

Smart Road Safety And Accident Prevention System For Mountain Roads

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Abstract:-

In today's scenario, as we all know that people use cars on a large number and number of accidents take place. Road accidents are most frequently happening cases and cause of damage. There are many dangerous roads in the world like mountain roads, narrow curve roads and T roads. Sometimes mountain roads are very narrow and drivers are not able to see the vehicle coming from the other side. If the vehicle speed is very fast then it is difficult to control the vehicle and the vehicle falls down.

Introduction:-

In the developing country accidents are the major causes of death. In the mountain roads there are tight curves and narrow roads. In this situation drivers are not able to see the vehicle coming from the opposite side. Thousands of people lose their lives because of this problem. The problem on mountain roads is also caused by falling of mountains, trees and big rocks. This system is used to save the lives of many people.

Keywords:-

Arduino, Resistors, Led, Switch, LCD display, IC, Capacitors, Transistors, Cables and Connectors, Diodes, PCB and breadboard, Ultrasonic, Transformer/Adapter, etc.

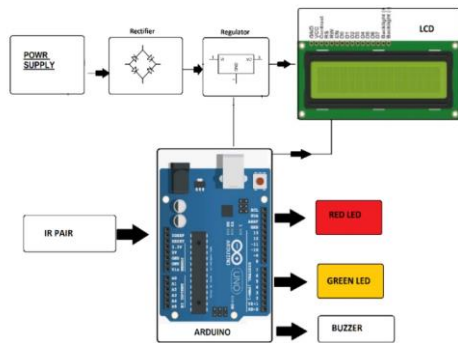
SYSTEM PROPOSED:-**Figure 1**

Figure1 shows block diagram of smart road safety and vehicle accident prevention system for mountain roads which works for the safety of human lives. We are using following components in our proposed system-

- Arduino
- Led
- LCD display
- Switch
- Transformer/Adapters
- Rectifier
- Sensors
- Buzzer

Arduino:-

Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online.

Switch:-

Switch is a transition state which can be either off or on or we can change connection system here we use electronic or mechanical switch to disconnect and connect motor from supply.

Transformer/Adapter:-

Here we use transformer/adapter to increase voltage gain on produce or generate output. We need to amplify voltage because output is not enough to transmit to a long distance.

Rectifier:-

A rectifier is an electrical device that convert alternating current, which periodically reverses direction, to direct current, which flows in only one direction.

METHODOLOGY:-

This accident prevention system using sensors is powered by Arduino board, it consists of IR sensors, LED lights, LCD display and buzzer. When two cars pass from the opposite side of a mountain curve the IR sensor senses the car and LED colour changes to red and raises the buzzer giving signal of danger and then it changes one LED colour into green to allow the one car to pass and then the other LED colour turns green. In this way we can prevent the accidents of curved roads.

