Speed Alerter

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Introduction

The Speed Alert Hardware project is a device designed to monitor and alert drivers when they exceed the speed limit on roads. The goal of the project is to promote road safety and reduce accidents caused by excessive speeding. The device is easy to use in any vehicle. Whether a new driver or an experienced one, this device can help stay within the speed limit and drive more safely.

Motivation

Along with the increase in population, the number of traffic on the roads is increasing as well as the price of goods. There are no regulated traffic rules or even if there are rules, there is no attempt to enforce them. As a result, various types of accidents are happening regularly. Awareness at the individual level can be the only way to avoid these accidents.
A motorbike user should ride the bike in a limited speed when using it. Setting an alarm to prompt the driver to slow down if the speed ever exceeds a certain limit. This will make it easier for the driver to slow down.

Objective

A highway speed checker is useful for traffic enforcement, especially against speed limit violators. But it is too handy. Our project offers a digital display and a buzzing sound or alarm to identify the speed of the motorbike if it exceeds the permissible speed limit. By limiting bike speed and preventing traffic accidents, the vehicle over speeding detection system lowers the number of accidents on the road and ensures a safe ride.

Architechture and Tools Preface

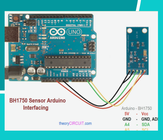
LCD (display module)

I2C interface 16x2 LCD display module, a high-quality 2 line 16 character LCD module with on-board contrast control adjustment, backlight and I2C communication interface it has two rows with the ability to display 16 ASCII characters on each row. Normal 16×2 character LCDs use 7 digital pins, while this module with I2C interface has reduced this number to 2 pins. A potentiometer is also included to adjust the display contrast.Connected with Arduino A4 (SDA),A5(SCL) port.

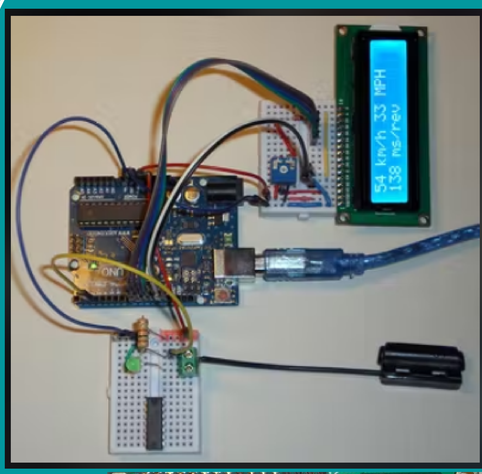
Arduino

Here Arduino is introduced as a microcontroller to

- 5 volt -VCC
- GND
- Digital PIn(2 -13)
- Analog port(A4,A5 -SDA,SCL is used for



Hardware Decpiction



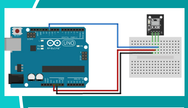
BreadBoard

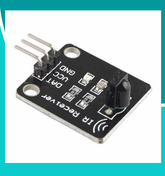
Breadboard is simply a board for prototyping or building circuits on. It allows you to place components and connections on the board to make circuits without soldering

DC Motor

A DC motor or direct current motor is an electrical machine that transforms electrical energy into mechanical energy by creating a magnetic field that is powered by direct current.Here it as an Analog Input.

IR receiver sensor module

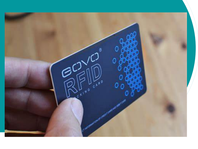




IR remote control or IR intrusion sensors.Arduino IR receiver module reacts to 38kHz infrared light.This module consists of a 1838 IR receiver, a 1kΩ resistor and a LED. Take Analog inputs from DC motor through Arduino and Produce Digital outputs.

RFID Card

RFID (Radio Frequency Identification) behaves here like a switch(ON?OFF) or Key of any transport for security purpose.



Related Work

- Speed Cameras
- GPS based Speed Alert System
- Rader Based Speed Alert System
- Smart Traffic Management System
- Intelligent Traffic Management System

Proporsed Model

Features NID or Driving License Verification and can be added with this project for the future development.

Conclusion

Moreover it is a simple,user friendly and cost effective real life application to show the intereaction between the components with the microcontroller.

Sources

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