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TraffiCop Android Application for Management of Traffic Violations

Ms.Deshna Patil[1], Ms.Nikita Dhankute[2], Ms.Shubhangi Gedam[3], Prof.Ashish Palandurkar[4]

[1,2,3,4] *Department of Computer Science and Engineering, Nagpur Institute of Technology Nagpur, Maharashtra, India.*

Abstract - *RTO officers or traffic police have a lot of workload of making registration, license issue, etc., which requires a lot of paperwork. As a result, people can't get the things done in right time, which is the waste of time and energy. The use of mobile devices, such as smartphones in field data collection has increased recently due to the emergence of Global Position Systems (GPS) and Wi-Fi Internet access. Timely and handy field data collection is required for quick response during emergencies. In this paper, we introduce a TraffiCop Android Application to collect the field data from personal mobile phones. The main objective of this work is to demonstrate a real-time field data collection method that can be used by Traffic Department. The purpose of this system is to allow the Traffic Police Officer to send the field collected data to the server. The information gathered using field data collection can include current location, and images captured during a crime scene. The data at server side can then be used for analysis and decision making.*

Key Words: **Real-Time Field Data Collection, Traffic Police, Analysis and Decision making, GPS, Smart City Project, TraffiCop App, etc.**

1. INTRODUCTION

Data collection is one of the important tasks for many spatial information users. Field data collection is one of the first steps for spatial information users, especially for geographers, geologists, biologists, crop scientists, ecologists, etc...

Accurate field data collection is also necessary for adequate spatial data analysis and proper decision making. The rapid emergence of data management methods has evolved into the Information Age. Powerful database systems for collecting and managing data are in use in all large and mid-range companies. All such data hold valuable information, which could be used to improve decision making and optimize success.

The traditional pen-and-paper based field data collection is a time consuming task. Hence this is not practical to use in real-time disaster information collection, which requires a quick emergency response. However, recent developments in mobile communication, GPS, the Internet and portable computing devices allow us to conduct field data collection in a timely manner. Moreover, under the client-server setting for field data collection, a field user may take advantage of data to access. Web based traffic system is an android application that report real time traffic crimes to the server. In existing traffic system, the storage of records of vehicles and civilians breaking traffic rules is not real time. In proposed system, we will develop a TraffiCop Android Application which can be used to take real time data as well as location and transfer it to server. So we are reducing the manual work and errors in the system. Using this system we can keep track of the number of traffic crimes occurring within a particular area and the same information can be used by the traffic police department for decision making and analysis. [2]

2. LITERATURE SURVEY

Literature survey is highlighted in reference to the performance and approach of the current system.

3. EXISTING SYSTEM

1. In current system whenever vehicle driver breaks any rule then police officer catch him and ask for his license.

2. User shows his license and traffic police office charges him for whatever rule he braked.

3. In existing system all is manual process i.e. traffic police manually checks for charges in his list. Some time it may make mistake while seeing charges so driver will pay wrong charges for his penalty.

4. Sometime traffic police imposes high charges by his own then at that time corruption may takes place, because drivers request police man to take small amount and leave them without receipt. So there is corruption happen. [1]

4. PROPOSED SYSYTEM

RTO department has to face many cases of corruption. So, providing a digitized solution will also help to make the system more clean and transparent. Thus, keeping in mind these two objectives our paper proposes a solution which will not only be economic but will also have a practical approach in Smart City Project. The traditional system consumes more time to generate report and perform statistical analysis. The proposed system will help to generate quick report as this process is fast and automated. [3]

