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IoT Based Accident Detection and Rescue System

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ABSTRACT: Now a days, large number of accidents are taking places and due to lack of safety chain people are facing situations which are causing severe unwanted incidents. Sometimes lack of safety chain affecting fatal injuries and also life of humans. Avoiding severity of road accidents is one of the most challenging task our authorities are facing these days. As the number of vehicles are increasing day by day, count of number of accident are also increasing. In these review, we are discussing about the solution on lack of safety chain by providing signals to control the delay time of safety chain. The proposed framework is a setup of Node MCU with various sensors which will help us to understand the type of accident and also the severity of accident at time instant. This paper focus on the time control in safety chain to avoid unnecessary situation.

I. INTRODUCTION

The world is moving towards development with speed and human life is getting faster day by day. And the world population is also increasing rapidly. Result of increasing population also increasing the gradual rise in the use of vehicles. Road transport is essential as it provide mobility to people and goods. Today almost every individual has there own vehicle. Increase the use of vehicles also increasing the number of accidents on daily basis. Many of the time accident takes places when visibility is quiet low while some accident takes place on valleys and hilly areas. In such condition it is difficult to get the information about the location and severity of the accident.

One of the biggest concern is in lack of safety chain which causing the increase in the severity and the delay occouring in emergency situation. After any accident occurs, it is important to get the correct information about the accident type and its location. This will also help to understand the requirement of emergency tools for safety purpose which will cover most of the time in safety chain.

Numerous scholars suggested different kind of solution on accident warning system in research literature. Offering the numerous methodologies to shortcoming the duration and to solve the problem in order to insure human safety and to save the lives. Accident detection system works on Global Positioning System (GPS) technology, various sensors and mobile application. Every vehicle must have installed the accident detection system.

II. LITERATURE REVIEW

Prof. S.R. Jagtap also proposed a system "Intelligent system for vehicular Accident detection and notification" in the year 2014. In this system they were suggesting about the solution of medical emergency after an accident. The location of mishap was send to desired person such as police, doctor or any other person through GSM along with accident location. also there was a camera in vehicle which was observing the patients condition.

Naji Taaib Said proposed "Mishaps detection and prevention system to decrease traffic hazards utilizing IR sensor" in 2018. His system worked on accident detection and prevention IR sensor that will recognize the alarm and it will send message to imputed member by GSM module. Also for prevention of accident they were using the system that will recognize the distance between 2 vehicle by IR sensor.

In 2017, Chunxiao Liao proposed a system which was based on Mobile edge computing named as Shrewd Traffic Accident Detection system. His framework was working on

mobile edge and it was computing with vicinity and also they provided vehicle recognizing system in it. By the help of mobile they were tracking the mishaps.

Arif Shaik proposed "Keen Car: An IoT based accident detection system" in 2018 . They were using the GPS to track the location also they were uploading the data on cloud and were sending alert to the imputed person in the system. It was get active when any auto collision takes place with vehicle.

In 2015, Sanjana.K.R proposed named as "An Approach on automated Rescue system with intelligent Traffic lights for emergency service". This framework naturally identified any accidents on road with sensors and it was notifying to there family members through GSM. They were using google guide and controls the traffic lights.

III. DISCUSSION

The document review mentioned, discuss about the use of Internet of things (IoT) whose data is generated by sensors and is stored on cloud from where it is easily accessable. To get support in accident detection system with the help of mobile application. This system helps searching for the location of victims of accident and also it detect the severity of the accident. It will generate an alert on mobile application which will provide the information about the type of accident, location of accident and severity of the accident.

Implementation of this system is very user friendly and also it is cost efficient. Technology that are used to create this model are Internet of things(IoT),Global Positioning system(GPS),Node MCU, Bumper sensor, Tilt sensor, MQ sensor. The communication between the sensors and mobile app is controlled by Blynk application. The world is connected globally through Internet. Also Internet is upgrading day by day.

The connectivity of Internet is all over the global. Mostly many people use Internet now a days. This all point comes under favour of IoT(Internet of things).IOT is communication of device through Internet. IoT defines the grid of things(physical objects) that are connected with sensors, software and other machineries switches data to get the desire outputs. The cost of implementation is moderate so for self safety every vehicle must have install this system.

Everyone is familier of use of GPS which is widely used for location tracking and mainly used in many application these days.

