Smart Traffic System for Emergence Vehicles

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Abstract - *Nagpur now become a Smart City and some of the projects like Metro, Road Development (Cement Road), Flyover due to this kind of projects Nagpur Traffic is very badly affected. And the local person has to suffer from long jam in the traffic. At this situation Emergency Vehicles also suffered from long jam. A smart city is one among that uses a Keen system characterized by the activity between behaviors, capital, cultures and infrastructure, achieved through their integration. Nagpur has Second Position In Smart City Program in Current Year. Smart city Mission is objective to line examples which will be replicated each inside and out of doors the smart city rushing up the creation of comparable smart city in numerous regions and elements of the country. These Emergency vehicles have to reach hospital or emergency place as quick as possible. Within the survey of the smart city construct by rendering recent IEEE papers during this domain, we tend to found heterogeneous construct of the good city; some papers mentioned it as a generic case study, whereas others deals with specific elements. This paper may be a survey of variety of articles, that is bifurcate into 2 subsection:1-General case study, that covers the subject of smart city in an exceedingly general framework, and 2-Specific case study, that covers the subject of the smart city from a selected elaborated application, like Traffic Management System, Smart street-Light Technology.*

*Key Words***: Ariduno, Frequecy, Detection, Trigger, Event**

1. INTRODUCTION

Metropolitan Area plays a big role within the positive growth for the economy of each nation, Asian country is not any exemption. on the brink of thirty first of India's current population lives in urban areas and contributes sixty three of India's gross domestic product (Census 2011).In India Due to over growth population present in Urban City the traffic jams has been Increased. Due to this many Emergency vehicles has been struck and many lives came in to the danger. The Metropolitan population of Asian country has seen an increase from seventeen.1 per cent to twenty nine.Percent between 1950 and 2015. With increasing urbanization, the Transport management getting older in terms of modernization and handling in Metropolitan areas and thereby contribute seventy fifth of India's gross domestic product by 2030 [1].

This results in a challenge of comprehensive development of physical, institutional, social and economic infrastructure. Since of these are vital in up the standard of lifetime of the voters living within the cities. a sensible town could be a self-contained city in terms of evolution data of data of knowledge} and communication infrastructure technology. The Over loading of traffic leads to heavy jams and Emergency vehicles some time get trapped in traffic. Thus good Cities Mission focuses on development of smart cities pan-India to alter economic process and up the standard of lifetime of folks by sanctioning native development and exploitation smart technologies to form its voters life higher. a sensible town will create our lives energy economical. Wireless innovations will support public health, giving doctors access to medical records simply and at lowest price

1. Project Hardware

This project contains four major Component i.e.

1) An Arduino Uno (with its adapter)

2) Arduino IDE for Windows

3) Sound sensor

4) Jumper wires & LEDS

1. 1. Arduino Uno

The Component Arduino Uno is that the heart of the project and Essential a part of circuit. Arduino is an open-source hardware and software company, project and user community that designs and manufactures single-board microcontrollers and microcontroller kits for building digital devices. The name Arduino comes from a bar in Ivrea, Italy, where a number of the founders of the project accustomed meet. Arduino board designs use a range of microprocessors and controllers. Arduino provides a typical form factor that breaks the functions of the micro-controller into a more accessible package.

Fig: Arduino Uno Hardware.

1.2. Arduino IDE for Window

Arduino IDE is an open-source software program that enables users to put in writing and upload code within a real-time work environment. As this code will thereafter be stored within the cloud, it's often utilized by people who have been looking for an additional level of redundancy.

1.3. Sound Sensor

Sensors are sophisticated devices that are frequently accustomed detect and reply to electrical or optical signals. A Sensor converts the physical parameter (for example: temperature, pressure, humidity, speed, etc.) into an indication which might be measured electrically.

The Sound Detection Sensor could be a small board that mixes a microphone and a few processing circuitry, it's the flexibility to detect different sizes of sound. These sensors are often accustomed for a range of uses from industrial to simple hobby or kidding

Fig: Sound detection Hardware.

