**Level 4: Fading**

1. Implement the lesson titled “Fading”.
2. Modify the main “for” loop to decrement from 255 down to 0.
3. Modify the program to read a number from serial monitor and use that number in the fade down to loop.
4. Modify the program to add code to check that the value read from the serial monitor is a valid number and not some random string.

Level 4 Code

int ledPin = 5; // LED connected to digital pin 5

int fadeNum = " ";

void setup() {

// nothing happens in setup

pinMode(ledPin, OUTPUT);

Serial.begin(9600);

}

void loop() {

Serial.println("Type a Fade Value between 0 and 255");

Serial.println(" ");

while (Serial.available() == 0); {

}

fadeNum = Serial.parseInt();

if (fadeNum>=0 && fadeNum<=255 && fadeNum){

// fade out from max to min in increments of 5 points:

for (int fadeValue = fadeNum ; fadeValue >= 0; fadeValue --) {

// sets the value (range from 0 to 255):

analogWrite(ledPin, fadeValue);

// wait for 30 milliseconds to see the dimming effect

delay(30);

}// for fade bracket

} // check if bracket

else{

Serial.println("The number you entered is not in the valid parameters");

Serial.println(" ");

}// else close

}// loop bracket