Connecting IR Sensor using RPi

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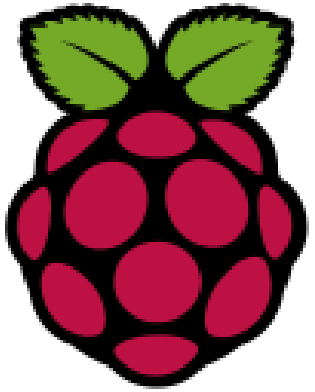
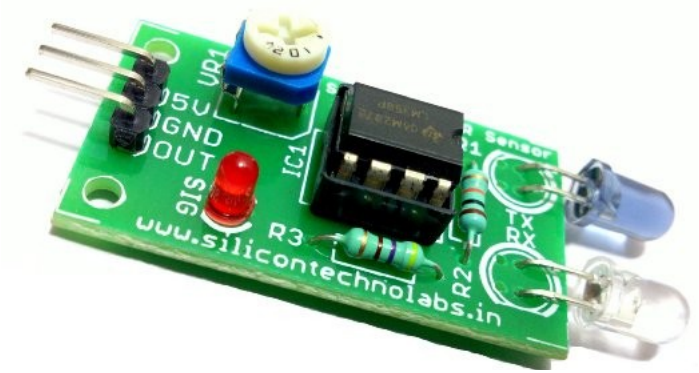
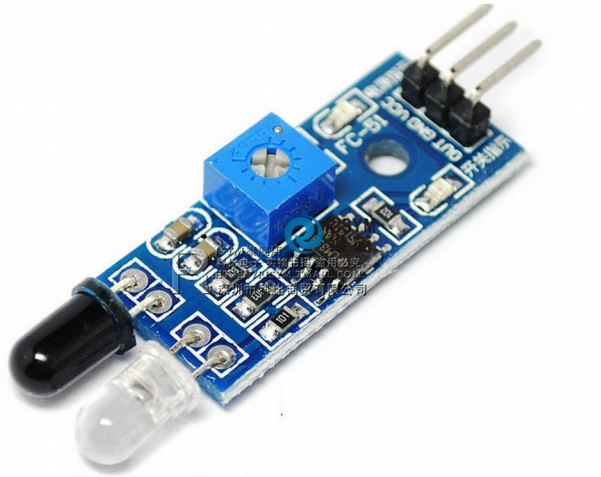


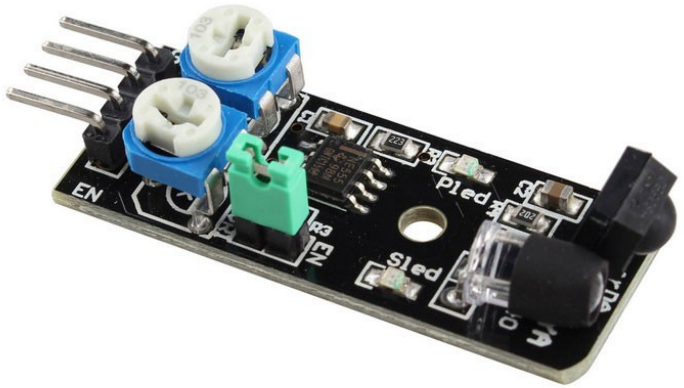
IR Sensor

- An infrared sensor is an electronic instrument which is used to sense certain characteristics of its surroundings by either emitting and/or detecting infrared radiation.
- Infrared sensors are also capable of measuring the heat being emitted by an object and detecting motion.
- Infrared waves are not visible to the human eye. In the electromagnetic spectrum, infrared radiation can be found between the visible and microwave regions.
- The infrared waves typically have wavelengths between 0.75 and 1000µm.