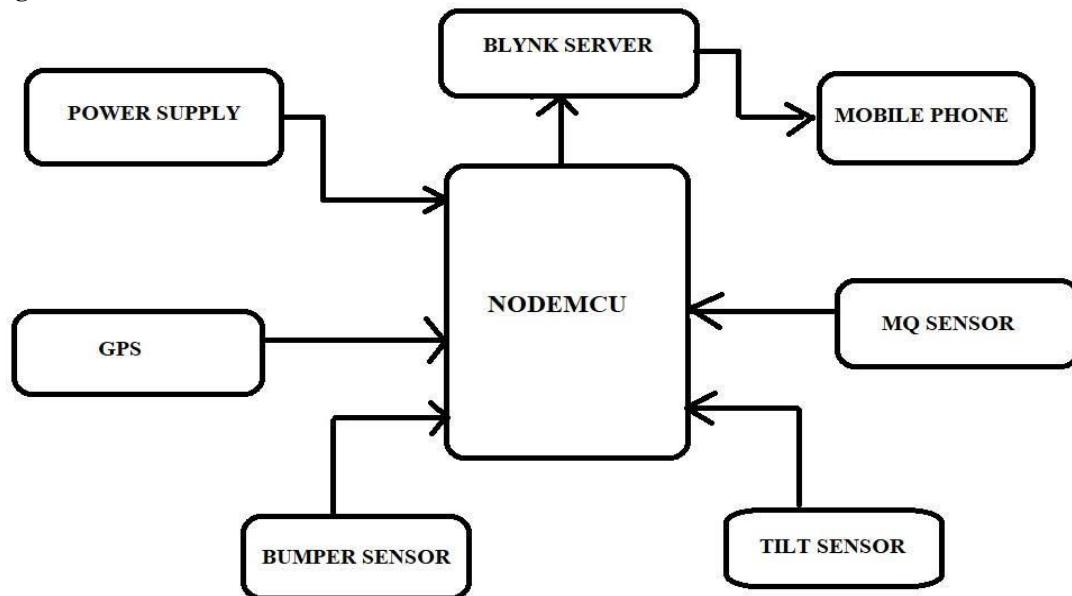
GPS in model is use to track the location of accident which will help to reduce the time of safety chain. GPS receives information from satellite and calculate the geographical location of vehicle. The Node Micro Controller Unit(Node MCU) has an open source software and also has an environment for hardware development which is inexpensive and built on system-on-a-Chip (SoC).

It means it is computer on a chip. Node MCU use widely to automate the system. This will make system inexpensive and it is easy to use. Sensors are connected on Node MCU to get the desire output through the system. As Node MCU contains processor core and a programable input/outputs. Blynk app is a software which connects with IoT and it controls hardware remotely. It also stores, displays the output of sensors to the system and it create the interface between cloud and application.

Overall, GPS will provide the location of accident, MQ sensor will help to detect the gas in the vehicle, Tilt sensor will provide the information about the angle of vehicle, Bumper sensor will provide information about the bumping of vehicle.

The idea mentioned is paper is projected to save the life of human in the critical situation. System focuses on monitoring the type and severity of accident. Alerts will provides the detail of accident at time instant by making aware via push notifications. And at time instant user will get active to collect all require elements to save life.

Block Diagram



IV. CONCLUSION

The main feature of the above literature paper is to provide emergency alert to input users in the system if any mishap occurs. The input users will get alert via push notification and all the required safety precautions action user will take at time instant. This will control the time delay in safety chain resultant it control the unnecessary situation. If any of the sensor get active the notification will generate in mobile phone via Blynk application. In Mishap, the time will get control and patient will get rescue from the critical situation.

REFERENECS

- [1] Aishwarya S.R, Ashish Rai, Charitha, Prasanth M.A, and Savitha S.C “An IoT based vehicle accident prevention and tracking system for night drivers” proc. IEEE, vol.3, no.4, pp.2320-9798 2015
- [2] Sadhana B Shabrin, Bhagyashree Jagadish Nikharge, Maithri M Poojary and T Pooja, “Smart helmet-intelligent safety for motorcyclist using raspberry pi and open CV”, proc.IEEE,vol.03, no.03 pp.2395-0056 2016
- [3] Jagdish A. Patel, Aringale Shubhangi, Shweta Joshi, Aarti Pawar and Namrata Bari discussed on “Raspberry Pi based smart home”, Proc. IEEE, vol.6, no.3, pp.2321-33612016
- [4] Dr. pankaj Tomar and preeti Mehta focused on “ An Efficient Management System based on Face Recognition using Matlab and Raspberry Pi 2”, Proc-IEEE, vol.3, no.5, pp.239 2016
- [5] T. Anitha and T. Uppalaigh focused on “Android based home automation using Raspberry pi”, Proc-IEEE, vol.04, no.01, pp-2351-8665 2016
- [6] Shailesh Bhavthankar and Prof. H.G.Sayyed discussed on” Wireless System for Vehicle Accident Detection and Reporting using Accelerometer and GPS”, Proc .IEEE vol.6, no.8, pp-2229-5518 2015
- [7] Md.Shaad Mahmud, Honggang Wang, A.M.Esfar-EAlam and Hua Fang has focused on “A Wireless Health Monitoring System Using Mobile Phone Accessories”, Proc-IEEE,vol.1, no.99, pp-2327-4662 2016
- [8] Sarika R. Gujar and Prof. A. R. Itkikar has focused on “Advanced Embedded System of Vehicle Accident Detection and Tracking System”, Proc-IEEE, vol.5, no.2, pp- 2277 128X 2015
- [9] Zaobo He, Zhipeng Cai, Jiguo Yu, Xiaoming Wang, Yunchuan Sun, and Yingshu Li, has discussed on “CostEfficient Strategies for Restraining Rumor Spreading in Mobile Social Networks”, Proc-IEEE,vol.66,no.3 2017
- [10] Hyung-Sin Kim, Hongchan Kim, jeongyeuo Paek and Saewoong Bahk has discussed on “Load Balancing Under Heavy Traffic in RPL Routing Protocol for Low Power and Lossy Networks”, Proc-IEEE,vol.16, no.4, pp. 1536-1233 2017



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