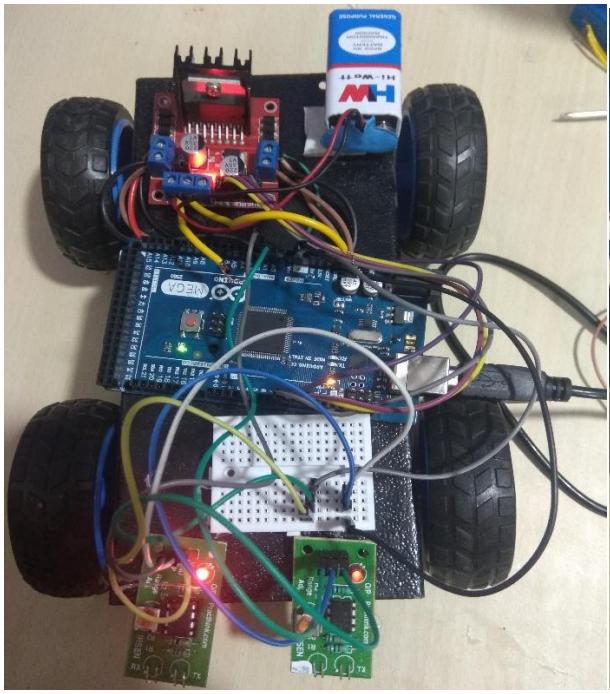
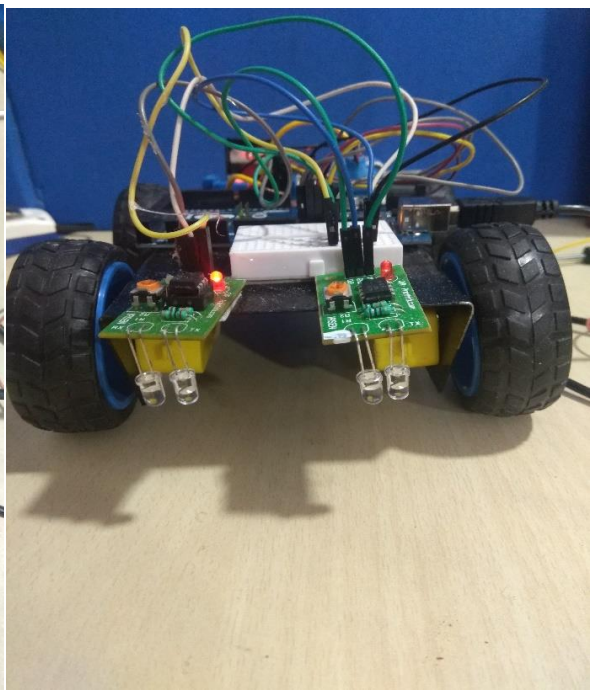
FALL DETECTION ROBOT USING INFRARED SENSOR AND ARDUINO

DESCRIPTION:

The property of an IR sensor is that when light(infrared) falls on the sensor, the output potential goes high. When the robot is moving on plain surface, the sensor is encountering infrared light does making the output as high, and the robot moves forward as directed. When the robot approaches the edge, the output becomes low and the robot stops its motion.





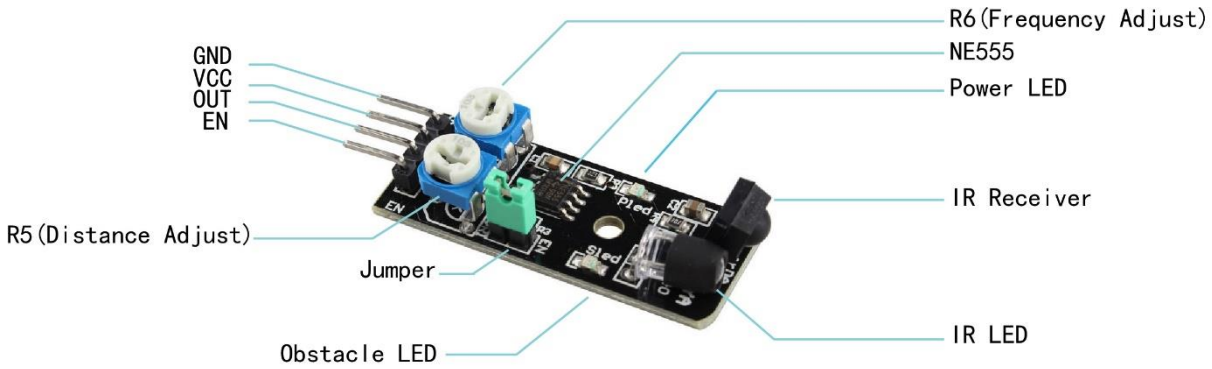
What is Infrared sensor?

