

Dramaläb

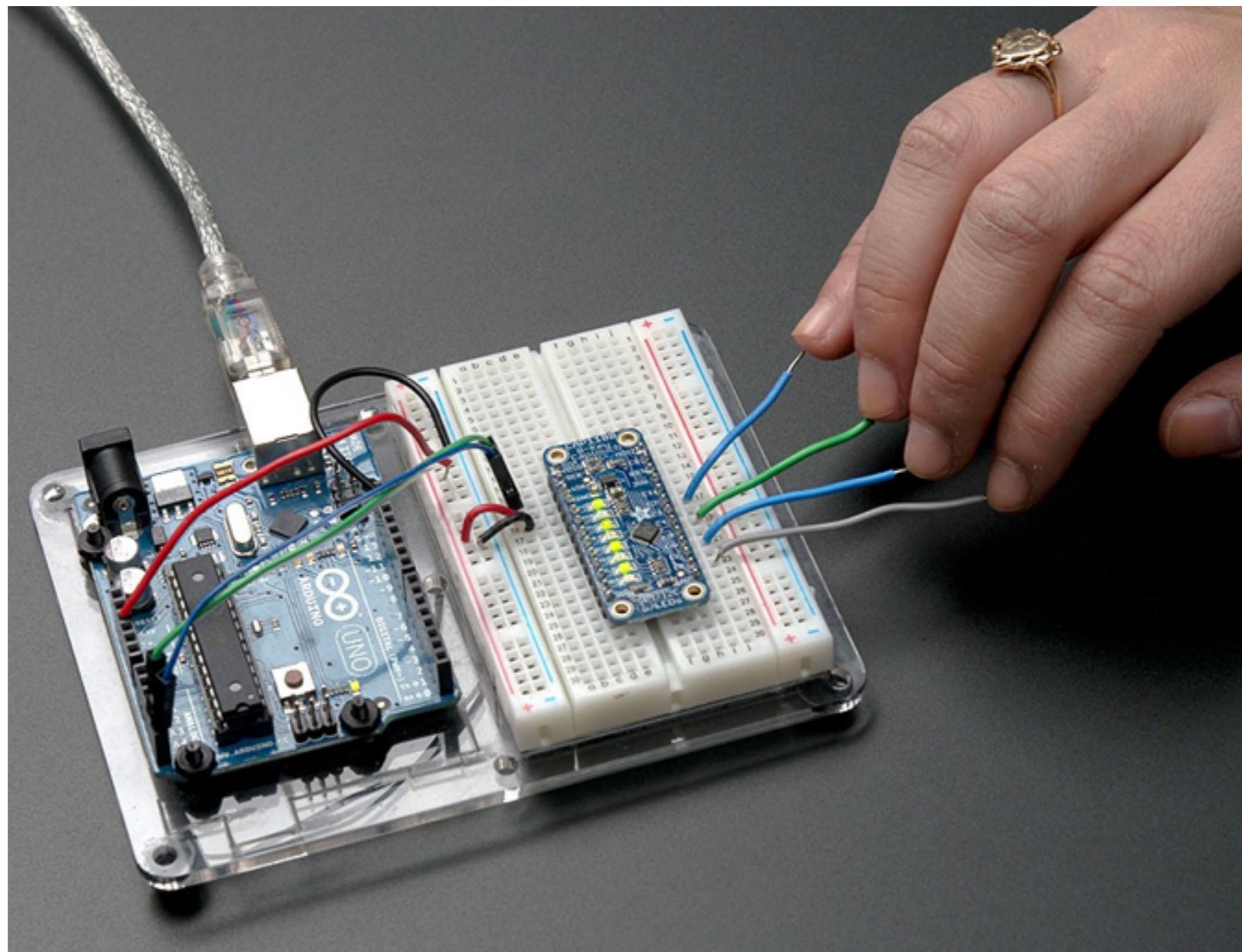
#3
Dramaläb
Session

11.04.15 - SER F1.FREIRAUM
