



Controlling and Analyzing Signal Jumping Using RFID and Hadoop

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ABSTRACT

From the past few years (means long time ago), accidents, hit and run, stolen vehicles & congestion has increased enormously. Even in our daily life, we come across many problems caused due to traffic rule violation by public. Also when we go through the daily newspaper, we realize that road accidents is one of the major problems now a days in every city. These problems cause disturbance to the government through the public and also consumes our precious valuable time. So in an attempt to reduce it & improve the traffic control, advanced technological solutions has been proposed. In this project, we are sly a system which will automatically earn penalty to the vehicle owner for violation of traffic rules. The penalty will be automatically charged to the owner if PUC has been expired or if vehicle is standing on zebra crossing when the signal is red, crossing the speed limit in speed limit zone or parking the car in no parking zone. The Project detects any signal break by the vehicle on the traffic signals and generates the E-challan through implementation of programming and hardware mechanism. Deploying the RFID technology which create tags storing data and transferring that data to readers over a wireless interface. Microcontroller compares this reader's information with previously stored information of that vehicle after correlate. It sends the texted message (e-challan) to GSM. It sends to registered mobile number of owner of that vehicle as well as RTO (Regional transport office) office. Owner has to pittance the challan amount to the RTO office or can pay online if linked to online payment system. This system also provides the tracking of vehicle driven by unidentified vehicle driver. Since vehicle would be among traffic signals and database are bond online to RTO office as protection purpose.

KEYWORDS: RFID (Tag and Reader), E-center, E-penalty, IOT, hive for Database.

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I. INTRODUCTION

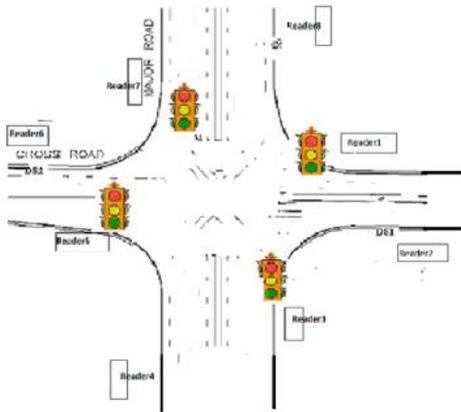
These days in our country challan are done manually with pen and paper and signal junction cctv cameras on the traffic premises. Which is often tedious and it takes lot of time and sometimes it turns into the corruption because traffic police write something else on challan paper and pay the government something else. However there has not been employed any system to exclude such topic in

traffic. Since traffic has become an important affair in the national interest. So according to this project when a vehicle jump the red signal before green, Then propose system identify the red signal jumping by the vehicle, bring about an automatic e-challan to that vehicle owner along with RTO. This conceit is new at all. Since there is no need of pen and paper purely green technology. And this will remove the developing day by day ramification in challan payment on the traffic signals. The

system will also minimize the death assurance due to collision on the traffic because drivers would be having of preceding knowledge of signal jumping that if they pass the signal conceit green they must pay the fine. In this project the signal pole is the target object for any vehicle to cross them. The RFID reader extract information form tags of vehicle. When ever vehicle moves near the reader module. Information is passed to AT89S51 microcontroller for the subsequent operation. Like ultimate to automatic generation of e-challan. RFID are assorting into two classes: active and passive. plug-in of RFID includes Tags and RF tag readers. Its practical frequency decides the range of reader. The max232 is a serial driver IC. It Support serial communication between microcontroller in RFID reader. Is based on internet of things (IOT). It converts TTL logic to CMOS and vice versa.

