

Mid-term Presentation On

“DENSITY BASED AUTOMATIC TRAFFIC LIGHT CONTROL SYSTEM”

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Overview

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Introduction

- Automatic Traffic Light control system.
- Controls traffic lights based on Traffic Density.
- Improves on the current time based system.
- Uses Ultrasonic sensor to detect traffic density.
- Manual control incase of emergency.

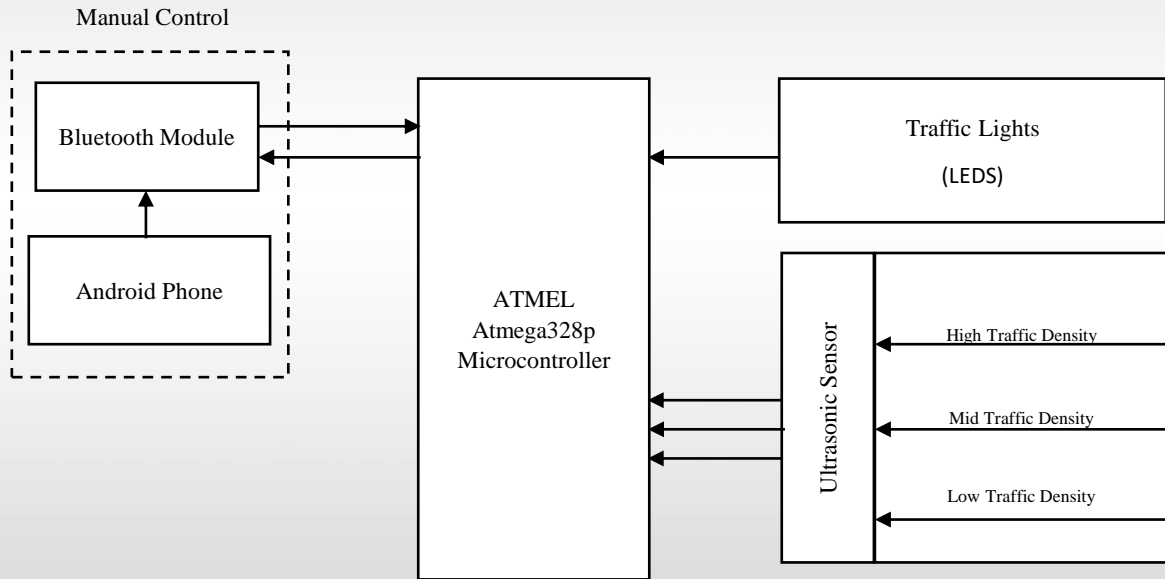
Objective

- To develop density based traffic light control system.
- To determine traffic density using ultrasonic sensors.
- To develop traffic light algorithm based on traffic density.

