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Microcontroller Based Traffic Signal Auto Stop

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ABSTRACT: Now a recent days we are running in the critical world, An Emergency saving our life need in position to have Ambulance, Due to having traffic in all the places may take delay. Due to this we face unexcepted things to rectify in this we make a model. Traffic light control assigns a right way to the road users by using lights in normal colors (red–amber/yellow–green). Traffic light control system uses a worldwide color code (a specific color order to enable color recognition for those who are color blind). Over speed is the major problem that prevails now a day. It is difficult to control. To make people using vehicle to go in slow speed in accident area. In order to overcome this problem. We have designed and developed a new system called “TRAFFIC SIGNAL AUTO STOP “by using a microcontroller. This project is developed for the users to control the Speed of the vehicle when it crosses and to stop it when red signal in Traffic.

I. INTRODUCTION

The industrialization and population, there has been a huge growth in the traffic. With growth in traffic, there is occurrence of bundle of problems too; these problems include traffic jams, accidents and traffic rule violation at the heavy traffic signals. In this situation traffic lights based on the voice intensity of the vehicle play an important role in traffic management. C.Nagarajan et al [3,6,12] has studies Traffic lights are the IR based signalling devices that are placed on the intersection points and employed to control the flow of traffic on the road the IR based signalling devices that are placed on the intersection points and employed to control the flow of traffic on the road. The history of the traffic light control goes back to 1868 when the first traffic lights system was installed in London and today this system could be found in all major cities of the world. Traffic control at intersections is a matter of concern for large cities .

II. LITERATURE SURVEY

Traffic lights were first invented in the year 1868 at London’s House of Commons where traffic light signals were placed at intersections of George and Bridge Street. Later the traffic lights were developed in the year 1914 by an American Traffic Signal Company, which fixed green and red lights at corners of the 105th street and Euclid Avenue in Cleveland, Ohio. During this period traffic lights were controlled either by timing or by switching manually. Traffic lights are also named as stoplights, road traffic lamps, traffic signals, stopand-go lights which are signaling devices placed at road crossings, everyday pedestrian crossings and other locations to control competing flows of traffic. Traffic lights have been fixed all over the world in many cities. Traffic light control assigns a right way to the road users by using lights in normal colors (red – amber/yellow – green). Traffic light control system uses a worldwide color code (a specific color order to enable color recognition for those who are color blind). Over speed is the major problem that prevails now a day. It is difficult to control. To make people using vehicle to go in slow speed in accident area. In order to overcome this problem. port.

POWER

The power supply unit consists of a step-down transformer (230V AC primary to 0-12V, 750m A secondary), bridge rectifier and voltage regulator. The output of the transformer is fed to bridge rectifier diodes D1 through D4 (each

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1N4007). The ripple from the output bridge rectifier is filtered by capacitor C1 and fed to regulator IC 7805. The regulated output is given to the temperature sensor, micro controller unit and LCD module, respectively. When switch S1 is closed, LED1 glows to indicate the presence of power in the system. Humidity sensor are planted inside the soil which we grow plants, trees etc., these sensor will sense the have land humidity and intimates to the micro controller which it attached. There already we had setup a humidity value in terms of %. Once if the desired level is not acquired then it gives intimation to the motor circuit which will in turn switch on the motor if the desired level of humidity reached them.

III.EXISTING SYSTEM

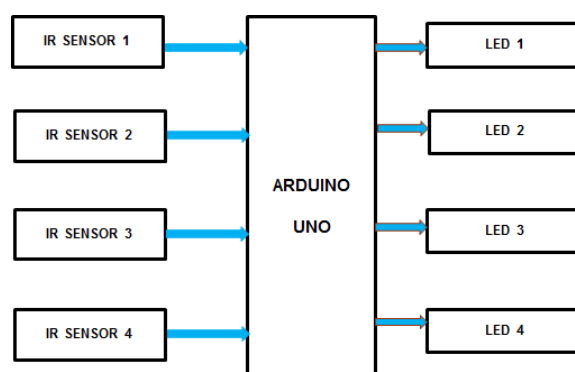
The signal from the sensor is given to the microcontroller through driver section. The microcontroller controls the speed of the vehicle. The vehicle motor is driven by DC power supply. When the sensor senses the ID, it sends signal to the microcontroller. The infrared region is approximately demarcated from 0.75 to 1000 μ m. The wavelength region from 0.75 to 3 μ m is termed as near infrared, the region from 3 to 6 μ m is termed mid-infrared. The LED structure plays a crucial role in emitting light from the LED surface. The LEDs are structured to ensure most of the recombinations takes place on the surface by the following two ways.