14:00 - 19:00

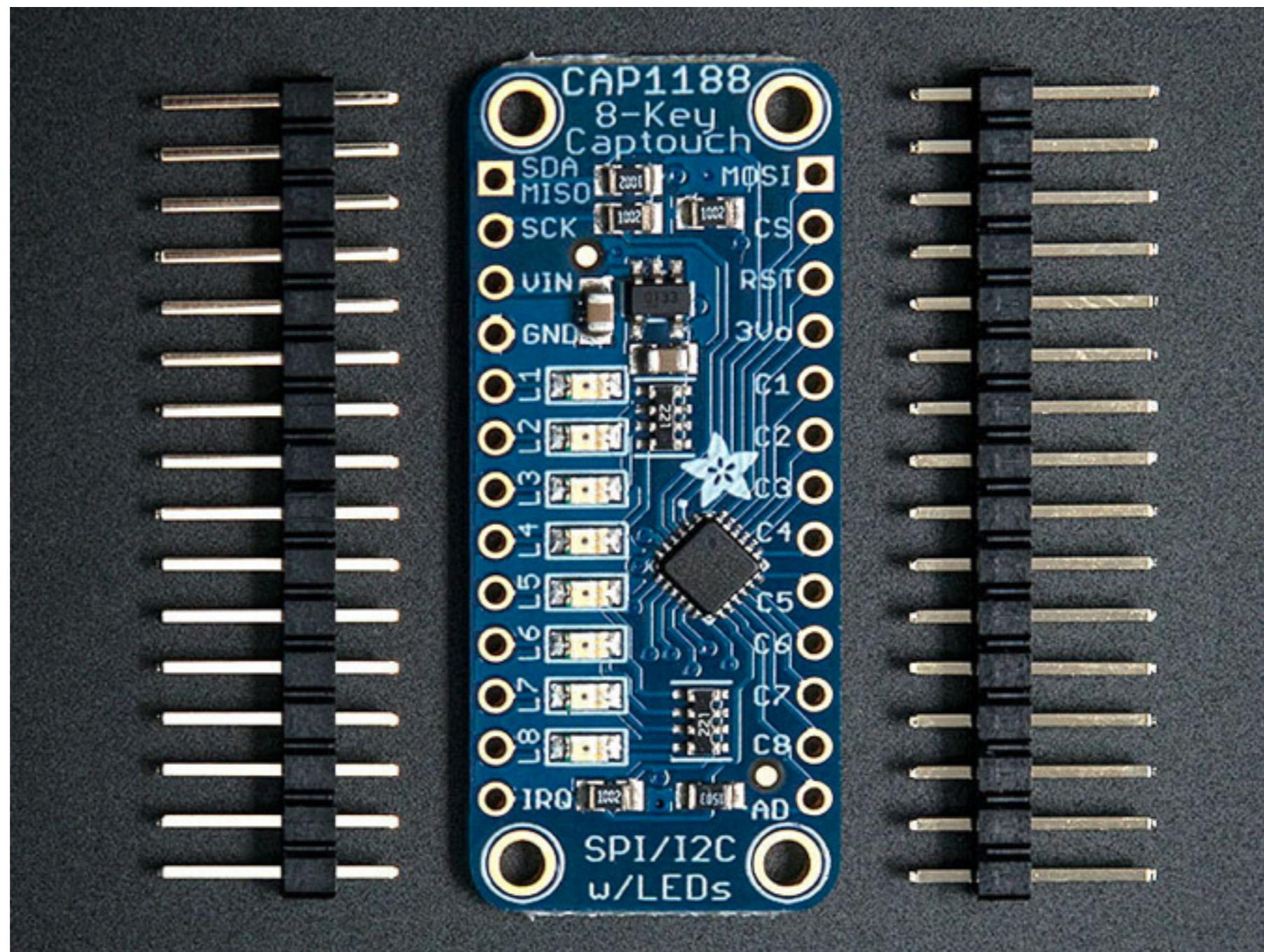


ENJOY ONE MORE PROJECT BASED SESSION:
