SURVEY ON ANTI CORRUPTION TRAFFIC MANAGEMENT SYSTEM

Jayanth M B[1], Abhishek C[2], Karthik K[3], Chandan Raj Y[4]

ECE, K S Institute of Technology, Bengaluru, India[1-4]

Abstract: Present day, technology has emerged in such a way that it can provide solutions to any real-life problems but in our daily life, traffic is the major issue, parking the vehicle in no parking place is the one of the major reasons for increasing traffic. We do not have a perfect system which finds the vehicle standing in no parking place. One such solution to the problem of towing vehicles is done efficiently by using embedded systems and IoT Technology. When a vehicle is parked at NO PARKING ZONE knowingly or unknowingly the owner is punished with a penalty and a notification will be sent to the consignment officer for registering a complaint against the vehicle. Every day public and traffic police wasting their time just for verification of documents. Helmet is mandatory but people neglect to wear the helmet, so every time traffic police must monitor this operation. Here penalty part is done manually so there may be a chance of misuse which leads into corruption. The role of traffic police is very helpful for the society. They are meant to be controlling the heavy traffic flow but, they control the drink drive, they control without helmet ride to save the lives. They always try to bring traffic awareness to the people. But unfortunately, some of our traffic police became corrupted, they always try to find different ways to hold people accountable for money in the name of traffic rules. Many time Traffic police stop us to verify our documents, so we have to carry our documents. Which is not feasible and it is also waste of time and will disrupt the traffic flow. Hence, we need a system which can overcome all the major imperfections in the present traffic control system.

Keywords: RFID, GSM, LIMIT SENSOR, IR sensor, Embedded C

I.   INTRODUCTION

According to the World Health Organization (WHO), about 1.24 million people die and 20 to 50 million are injured in traffic crashes each year. Traffic is the eighth leading cause of death on a global scale, and is expected to reach the fifth position by 2030. The WHO defined major behavioral contributors to road crashes are alcohol or sleep deprivation combined with vehicle operations, inappropriate speed, and non-use of protective equipment like seatbelts, child restraints, and helmets. A survey that has been done recently, said that nearly 70% of road accidents occur due to drunken driving, with a range of 44% to 67% in small cities. They also conveyed that overall, 56 accidents and 14 to 15 deaths occur on our roads per day due to not wearing helmets and seat belts. Traffic police is an important department within the police force all over the world. The key responsibility of the traffic police is to maintain law and order within road networks. They need to manage and control traffic. Effective enforcement of traffic safety policies is important for traffic fatalities reduction but is often diminished by police corruption. Corruption is defined as the misuse of authority for personal advances, most common acts of corruption in traffic police are bribery and extortion. These are usually overlapping actions, representing corrupt payments either given or taken, to influence officials' operations. To overcome such problems "Anti-corrupted traffic monitoring system" is useful. Our day-to-day life in a metropolitan city is always presented with an obstacle, not financial or climate, but the kind of obstacle that can be overcome with meticulous planning and execution. Commute, which includes travel, parking and safety are three things that should be made simpler and hassle free. In a bustling city like ours, the heavy fines that are charged for breaking rules are often never tracked, making the rules in place negligible. Unauthorized stops have always been misled to breaking of rules and unnecessary fines or delays. Finding a designated area to park your vehicle has always been a task in residential areas, parking in the no parking zones can always lead to getting the vehicle towed away or a standard fine being charged for that number plate. The vehicles that are towed away have an hour-long procedure of their own to get it released from the authorities, meanwhile the authorities are not liable for the damages caused to the vehicle whilst towing it. There is no system in place that can indicate no parking zones. If only there was a system to notify us when we park the vehicle in no parking zone it would prevent the inconveniences caused whilst paying the fine or the time wasted in order to retrieve the vehicle from higher authorities. Traffic police are usually engaged in verifying documents for vehicles on the road rather than improving or controlling a better flow of traffic. Accident zones are never monitored by traffic police, instead their work hours are spent on pulling a vehicle to the curb side and verifying their documents. Fines that are placed in such unauthorized stops are never monitored or kept an account of, which paves way for corruption and un wanted/ un lawful arguments. The roles of a traffic police are diversified from controlling traffic, avoiding drink and drive, control of riders without helmet and so on. If only a reformed system to ensure the right parking, document verified riders, riders who'll

be compelled to wear a helmet nor drink before driving and only then we will be able to solve the problem and shift the focus on traffic congestion.

In this project we will be aiming to solve these problems.

II. LITERATURE SURVEY

There are many IEEE papers and journals are referred in the project and few of them are discussed below:

