Obstacle avoiding car using Ultrasonic Sensor

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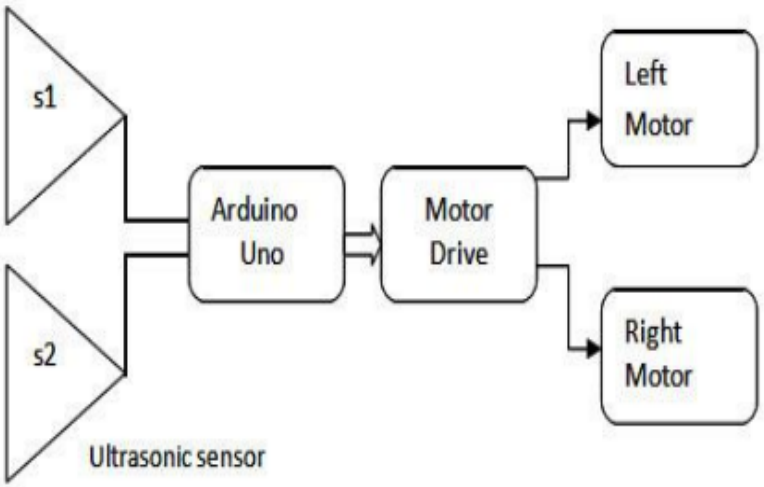
April 11, 2022

Aim

To build an obstacle avoiding robotic vehicle using ultrasonic sensors to detect the obstacles. The vehicle guides itself when there is an obstacle ahead of it.

Basic Idea

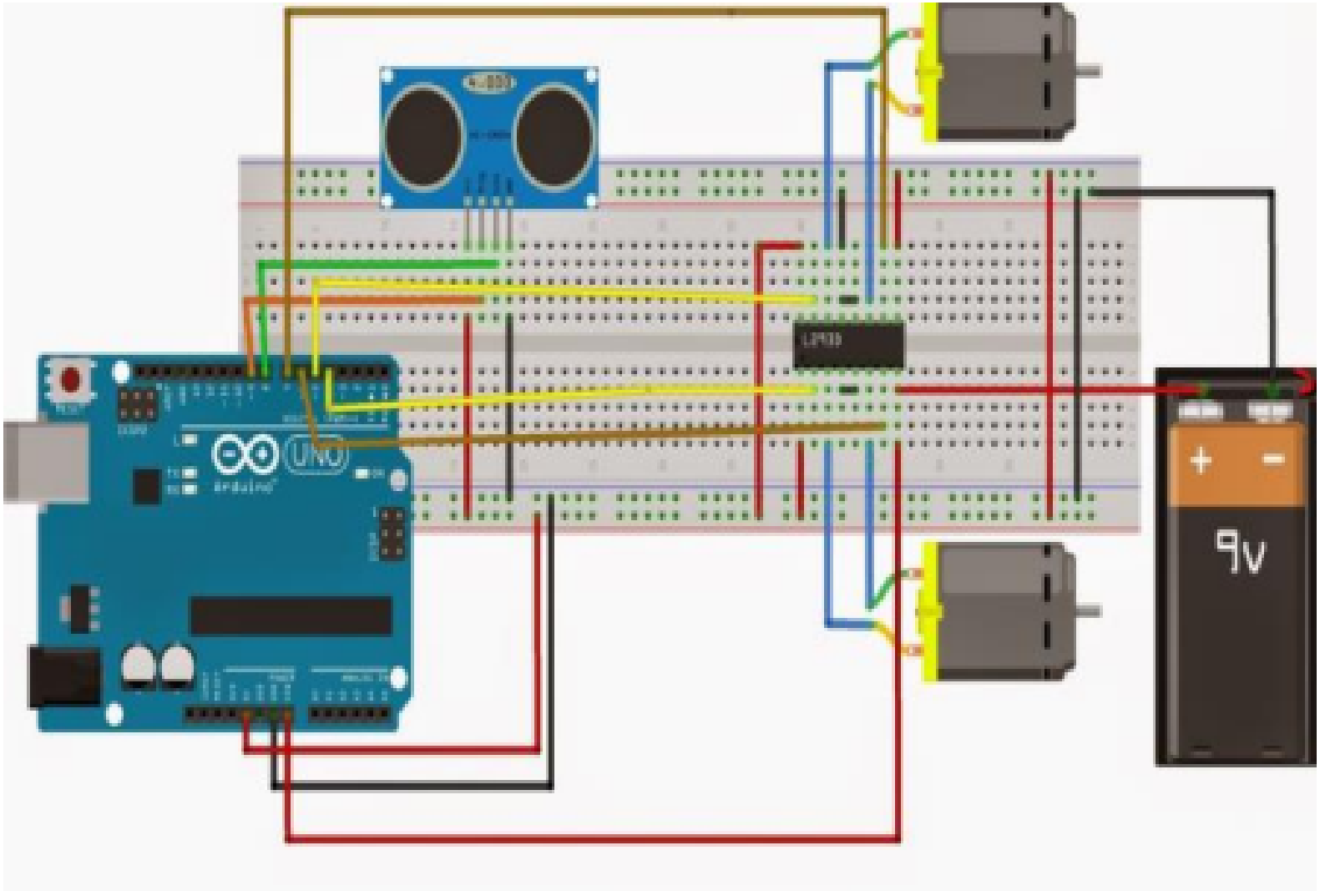


- The ultrasonic sensor detects the distance between the car and the obstacle ahead of it. It sends the distance to Arduino.
- The Arduino reads the distance, takes a decision to turn left or right if the obstacle is nearby, and controls the motors accordingly.
- The two motors are used to move the car, and turn the car.

Components Used

- Arduino Uno
- Ultrasonic Sensor
- Motors
- Battery
- L298D driver for motors
- Hardware components to make the car

Circuit Diagram



Timeline

- We plan to start with building the hardware, as it is difficult than programming the Arduino.
- We will try to get the components before this weekend, and start building the hardware model of the car.
- In the next week, one of us will work on the hardware and the other will write the code for the Arduino.
- Before next weekend, the project will be ready.

Improvements that can be made

- This car can be made into a remote controlled using a bluetooth module. It will still detect obstacles using the ultrasonic sensor.
- By adding a proximity sensor, this car can be made to follow a line.
- By adding a camera, this car can stream its surroundings to the person who controls it.

Practical Applications

Obstacle avoiding car with some added improvements can be used for many things like,

- Military applications
- Can be sent to look or spy at places
- Food delivery robots