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IOT Based Smart Ambulance Monitoring System with Traffic Light Control

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ABSTRACT- Lack of green visitors manipulate can lead to the lack of lots of lives because ambulances no longer being capable of attaining the health center in time. Also, with the cutting-edge annual boom of vehicles being around 11% while the annual road extension closing around four% in growing countries which includes India, the trouble is in addition worsening. So, to cope with this trouble the paper provides a unique, clean enforce alternative for traffic control for the duration of emergency conditions requiring the most effective three major devices: Arduino UNO, GPS Neo 6M, and SIM 300A.

The loss of human lifestyles because of coincidence should be avoided. Now an afternoon, many human beings are dying in twists of fate because of the truth; The most important motive some times gets rid of occurs earlier than the man or woman reaches the clinic in ambulance. Emergency circumstances, each and every second are very crucial to saving an affected character's lifestyle. The most important concept of this assignment is to find each second that is successful in keeping a person. Site visitors congestion is a main problem that needs to be postponed to ambulance. This leads to a waste of time and, moreover, sometimes lifeless reasons.We've proposed an IoT-based site visitor's mild sign manipulate for ambulance to overcome this situation. Which helps the ambulance to attain the clinic's utmost fast and also store the patient existence. It is also used to ship location and of the ambulance reach the traffic signal for the earlier arrangements to manipulate the visitors.

KEYWORDS—Internet of Things, Arduino, Smart Ambulance, Intelligent Traffic Management System, Smart Healthcare.

1.INTRODUCTION

One of the most profound aftermaths of evolving technologies in this modern generation is hastily increasing vehicular counts, which has turned out to be grave within the wake of an awesome upward push in the global population. As a result, visitor congestion has become a severe hassle in most international locations around the sector. The charge for street expansion is simply one-1/3. The vehicular boom charge in countries like India, which in addition decline the hassle. And the era is the constantly developing effects of amassed know-how and application in all techniques, skills, techniques, and approaches used. For controlling the site visitors, they create android software that both the ambulance and the manipulated room can use.

We may regard the application as a platform for the ambulance and manipulate room to view the visitors' conditions in the desired location. Whenever the ambulance motive force notices an excessive density of traffic, on the app, on the course to the health center, he can alert the traffic to manipulate the room with the aid of sending a request signal.

The control room can control the traffic alerts at the direction of the ambulance based totally on the ambulance's vacation spot and the site visitors' situations on the route. This paper describes the solution to the problem of an ambulance getting caught in a visitor's jam and may be addressed by ensuring that the way via which the ambulance is journeying is cleared. I can accomplish this by alerting the closest visitors to the mild manipulation room each time an ambulance is drawing close.

2. LITERTURE SURVEY

1.An IOT based approach for smart ambulance service using think speak cloud

In this research paper we focus on this issues and proposed a prototype which Save all delays and save precious lives. The proposed solution allows us to save all delays aspects in efficient Manner and saves life IOT cloud computing.

2.An IOT based ambulance guidance system under emergency condition

This Paper provides an idea in order to control the accidents by implementing a solution where Traffic signals are dynamically operated in its way and traffic congestion rates are lowered by using embedded system.

3.Traffic control system using pi camera

Raspberry-Pi is utilized as a microcontroller which gives the flag timing dependent on the traffic thickness. Furthermore, can give office to deal with crisis vehicles consequently and effectively by using Raspberry pi or Image processing.

4.Development of smart system for ambulance

The system in the Smart ambulanceis designed to activate when it receives a signal from an ambulance via radio frequency (RF) transmission, and Arduino is used to modify the sequence back to normal before and after the emergency mode is engaged by using RF module.

5.Smart ambulance system using ambulance

In smart ambulance different sensors like heart rate sensor, blood pressure, ECG will be judging status of vital parameters, the status of these parameters will be send to hospital's database simultaneously traffic signals will be operated by using GPRS message through cloud by using wireless sensor and network cloud.

3. OBJECTIVES

The main objectives of are:

1. The primary goal of this venture is to create an 'inexperienced corridor' for the ambulance in order that the ambulance can attain the medical institution without having to stand many limitations.

2. To permit the driver of the ambulance to view the visitors' situations in order that he decide the fine direction to attain the medical institution.