An infrared sensor is an electronic device, that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measures only infrared radiation, rather than emitting it that is called as a passive IR sensor.

Usually in the infrared spectrum, all the objects radiate some form of thermal radiations. These types of radiations are invisible to our eyes, that can be detected by an infrared sensor. The emitter is simply an IR LED (Light Emitting Diode) and the detector is simply an IR photodiode which is sensitive to IR light of the same wavelength as that emitted by the IR LED. When IR light falls on the photodiode, sthe resistances and these output voltages, change in proportion to the magnitude of the IR light received.

Components Required:

1. Arduino Mega 2560
2. IR sensors -2
3. 9V Lithium battery
4. L298n Motor driver
5. DC motors -4
6. Wheels
7. Breadboard
8. Jumper cable



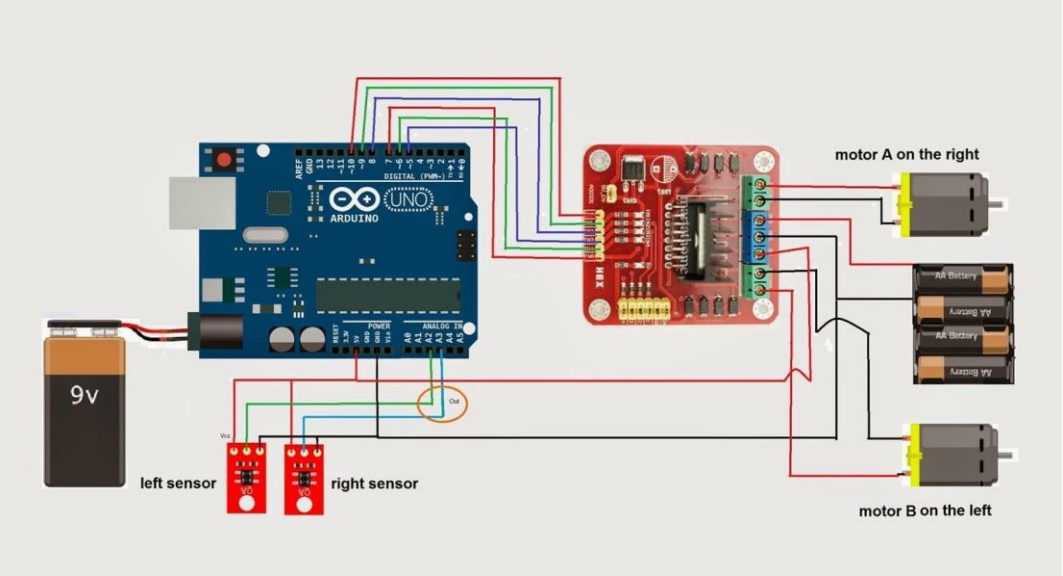
Connections:

L298	**Arduino mega**
VCC	Vin
GND	GND
IN1	D8
IN2	D9
IN3	D10
IN4	D11

IR Sensor	**Arduino**
VCC	5V
GND	GND
OUT	D2

Lithium Battery	**L298n**
+V	VCC
-V	GND

CIRCUIT DIAGRAM:



CODE:

APPLICATIONS:

1.Radiation Thermometers: IR sensors are used in radiation thermometers to measure the temperature depend upon the temperature and the material of the object

2.Flame Monitors: These types of devices are used for detecting the light emitted from the flames and to monitor how the flames are burning.

3.IR Imaging Devices: IR image device is one of the major applications of IR waves, primarily by virtue of its property that is not visible. It is used for thermal imagers, night vision devices.