Vehicular Traffic Signal Control for Ambulance and Patient Health Monitoring Over Internet of Things (IOT)

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ABSTRACT

In exceptionally populated nations like India, each 3.7 minutes a demise swoops in. A main source of the worldwide weight of general wellbeing and fatalities is street mishaps. The loss of human life because of mishap is to be maintained a strategic distance from. Traffic blockage and tidal stream are significant realities that cause deferral to rescue vehicle, as the greater part of the nations follow foreordained succession of traffic lights. Once in a while the mishaps are additionally not identified in time, which likewise by and large prompts death toll. The thought here is to give a canny traffic light framework, which would enable the rescue vehicle to arrive at the goal in least conceivable time by giving a sufficient course of section. Likewise we are checking the patient wellbeing with the assistance of various sensor like ultrasonic sensor for saline level observing, heart beat sensor to screen the quantity of beats of patient. Temp sensor screen the temp of patient. Also, update information over thingspeak utilizing esp8266. Inventive wellbeing observing frameworks are required with less human intercession which will be accessible easily in provincial just as urban territories. The thought is to give savvy, dependable and programmed saline stream checking framework which can be effectively executed in any medical clinic and can be simple for specialists just as attendants to screen the saline stream from a separation. The proposed framework takes out constant immediately checking of patient by medical caretakers or specialists.

Keywords: ARM 7(LPC2148) Controller, Ultrasonic Sensor, LM35 , Heartbeat Sensor, Bluetooth Module, LCD Display, Traffic Signal, L293D Motor Driver.

ARTICLE INFO

I. INTRODUCTION

Street traffic blockage turns into a significant issues for profoundly jam-packed metro urban communities like, Chennai, Mumbai and so forth. Emergency vehicle administration is one of the significant administrations which gets influenced by traffic . To smoothen the emergency vehicle development this paper have thought of the arrangement of "Clever programmed traffic control for rescue vehicle". India is the second most well known nation on the planet and is a quickly developing economy.

It is seeing horrendous street clog issues in its urban areas. In India framework development is delayed when contrasted with the development in number of vehicles, because of space and cost imperatives. Likewise, Indian traffic is non path based and out of face. It needs a traffic control arrangements, which are not quite the same as the created nations. Insightful administration of traffic streams can diminish the negative effect of blockage on the present world. Roads turned parking lots during times of heavy traffic is one of the significant concerns. During times of heavy traffic, crisis vehicles like ambulances, squad cars

and fire detachment trucks stall out in jams. Because of this, these crisis vehicles are not ready to arrive at their goals in time, that can result into lost human lives. The fundamental idea driving the paper is to give a smooth stream to the emergency vehicle to arrive at the medical clinics in time and in this manner limiting the deferral brought about by traffic blockage. The following is the block diagram of our framework.
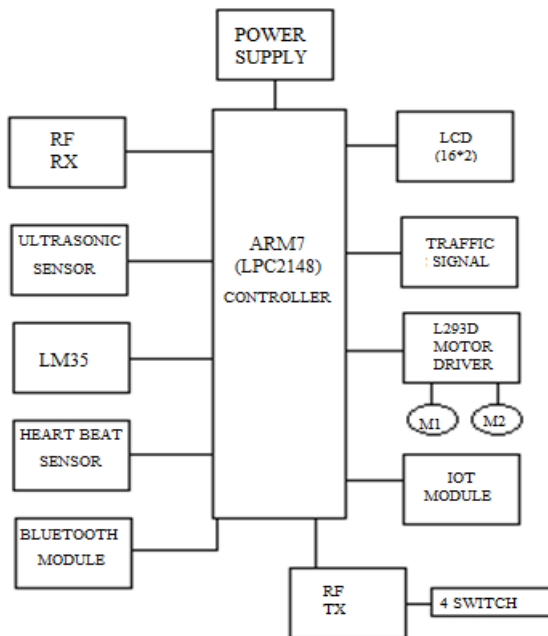

Fig.(1) BLOCK DIAGRAM OF SYSTEM

II. RELATED WORK

1.Implementing Intelligent Traffic Control
Rajeshwari S., SanthoshsHebbar, varaprasadGolla Intelligent traffic control framework to pass crisis vehicles easily. Every individual vehicle is furnished with unique RFID tag (set at a key area), which makes it difficult to evacuate or annihilate. We use RFID peruser, NSK EDK-125–TTL and PIC16F877A framework on-chip to peruse the RFID labels connected to the vehicle. It tallies number of vehicles that passes on a specific way during a predetermined span. It additionally decides the system blockage, and consequently the green light span for that way. On the off chance that the RFID-tag-read has a place with the taken vehicle, at that point a message is sent utilizing GSM SIM300 to the police control room.

2.Intelligent Traffic Signal Control System Using Embedded System Author :- Dinesh Rotake, Prof.SwapniliKarmoreA advancement of a clever traffic signal control (ITSC) framework required on the grounds that present traffic light controllers depend on old microcontroller, for example, AT89C51 which has exceptionally less inside memory and no in-manufactured ADC. These frameworks have constraint since they will utilize the predefined program that doesn't have the adaptability of adjustment on ongoing application. The

present traffic framework have fixed time interim for green and red sign which doesn't give the adaptability to the framework.