1.4. Jumper Wires & LEDS

A jump wire (also referred to as jumper wire, or jumper) is an electrical wire, or group of them in an exceedingly cable, with a connector or pin at each end (or sometimes without them – simply "tinned"), which is often accustomed interconnect the components of a breadboard or other prototype or test circuit, internally or with other equipment or components, without soldering. Individual jump wires are fitted by inserting their "end connectors" into the slots provided during a breadboard, the header connector of a circuit board, or a bit of equipment.

A LED (LED) could be a semiconductor light that emits light when current flows through it. Electrons within the semiconductor recombine with electron holes, releasing energy within the sort of photons. the colour of the sunshine (corresponding to the energy of the photons) is set by the energy required for electrons to cross the band gap of the

semiconductor. White light is obtained by using multiple semiconductors or a layer of light-emitting phosphor on the semiconductor.

2. Implementation

The Implementation of the Project is divided into two part are as follow:

Part 1:

In Phase 1 the Arduino circuit, sound detector are assembled, here the Arduino IDE has been used where the coding has been done. Some set of operation has been added. As shown in fig the Sound sensor will gather the information and translate Analog details into the digital data. These digital data is nothing but the sound values in HZ. This value has been compare with the store sample values. if the sample values are matched with the input values then the Arduino will trigger the event to reset the signal.
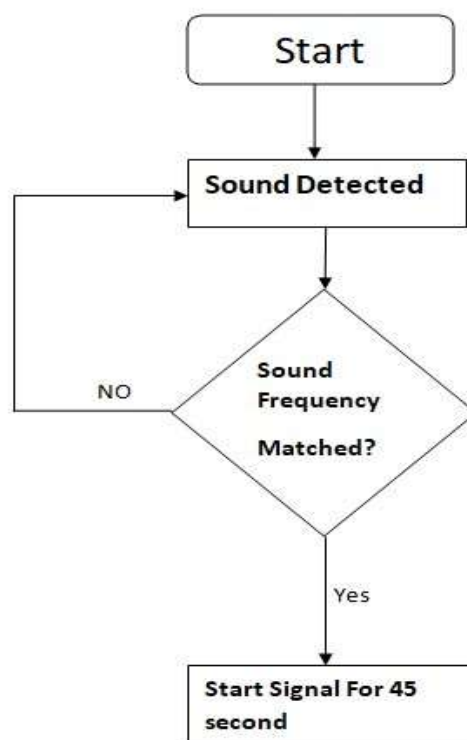

Fig: Simple Flow Chart for part 1 working.

Part 2:

When Arduino trigger the Event in Part 1, these event are used to start signal from that direction where ambulance is arriving. The four sound sensors are set every side of the road which is coming toward signal which is identity it and gives green Signal so the traffic from that road can be clear.
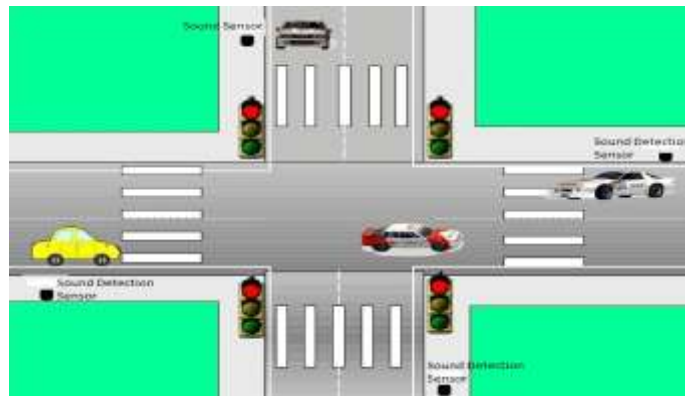
Fig: Traffic signal Flow Diagram.

3. Future Scope

The Future Scope Of The Project Would Be:

- Noise Cancelation.

- Identify the Emergency vehicles more Accurately

- VIP Vehicle identification set accordingly.

4. CONCLUSION

By implementing this project we can save many lives which are lost due to the traffic. This project gives relief to the Emergency vehicles to get struck in the traffic. Emergency vehicles like Ambulances, FireBriged will able to reach the emergency location. We hope that our application will play an important role.

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