ISSN: 2395-7852

International Journal of Advanced Research in Arts, Science, Engineering & Management (IJARASEM)

Volume 11, Issue 2, March 2024

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

IMPACT FACTOR: 7.583

| www.ijarasem.com | ijarasem@gmail.com | +91-9940572462 |

| ISSN: 2395-7852 | www.ijarasem.com | Impact Factor: 7.583 | Bimonthly, Peer Reviewed & Referred Journal|

| Volume 11, Issue 2, March 2024 |

IOT Buzzer to Identify Vehicles in No Parking Zone

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ABSTRACT: Since India has a huge population, there are large number of vehicles present which leads to the frequent occurrence of the traffic congestion, which has become one of the major problems in the traffic system. People tend to violate the traffic laws and one among them is the act of parking vehicles in the No Parking Zone. So we have proposed this system in which we have created a module consisting of ultrasonic sensor and servo motor buzzer, to detect the vehicle in the No parking area. Once the vehicle is detected then we can simply buzzer the alarm and a red led will blink on the mobile application. In this way a vehicle can be detected in the no parking zone.

KEYWORDS: traffic congestion, no parking zone, ultrasonic sensor, buzzer, alarm, detect vehicle.

I. INTRODUCTION

Traffic congestion occurs mainly due to the vehicles being parked in the No Parking Zones. Many people tend to violate the traffic laws and particularly in public venues people tend to park their vehicles in no parking areas, causing trouble for the societies around and leading to the narrowing of the roadway, thus occurring of traffic congestion. In order to tackle this big issue of traffic system, we have planned to create a Iot based device. In this project, we have planned to create a device or buzzer, which would be fixed on the no parking boards in the no parking zones . Once the vehicle is detected in the no parking area, then we can simply buzzer the alarm for a few seconds until the vehicle is removed and a coloured led will blink on the mobile screen.

For the software, we have used blynk iot which will blink a led on the screen when the vehicle is detected in the no parking zone. After the notification, it will send a sms to the nearest traffic authority. With the help of this system the authority can take legal action on the illegally parked vehicles in the no parking zone.

This way the traffic authorities nearby would get notified every time someone parks in the no parking area. With an aim of tackling the big issue of illegal parking, especially around societies and public venues, we have planned to bring up this system in action. With the help of IOT and technical invention the illegal parking and traffic congestion can be solved up to a great extent.

The objective of this project is to develop a device which would be fixed on the no parking boards and if any vehicle enters the No Parking Zone, then it would buzzer the alarm for some time. If the vehicle is still not removed then the nearest traffic authority would be notified, and further actions would be taken by the authorities. Vehicle detection can be done through CCTV cameras located at traffic areas. But major drawback of CCTV is that one needs to keep an eye on the camera recordings in order to track the illegally parked vehicles. This is where the NO PARKING DEVICE comes in the picture. The traffic authorities would not have to continuously check the camera recordings , instead this device would send a message to them if someone parks the vehicle in no parking zone.

II. RELATED WORK

This paper addresses the issue of parking and provide an IoT based Cloud integrated smart parking system. The system provided has real time information regarding availability of parking slots. Users from remote locations can book a parking slot with mobile application. Abhirup Khanna, and Rishi Anand "IoT based Smart Parking System," International Conference on Internet of Things and Applications. 2016 [1] –

The detects the empty slots and helps the drivers to find parking space in unfamiliar city. The average waiting time of users for parking their vehicles is effectively reduced in this system. Suvarna Nandyal, Sabiya Sultana, and Sadaf Anjum, "Smart Car Parking System using Arduino UNO," International Journal of Computer Applications, vol. 169, no. 1 .2017 [2]

The performance of this work on testing met design requirement. When implemented, this module will solve problems associated with parking of vehicles. This includes minimizing time wastage in sourcing for car park spaces, reduce traffic jam and enable drivers to maintain orderliness in a busy business area. Ifeoma B. Asianuba, and Nzete Emeke Anderson, "Wireless Sensor Network for Car Space Display Unit," World Journal of Innovative Research, vol. 6, no. 3, pp. 6–10, 2019.[3]

