**Wiring the IR Sensor to Raspberry Pi:**

* **VCC** pin of the IR sensor to **5V** on Raspberry Pi.
* **GND** pin of the IR sensor to **Ground** on Raspberry Pi.
* **OUT** pin of the IR sensor to a **GPIO pin** (e.g., GPIO 17).

import RPi.GPIO as GPIO

import time

# Pin Definitions

ir\_sensor\_pin = 17 # GPIO pin for IR sensor

led\_pin = 27 # GPIO pin for the LED

# GPIO setup

GPIO.setmode(GPIO.BCM) # Use BCM pin numbering

GPIO.setup(ir\_sensor\_pin, GPIO.IN) # IR sensor as input

GPIO.setup(led\_pin, GPIO.OUT) # LED as output

try:

while True:

# Check if the IR sensor detects an object

if GPIO.input(ir\_sensor\_pin):

print("Object detected")

GPIO.output(led\_pin, GPIO.HIGH) # Turn on the LED

else:

print("No object detected")

GPIO.output(led\_pin, GPIO.LOW) # Turn off the LED

# Delay to avoid excessive logging

time.sleep(0.5)

except KeyboardInterrupt:

print("Program stopped by user")

finally:

# Clean up GPIO settings

GPIO.cleanup()