



Real Time Traffic and Vehicle Detection Using Smartphone

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ABSTRACT: Today, people use the radio channels like walkie-talkie and phone lines to update the traffic information to their department. This information is sent and received throughout the city for traffic control. Our system focus is to provide a efficient commuting. With these elements we can successfully owe a value for money. As, many people use mobile phones as a communication medium. Traffic control can be managed by using the mobile based system. There are four types of users. Each user will register in the application. Traffic police will also be registered and will update the location and the traffic. Traffic police will have user interface such that they will update the current status of the traffic at that location. Likewise, all different location will set their own status and the respective traffic police will update the traffic. And this update will be shown in the user's module at their locations. Every vehicle entry module will be accessible to the traffic police and they will enter the vehicle data, which will then show the vehicle information if involved in crime or stolen and is stored on the centralized server. The car data will be entered by entering the registered vehicle number. Each toll and parking area will also be having the module to enter vehicle data passing on their locations and will update. After entering the vehicle data, the server will check its database and reply back to the respective toll, traffic police or parking area informing about the status of the vehicle is innocent or involved in crime or stolen. As per the information displayed to the users screen, if the vehicle is involved in any such activity the message will be sent to the police department.

KEYWORDS: Traffic, Smartphone, Crime

I. INTRODUCTION

In this era of urbanization, traffic issues are seen everywhere. Therefore, to have an efficient traffic control is must everywhere. Traffic issues are mainly due to growing number of vehicles in the cities and less infrastructure. Many trials have been made to solve this traffic issue. Looking at the need of the hour, our system gives an efficient way to handle this. This system will allow managing increased traffic and reducing the man work to eliminate the jams. The concept in this paper is traffic management at intersection of major roads and to control the vehicular jams and to prevent traffic. Traffic controls like warning signs, stop signs, etc. are used in most areas but these don't give the desired result. As the expansion of the traffic network is not a solution therefore, the existing traffic system has to be used in more intelligent and efficient way to increase traffic throughput and reduce travelling time.

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in any such activity the message will be sent to the police department. The user module will be facilitated to get the data from the centralized server and provide live status of traffic, based on the location entered by the user.

II. RELATED WORK

Nowadays, people use the radio channels like walkie-talkie and phone lines to update the traffic information to their department. This information is sent and received throughout the city for traffic control. It is also difficult to maintain the crime records of vehicles involved. So our project will be applicable to all the necessary aspects of traffic system. Our project will be applicable for the regular workload of Police and their departments with improving efficiency and accuracy.

In 1868, the concept of traffic signal was firstly installed in London near the parliament house [6]. The device had two different colored signals to indicate traffic situation. Mainly two color are used Red and Green which had different meaning, the Police officer has to turn the signals into different directions. This was the first time colors are used to control the traffic.

Later on in 1912 in Salt Lake City police used two colors red and green with electric illumination to control the traffic. In 1920 William potts, the traffic police superintendent designed three color traffic control system.

III. EXISTING SYSTEM

The existing system is mostly based on the traffic light signalling. It uses the concept of Red to Stop the vehicle, Green to allow the vehicles to pass the signal and Orange light to get ready to cross and flashing Orange to cross with caution indicators to manage the traffic.

Also the Intelligent Transportation System was a good and effective design to cope with the issue of traffic[9]. It was mainly not applicable because it required accurate traffic data for surveillance. Even the currently used technology of video, sonar, radar etc aren't effective as they had pose installation issues and bit expensive and maintenance is also expensive[10].

IV. PROPOSED SYSTEM ARCHITECTURE

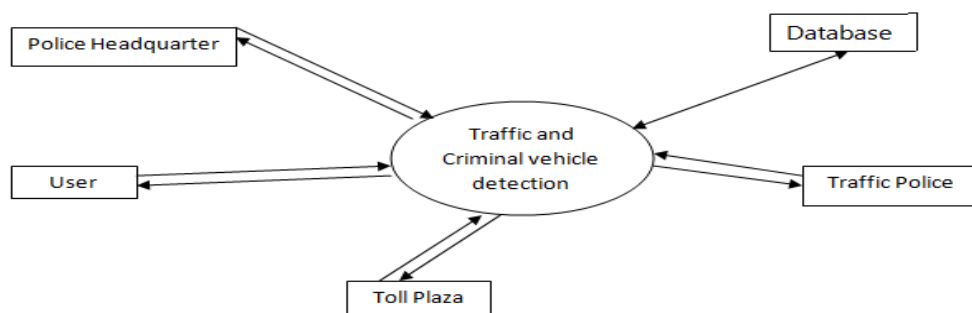


Fig: System Architecture

V. WORKING

Step 1: Registration and login module for every user in the application [6].

Step 2: After registration user will have to enter their vehicle details as per the road and traffic department.

Step 3: The user will be verified and then the valid users will be able to login in the application. There will be four types of users and is mandatory to register themselves as per their roles.

Step 4: Traffic police will login in his module and set his location and then will send the data to the server which will be made available to the users.

Step 5: They will update the live status of traffic in their location. Likewise, different areas will have their own traffic status and will be made available to the user.



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Step 6: And user will use the road according to his convenience and will not get stuck in traffic.

Step 7: The vehicle entry module is accessed by the traffic police and the local police for entering the data of criminal vehicles and stolen vehicles in the centralized server.

Step 8: Toll plaza and parking area will also have their own module to enter the vehicle passing their junction.

Step 9: After the data entered in the application, it will automatically check with the centralized database and reflect the status of vehicle in the application. If it is involved in any such crime or stolen, a message will be sent to the police department. This whole thing will be done on an application based on android.

The main elements for this are Android phone, a server for processing data. The application is installed in the android phone. Our objective is to make a system for traffic police to control the traffic and help in criminal activities. This will have multi operations and functions. The system will retrieve the traffic data from the traffic police and measure the traffic density and later on convey the live status to the users as High, Low, and Medium. The users can know the traffic of an area by entering their location. While the criminal detection module will maintain a record of vehicles and their compliance crime charges on that number which will be done by the traffic police, toll plaza and the parking management.

VI. SPECIFICATION

Software Specification:-

1. Java
2. Eclipse with ADT
4. SQL Server

Hardware Specification:-

PROCESSOR - Intel Pentium IV or higher
Operating System - Microsoft windows XP, Vista or higher
Browser - Mozilla Firefox, Google Chrome, Internet Explorer

VII. RESULT ANALYSIS

The analysis of the proposed system is that it will provide:-

- Easy operation of traffic for the traffic police
- Convenience to the commuters
- Help the police for vehicle related crime investigations etc.
- Smartphone utilization for the application is easy
- Easy application to any kind of user and an effective methodology.

VIII. CONCLUSION AND FUTURE WORK

The proposed project provides an efficient way to control traffic. Designed system has achieved targeted aims. This paper has module for the number of criminals and vehicles involved. The approach is very low cost, easy to operate and can be implemented successfully. Since Smart phones are easily available to common people's lives, utilizing them for traffic monitoring is a good idea through an application. As traffic is increasing day by day, monitoring it in an effective way has been the challenge to developers and we think we have achieved it. This is good idea to find the vehicle which has been stolen and also efficient for police to find out the vehicle which is involved in any criminal activity. By using smart phone so it has advantage of time and management. All this can be done in an energy efficient manner by using low energy consuming components occasionally using GPS for localization and updating of traffic. Some problems need a research too, like road roughness condition and road issues which may be handled through feedback.



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