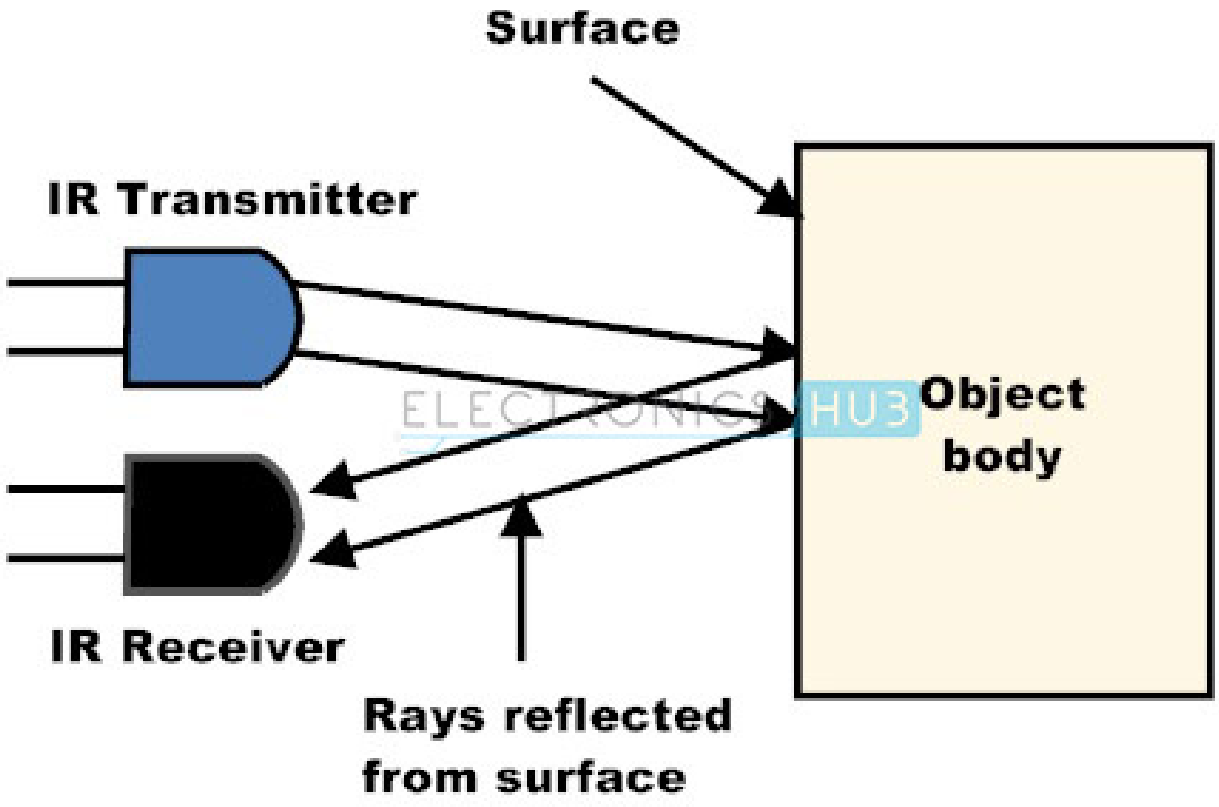
IR Sensor Modules



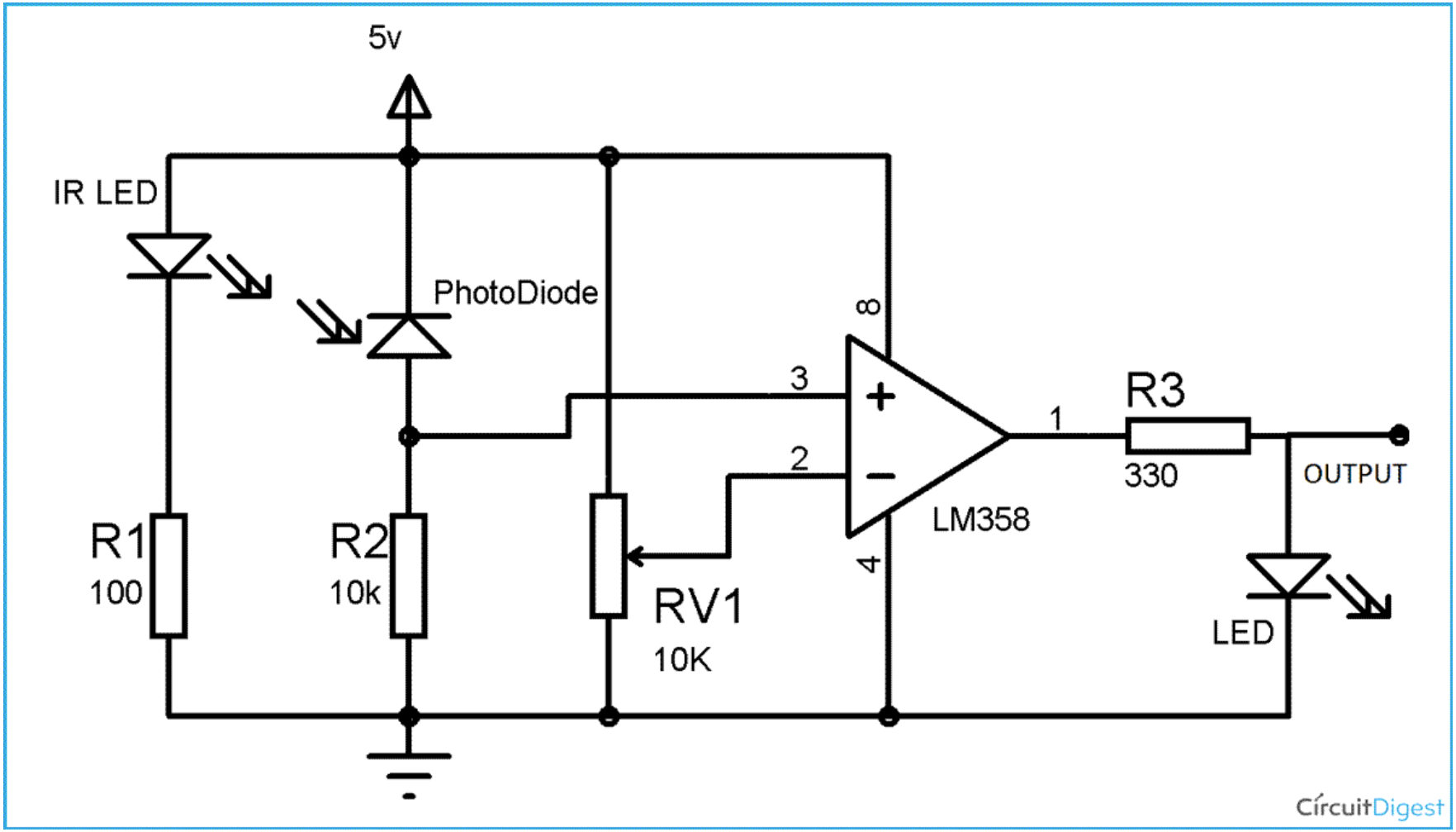




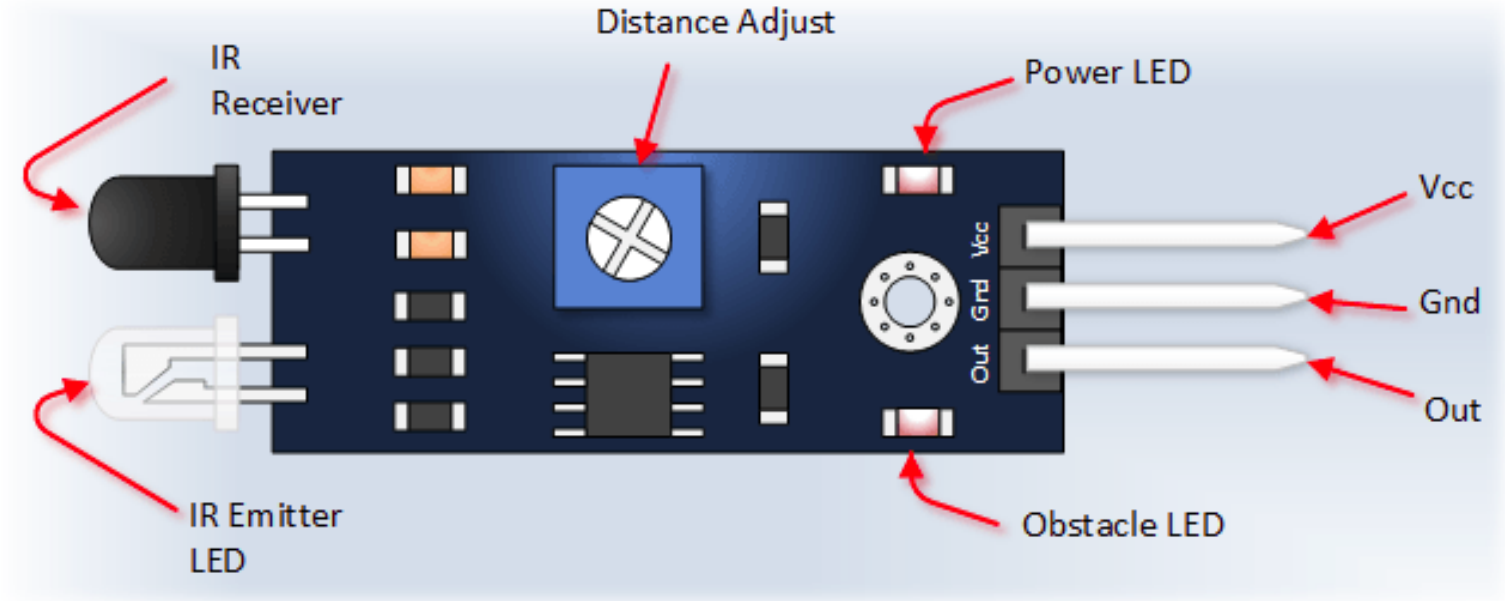
IR Sensor functionality



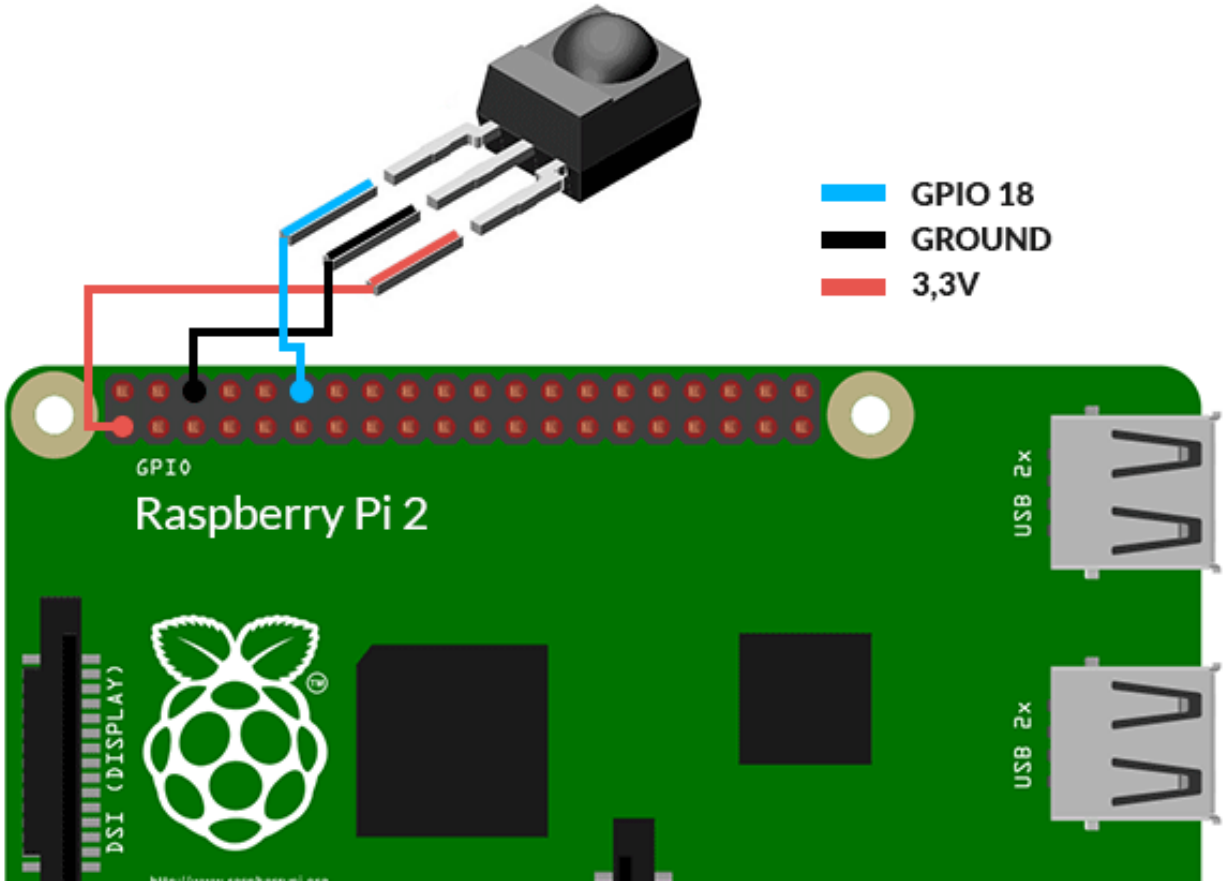
IR Sensor working



IR Sensor structure



IR Sensor connections



Program:

```
import RPi.GPIO as GPIO
import time
GPIO.setmode(GPIO.BCM)
GPIO.setup(18,GPIO.IN)
try:
    while True:
        i = GPIO.input(18)
        if i==1:
            print("No Obstacle")
            time.sleep(0.1)
        elif i==0:
            print("Obstacle Found")
            time.sleep(0.1)
except KeyboardInterrupt:
    GPIO.cleanup()
```

Assignment

- Write a program using IR sensor when it finds an obstacle in front of it, the LED will glow or buzzer will start ringing.

Thank you

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