3. To permit the site visitors manage room to view and clear the visitors.

4. METHODOLOGY

4.1 COMPONENTS USED

1. Inbuilt GPS System
2.GPSNeo6M
3.ArduinoUNO
4. GSM SIM 300A

4.2 Block Diagram

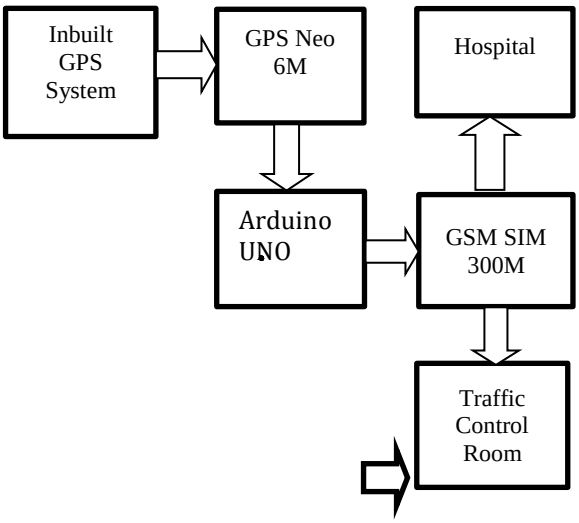

Fig.1. Block Diagram of IOT Based Smart Ambulance Monitoring System with Traffic Light Control

Google Maps is to be installed on the inbuilt GPS system present in the ambulance. On Google Maps, the location of all the hospitals and nursing homes will be stored in the Google Maps interface. The GPS will select the shortest possible path to reach the nearest hospital. The inbuilt GPS of the ambulance will be connected to the GPS Neo 6M.

The GPS module NEO 6M sends the live location of the ambulance to the traffic control room and the hospital. So, the traffic control room can accordingly clear a route for the ambulance. The Arduino UNO is used to store the code for sending the live location of the ambulance. It receives the location from the GPS Neo 6M and sends it to the traffic control room and hospital using SIM300A.The SIM 300A is a GSM-enabled SIM, which is used to send the live location of the ambulance using text messages to the traffic control room and hospital.

