Experiment No - 04

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Aim : Understanding the connectivity of Raspberry Pi Beagle board circuit with IR Sensor. Write an application to detect obstacle and notify user. using LED'S

Theory:
Infrared Sensor IR (emitting infrared signal radiation and receiving of the signal when the signal bounces back from any obstacle) In other words it works by continuesly receive signal by bouncing on any obstacle in the way

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Components : IR sensor
1. Emitter : This component continuously emits infrared signal.
2. Receiver : Waits for the signal which is bounced back by obstacle.
3. Indicator : On board LED to signal if obstacle is deducted by the sensors.
4. Output : Could be used as Input for futher processing of the signals
5. Ground : Ground / Negative point of the circuit
6 voltage : Input 3.3 v

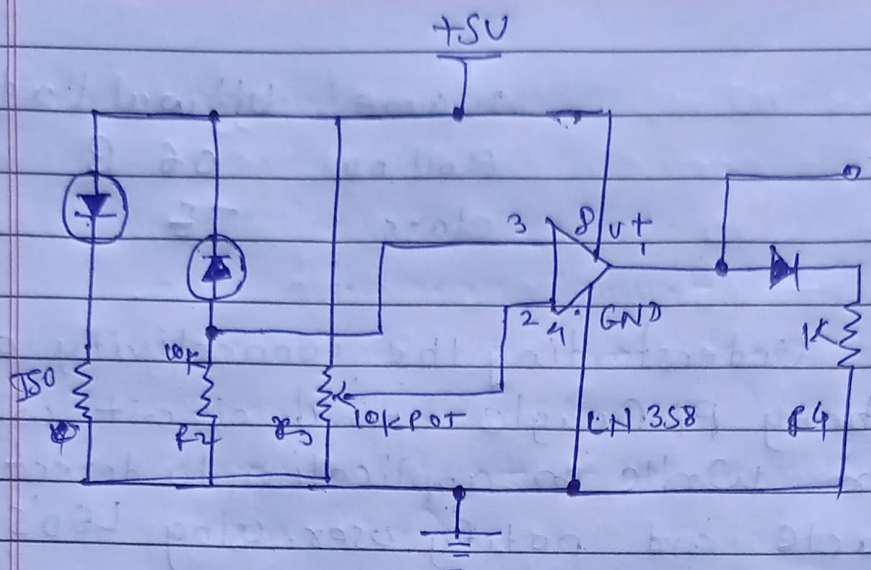

fig Circuit Diagram for IR Sensor.

Objective

We will be creating a circuit using following components to deptect obstacle.

1. Raspberry -Pi 3
2. Infrared Sensor
3. 1 LED
4. 1 Resistor (330Ω)
5. few Jumper cables
6. 1 bread board

Circuit to defect Obstacles.

We will be creating a circuit which will turn on the LED when an obstacle is detected. And as soon as the obstacle is removed from the way the LED will turn off In order to acheive follow steps to create required circuit.

Part 1 : Connecting IR sensor
Part 2 : Connecting LED
Part 3 : Code to connect IR Sensor IF with LED status

```
from GPO zero import LED
from signal import pouse
import R pi . GPO as GPO
import time
GPO . Set mode (GPIO . BCN)
LED – eIN = 27
IR _ PIN = 17
indicator = LED ( LED – PIN)
GPIO . Setup( IR_PIN , GPIO_IN)
Count = 1
while true
    got _ something = GPIO . input (IR_PIN)
    if got-something :
        indicator . on ()
        print("{:>3} Got Something," format (Cont))
    else
    indicator . off()
    print( "{:13}Nothing detected" . formate (count))
     cocnt+ = 1
    time . sleep(0.2)
```

Part 4 : Executing the code.

Conclusion : thus we done connectivity of Rasberry Pi / Beagle board circuit with IR Sensor . Write an application to detect obstacle and notify user using LED's