

1. We were able to modify the project from one of this lab's exercises to include a potentiometer, so there wasn't much to change and it worked the first time we hooked it up. We coded the photon to move the position of a single red LED among the three LED's on the board based on the position of the potentiometer. When the potentiometer was turned all the way counterclockwise, the left LED was red. When the potentiometer was in the middle, the center LED was red, and when the potentiometer was at its maximum value the right LED was red. The LED's that were not red were coded to be blue. The issues that we ran into were with the potentiometer staying in place on the breadboard, otherwise we had the coding and circuits experience to put this together rather quickly without errors.
2. Unfortunately, the ADC values were lost because the edited PDF did not save properly. They were checked off by the TA before we moved on to our project, if that is worth anything.

```
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//EE1301F18 IOT Lab 2

// This #include statement was automatically added by the Particle IDE.
#include <neopixel.h>

// IMPORTANT: Set pixel COUNT, PIN and TYPE
#define PIXEL_PIN D4
#define PIXEL_COUNT 3
#define PIXEL_TYPE WS2811
#define AN_MAX 4095

Adafruit_NeoPixel strip = Adafruit_NeoPixel(PIXEL_COUNT, PIXEL_PIN,
PIXEL_TYPE);

void setup() {
  strip.begin();
}

//this function enables selected led with the color colorselected, and
enables the non-selected LED's with the colorUnselected
void oneLight(int led, int colorSelected, int colorUnselected){
  if(led > PIXEL_COUNT)
  {
    return;
  }
  for(int i = 0; i<PIXEL_COUNT; i++)
  {
    strip.setPixelColor(i, colorUnselected);
  }
  strip.setPixelColor(led, colorSelected);
  strip.show();
}

void loop() {
  //Setup some colors
  int PixelColorRed = strip.Color( 80, 0, 4);
  int PixelColorBlue = strip.Color( 0, 0, 128);
  int targLED;
  int step = AN_MAX/PIXEL_COUNT; //added to make this more general for any
number of lights.

  int potentiometerVoltage = analogRead(A0); //reading the voltage off the
potentiometer.

  //steps through and selects the target LED based upon the potentiometer
voltage
  for(int i = 0; i<PIXEL_COUNT; i++)
  {
    if(step*i <= potentiometerVoltage && potentiometerVoltage <= (i+1)*step)
    {
      targLED = i;
    }
  }
  //Enables the LED selected by the preceeding for() loop.
  oneLight(targLED, PixelColorRed, PixelColorBlue);
  delay(100); //wait 0.1sec}
```