5. RESULT

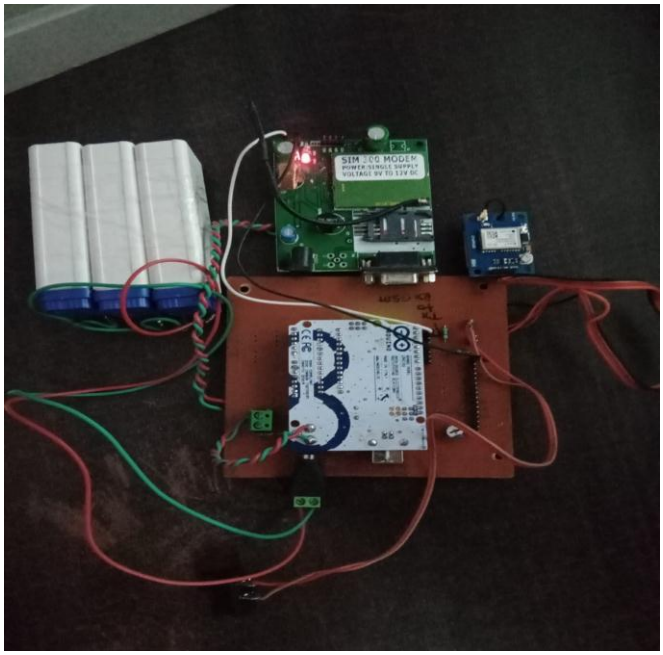

Fig. 2 Final setup of project

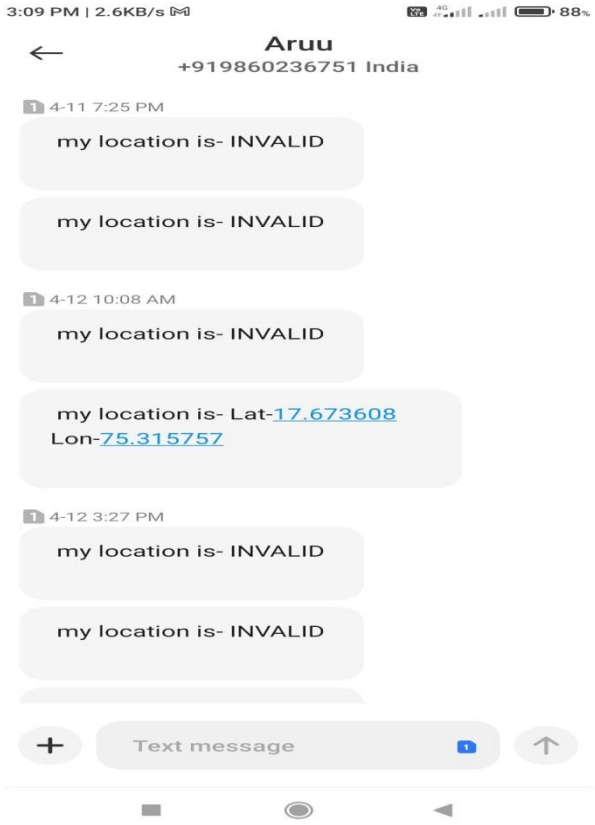

Fig. 3 Display Text Message on Mobile

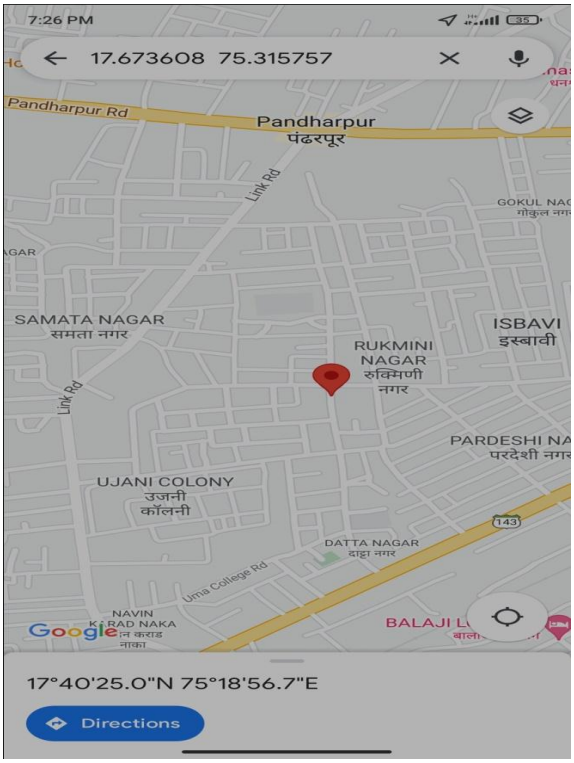

Fig 4: Display GPS Location on Mobile

In this section we have discussed the project-based result, which is shown in the below figure.

These results are declared by GSM output and shown. on the mobile phone through the message and on Google Maps.

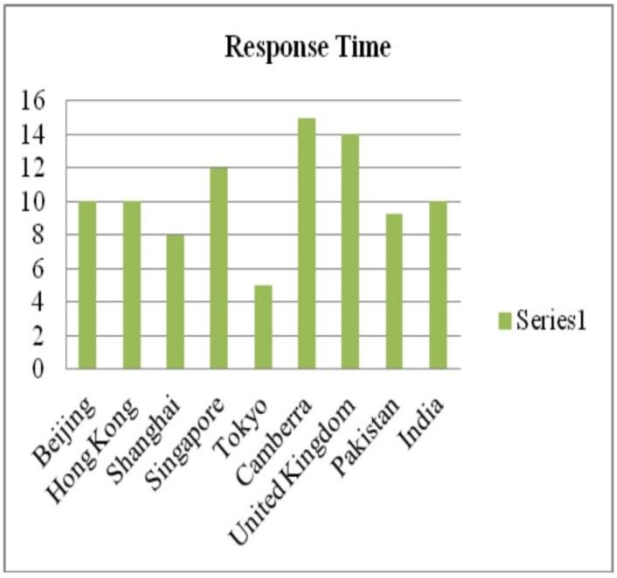

Fig.5 Response Time of Ambulance in Different Countries

I have declared out result in graph based, which are based on different country-based response time of the Ambulance services using this application. This application is very helpful in these countries and used widely.

6. APPLICATION

The System designed here can be used in different areas such as:

1. We are used to the implementation of the traffic signal controller.

2. We are using the GPS system, which sends the live location of the ambulance to the traffic control room and the hospital.

3. We are using the GSM SIM, which is used to send the live location of the ambulance using text messages to the traffic control room and hospitals.

7. CONCLUSION

This research paper proposes an Arduino-based traffic control system for healthcare-related emergencies. All though the system is expected to work well on its base functionality, it suffers from hardware-related limitations. The connections to the system should be made carefully. If there is a mistake injoining the connections, the system will not work properly. The future scope of this research includes the integration of the proposed system with sensor-based patient data collectionmodules.

The data will be sent to the cloud using an Arduino-based Wi-Fi module. The destination hospital can access real-time patient data using an open Wi-Fi system. The proposed system can be improved in this direction for future use.

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