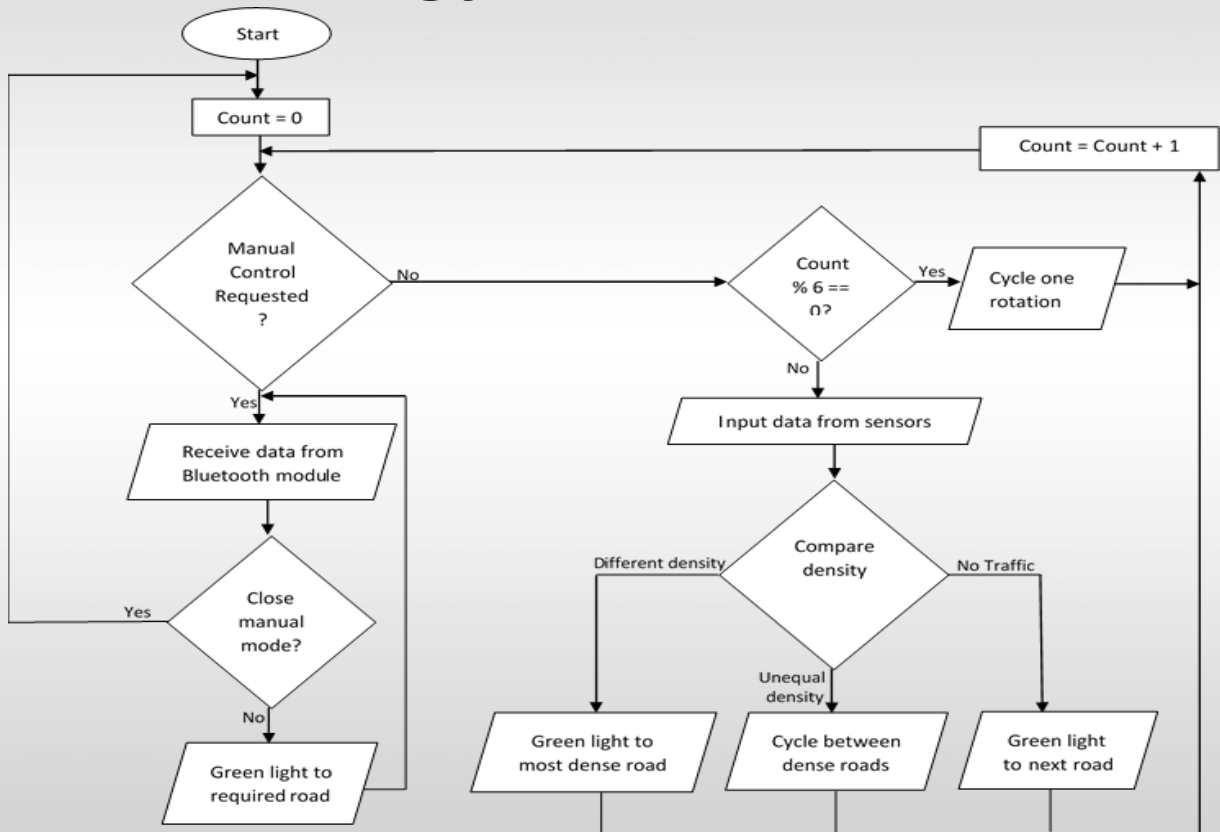
Literature Review

- Has been implemented since the early 20th century.
- Implemented in countries like Indonesia, China, USA.
- Uses Ultrasonic sensor instead of IR sensor.
- Sensors determines the vehicles density on the road.
- Microcontroller Atmega328p generates the result.

System Overview



Methodology



Work Completed

- Research of component based on Requirements
- Design and Simulation of Circuit
- Collection of required hardware
- Assembly and Implementation of hardware
- Programming based on basic Algorithm

Work Remaining

- Final Traffic light Switching Algorithm
- Bluetooth interfacing for manual control
- Testing and debugging of the system
- Calibration of the system
- Designing of layout of the road

Problems Encountered

- Difficulty in developing effective light switching algorithm.
- Gradual increase in time for switching the traffic lights.
- Sensor found to be unresponsive at close range.

Conclusions

- This improved technology makes the regulation easy and enhance the flow of traffic.
- It reduces the human effort in traffic management.