The proposed NFC (Near Field Communication) reader method is placed at a certain distance before the tollgate; the reader collects the identification number of the car and sends the data to the tollgate system. This system sends a query to the main office for the data and will retrieve back the data and valuable documents belonging to the car. If no error is found then the barrier will open otherwise barrier remains closed [1] the proposed system consists of RFID tags, RFID reader and a user interface. RFID tags attached with many different objects and RFID reader will track the respective object accordingly [2]. The authors have proposed a system to check for the drunken drive and avoid it effectively, with these emerging technologies, the automobile industry uses various sensors and controllers to provide an equipped environment. Taking advantage of this phenomenon, they have developed a mechanism for providing secured driving near the seat belt buckle. The driver is not permitted to drunken driving and without the seatbelt [3]. The following system has proposed the automatic toll collections by using the Microcontroller, RFID tags and IR sensors. When a vehicle reaches near the toll gate the fee will be automatically deducted from user account. MQ135 sensors attached inside the vehicle near the steering to check for the alcohol consumption of the driver. The load checker checks the load of the heavy vehicle, if the load exceeds the limit, then the penalty amount will be deducted for the exceeded limit and the camera captures a snap of the vehicle and automatically an e-mail alert will be sent to the consignment officer regarding the vehicle [4]. In this paper, authors have used MQ-3 gas sensor to detect the alcohol content of users. The gas sensing material used in the sensor is tin dioxide (SnO_2), which has low conductivity in clean air. Once, alcohol vapor exists in the air the conductivity of the sensor increases with the increasing concentration of alcohol [5]. The authors in this work have proposed a prototype portable alcohol detection system, The sensor unit used in this system is capable of distinctively detecting the saturated water vapor and the metabolites from human breath while accurately measuring the alcohol level of a driver breathing into the detector. The system also displays the alcohol level measured by the detector on a smartphone and sends the data to a cloud system [6]. The work put forward here is that the GPS system will detect the exact location of vehicle with corresponding longitude and latitude, then GSM will send messages to relatives of the driver. They have used ultrasonic sensor which sensing the limited distance from other vehicles, and then the sensors are activated and send location information messages to relatives of the vehicle [7]. The work consists of a helmet unit (HU) and a motorbike unit (MU). The HU and MU communicate via RF using the NRF24L01 Module. The helmet unit continuously monitors the pulse rate of the rider, alcohol in the breath of the rider, and vibration intensity. The ignition system of the bike is activated only when the readings of the pulse rate sensor cross the threshold. The motorbike unit has GPS and GSM modules that send messages with the position of the rider in case of a mishap [8]. The paper introduces a multi-layer security system which is a theft alerting feature, owner speed-limiting system, and emergency monitoring vehicle feature. If the vehicle is robbed, location information can be delivered to the owner from anywhere in the world. The application of Raspberry Pi in the system gives capable and strong security to the vehicle. The use of GSM/GPS in this paper gives real-time location data of the vehicle and it can also use a camera to monitor vehicles anywhere [9]. The suggestion of this paper consists of a Fully equipped RFID based Parking System that provides solutions to various parking problems, RFID reader is placed at the entry gates and a card is given out which must be shown at the exit gates for details and the whole structures capacity and allotment is done strategically [10]. In this project paper, the smart helmet developed is in such a manner that bike does not start until and unless rider wears the helmet. Also, the bike won't start if the rider is drunk the whole project functions around Pressure sensors and Arduino, the system will make use of different wireless communication protocols including ZigBee and another radio frequency protocols [11]. The presented vehicle identification and verification system will monitor and track the vehicle in all the conditions. The system contains a server and a display unit for reporting and displaying related events (RFID tagged vehicle details, non-RFID tagged vehicle details, STOLEN vehicle details) [12]. The system will indicate the expiry dates of all documents and sends mail to that person. And, the theft vehicle can be easily identified by the admin (police) by scanning the RFID tag of that theft vehicle during checking [13]. These systems allow a very high storage efficiency in surface and volume and is very quick as the time required for accessing a car is low and the parking system requires a working mechanism that can operate the system. In addition to this, a detection system is required to help the person know whether there is an availability of a free parking spot. The need to consider the safety of cars and humans alike when designing this system. In this paper, the different types of parking systems and various kinds of sensors used to increase safety and efficiency are discussed [14]. In the ITS context, intelligent speed advisory/assistance for on road passenger vehicles has been a research subject for a long time. This research has analyzed recent studies on intelligent speed assistance approaches that overcome adverse environmental and road safety problems. Furthermore, it is interesting to summarize these techniques and analysis of the outcomes and

objectives achieved. By doing this research, an inclusive comprehension of the vehicle speed assistance systems, the open issues of this field, related challenges, and future directions were obtained [15]. The work was aimed at proposing efficient, fast, simple and hardware friendly vehicle Number plate recognition system. The two modules of the project namely (i) number plate recognition system (NPRS) (ii) Radio Frequency Identification (RFID) have been individually gathered. Both the modules working parallel. Due to its expansive application area, both academic and commercial world's number plate recognition systems have received more attention. Induced in an authentic time NPRS implementation techniques and algorithms for exploring possible. Relatives are different ways to achieve results even if, at the time of execution of the selection algorithm plays a supreme role [16]. In this system, they examined the sources for RFID's complexity, described the need for a whole- tic security model and emphasized the increasing dynamics in RFID research. Furthermore, they highlighted the different perceptions by RFID users, researchers and vendors and showed the current development streams in RFID research starting from the commonly accepted fact that the current generation of RFID tags cannot execute conventional cryptography [17]. The Various benefits of RFID applications have been identified. RFID technology supports tracking of library materials, reduces threats to the library collection, improves accuracy of data collection, and reduces the amount of time required to perform the circulation operations of check-in, check-out, inventory control and shelf-management. Information can be read from RFID tags more quickly than from bar codes and several items in a stack can be read at the same time. RFID systems also have a security function to detect theft. RFID technology is revolutionizing library operations and services. The library also presents unique challenges for RFID adoption, including technological constraints, cost concerns and privacy concerns [18]. Requirement of the smart parking system will increase drastically in the upcoming years. However, the smart parking systems already exists in many cities, proposed system is targeted at making this system more cost-effective and user- friendly. This system was successfully tested and had 90% accuracy. The web application is user friendly. Future works will extend the system to work with other different technologies. They conclude there are some categories such as parking zone, NO parking zone and unknown place. For that they built a hardware which executes operations so the system give alert only when vehicle is in NO parking area [19]. They have provided a very effective solution to develop an intelligent system for vehicles for alcohol detection whose core is Arduino. Since sensor has fine sensitivity range around 2 meters, it can suit to any vehicle and can easily be hidden from the suspects. The whole system has also an advantage of small volume and more reliability [20].

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