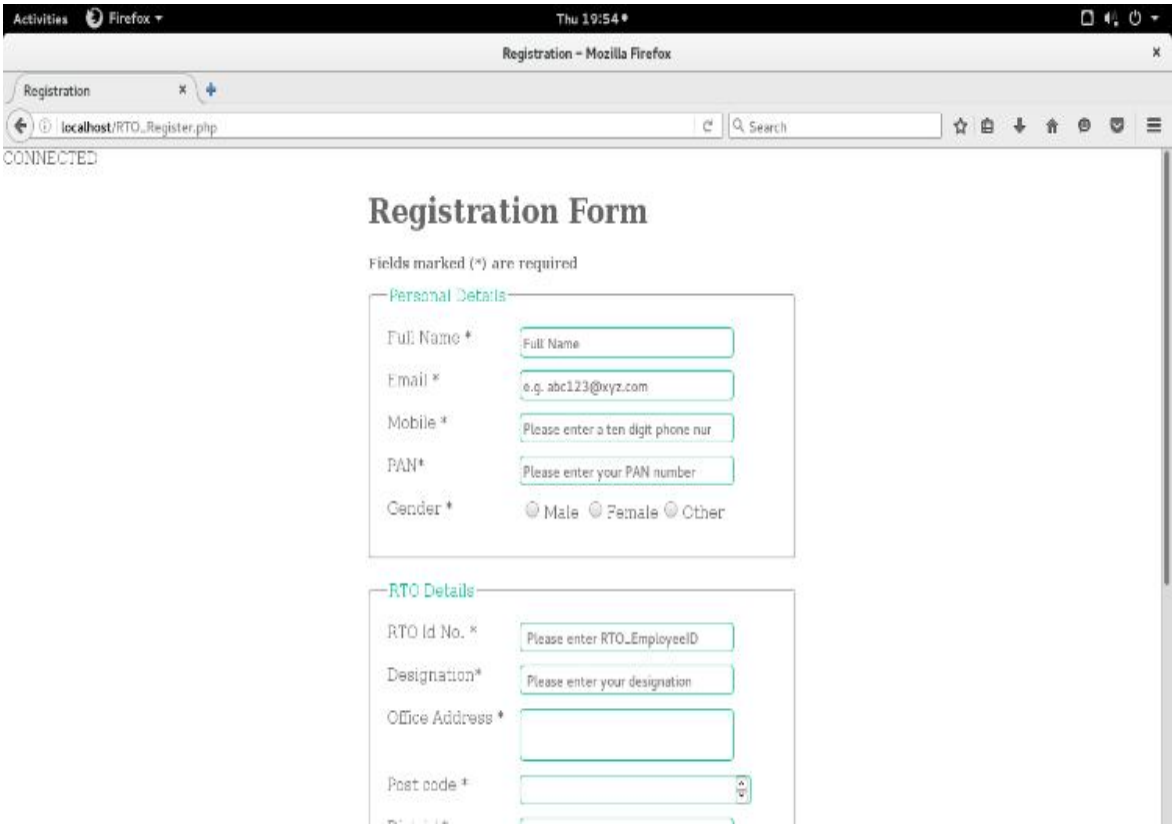

Fig.4 Registration form

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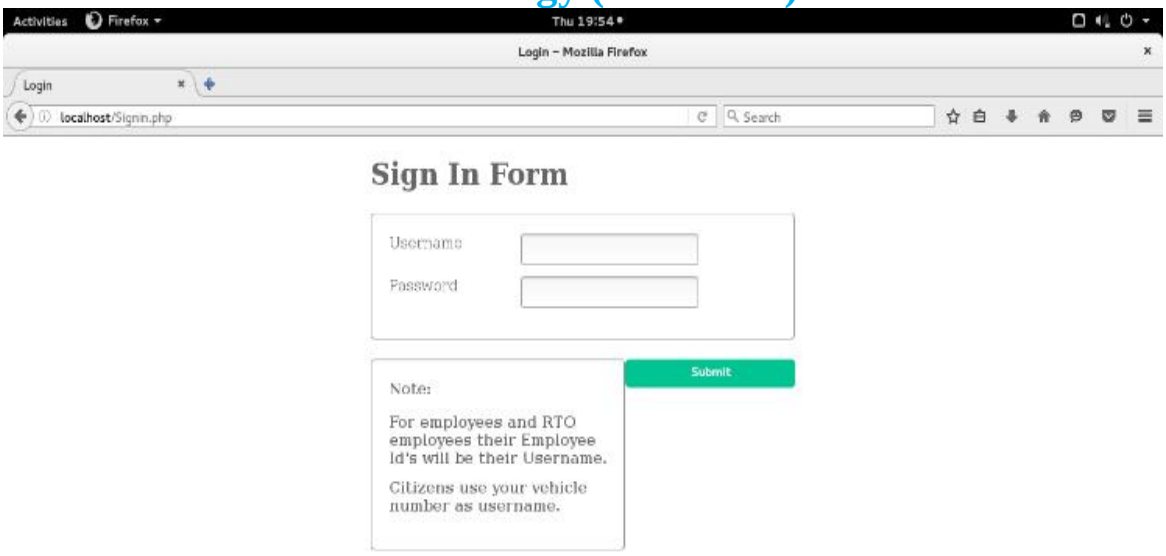