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The study deployed a wi-fi module to inquire about available parking space, register a prospective vehicle owner for reservation and obtain a confirmed or cancelled reservation via the mobile app. A unique feature of the parking slot is the presence of sensors that can activate an alarm in the event of an emergency incident. Pragati Kanchan, "Real Time Location Based Shared Smart Parking System," 6th International Conference on Energy and City of the Future, vol. 170, 2020.[4]

A literature review on use of Internet of Things with respect to transportation and applying ML techniques on it was explored and discussed. In this paper, a number of approaches by the various authors using different type of ML algorithms were stated. As per the different proposed algorithms, the researchers have contributed a lot to make the transportation smart by using the data collected from the IoT devices and applying ML algorithms on it. Ajay Kumar Dogra, and Jagdeep Kaur, "Moving towards Smart Transportation with Machine Learning and Internet of Things (IoT): A Review," Journal of Smart Environments and Green Computing, vol. 2, pp. 1-18, 2022.[5]

III. METHODOLOGY

Internet of Things (IoT) is the networking of physical items with electronics built into its design to enable communication and the detection of interactions between them or with the surrounding environment. IoT based technology will provide higher levels of services in the future years, effectively altering how individuals go about their everyday lives. Just a few categories where IoT is well established include improvements in medical, power, agriculture, smart cities, and smart homes.

As of right present, there are more than 9 billion "Things" linked to the Internet. The Internet of Things (IoT) has revolutionized the world with its ability to connect devices and make them work together seamlessly. The IoT can be used to create innovative solutions that solve real-world problems. people still park there vehicle in no parking area so we have proposed the system in which we have create a module in that we have used the ultrasonic sensor or IR sensors and servo motor buzzer, to detect the vehicle in that No parking area. Once the vehicle detect then we can simply buzzer the alarm for 1 min. if the person remove the vehicle then no action is taken. if the person don't remove the vehicle then it will automatically sent the SMS by using GSM Module to traffic police authority that some one has parked the vehicle in no parking area.

IV. EXPERIMENTAL RESULTS

In today's time when number of private vehicles has increased, it causes huge burden on the traffic management system which further leads to traffic congestion.

Therefore device would help in easy recognition of illegally parked vehicles in the surrounding, and thus solving the issue of traffic congestion and narrowing of roadway.

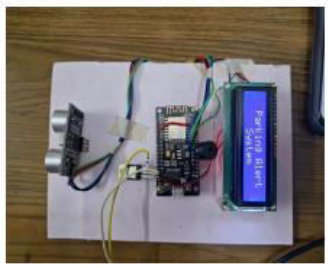

Fig 1: hardware connection

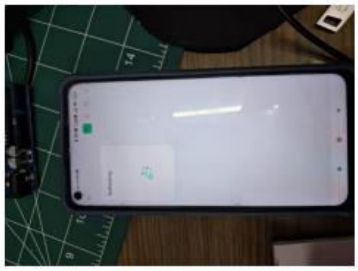

Fig 2: application(bylink iot)

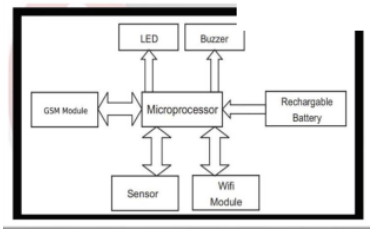

Fig 3: circuit diagram

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V. CONCLUSION

With the increase in the number of vehicles, discipline in road regulation or traffic system has become mandatory. Parking vehicles in the no parking zones leads to the narrowing of the roadway and thus leads to the occurrence of the traffic congestion. Our aim is to overcome this major issue by giving an aid to the traffic system and make it easier to spot the illegally parked vehicles and take further actions. This way our surroundings can be spacious for other moving vehicles and pedestrians with proper parking areas thus reducing traffic.

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[4] Pragati Kanchan, "Real Time Location Based Shared Smart Parking System," 6th International Conference on Energy and City of the Future, vol. 170, 2020.