5. METHODOLOGY

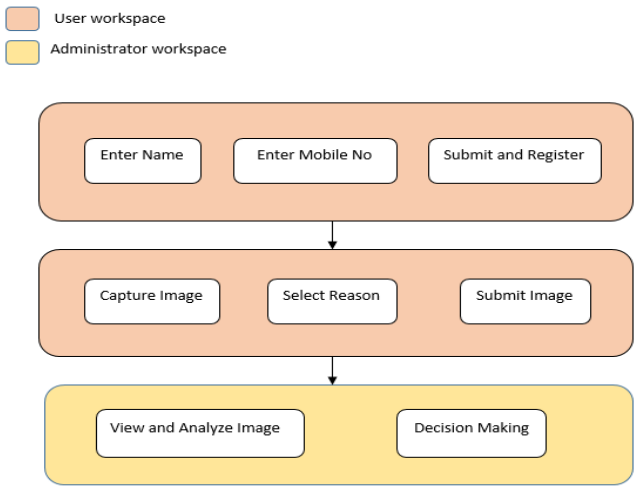
The architecture of this system is client-server architecture. The server side is managed by the administrator of the system which consists of admin side and user interface. The administrator has the right to add the traffic police, delete the entry of any traffic police and keep the track of their locations.

The admin interacts with the system through Graphical User Interface (GUI) and provides the login identifications to any newly added traffic police. The server keeps the track of the location of traffic police through Google Maps using the Global Positioning System (GPS).

The database keeps the complete records of any user who violated the traffic rule along with the required details. The client side consists of complaints and user interface. The client side is for the end-users i.e. the traffic police officers.

The traffic police uses an android application to communicate with the server. The server gives the details of fine to be collected based on the rule violation registered for that user by the traffic police. The user is notified through message by the server after successful collection of fine by the client. In case of any communication failure between client and server the client can store the record of the user in its local database. [3]

6. MIND MAP



7. FLOW CHART

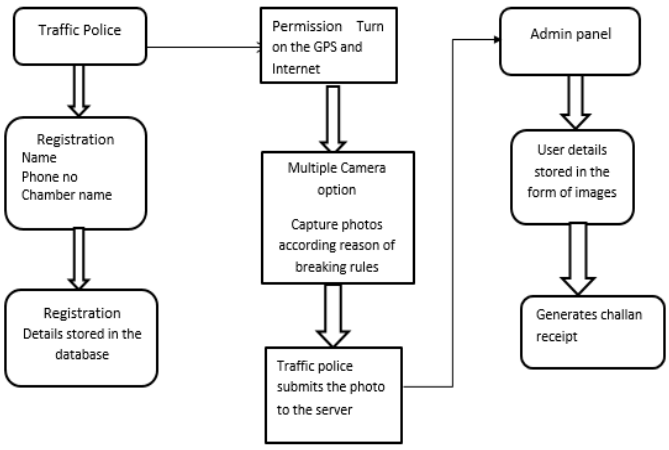


Fig 2.2: Flowchart of TraffiCop application

8. IMPLEMENTATION

This system helps traffic authorities to mark the area with more number of traffic crimes committed in that area. The higher authorities can use this system for analysis and take decisions. This system therefore reduce the manual work and errors in the current traffic system. [2]

9. ADVANTAGES

1) Central platform to report traffic issues – Saves time as paper work is reduced.

2) To mark the area with more number of traffic crimes.

3) Stop corruption involved in concerned authority.

4) Encourage people to follow traffic rules to ensure safety of the masses.

5) Makes the traffic system stricter so that people strictly follow the traffic rules.

10. LIMITATIONS

1) Internet connectivity or wireless network is compulsory to transmit the data.

2) Android phone is required.

11. MODULES OF THE PROJECT

Admin Module:

1) Admin can login into the application.

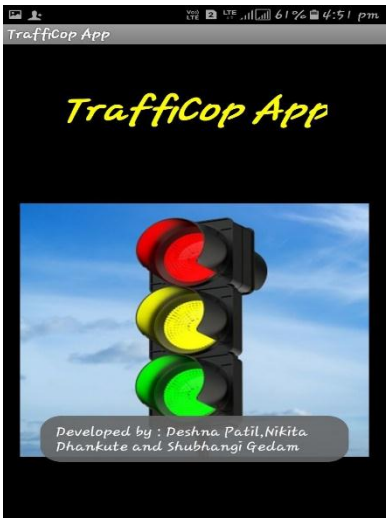
2) Admin check the images at server site and imposes the fine or penalty according to the rules braked and reason selected with the photo clicked at traffic police site.