Fig.5 Sign in page

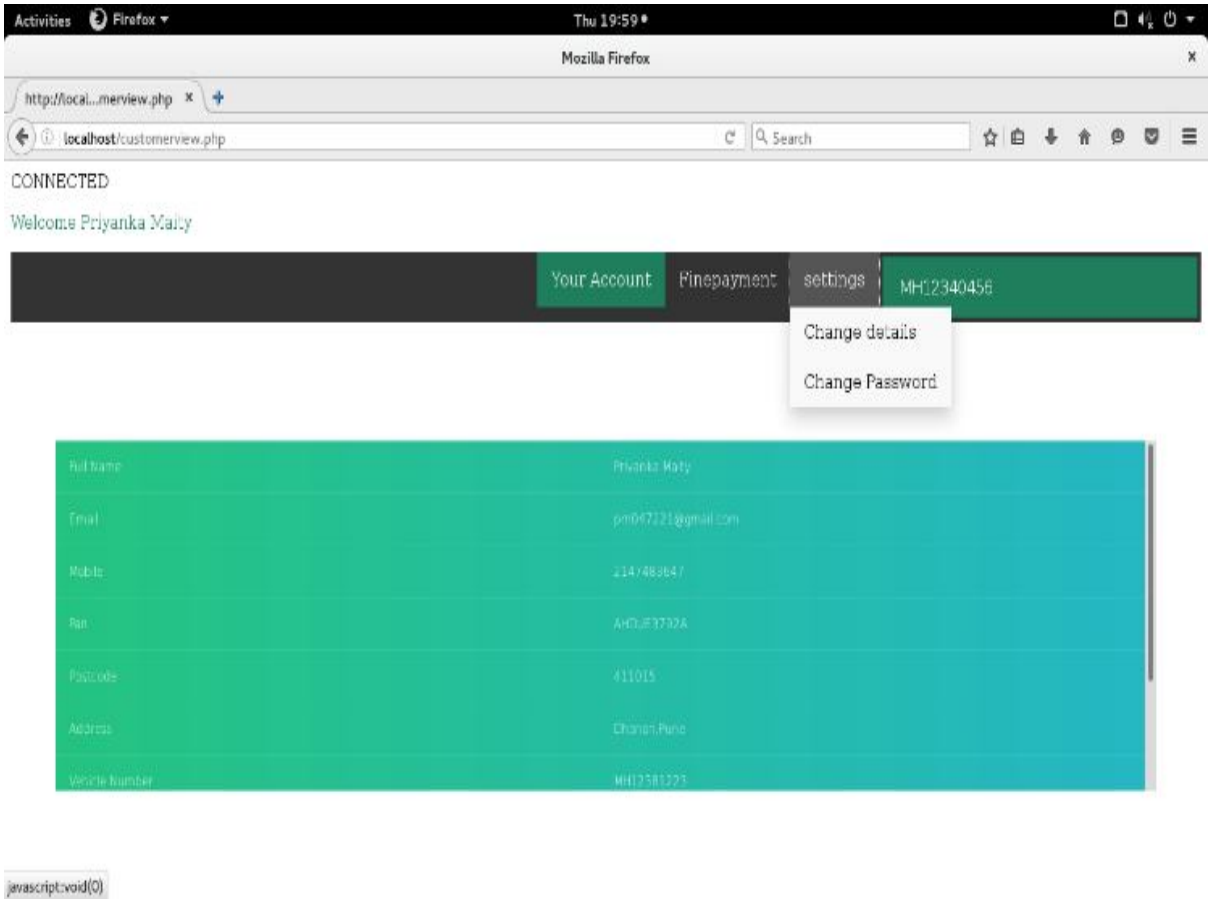

Fig.6 Citizen homepage

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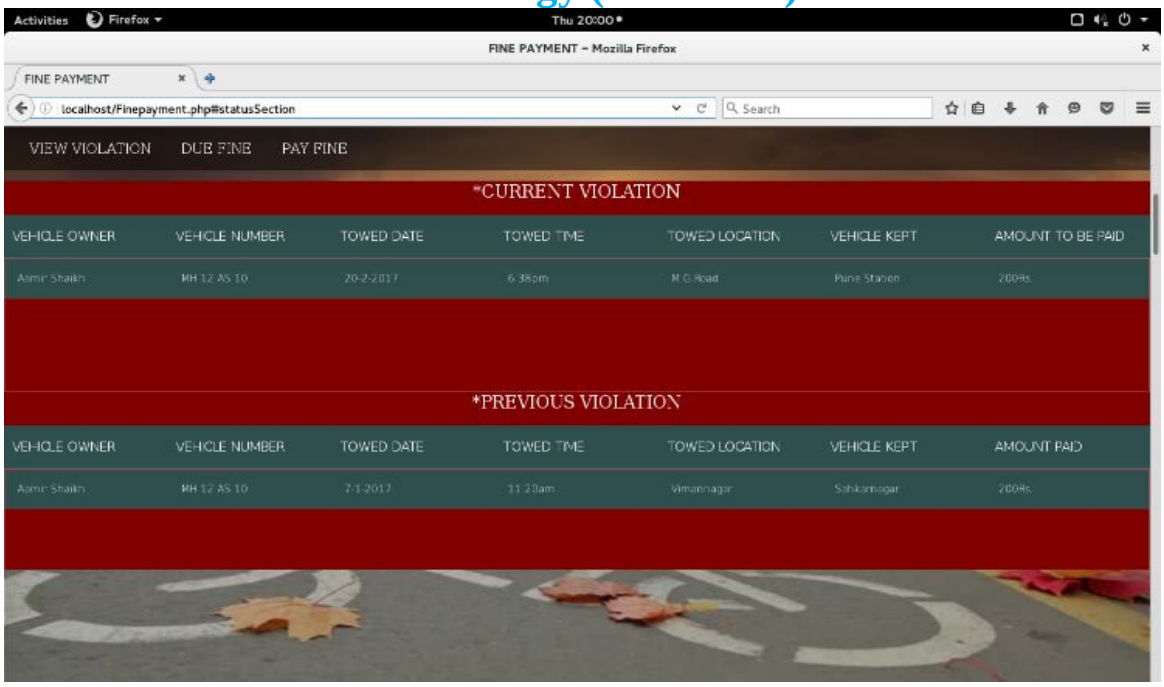