(AVI) technique and also discussed the varied AVI technologies Image processing AVI system, RF and Microwave AVI system etc. They also compared the microwave and Infrared communication and represents the components like onboard Unit (OBU) and Road Side Unit (RSU) with two-way communication using Infrared. Under this system, a data base stores the required information concerning the vehicle and when the vehicle enters in the toll collection berth the RSU transmits the ask signal to OBU using downlink and OBU response through the uplink and arrange its identity to RSU, which further send this advice to Computer system where the tax is calculated and bank transaction is performed. The work in [11] discussed an approach based on the GPRS to appliance the Red-light violation system and hardware and software for its configuration. The whole system is divided into two portions:

- Monitoring Stations
- Control Center



Broken signal has been detected

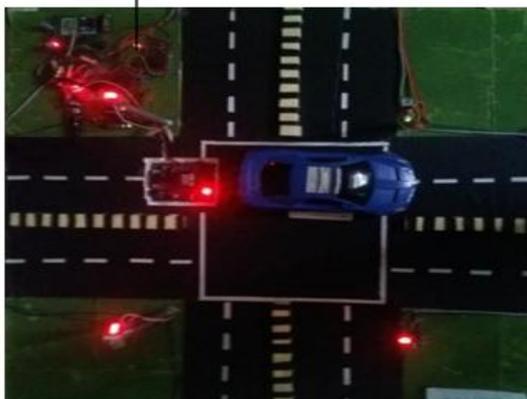


Fig: 3 Signal detection using model

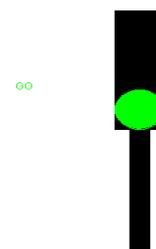
II. RELATED WORK

The roads cloverleaf is a bottleneck point in the urban traffic network and it is very critical node. Traffic may accumulate quickly and traffic jam can occur quickly in case the traffic control system is not able to properly manage the vehicles queues in fast and smart manner. The work in explained the idea of implementing Electronic Toll Collection system using the Automatic Vehicle Identification



The monitoring centers are appropriated near the red lights of the city and the control station is placed at the central location. During the red light period, monitoring station serial number are written to wireless modem that further this is sent to monitoring center using the IOT. The following diagram defined overall working of this system

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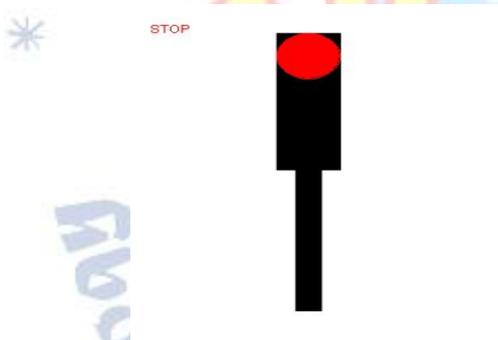


III. LITERATURE SURVEY

Some of the available technologies are Inductive loop detection, Passive infrared sensors, Wireless sensor network and Radio Frequency Identification.

Manish Kumar, Niranjana Kumar, Mizan Faisal, Nizamuddin, Niranjana Kumar "Automatic challan System using RFID Technology" Volume 6, Issue 5, May (2016).

In this related work it is gathered that RFID has demand and importance in these days, application of this technology in various fields like security, medicals, military, smart cards, mechanism and identifying attack ranges. And the aim of this work is that RFID reader is accountable to power and interact with the RFID tag. The reader has the generating a high frequency electromagnetic energy and a query signal. This energy used in tag antenna and transmits (releases) the tag's unique ID to the reader. Basic idea is to develop the controlling and analyzing signal jumping using rfid and Hadoop that can check for signal jumping by any vehicle. The RFID Reader reads and checks the information like vehicles biodata and automatically sends a report to the hive database and it sends to the owner.



IV. CONCLUSION

In this way we have come up with an implementation of a system which will automatically acquire penalty for violation of traffic rules and in turn will lead to a disciplined traffic in our country. We hope these achievement will help in minimizing many problems related to traffic which brings brawl to the whole system and will help in reducing number of accidents; traffic jam which consumes our precious time, and will also reduce pollution to some extension. In our system we are monitoring the traffic only at the signal poles but it could also be useful in monitoring the no entry area, one way routes etc. This we can provide other modes of payment like an online mode, mobile, pay by mail to the users which is time saving and quick.



Future Enhancement

Since our database keeps up the track of vehicle's travel, it could likewise be useful to police in examination at cases for example, hit & run and theft.

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