



INTELLIGENT TRAFFIC LIGHT CONTROL AND THEFT VEHICLE DETECTION

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Abstract- In today's congestion world, vehicle theft is a major concern. When a vehicle is theft, we are going to police station and give complaint about the vehicle. Then police men take necessary action to find out the vehicle and this is taken into a long process. So, the project of stolen vehicle detection has been designed. In this project, each vehicle is equipped with RFID. When a stolen vehicle crosses a check post that contains RFID reader, it reads the RFID number. Already the stolen vehicle owner enrolled the RFID number in the database. When a RFID number of stolen vehicle list in database matches the vehicle which crosses a check post, it will identified by alarm. Suppose the stolen vehicle is moved, the police men give the message to next check post through GSM module. So, the police men identify the stolen vehicle easily. This system is applicable only for vehicle that will equipped with RFID tag. And also a prototype of intelligent traffic light control has been designed. It provides a safe and efficient traffic flow, to assign the right way and minimizes the delay or waiting time at road.

I.INTRODUCTION

Thousands of automobiles are lost each year in the state and thousands of automobiles are also recovered by the Police from when they catch the culprits or even when the culprits leave the vehicles they have stolen after they have used them. The usual problem with the recovered vehicles reaching the actual owners is that the vehicle need not be found in the same jurisdiction as one in which the complaint was launched. So, when a vehicle is recovered, usually the Police try to trace out the actual owner of the vehicle from the RTO based on the license and chassis number. But this is a lengthy and time consuming process for the RTO to trace out the actual owners from the records and inform back to the Police stations. Because of these delays, vehicles that are recovered all long time to actually reach their owners. So this project has been designed and this reduces the time of find out the stolen vehicle.

II. BLOCK DIAGRAM

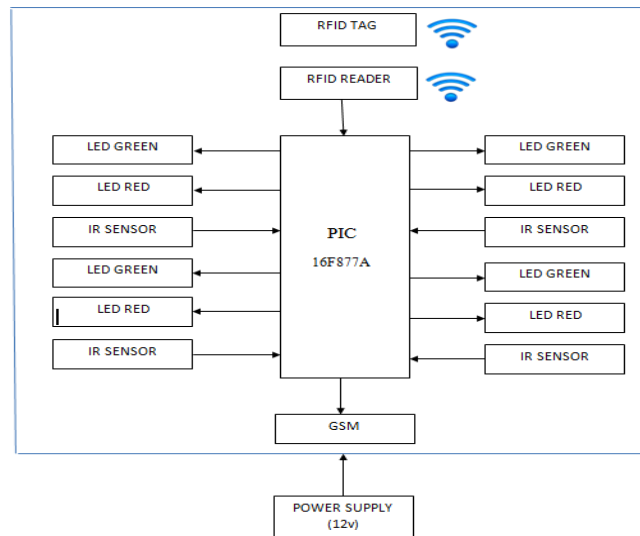


Fig.1 Block diagram

The above block diagram shows the concept of our proposed system. In our system we used sensors to read the environmental changes. IR Sensor senses the motion of the vehicle. We will fix the IR sensor in four sides of the road. Then the count of the vehicle is the input of the microcontroller. According to the input of the microcontroller, it set the waiting time of the four side travellers. Suppose the count of the vehicle is high, it set the interval of the time to cross the road is high. So the travellers cross the road without the time delay.

RFID reader read the RFID tag. RFID tag number is the input of the microcontroller. If the input of the microcontroller matches the already theft vehicle list, the message will send the controller room through the GSM module. So the theftvehicle can be identified easily.

III.COMPONENTS SPECIFICATION

- Passive RFID Tag - 125 to 135 KHz (5 - 10 cm)
- RFID reader - 125 KHz
- GSM Module SIM 900A
- PIC Controller (16F877A) - 12V, 20 mA
- IR sensor - 4.5 VDC, 0.85 mA (10 cm)
- Burglar alarm - 12V, 1A
- Power LED - 3.3V, 30 mA
- Power Supply - 12V, 1.5A