Fig.7 View Violations

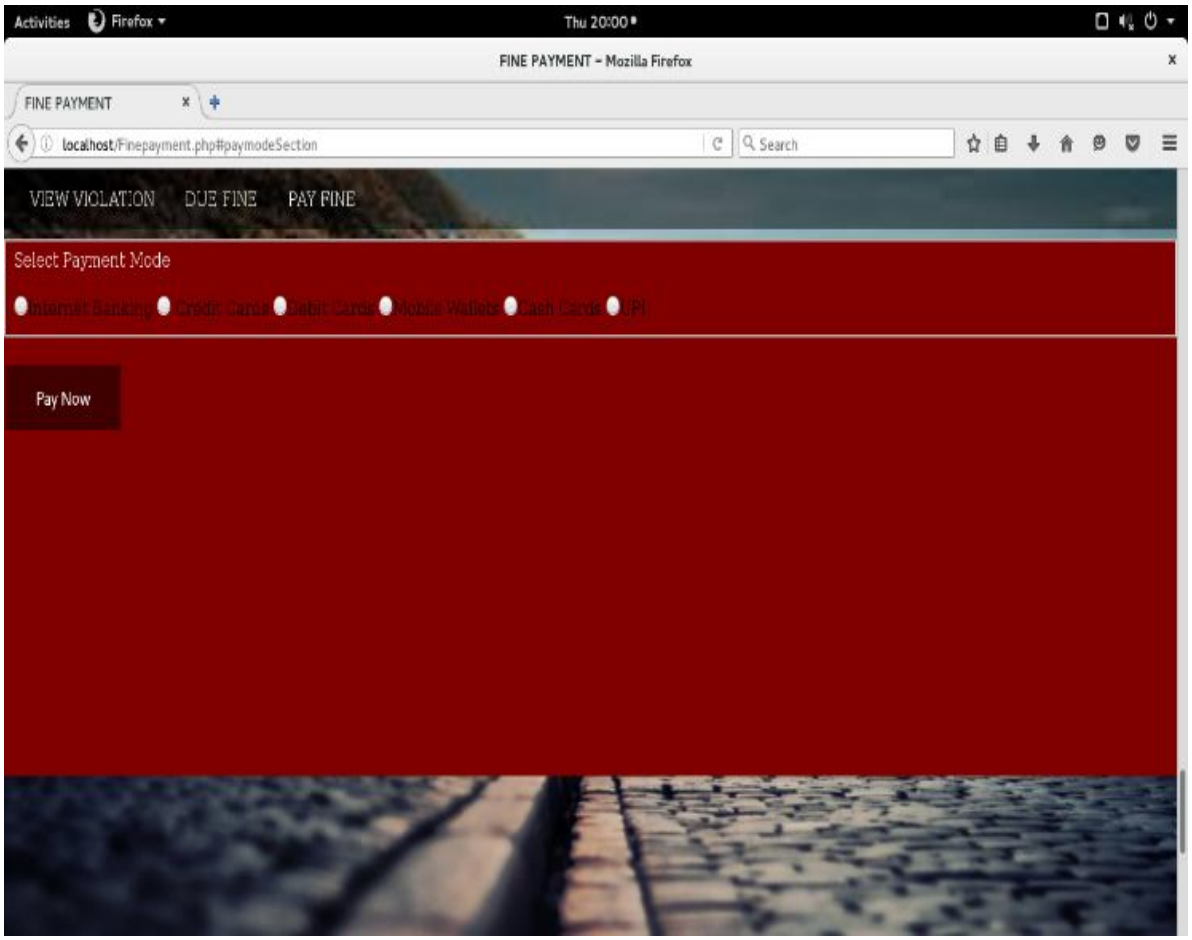

Fig.8 Pay Fine

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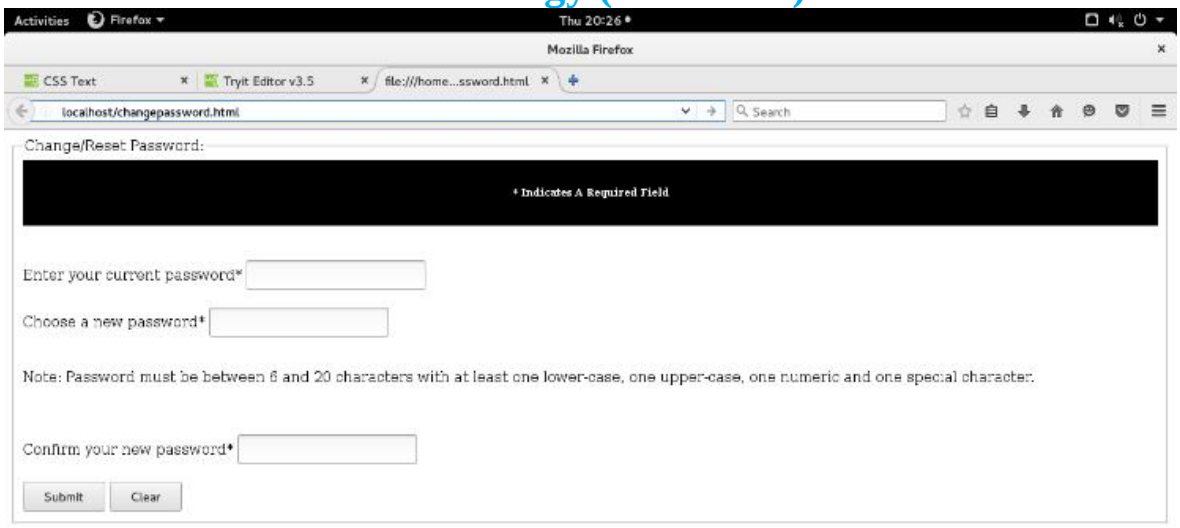