Traffic police module:

1) Traffic police login to the android application.

2) If any person caught by traffic police violating the traffic rules then police will click the photo of the person violating the traffic rules.

3) After clicking the photo the traffic police will submit the photo with a valid reason to the server site.


TraffiCop App
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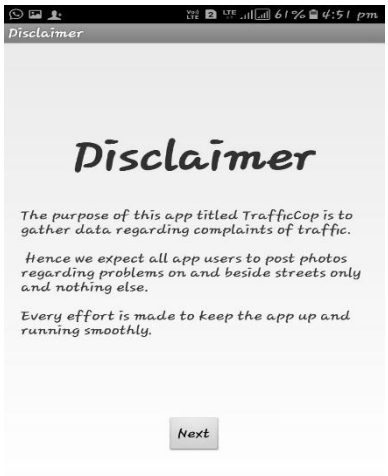
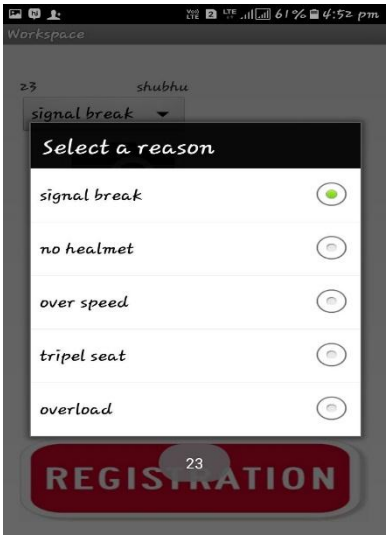
Developed by : Deshna Patil,Nikita Dhankute and Shubhangi Gedam


Workspace
23
shubhu
signal break
location is enabled
REGISTRATION


Disclaimer
Disclaimer
The purpose of this app titled TrafficCop is to gather data regarding complaints of traffic.
Hence we expect all app users to post photos regarding problems on and beside streets only and nothing else.
Every effort is made to keep the app up and running smoothly.
Next


Workspace
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signal break
Select a reason
signal break
no healmet
over speed
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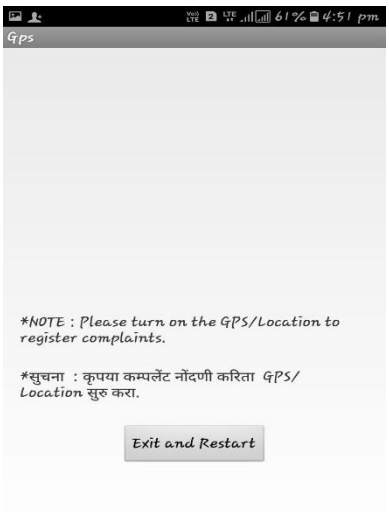
23
REGISTRATION


Gps
*NOTE : Please turn on the GPS/Location to register complaints.
*सुचना : कृपया कम्पलेंट नोंदणी करिता GPS/ Location सुरु करा.
Exit and Restart


Workspace
23
shubhu
signal break
image captures
REGISTRATION

12. TECHNOLOGY & PROGRAMMING LANGUAGES

Hardware Requirements:

1) Android Mobile
2) Intel processor III and above

Software Requirements:

1) MS SQL Server
2) SDK for Android 2.2 and above
3) Windows Operating System
4) Eclipse

13. CONCLUSION

This system will help traffic authorities to mark the area with more number of traffic crimes committed in that area. Thus we look forward to develop an android application for traffic police officers. The higher authorities can use this system for analysis and take decisions. This system will therefore reduce the manual work and errors in the current traffic system.

14. FUTURE SCOPE

The system will provide efficient maintenance of the fine records as well as user's details. The user's details stored in the form of images on the server database can be further used if required by extracting the data through image processing. For implementing purpose we need to make sure whether the user is aware of this automated system. Further modules may be added into the system for awareness purpose to promote traffic awareness amongst them. [3]

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