# LAB –10 Programming on PIR sensor
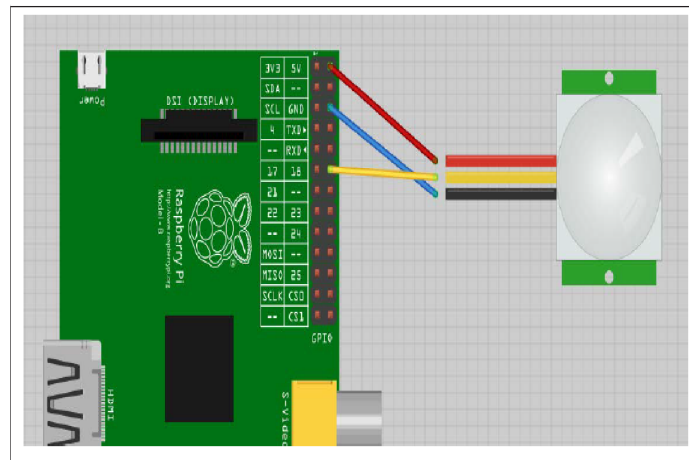
**Aim:**

    To detect the movement using Passive Infrared (PIR) sensor using Raspberry pi board using Python.

**Task:**

Construct a "Motion Detector" using PIR sensor and Raspberry pi board using Python.

**Pin & Circuit Diagram:**





**Algorithm:**

1)Import the necessary libraries such as **RPi.GPIO** for GPIO Control.
2)Disable GPIO warnings using **GPIO.setwarnings(False)**.
3)Set mode to **BOARD**.Configure pin 11 as input with a pull-down resistor and pin 3 as an output.
4)Read the input value from pin 11:
       i)If i is 0, print **"No intruders detected"**, set pin 3 to 0, and sleep for 1 second.
       ii)If i is not 0, print **"Intruders detected"**, set pin 3 to 1, and sleep for 1 second.
5)Exit

**Program:**

```
1    import RPi.GPIO as GPIO
2    from time import sleep
3    GPIO.setwarnings(False)
4    GPIO.setmode(GPIO.BOARD)
5    GPIO.setup(11,GPIO.IN,pull_up_down=GPIO.PUD_DOWN)
6    GPIO.setup(3,GPIO.OUT)
7    try:
8      while True:
9        i=GPIO.input(11)
10       if i == 0:
11          print("No intruders detected",i)
12          GPIO.output(3,0)
13          sleep(1)
14       else :
15          print("Intruders detected",i)
16          GPIO.output(3,1)
17          sleep(1)
18   except KeyboardInterrupt:
19     GPIO.cleanup()
```

**Output:**
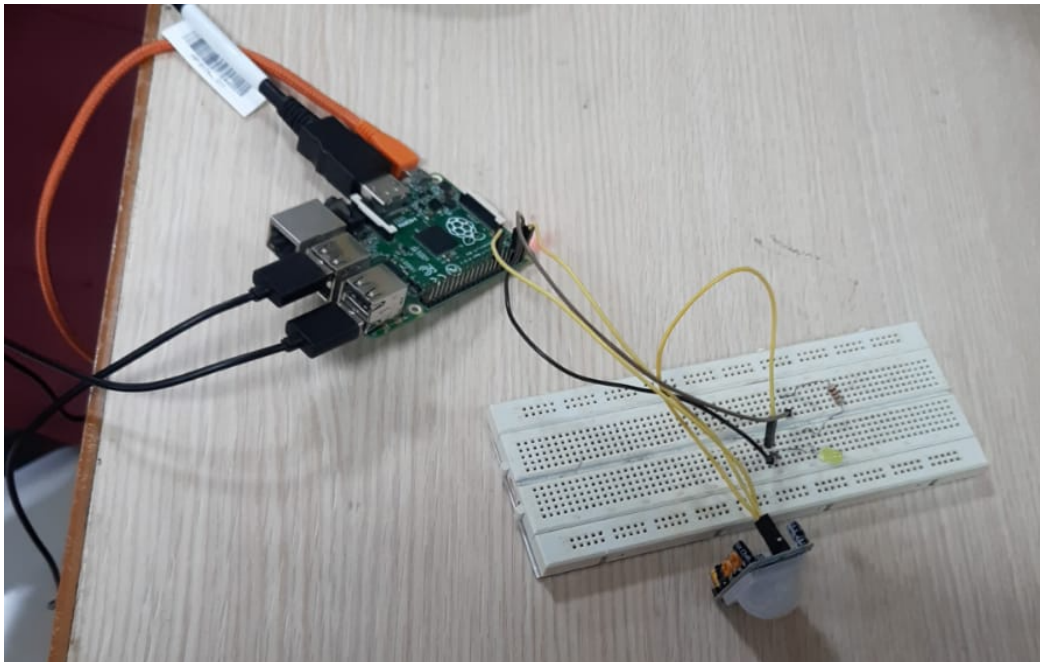


**Pre Lab Questions:**

1. Define motion sensor.
2. Illustrate the characteristics of Adafruit PIR sensor.

**Post Lab Questions:**

1. What is retriggering?

2. How do PIR sensors work?

**Result:**

      Thus,the Python program successfully interfaces with the Raspberry Pi board and the PIR sensor, accurately detecting and responding to movement.