Fig.9 Change password

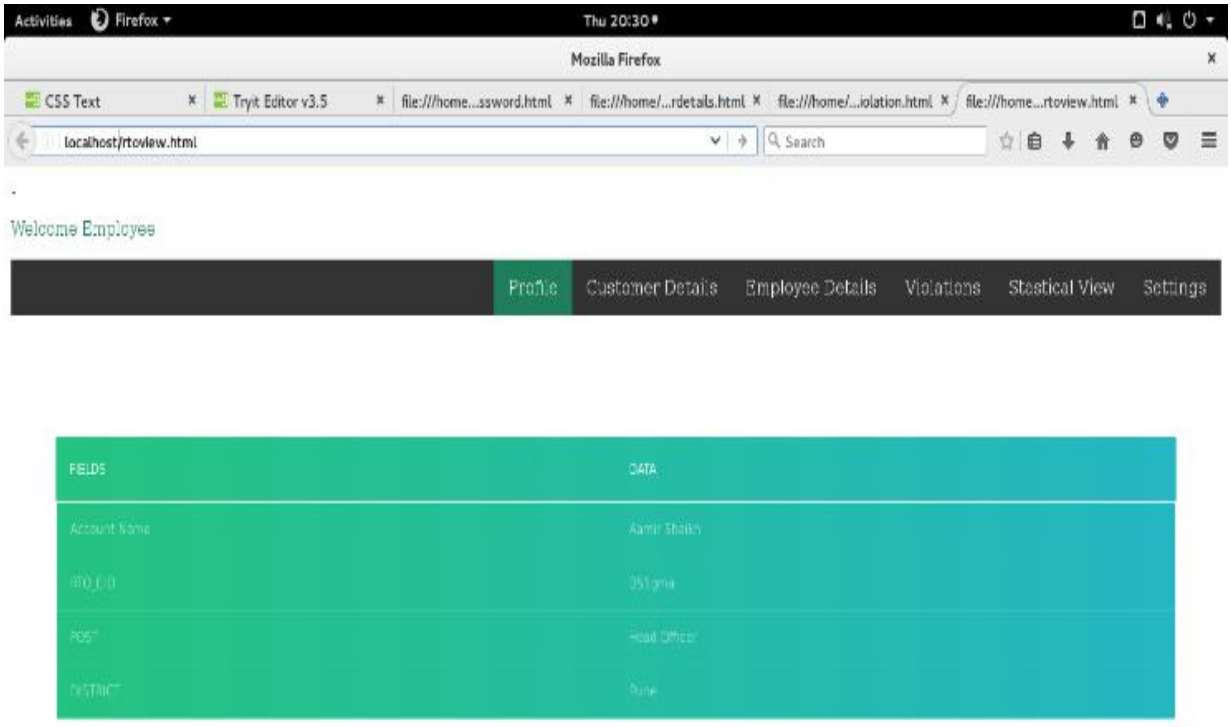

Fig.10 RTO Personnel homepage

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ISSN: 2321-9653

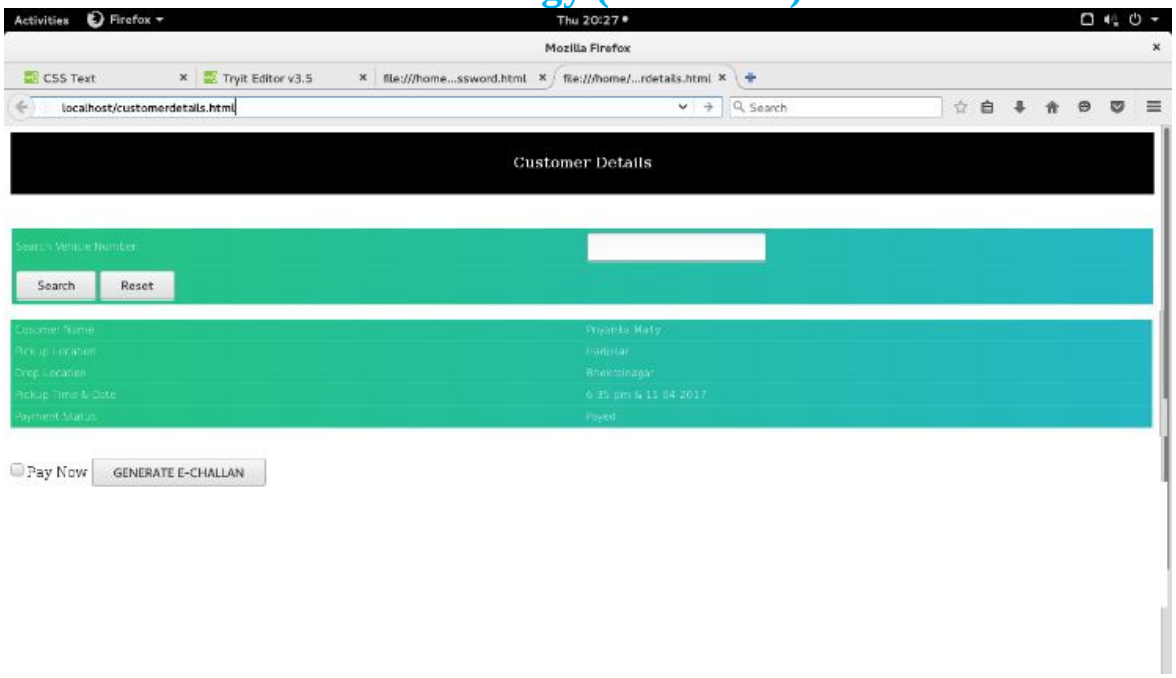

Fig.11 View customer details

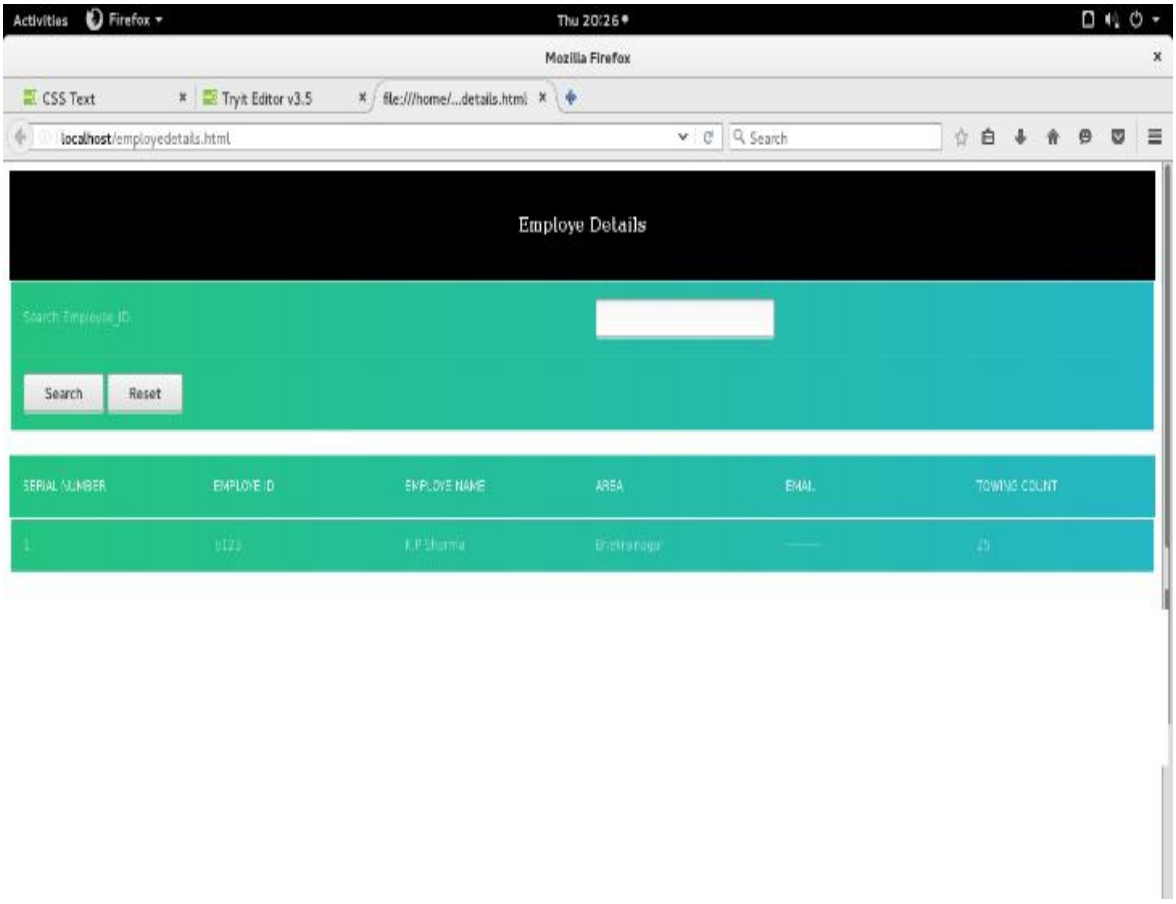

