## Cambridge Raspberry Jam

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| Name |
| Age |
| Parent |

## Beginners worksheet #9

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| Project | Passive Inferred Sensor |
| Description | In this project you will learn how to wire and program a passive inferred sensor |

## Tools required

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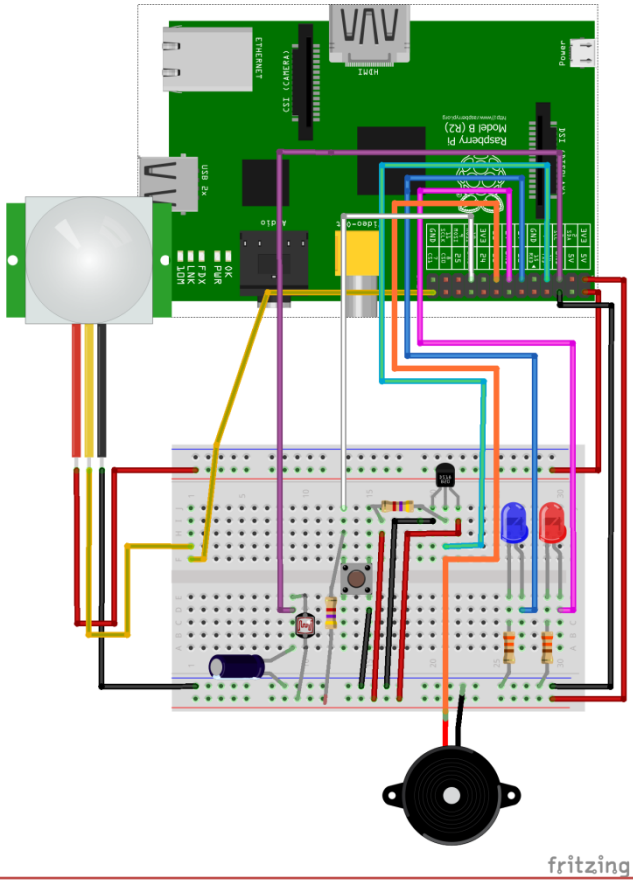
|---|---|---|
| ☐ Raspberry Pi SD card | ☐ 1 X Blue LED | ☐ 13 x m/f jumper wires |
| ☐ Keyboard | ☐ 2 x 330 Ω resistors | ☐ 5 m/m jumper wire |
| ☐ Monitor + Cable | ☐ 2 4.7k Ω resistors | ☐ Temperature sensor (DS18B20) |
| ☐ Power supply | ☐ Buzzer | ☐ LDR Light Dependent resistor |
| ☐ Breadboard | ☐ 1uf resistor | ☐ Passive Infrared Sensor |
| ☐1 X Red LED | ☐ Push button | |




## Code

**TURN ON THE LEDS "9_pir.py"**

```
#!/usr/bin/python
import RPi.GPIO as GPIO
import time
GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
GPIO.setup(27,GPIO.OUT)

GPIO_PIR = 7

print "PIR Module Test (CTRL-C to exit)"

# Set pin as input
GPIO.setup(GPIO_PIR,GPIO.IN)      # Echo

Current_State  = 0
Previous_State = 0

try:
  print "Waiting for PIR to settle ..."
  # Loop until PIR output is 0
  while GPIO.input(GPIO_PIR)==1:
    Current_State  = 0
  print "  Ready"
  # Loop until users quits with CTRL-C
  while True :
    # Read PIR state
    Current_State = GPIO.input(GPIO_PIR)
    if Current_State==1 and Previous_State==0:
      # PIR is triggered
      print "  Motion detected!"
      # Record previous state
      GPIO.output(27,GPIO.HIGH)
      time.sleep(1)
      GPIO.output(27,GPIO.LOW)
      Previous_State=1
    elif Current_State==0 and Previous_State==1:
      # PIR has returned to ready state
      print "  Ready"
      Previous_State=0
    # Wait for 10 milliseconds
    time.sleep(0.01)

except KeyboardInterrupt:
  print "  Quit"
  # Reset GPIO settings
  GPIO.cleanup()
```

1. Change directory "**cd Desktop/gpio_python_code/**"
2. Create file "**touch python 9_pir.py**"


3. Enter the code above code
Once complete “Ctrl + x” then “y” then “enter”
4. To run the python code “**sudo python 9_pir.py**” << Move in front of the PIR to activate it.