## **Basic Hardware Control**

Overview of basic python commands needed for the exercise

	GPIO = General Purpose Input and Output
import RPi.GPIO as GPIO	Add GPIO library
GPIO.setmode(GPIO.BCM)	Use BCM port names
GPIO.setup(5, GPIO.OUT)	Set port 5 to Output
<pre>GPIO.setup(5, GPIO.IN, pull_up_down = GPIO.PUD_DOWN)</pre>	Set port 5 to input. You can now read the input value. When 3.3 volt is applied value is True else False
GPIO.output(5, True)	We use <i>Pull Down</i> (PUD_DOWN) when we switching 3.3V. We use Pull Up (PUD_UP) when we switch to ground (GND)
x = GPIO.input(5)	Set port 5 "ON" (3.3V) True = ON / False = OFF
	Read port 5 into variable X
import time	Add time library
time.sleep(5)	Wait 5 seconds

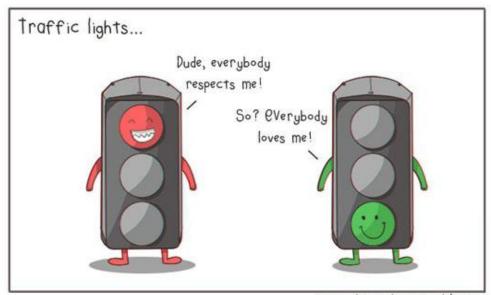
2.1 Connect traffic light to breakout board.

Black = Ground (GND) Green = Green led Yellow = Yellow led Red = Red led

2.2 Write program that will make the yellow light blink. Start with:

import RPi.GPIO as GPIO
yellowLed = 5
GPIO.setmode(GPIO.BCM)
GPIO.setup(yellowLed, GPIO.OUT)

- 2.3 Write "normal" traffic sequence
  - 5 seconds green
  - 1 second yellow
  - 5 seconds red
- 2.4 Connect switch to breakout board.
  - 1 cable to 3.3V
  - 1 cable to GPIO port (port start with P and number)
- 2.5 Write a program that continuously shows the state of the switch
- 2.6 Modify your traffic light program so that:
- When switch is off, the normal routine runs (Green -> Yellow -> Red)
- When switch is on, the yellow light blinks



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