Fig.12 View employee (towing authorities) details

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ISSN: 2321-9653

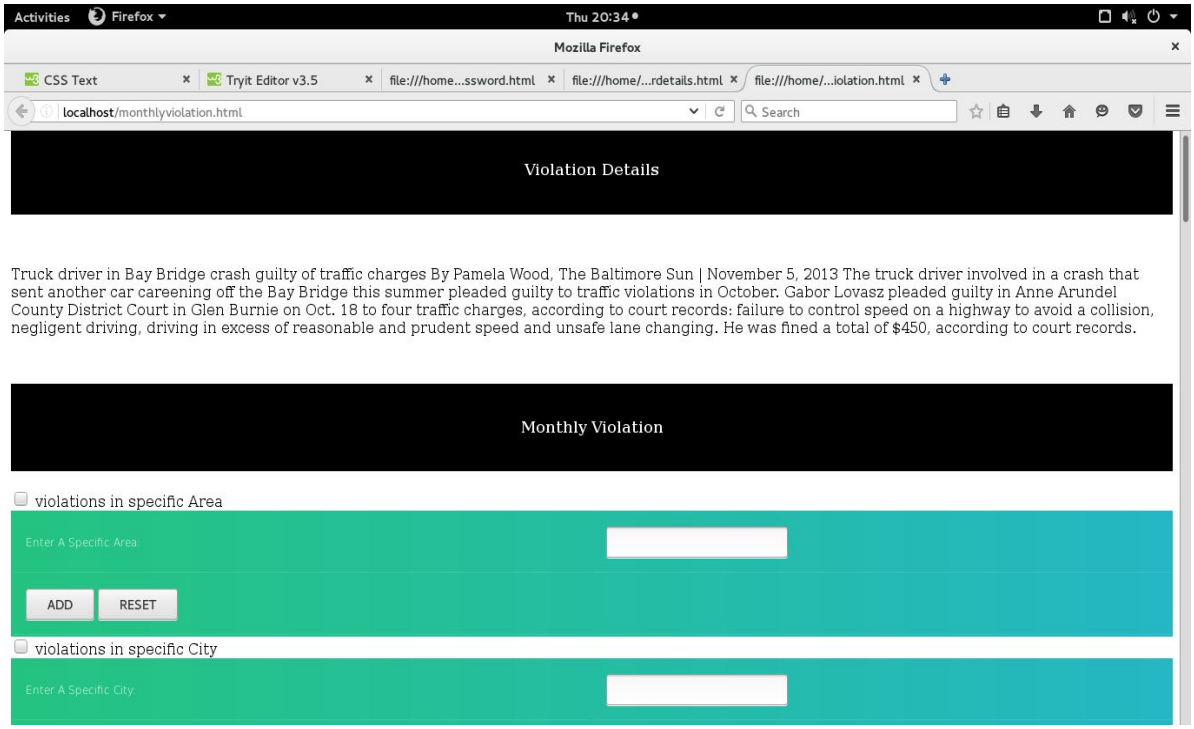

Fig.13 Violation details

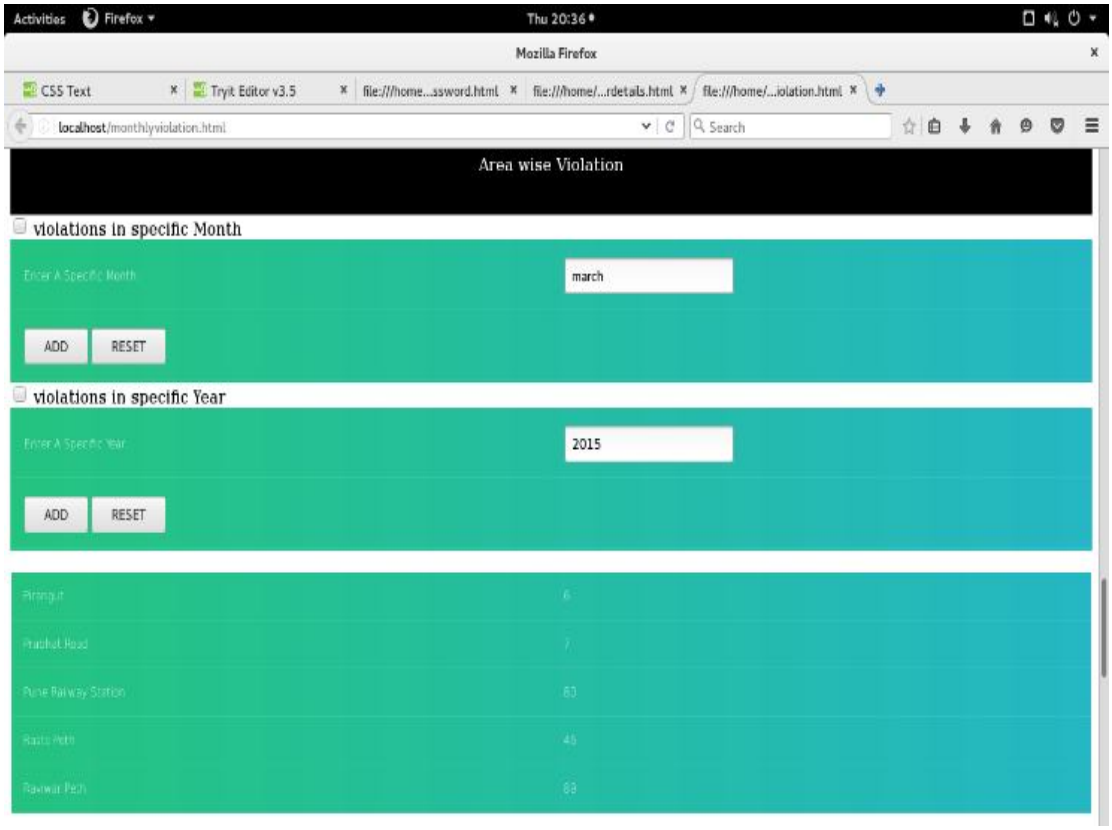

Fig.14 Violation details (Area wise)