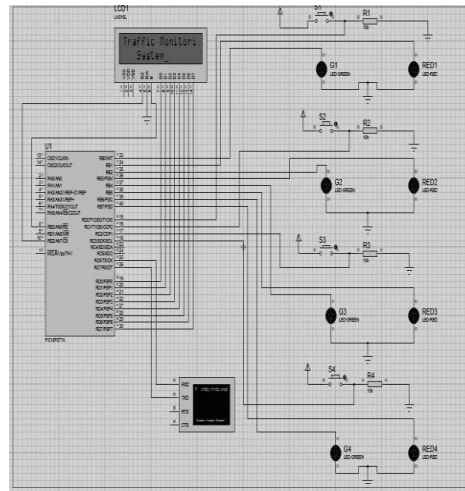


Fig.2 Circuit diagram

The Figure.2 shows the circuit diagram of proposed system. The input of the PIC microcontroller is number of vehicles count. Vehicles are represented by Switch in this diagram. Numbers of vehicles are indicated by on the switch. So, we can identify the count of the Vehicle. The delaying time is displayed in LCD display. Finally, the traffic flow is controlled by using the proposed system. The Figure shows the circuit diagram of proposed system. The input of the PIC microcontroller is number of vehicles count. Vehicles are represented by Switch in this diagram. Numbers of vehicles are indicated by on the switch. So, we can identify the count of the Vehicle. The delaying time is displayed in LCD display. Finally, the traffic flow is controlled by using the proposed system.

IV. ADVANTAGES

- It gives the proper idea and implementation of your code and circuit before implementing on hardware.
- It reduces the time on creating hardware and testing your errors directly on hardware. You can analyse your circuit and code both on Proteus and find the errors encountering before implementing on hardware.
- Reduces project cost and software dependency.

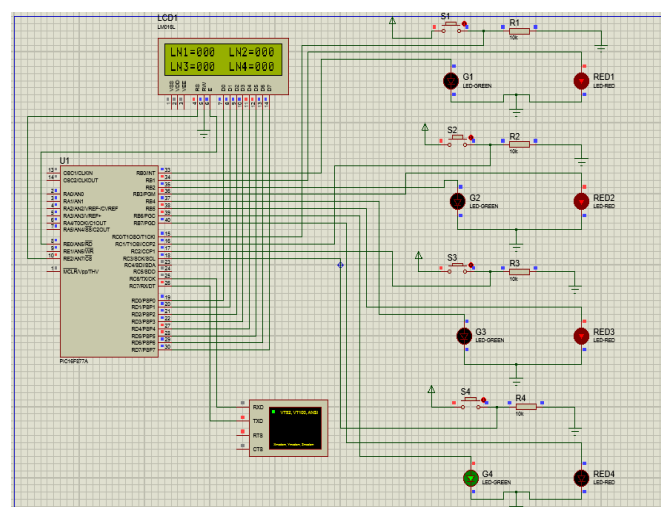


Fig.4.proteus output 1

The above diagram shows fig.3 the normal traffic light flow.

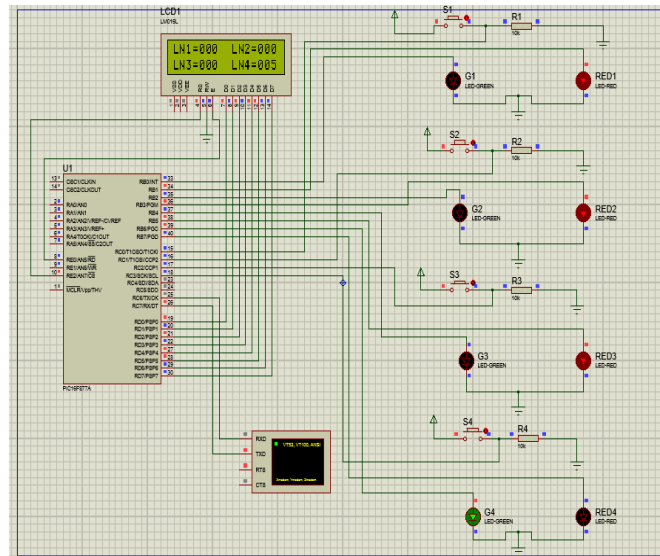


Fig.4.proteus output 2

The above diagram shows the 4th lane traffic density is high so the 4th lane was provided with green signal and the waiting time for the other lane was increased.

V.CONCLUSION

With automatic traffic signal control based on the traffic density in the route, the manual effort on the part of the traffic policeman is saved. As the two systems are automated, it requires very less human intervention. In stolen vehicle detection, SMS will be sent so that they can prepare to catch the stolen vehicle at the next possible junctions. So, the vehicle owner easily got the stolen vehicle without delays. In RFID tag has a unique number. So, the owner of the stolen vehicle can be identified easily. It also saves the searching time of the police men. If people spend a lot of time in traffic jams, they will waste the time. The signal is turns to red, only the count of the vehicle is large.

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