iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** V **Month of publication:** May 2023

DOI: https://doi.org/10.22214/ijraset.2023.51798

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue V May 2023- Available at www.ijraset.com

Advanced Traffic Control System for Emergency Vehicle

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***Abstract:** Traffic congestion is a severe problem in most of the cities across the world and it has become a nightmare for the citizens. It is caused by delay in signal, inappropriate timing of traffic signal ling etc. The delay of traffic light is hard coded and it does not depends on traffic. Therefore for optimizing traffic control, there is an increasing demand in systematic quick automatic system. This paper is designed to develop a density based dynamic traffic signal control. The signal timing changes automatically on sensing the traffic density at the junction. The microcontroller used in this project is Raspberry Pi. The system contains IR sensors (transmitter and receiver) which will be mounted on the either side of the road on poles. It gets activated and receives the signal as the vehicles passes close by it.*

I. INTRODUCTION

It is an intelligent traffic controlling system. Our present methodology adopted for traffic controlling is based upon the fix timing. Each side has to wait for the fix time and they are allowed to cross the road for the limited fix time. This is feasible during normal traffic butfailsduringheavyrush.Thiswastethetimeofcommutersaswellasincreasesrushesmanyfolds.Thisproblemcanbetackledbyadoptingtrafficmonitoringsystemofvehicles.Thisusesvehiclesdensityasitstoolformeasuring the rush on the road. Based up on the calculated density of vehicles the traffic light are being controlled to manage the traffic. It is an intelligent traffic controlling system. Our present methodology adopted for traffic controlling is based upon the fix timing. Each side has to wait for the fix time and they are allowed tocrosstheroadforthelimitedfixtime.Thisisfeasibleduringnormaltrafficbutfailsduringheavyrush.Thiswastethetimeofcommutersaswellasincreasesrushesmanyfolds.Thisproblemcanbetackledbyadoptingtrafficmonitoringsystemofvehicles.Thisusesvehiclesdensity as its tool for measuring the rush on the road. Based upon the calculated density of vehicles the traffic light are being controlled to manage the traffic.

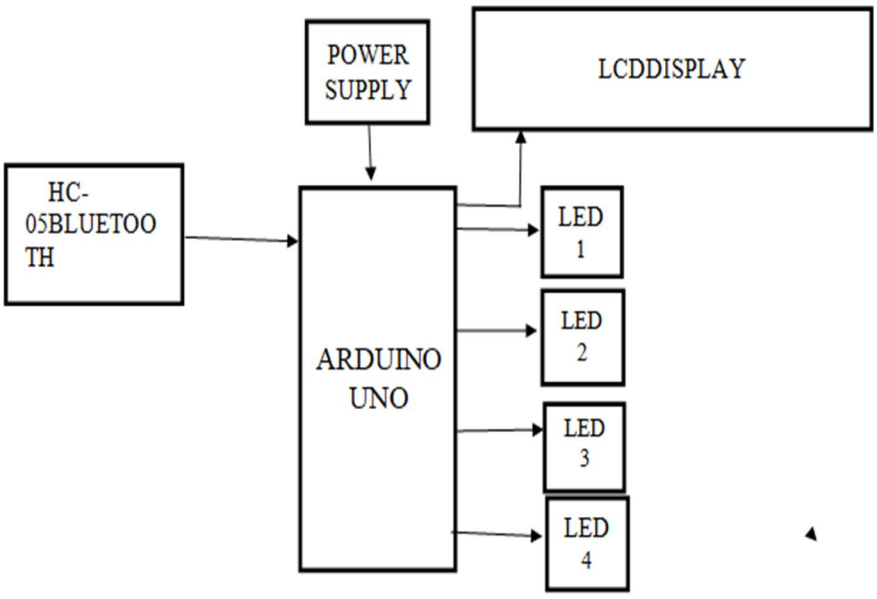


Fig: block diagram of advanced traffic control system for emergency vechicle

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II. RELATEDWORK

Traffic light controller helps to manage the traffic and to maintain proper traffic management. These systems are placed at the intersections of the road or at the crossings to avoid congestions and accidents. The systems indicate to the driver by using different colours of light. Therefore it is simple to avoid congestion at the intersections.

This project is the traffic light controller by using Arduino. It is an electronic project by which we will get knowledge about trafficlightsandhowtheywork.Thisprojectisthesimpleversionofatrafficlightsystemwherewehavedemonstrateditforthreesidesorways.