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ISSN: 2321-9653

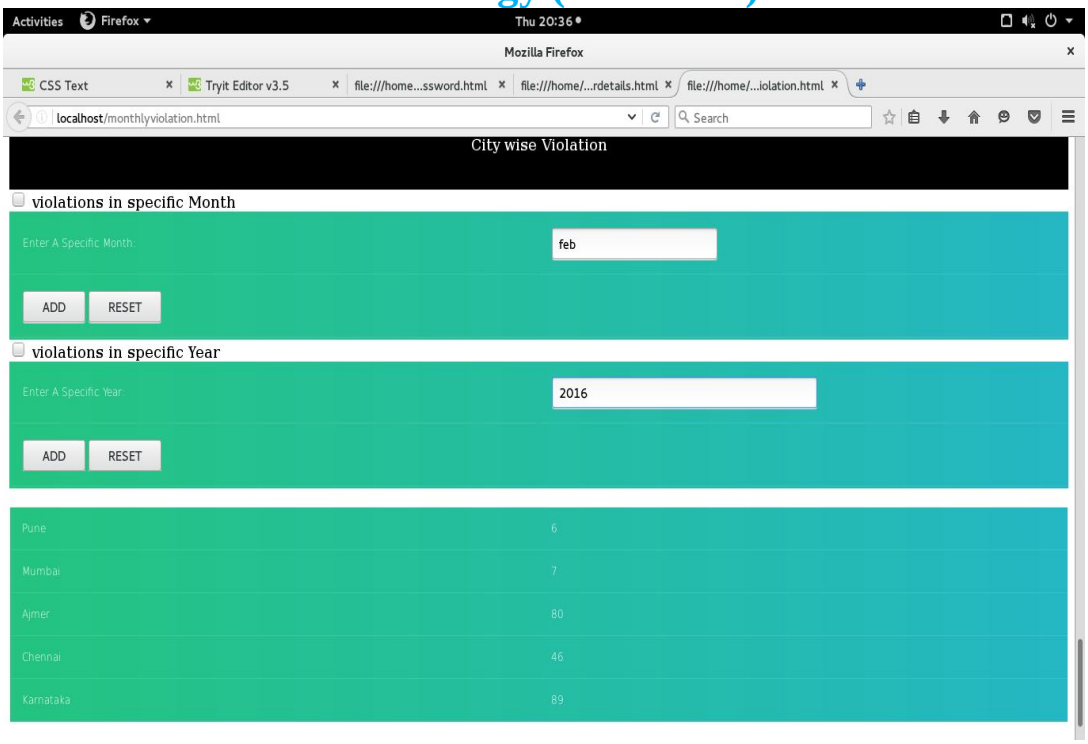

Fig.15 Violation details (City wise)

