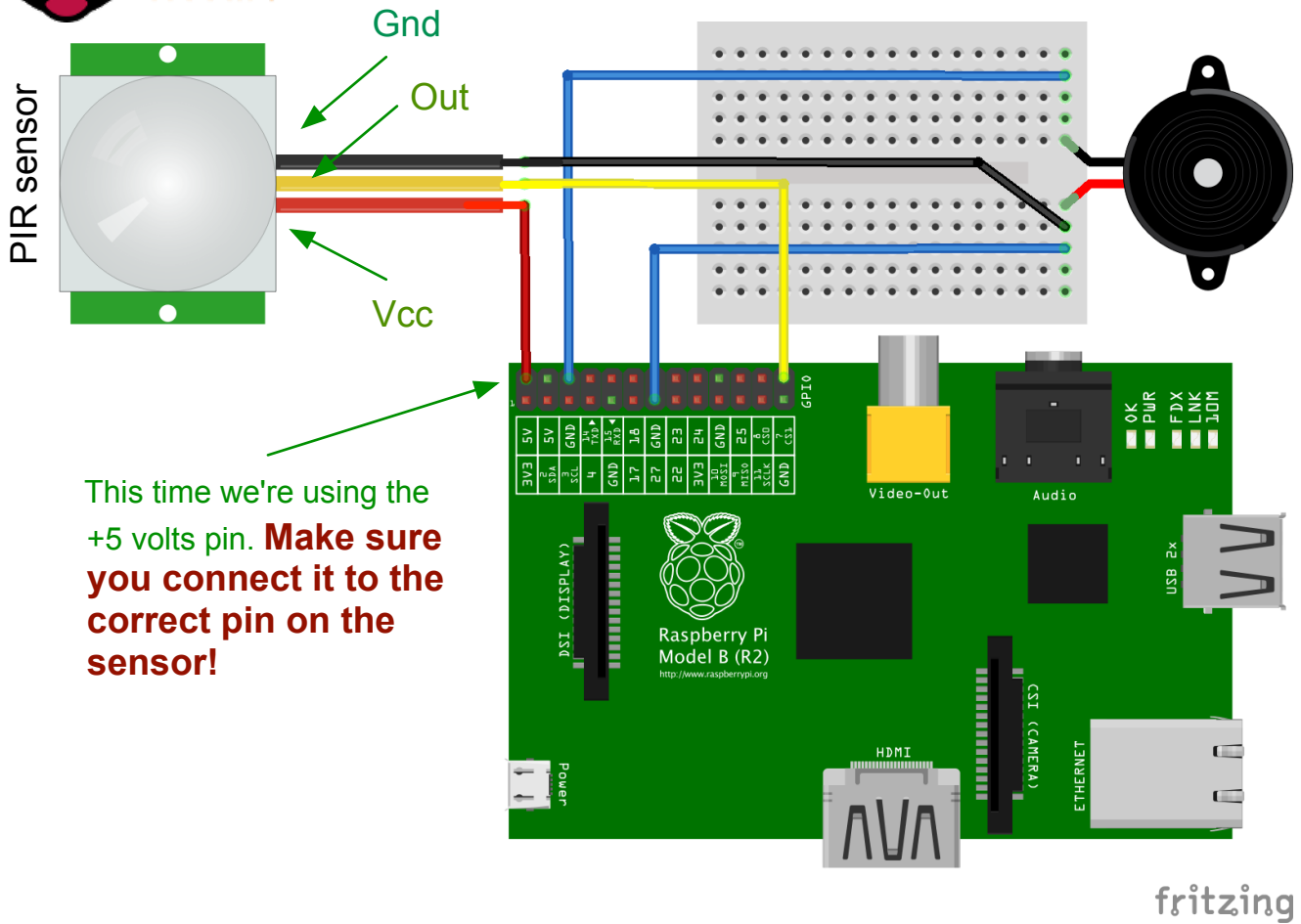


INTRUDER ALARM WITH python™



The PIR sensor uses Infra-red light to detect movement. Can you see it?

Use the Python code over the page (note that it uses the buzz function we wrote before).

Could you add a visual warning? Add an led to the circuit and then make that flash when the alarm is triggered?



```
import RPi.GPIO as GPIO
import time
```

```
GPIO.setmode(GPIO.BOARD)
```

```
# Setup the pins we'll use
```

```
GPIO_PIR = 26
```

```
GPIO.setup(13,GPIO.OUT)
```

```
GPIO.setup(GPIO_PIR,GPIO.IN)
```

```
#define a function to make the buzzer buzz
```

```
def buzz(freq,dur):
```

```
    repeat = dur/(2*freq)
```

```
    for count in (range(int(repeat))):
```

```
        GPIO.output(13,GPIO.HIGH)
```

```
        time.sleep(freq)
```

```
        GPIO.output(13,GPIO.LOW)
```

```
        time.sleep(freq)
```

```
print "PIR Alarm active (CTRL-C to exit)"
```

```
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 "    ALARM!"
```

```
            buzz(0.005, 2)
```

```
            # Record previous state
```

```
            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
```

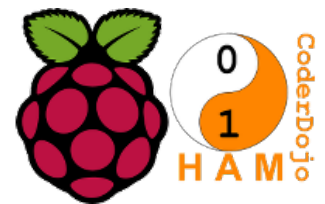
```
            time.sleep(0.01)
```

```
except KeyboardInterrupt:
```

```
    print "    Quit"
```

```
    # Reset GPIO settings
```

```
    GPIO.cleanup()
```



The indentation is really important in this code. Try to using the tab key rather than lots of spaces.



Use the dotted lines to help you get each block of code aligned correctly.