LEARN HOW TO CONNECT SENSORS VIA BLUETOOTH

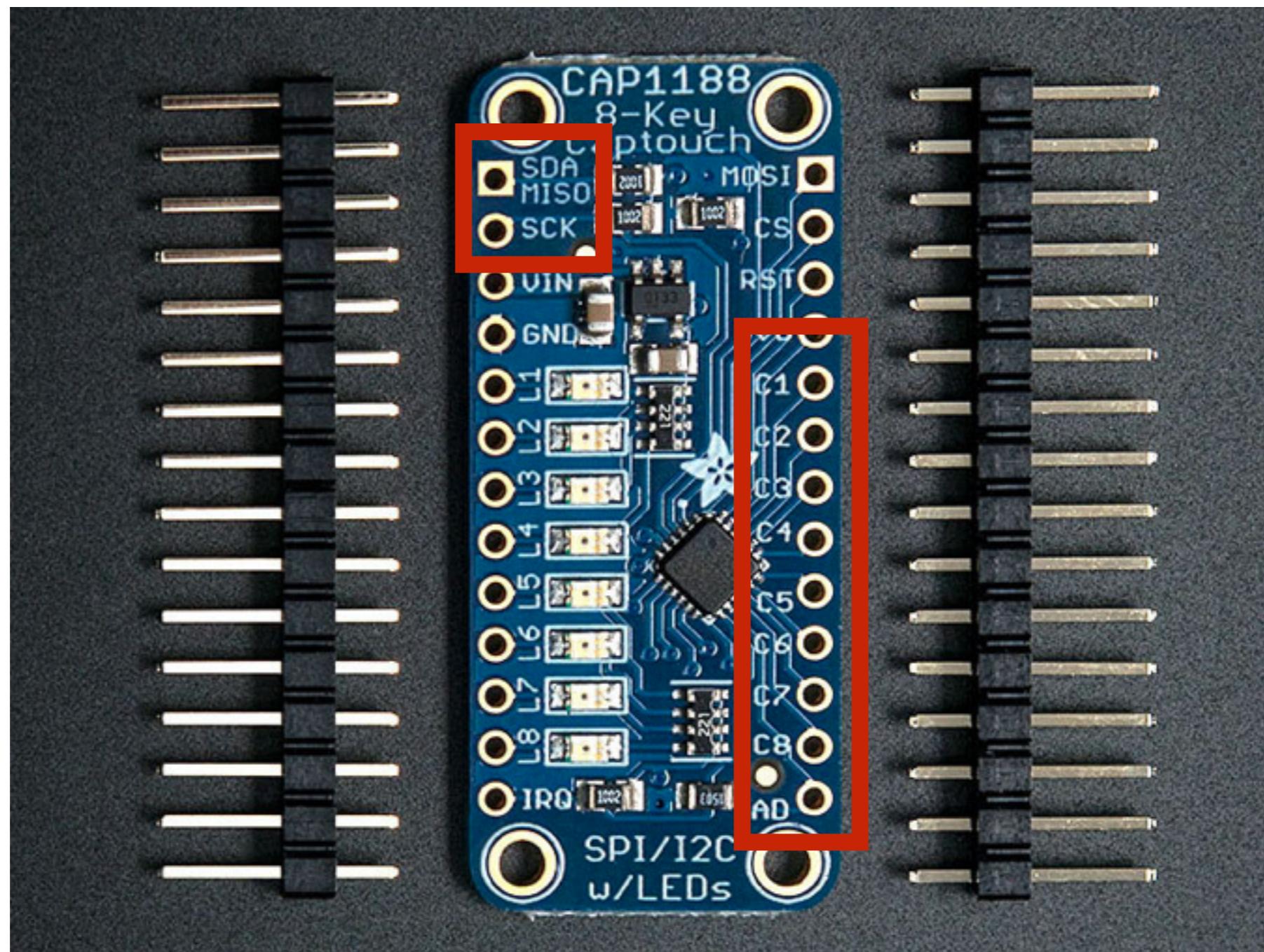
Capacitive Sensor