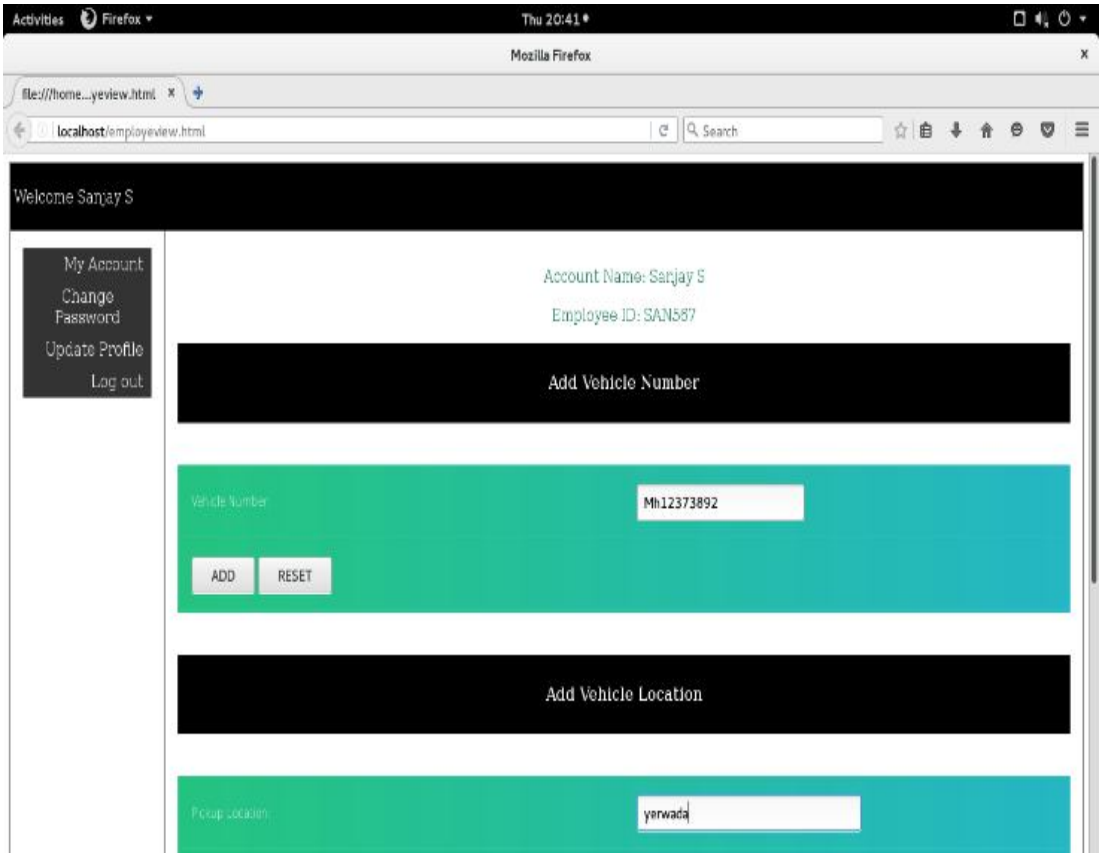

Fig.16 Towing Employee Homepage

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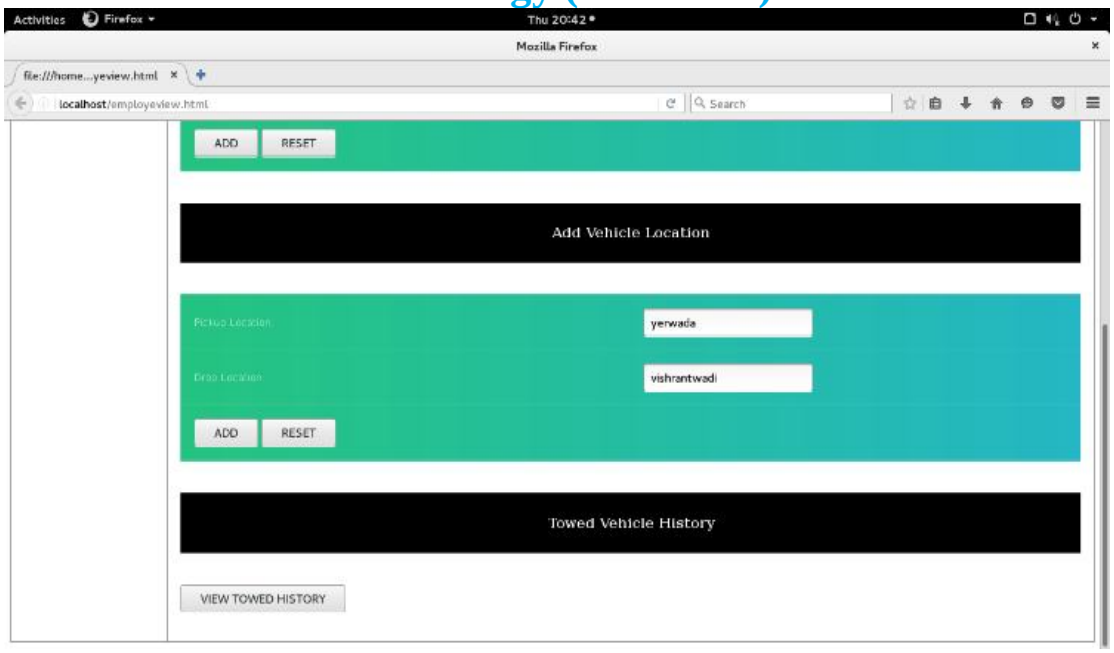

Fig.17 Towing Employee Homepage

V. FUTURE SCOPE

This web application is totally dedicated to violation that is made by parking vehicles on the non-Parking areas and due to which the vehicles are towed and it's difficult for the person to locate its own vehicle and retrieve it back. In future, this web application can be expanded by adding few gadgets or devices to aid in reduction of other violations too.