Roads without any supervision or guidance can lead to traffic conflicts and accidents. Traffic signals are required for an or derlyflowoftraffic.Atrafficsignalisusedasaninstructingdevicethatindicatestheroadusertoactasperthedisplayedsign.

Traffic lights allow everyone to cross the inter section point one by one, reducing conflicts between vehicles entering inter section points from different directions. It provides road safety, also helps to solve traffic in simple manners.

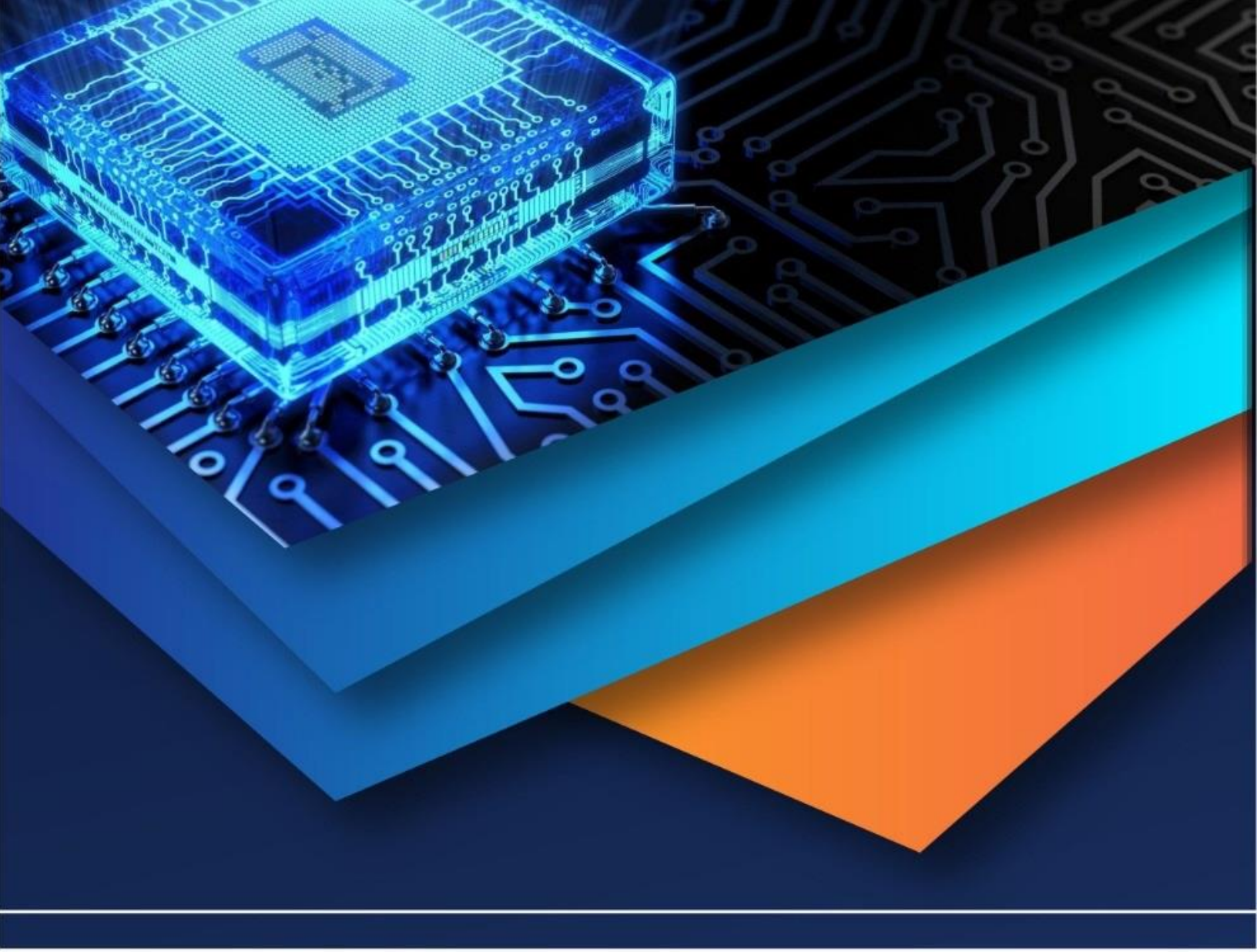
III. CONCLUSION

In this project we have studied the optimization of traffic light controller in a city using Arduino. Atraffic light system has been designed and developed with proper integration of both the hardware and the software. This interface is synchronized with the whole process of the traffic system. Automatically, this project could be programmed in any way to control the traffic light model and will be useful for planning proper road system.

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