Snapshots

- Designing PCB

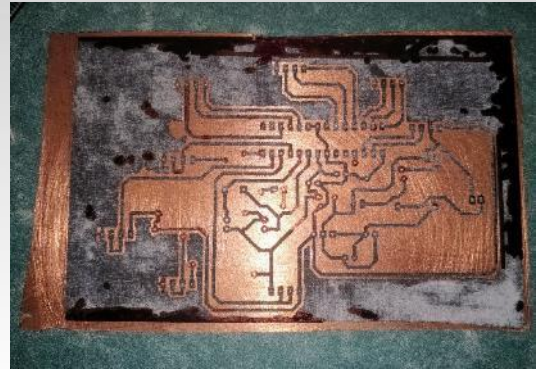


fig 1

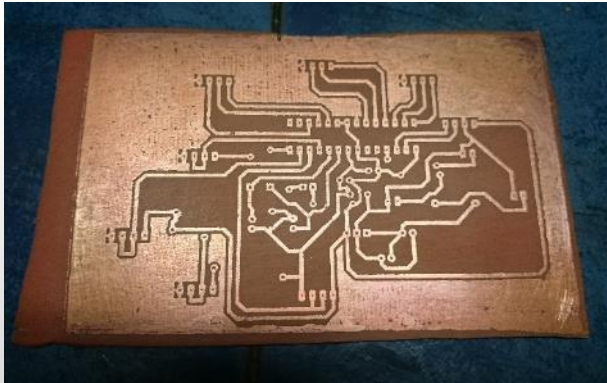


fig 2

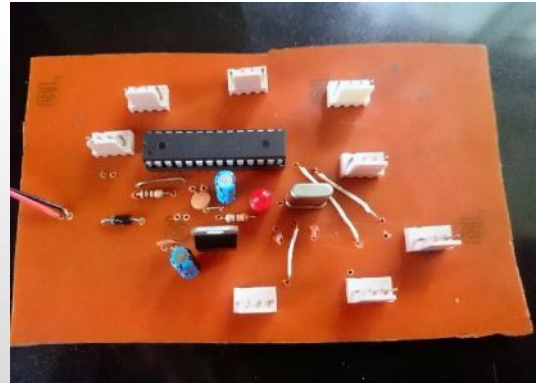


fig 3

Snapshots

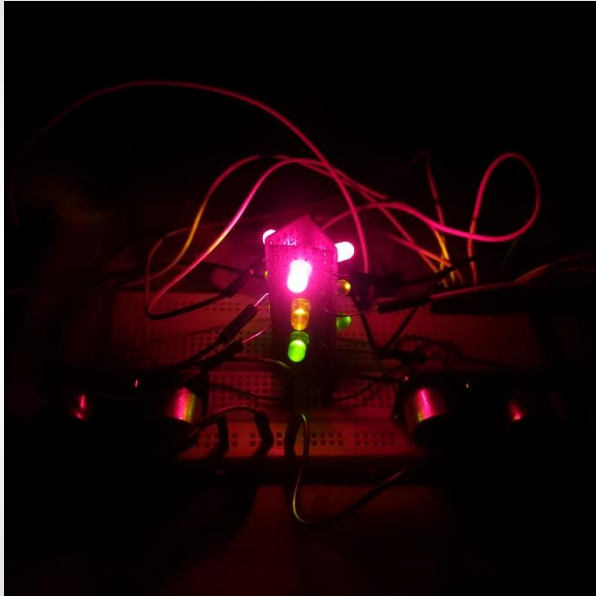


Fig 4: Testing of LEDs and Ultrasonic sensors

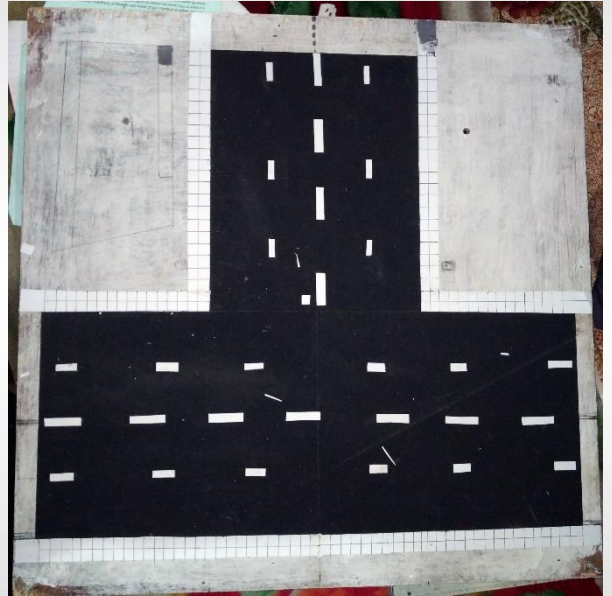


fig 5: Construction of the Road model

References

- [1] Sinhmar Promila, “Intelligent Traffic Light and Density Control using IR Sensors and Microcontroller”, International Journal of Advanced Technology & Engineering Research (IJATER) ISSN NO: 2250-3536 VOLUME 2, ISSUE 2, March 2012.
- [2] Das Rupak,” Study OF PLC and its Application in A Smart Traffic Control System”,National Institute of Technology:Rourkela,2013.

Thank You!!!