Automatic Barricade with Traffic Light

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ABSTRACT

India is the second largest road network in the world.Traffic jams occur due to drivers violating traffic rules. One of the major reasons of accidents is violation traffic signals. In this project we are going to implement the Automatic barricade with traffic light using Arduino UNO R3 . Till date traffic controlling system was based on traffic police and electronic signals. Hence it necessary to implement the Automatic barricade with traffic light system for the purpose of reducing accidents and smooth moving of traffic.

Implementation of the Automatic barricade with traffic light system will ensure that driver will have to compulsorily follow traffic signals and violation of traffic signals will not be possible

Keywords: Traffic control, Arduino , Traffic Signal, Barricade..

1 INTRODUCTION

Safety begins right from our self, so it is at most important to follow traffic rules and regulations.

The focus of this project is to improve the current traffic system and reduce this grave issue of traffic congestion to some extent.

We have considered here a four lane road. To stop the people from breaking the signals we will install 4 barricades which will block the road once the signal turns red.

Red LED indicates CLOSED , Yellow LED indicates driver be ready to drive or be ready to stop and green LED indicates OPEN..

2 PROBLEM DEFINITION

The problems which are encountered in the previous identification systems are:

- We know that the yellow light is getting on at least two time , one is for get ready to drive and second is get ready to stop.
- For that we will keep the message plate as " Go Slow ".

3 BLOCK DIAGRAM
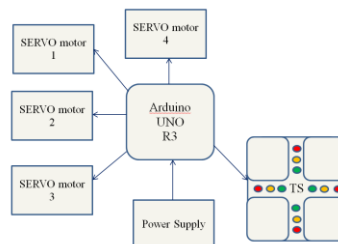
4 HARDWAREDESCRIPTION-

ARDUINO UNO-

The Arduino Uno is a microcontroller board based on the Arduino328 (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. The Uno differs from all preceding boards in that it does not use the FTDI USB-to-serial driver chip. Instead, it features the Arduino8U2 programmed as a USB-to-serial converter. "Uno" means one in Italian and is named to mark the upcoming release of Arduino 1.0. The Uno and version 1.0 will be the reference versions of Arduino, moving forward

SERVO MOTOR SG90-

The Tower Pro SG90 is a simple Servo Motor which can rotate 90 degrees in each direction (approximately 180 degrees in total) , and it operates on 5V.

BARRICADE-

Barricade is any object or structure that creates a barrier or obstacle to control, block passage or force the flow of traffic in the desired direction
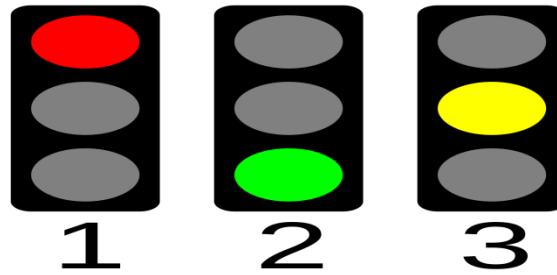

TRAFFIC SIGNAL –

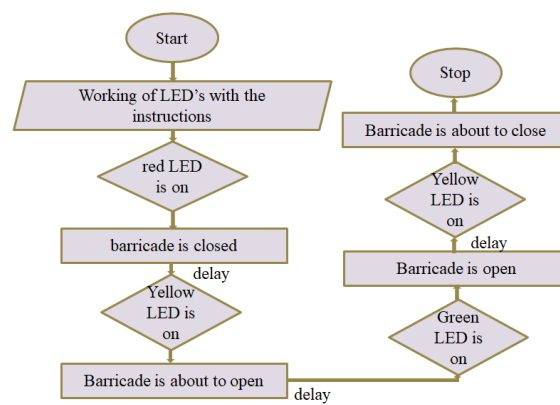In simple words, traffic lights usually change in this order:
Red light on: This tells drivers to stop.
Green light on: This means the driver can start driving or keep driving.
Yellow light on: This tells drivers to stop when it is safe to, because the light is about to turn red OR ready to drive because the light is about to green .

5 WORKING PRINCIPLE WITH FLOWCHART –

5 RESULT-

The result of our project is , when the red light is on barricade is in down position .

when yellow led will glow after red signal it will be sign of be ready to go .

once the led get's green it will be in open position and here yellow led glow once again that will be sign of be ready to stop.

This process is continuously happen with all lanes and automatically the frequency of accidents due to traffic breaking will be reduce.
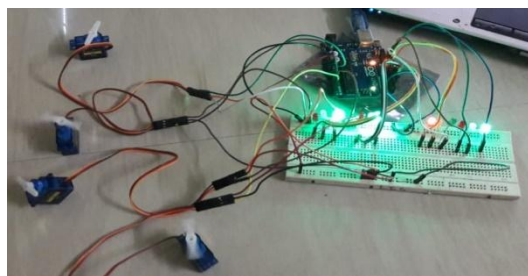
6 ADVANTAGES & DISADVANTAGES

- Help's in reducing the frequency of an accident's.
- This system will also boost the mission of "Smart City".
- Provide authority to the drivers to move with confidence.
- Will reduce traffic police work load.

- Direct traffic on different routes without excessive congestion.

DISADVANTAGES-
- This is only useful for 2 way road's.

7 COCLUSION-

- Very effective in controlling traffic.
- This will help in betterment of smooth moving traffic.
- It ensure that drivers will not face traffic jams and enjoy the drive.
- The issues of accident can be reduced drastically.

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