

Smart Crossing for Pedestrians Using IOT

A. Hazarathaiah ^[1], P. Likhitha ^[2]

Professor ^[1], UG Scholar ^[2]

Dept. of Electronics and Communication Engineering
Narayana Engineering College, Gudur, Nellore District
India

ABSTRACT

Crosswalk is a method for sharing the street amongst vehicle and individuals. Be that as it may, thickness of the populace rises, in the interim the quantity of aggregate mischances diminishing, the quantity of passerby mishap does not drop down for a long time. In this paper, we propose another framework called Smart Crossing that is another sort of crosswalk utilizing sensors, illuminator and an IoT gadget to guard person on foot in while crossing. In this paper, we propose a crosswalk framework utilizing sensors to track passerby and feature them to make vehicle driver effortlessly keep away from any risky circumstances.

Keywords:- IOT, Pedestrains

I. INTRODUCTION

Since individuals and vehicle are sharing the road, crosswalk expands effectiveness of utilizing the road in exceedingly thought region. Be that as it may, as the populace expands, this brings more incessant accidents and more genuine wounds and subsequently, nationals are attempting to diminish these accidents by making advancements and legitimate approvals. Such activities pull down the aggregate number of lethal accidents yet sadly, number of pedestrian fatalities does not diminish for 10 years. To be particular, this casualty does not have a comparative trademark thinks about to others. An examination around 2014 in USA demonstrates fatalities in 78% happened in urban, 71% happened at non-crossing points and 72% happened oblivious. Through this examination, pedestrian fatalities are inferring vigorously populated territory makes more shot make a mischance and a mediocre acknowledgment makes less opportunity to distinguish a pedestrian or a vehicle.

II. LITERATURE REVIEW

Pedestrian fatalities appear to be influenced by assorted reasons. In any

case, incredibly, a few highlights that may look like to influence, for example, plastered driver or youthful driver, was not the significant issues in accidents. It will probably impact by the thickness and number of the populace and light. To decrease the quantity of pedestrian fatalities, there are a few methodologies, which lead driver to back off, take

care of this issue. In the first place approach is to authorize the acknowledgment of crosswalk region utilizing light transmitting asphalt marker, in this manner vehicle driver can be effectively educated where the genuine crosswalk is on the road [2 - 4]. For all that, this neither keeps any sudden responses from pedestrians nor drivers to see pedestrian effortlessly. Second approach is lighting up the crosswalk territory that the driver sees a pedestrian from long separation. This is extremely satisfactory against a sudden development of pedestrian. Unexpectedly, this expends excessively vitality to maintain every single dim hour for inadequate pedestrians also the shoreline of vitality isn't shabby if illuminators are introduced more to bring down the shot of mishap [5]. For all that, if the mishap happens, there is just believing the vehicle driver to call crisis unless the pedestrian has its awareness.

III. EXISTING SYSTEM

Pedestrian fatalities appear to be influenced by various reasons. Be that as it may, incredibly, a few highlights that may look like to influence, for example, inebriated driver or youthful driver, was not the real issues in accidents. It will probably impact by the thickness and number of the populace and light. To decrease the quantity of pedestrian fatalities, there are a few methodologies, which lead driver to back off, take care of this issue.

Disadvantages:

1. We are unable to control the accidents.

2. There are no proper techniques in the existing systems.

IV. PROPOSED SYSTEM

We propose another sort of crossing framework that can give pedestrian security and in addition drivers to see pedestrians prior to stay away from any unsafe circumstance. Utilizing illuminator gives three times longer separation of seeing the pedestrian that acquires enough time to back off the speed of vehicle. On the off chance that if there should be an occurrence of mischance happens, smart crossing gives robotized condition answering to the control focus about the circumstance records and react promptly whether the driver get frenzy or flee. This may spare numerous lives, which brings more opportunities to get into the brilliant hour. Smart crossing additionally spares colossal vitality in running the illuminator. Numerous other illuminator spends a ton of vitality to light up the crosswalk whether the pedestrian exists or not. In the interim, smart crossing turns on the illuminator when the pedestrian exists.

Advantages:

1. We can restrict the accidents to happen.
2. If any case happens we can take action in the early times.
3. Our scheme uses less energy using illuminator

A. Block Diagram Of Proposed System

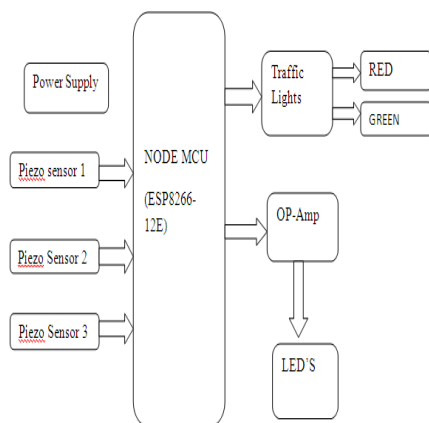


Fig.1. Block Diagram Of Proposed System

B. Internet of Thing's (IOT)

IOT (Internet of Things) is an advanced automation and analytics system which exploits networking, sensing, big data, and artificial intelligence technology to deliver complete

systems for a product or service. These systems allow greater transparency, control, and performance when applied to any industry or system.

IOT systems have applications across industries through their unique flexibility and ability to be suitable in any environment. They enhance data collection, automation, operations, and much more through smart devices and powerful enabling technology.