3.An Intelligent Ambulance Traffic Signal Control System Author:- :- Joshua, Srinivasa Rao, Nagendra Rao A framework which is utilized to give leeway to any crisis vehicle by turning all the red lights to green on the way of the crisis vehicle, thus giving a total green wave to the ideal vehicle. A green wave‟ is the synchronization of the green period of traffic signals. With a „green wave‟ arrangement, a vehicle going through a green sign will keep on getting green signals as it goes not far off. Around the globe, green waves are utilized to incredible impact. Regularly criminal or fear based oppressor vehicles must be distinguished. Notwithstanding the green wave way, the framework will follow a taken vehicle when it goes through a traffic light. As opposed to any customary vehicle following framework, in which the Global Positioning System (GPS) module requires battery power, our following framework, introduced inside the vehicle, doesn't require any force. The data with respect to the vehicle must be refreshed in the framework database

4. Real Time Patient Monitoring System based onInternet of Things
The prominence of Internet of Things is expanding step by step in the zone of remote observing framework. The remote observing frameworks incorporate, vehicle or resources checking, kids/pets checking, armada the board, leaving the executives, water and oil spillage, vitality lattice checking and so forth. Right now, have proposed a smart patient observing framework for checking the patients' wellbeing condition naturally through sensors based associated systems. A few sensors are utilized for social occasion the organic practices of a patient. The significant organic data are then sent to the IoT cloud. The framework is increasingly astute that can ready to distinguish the basic state of a patient by preparing sensors information and right away gives pop-up message to specialists/nurture just as emergency clinic in-control individual. The specialists and attendants get profited by this framework by watching their relating patients remotely without visiting face to face. Patients' family members can likewise get profited by this framework with restricted access.

5. Priority Based Real Time Smart Traffic ControlSystem Using Dynamic Background
Vehicular traffic is expanding quickly right now is bringing about traffic clog. The crisis vehicles, for example, ambulances, fire motors and police vehicles are given equivalent need over different vehicles and henceforth stall out up right now. A procedure for need put together vehicle recognition based with respect to picture handling systems is proposed right now. In the event that a crisis vehicle is distinguished out and about, the path where this vehicle is will be given higher need over every

other path. The paper proposes a calculation which will distinguish whether a vehicle is a crisis one or not.

6. Internet of Things Based Patient Health MonitoringSystem Using Wearable Biomedical Device

Upgraded and wise medicinal services framework is an image of created and prosperous country. Web of Things (IoT) has flourished the computerized medicinal services framework by giving remote observing of patients' wellbeing condition and permitting specialists to approach those data. This paper proposes an IoT based computerized and astute framework that consequently faculties patients' wellbeing condition, stores and shows those information over web and educates specialist about basic conditions. This paper centersaround making the framework reasonable and easy to use for the mass individuals. This framework will help the specialists consistently to be forward-thinking about patients' wellbeing condition. The proposed framework will caution both specialist and relative of the patient about any sort of damage if there should be an occurrence of crisis circumstance. In this way, level of sparing lives will increment and because of remote observing, a specialist will have the option to offer medicinal assistance and guidance to expanded number of individuals than previously.

7. Monitoring Patient's Health with Smart Ambulance system using Internet of Things (IOTs)

India is one of the most crowded nations of the world. Due to over populace, numbness of wellbeing have been remained the serious issues in India. For each one moment a passing swoops in as a result of respiratory failure. To spare a life is favorable just as valuable. The thought here is to give a keen brilliant wellbeing framework utilizing a few sensors and microcontrollers; it will detect the body condition and send the information to the worked together medical clinic's site. In the event that the condition is basic, an emergency vehicle is allocated to that specific area where the patient lives. To arrive at the goal on time the driver will utilize google map with the assistance of the site and to maintain a strategic distance from mishap, impediments, coordinated equipment is made utilizing by Arduino and sensors.

8. Health Monitoring System Using Internet of Things

The present advancement of observing your adored ones turns into a troublesome undertaking in the cutting edge life. Monitoring the wellbeing status of the your patient at home is a troublesome errand. Uniquely mature age patients ought to be intermittently checked and their friends and family should be educated about their wellbeing status every once in a while at work. So we propose a creative framework that robotized this errand effortlessly. Our framework advances a brilliant patient wellbeing following framework that utilizes Sensors to follow tolerant wellbeing and utilizations web to advise their friends and family in the event that regarding any issues. Our framework utilizes temperature just as heartbeat detecting to monitor understanding wellbeing.

The sensors are associated with a microcontroller to follow the status which is thus interfaced to alcd show just as IOT association so as to transmit cautions. In the event that framework recognizes any sudden changes in tolerant heartbeat or internal heat level, the framework consequently alarms the client about the patient's status over IOT and furthermore shows subtleties of heartbeat and temperature of patient live over the web. In this manner IOT based patient wellbeing following framework successfully utilizes web to screen persistent wellbeing details and spare lives on schedule.