IV.PROPOSED SYSTEM

In this system we will use IR sensors to measure the traffic density. They are arranged on each side of the road and are interfaced to the microcontroller. Based on these sensors, controller detects the traffic and control the traffic system. IR sensors are connected to the microcontroller. If there is traffic on road then that particular sensor output becomes logic zero otherwise logic one. Based on logic 0 and logic 1 output, the microcontroller changes the glow time of the green LED of the corresponding junction to a higher value. Thus as a number of vehicle increases, the green light glows for more time. An infrared sensor is an electronic instrument that is used to sense certain characteristics of its surroundings by either emitting and/or detecting infrared radiation. It is also capable of measuring heat of an object and detecting motion.

Infrared waves are not visible to the human eye. In the electromagnetic spectrum, infrared radiation is the region having wavelengths longer than visible light wavelengths, but shorter than microwaves. The infrared region is approximately demarcated from 0.75 to 1000 μ m. The wavelength region from 0.75 to 3 μ m is termed as near infrared, the region from 3 to 6 μ m is termed mid-infrared. The LED structure plays a crucial role in emitting light from the LED surface. The LEDs are structured to ensure most of the recombinations takes place on the surface by the following two ways.

BLOCK DIAGRAM



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TABLE I: THE ARRANGEMENT OF CHANNELS

Microcontroller	ATmega328P
SRAM	2 KB (ATmega328P)
EEPROM	1 KB (ATmega328P)
Clock Speed	16 MHz

A. LCD

For display, a Lampex make 16*1 LCD (model GDM1601A) was used. Pin connections of this LCD are given in Table II. Pins 15 and 16 haven't been used. Pin 3 is connected to the circuit ground through a 1kilo-ohm preset that is used to control the light intensity of the LCD. Note that the Hitachi make 16*1 LCD (HD44780A00) will not work in this project.

B. APPLICATIONS

- Increase intersection capacity at same time.
- Maximises the traffic flow.
- Reduces the number of accidents.
- Better traffic flow leading to greener environment.

V. IR SENSOR

IR detectors are little microchips with a photocell that are tuned to listen to infrared light. They are almost always used for remote control detection - every TV and DVD player has one of these in the front to listen for the IR signal from the clicker. Inside the remote control is a matching IR LED, which emits IR pulses to tell the TV to turn on, off or change channels. IR light is not visible to the human eye, which means it takes a little more work to test a setup. There are a few difference between these and say. IR detectors are specially filtered for Infrared light, they are not good at detecting visible light. On the other hand, photocells are good at detecting yellow/green visible light.



VI. MICROCONTROLLER

Micro controller AT89C52 (IC2) is a 40-pin IC from Atmel. Its pin details. Like AT89C52, it also belongs to the 8031/8051 family. Micro controller AT89C52 has a 256*8-bit internal random-access memory (RAM), eight interrupt sources and 8 KB of flash memory compared to 128*8-bit internal RAM, six interrupt sources and 4 KB of flash memory in AT89C51. By combining a versatile 8-bit CPU with flash memory on a monolithic chip, Atmel AT89C52 is a powerful, highly flexible and cost-effective solution to many embedded control applications. Port 0 and 2 are 8-bit bi-directional input/output (I/O) ports. The external-access enable pin 9EA) is connected to +Vcc for internal program executions. This pin also receives the 12V programming-enable voltage (VPP) during flash programming when 12V programming selected.

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VII. CONCLUSION

By introducing the concept of this technology in the Field of the communication we can make our communication more efficient and faster, with greater efficiency. We can display the messages with less errors and maintenance. This system can be used in the above technical paper explains how we can develop as well as modify voice control Android based wireless notice board.

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