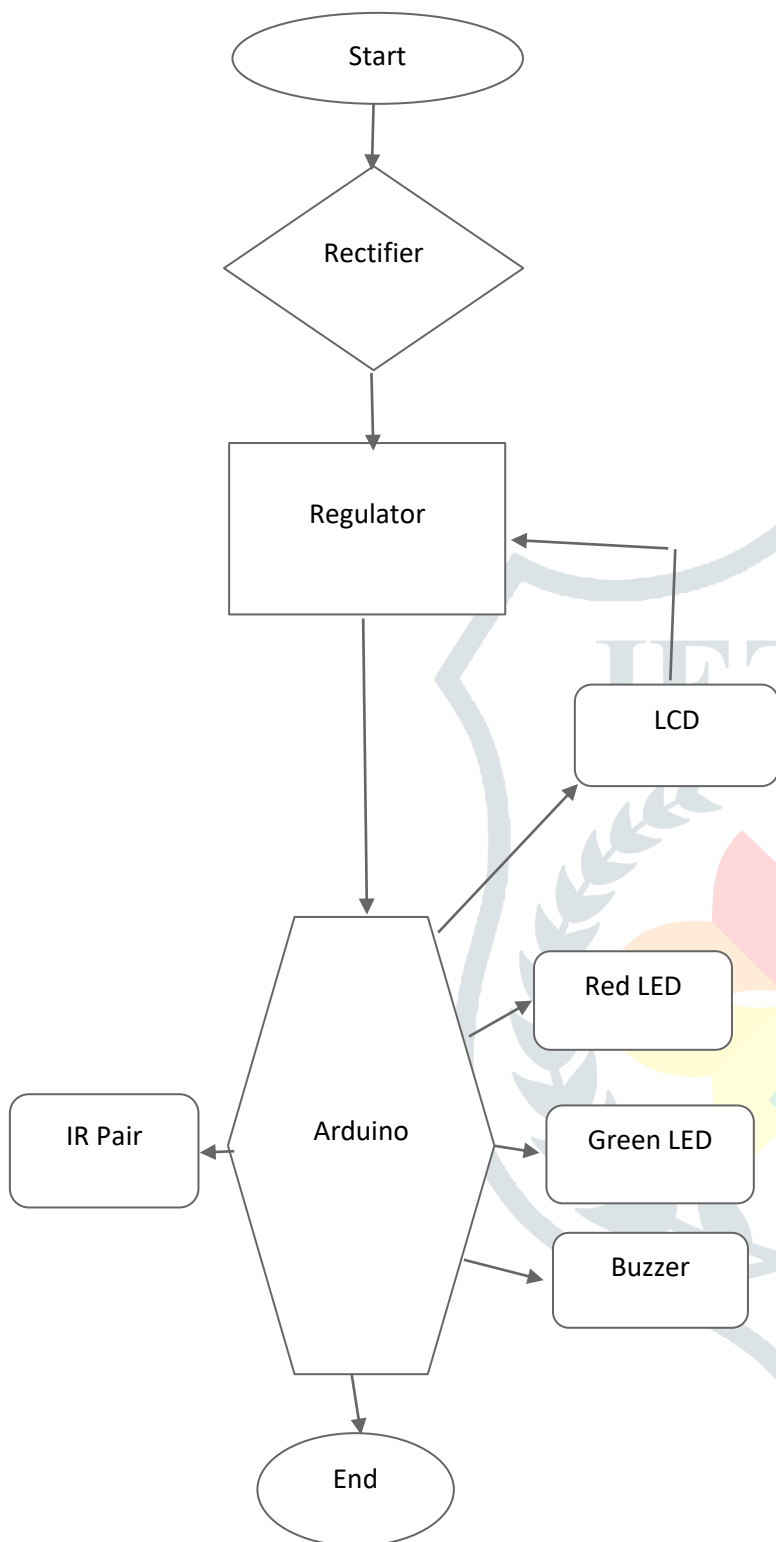


Figure 2

Figure 2 shows the flow chart of our proposed system methodology.

FUTURE SCOPE:- The scope of this system is to prevent the lives of people in the future. By adding a camera, we can make this system better which will give us the photograph of the accident place. We can add GPS also for tracking the location of the accident vehicle. By using these technologies we can make a safe environment for people and animals. We can decrease the number of accidents that occur at mountain roads, curved roads.

CONCLUSION:-

We believe that our project will be beneficial for various purposes and hence our efforts will be fruitful and our proposed system can save thousands of human lives.

ADVANTAGES:-

1. The purpose of this project is to reduce the number of accidents at mountain roads.
2. This system is also useful for animal sensing and saving their lives.
3. With the help of this system, people can drive in day and night to be careful.
4. With the help of this system, we can save thousands of lives on curved roads.

ACKNOWLEDGEMENT :-

We feel profound pleasure in bringing out this project for which we have to go to post to make it a reality. This project work reflects the contributions of many people with whom we had long discussions and without which it would not have been possible.

I would like to give thanks to my head of department of ECE MR. VISHAL UPMANYU sir and MRS. RASIKA VERMA MADAM who gave me a solution of my problem and my friend who supported me. And I think that this idea will help citizens to save their lives.

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