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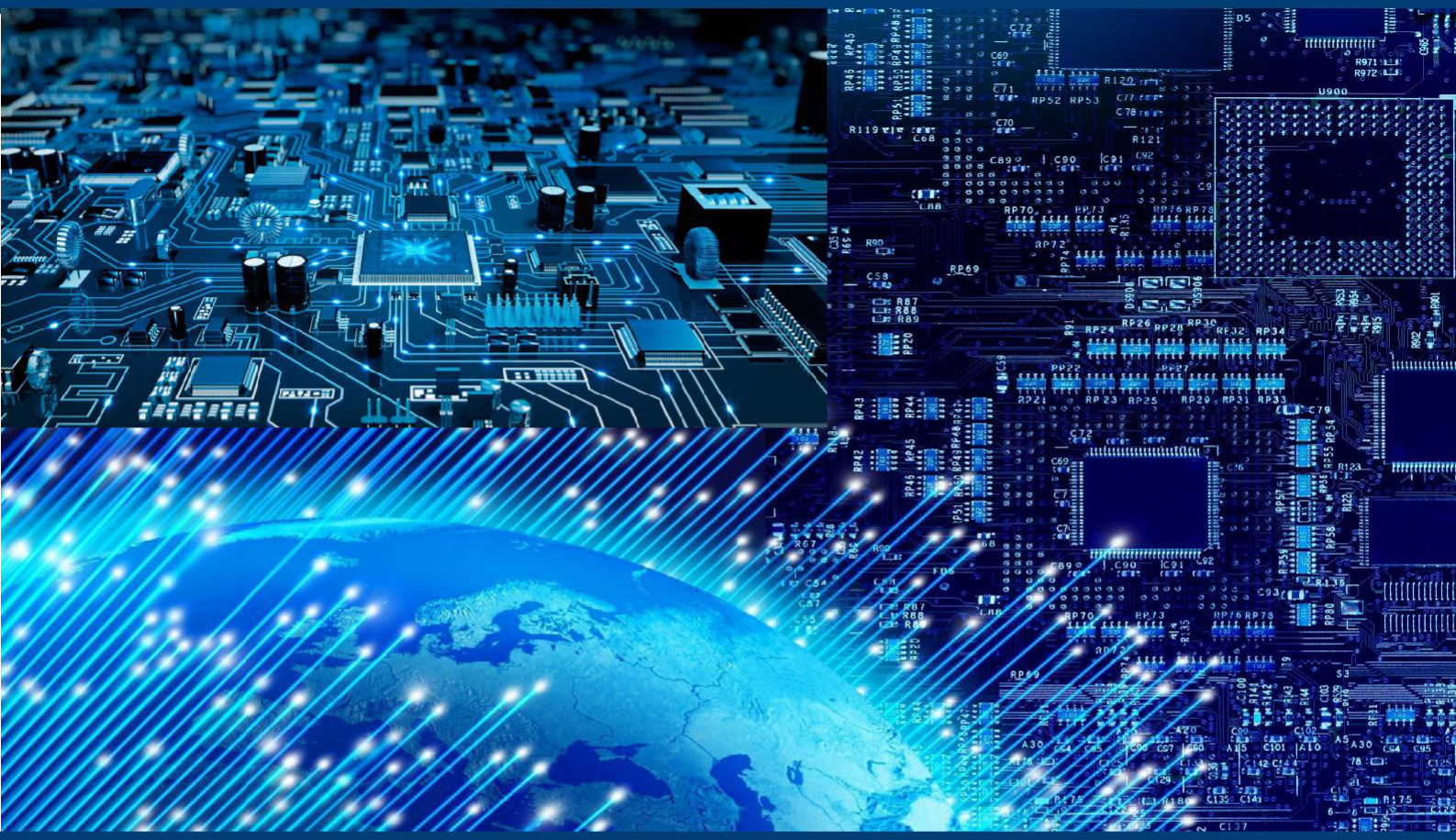

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