VI. CONCLUSION

The web application will reduce the paper work and the time and energy spend for searching the vehicle. The fine payment is easier and even the person would know the number of violations he/she has committed, which will eventually let the person stop from doing more violations. Using the RTO database would make this framework more efficient.

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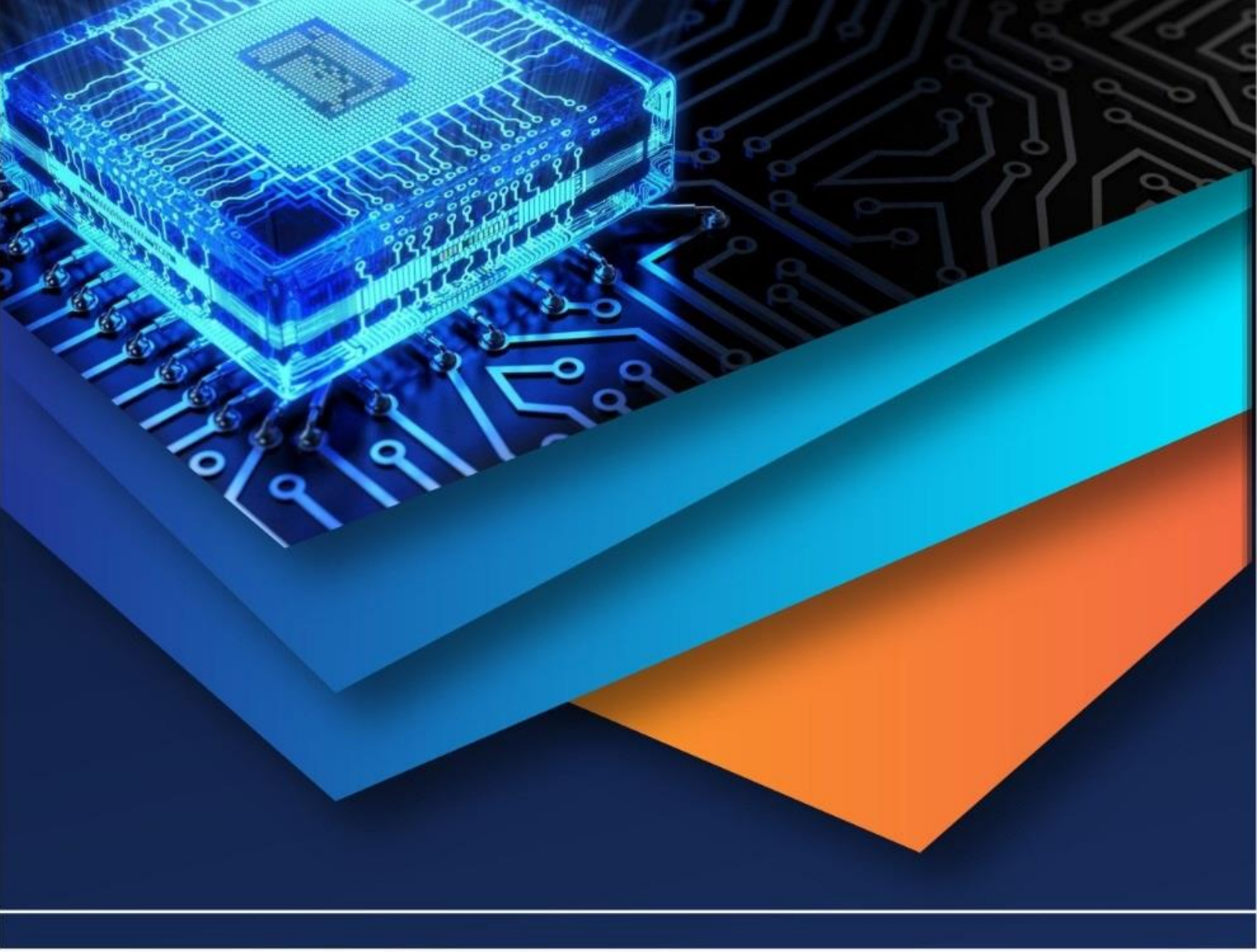

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