C. Node MCU

The Node MCU is an open-source firmware and development kit that helps you to Prototype your IOT product within a few Lua script lines. It includes firmware which runs on the ESP8266 Wi-Fi SOC from Espress if Systems, and hardware which is based on the ESP-12 module

Features:

- Open-source
- Interactive
- Programmable
- Low cost
- Simple
- Smart
- WI-FI enabled

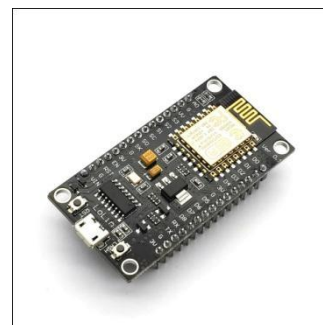


Fig.2. Node MCU Wi-Fi Module

D. Piezoelectric Sensor

A piezoelectric sensor is a device that uses the piezo electric effect, to measure changes in pressure, acceleration, temperature, strain, or force by converting them to an electric charge. The prefix piezo- is Greek for 'press' or 'squeeze'.

The piezoelectric sensor is a device used to measure the piezoelectric effect. This sensor is used to measure the change of pressure, force, temperature, strain and acceleration. They are converted into an

electrical charge. The following circuit shows the schematic symbol of the piezoelectric sensor.

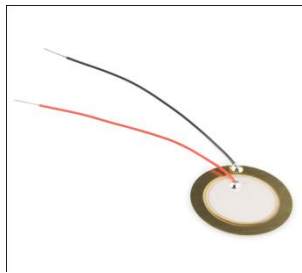


Fig.3.Piezo Electric Sensor

E.Blynk Cloud

Blynk was designed for the Internet of Things. It can control hardware remotely, it can display sensor data, it can store data, visualize it and do many other cool things.

Blynk is a platform with iOS and Android apps to control Arduino, Raspberry Pi and the likes over the Internet. It's a digital dashboard where you can build a graphic interface for your project by simply dragging and dropping widgets. It's really simple to set everything up and you'll start tinkering in less than 5 mins. Blynk is not tied to some specific board or shield. Instead, it's supporting hardware of your choice. Whether your Arduino or Raspberry Pi is linked to the Internet over Wi-Fi, Ethernet or this new ESP8266 chip, Blynk will get you online and ready for the Internet Of Your Things.



Fig.4.: Blynk app Overview

V. RESULT AND DISCUSSION

A.RESULT:



Fig.5.Overview of the kit

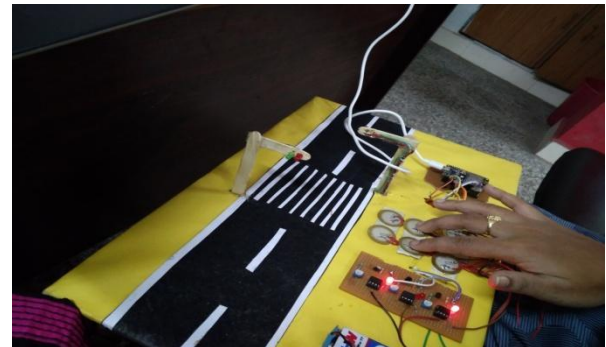


Fig.6.Applying pressure on piezosensor2 the red and green led blinks.

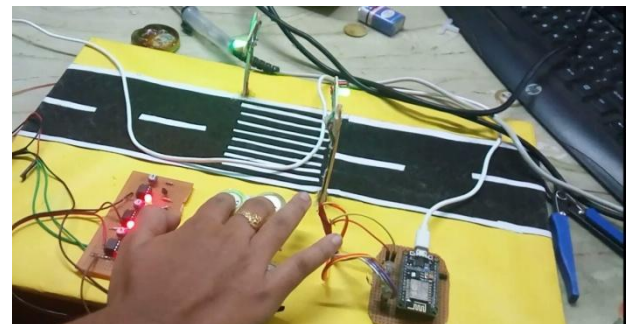


Fig.7.Applying pressure on piezosensor1 the green led glows.

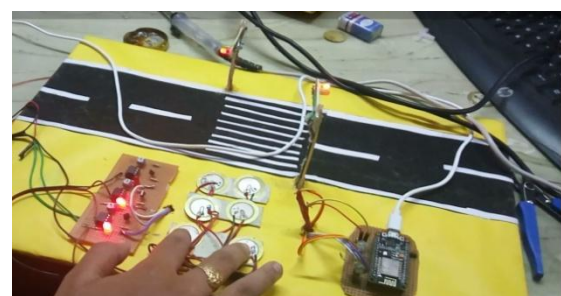


Fig.8.Applying pressure on piezosensor3 the red led glows.

B.DISCUSSIONS

1. Connect the Battery

2. Led's will glow
3. Then connect Kit to the lap with the help of USB cable
4. Compile and Run the Program
5. Apply pressure on piezo sensor1 then green Led will glow then the output occurs on blynk app as "YOU MAY Go."
6. Apply pressure on piezo sensor2 then both green and red led's will blink then the output occurs on blynk app as "MAINTAIN SPEED IN LIMIT."
7. Apply pressure on piezo sensor3 then both red led will blink then the output occurs on blynk app as "HALT FOR SOMETIME."

VI. CONCLUSION

In this paper, a sensor based way to deal with manage the dynamic administration of movement lights in pedestrian crossing has been introduced. The recommended arrangement gives the likelihood to change the periods of the movement light considering the time and the quantity of pedestrians going to cross the road. Truth be told, the season of green can be expanded contrasted with that characterized statically to permit a superior transfer of the pedestrians' collection. examination. The paper additionally gave, as indicated by the circulation of vehicles and pedestrians' stream, the lines at the activity lights, the quantity of stops, and a few parameters for the assessment of pedestrian wellbeing.

Due to this

- Improved safety for pedestrians and vehicles.
- Possible traffic volume decreases.
- Small improvement to pedestrian safety, as it will cut down the risk of a pedestrian walking.
- Man Power will be reduced

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