9. Implementation of an Emergency Vehicle to Traffic Lights Communication System

First light signals for controlling traffic were worked physically by the police. The following kinds were worked on a 'fixed-time' premise by simply mechanical gadgets. Later advancements included connecting up various neighborhood fixed-time controllers with an ace controller. The most recent and most mainstream types are the traffic lights that are worked by the passing vehicles themselves by utilizing identifiers set in the roadway. In Kuwait, street mishaps have expanded to a significant level and the loss of human life because of mishaps is to be maintained a strategic distance from. Traffic blocking is a significant truth that makes postpone crisis vehicles. To bar loss of human life because of mishaps, we propose the ETL (Emergency Traffic Light) control framework. The primary objective behind this framework is to give a smooth stream to crisis vehicles, for example, ambulances to arrive at their goals in time and in this way limiting the postponement brought about by congested driving conditions. The ETL control framework will control the traffic lights in the way of the crisis vehicles, halting clashing traffic, and permitting the crisis vehicle option to proceed to help in diminishing their reaction time.

10. Patient Health Monitoring System Based on Internet of Things

Web of Things gives us an availability between this present reality and the physical world. It can give us availability anyplace, whenever and at wherever. Essentially web of things is a system of physical items that detects, convey and assembles all the significant data from the information which is widespread language for the articles and based on that data, it takes choice in like manner. Right now, have built up a circuit which can detect the temperature and heart-beat of the human body, and on the off chance that it surpasses a specific set point of confinement, at that point an alert would be raise over "IOT Geeko" stage on web.

III. CONCLUSION

Human life is precious and must follow safety measures very conscious in all aspects this of course includes ambulances services too. In this, by using intelligent ambulance system we can achieve the uninterrupted service of the traffic control system by implementing the alternate methods for signal change to allow flow control.

This system will reduce accidents which often happen at the traffic signal intersections because other vehicles have to huddle to give way to the ambulance services. This life saver project must be implemented in the traffic forums to aid the public in good manner

REFERENCES

[1] Y. SasiKanth, K. Jamal, "Ethernet Enabled Digital I/O Control in Embedded Systems", International Journal of Emerging Engineering Research and Technology, Issue 6, Volume 3, page no. 9-13.

[2] A. Leventis , Th. Antonakopoulos , C. Stavroulopoulos , Th. Luckenbach and V. Makios , Senior Members. IEEE, Intelligent Devices for Appliances Control in Home Networks, IEEE Transactions on Consumer Electronics, Volume 49, page no. 2

[3] P. Magrassi, T. Berg, "A World of Smart Objects", Gartner research report R-17-2243, 12 August 2002.

[4] White Paper: "Internet of Things Strategic Research Roadmap", Antoine de Saint-Exupery, 15 sep 2009.

[5] Souza, Alberto M.C. Amazonas, Jose R.A. "A Novel Smart Home Application Using an Internet of Things Middleware", Proceedings of 2013 European Conference on Smart Objects, Systems and Technologies (SmartSysTech), pp. 1 – 7, June 2013.

[6] Perumal, T, Ramli, A.R, Chui Yew Leong, "Design and implementation of SOAP-based residential management for smart home systems", IEEE Transactions on Consumer Electronics, Vol: 54, pp. 453 – 459, May 2008.

[7]F. Hu, D. Xie, and S. Shen: On the Application of the Internet of Thingsin the Field of Med- ical and Health Care. in 2013 IEEE InternationalConference on Green Computing and Communications and IEEEnternet of Things and IEEE Cyber, Physical and Social Computing. pp.2053–2058.IEEE. aug 2013.

[8] Car, J. et al. (2008): The Impact of eHealth on the Quality & Safety ofHealthcare, A Systemic Overview & Synthesis of the Literature. Report for the NHS Connecting for Health Evaluation Programme.

[9]. Hillestad, R. et al. (2005): Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, And Costs. Health Affairs 24, no.5 (2005).1103– 1117.

[10]. Laxman, K., Krishnan and S.B., Dhillon, J.S. (2015): Barriers to Adoption of Consumer Health Informatics Applications for Health Self Management. Health Science Journal, Vol. 9, No. 5:7.

[11]. Georgiadis et al. (2010): An Intelligent Web-based Healthcare Systems: The case of DY- MOS. Web-based applications in Healthcare and Medicine. (A. Lazadikou (ed.)) Annals of Information System, Vol.7, Springer Science + Business Media LLC.

[12]. Wiecha, J. and Pollard, T. (2004): The Interdisciplinary eHealth Team: Chronic Care for the Future. J Med Internet Res 2004. 6(3): e22.

[13]. Zhang, X., Yu, P. and Yan, J. (2014): Patients' adoption of the eappointment scheduling service: A case study in primary healthcare, Investing in E-Health: People,

Knowledge and Technology for a Healthy Future. H. Grain et al. (eds.), pp. 176–181, The authors and IOS Press.

[14]. Lv, Z., Chirivella, J. and Gagliardo, P. (2016): Big data Oriented Multimedia Mobile Health Applications. J Med Syst, 40: 120.

[15]. Hjelm, N.M. (2005): Benefits and drawbacks of telemedicine. J Telemed Telecare. 11(2): 60–70.

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www.arduinouno.com
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