

Arduino code to use the LED Backpack counter (7 segment display) to count pulses generated by TimerOne

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QCC Physics

Install from Arduino Library manager:

1. Adafruit_LEDBackpack.h and any needed associated libraries (search in library manager “Adafruit LED Backpack Library”)
2. TimerOne.h

Connect:

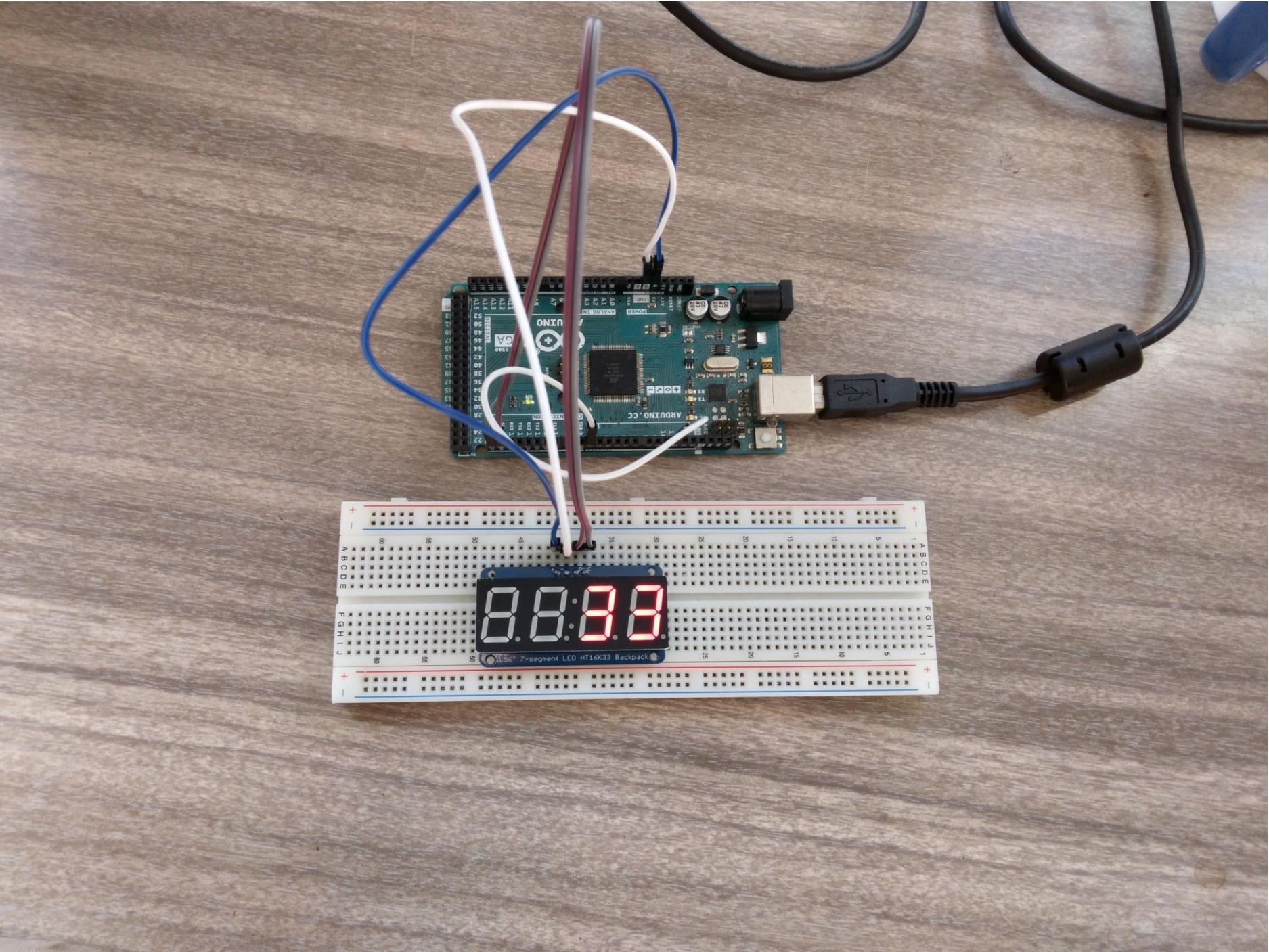
Jumper wire between Arduino pins 11 and 2.

5V and GND to Backpack counter

Arduino SDA to Backpack counter pin D

Arduino SCL to Backpack counter pin C

When the code is running you should see in the Arduino Serial Monitor zeroes and ones appear as the LED counter counts



```
#include <TimerOne.h>
#include <Adafruit_LEDBackpack.h> // Search Arduino Library manager for "Adafruit LED Backpack Library" for 7-segment LED.
Adafruit_7segment matrix = Adafruit_7segment();
unsigned long int timerCount = 0; // global variable needed to increment by one

void setup() {
  Serial.begin(9600);
  matrix.begin(0x70); // Creates a serial connection to 7-segment display with the address "0x70"
  pinMode(11, OUTPUT);
  pinMode(2, INPUT);
  Timer1.initialize(1000000);
  Timer1.pwm(11,100000);
}
void loop() {
  attachInterrupt(digitalPinToInterrupt(2),2,RISING); // when a rising state is detected, an interrupt is called
  timerCount++; // timerCount increments once
  matrix.print(timerCount);
  matrix.writeDisplay();
  while(digitalRead(2) == HIGH) {
    Serial.println(HIGH);
  }
  while(digitalRead(2) == LOW) {
    Serial.println(LOW);
  }
}
```