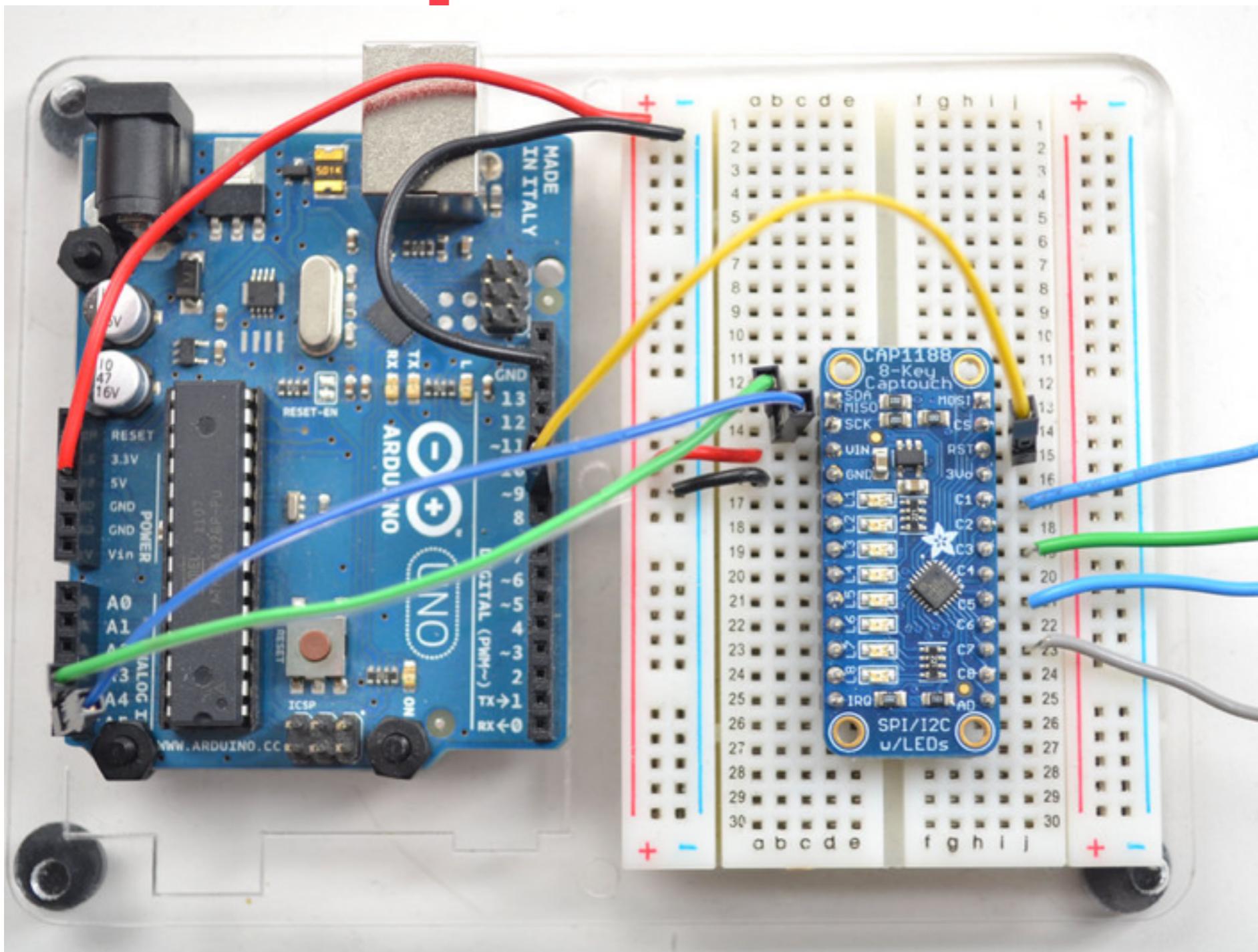
Capacitive Sensor



Capacitive Sensor



Capacitive Sensor



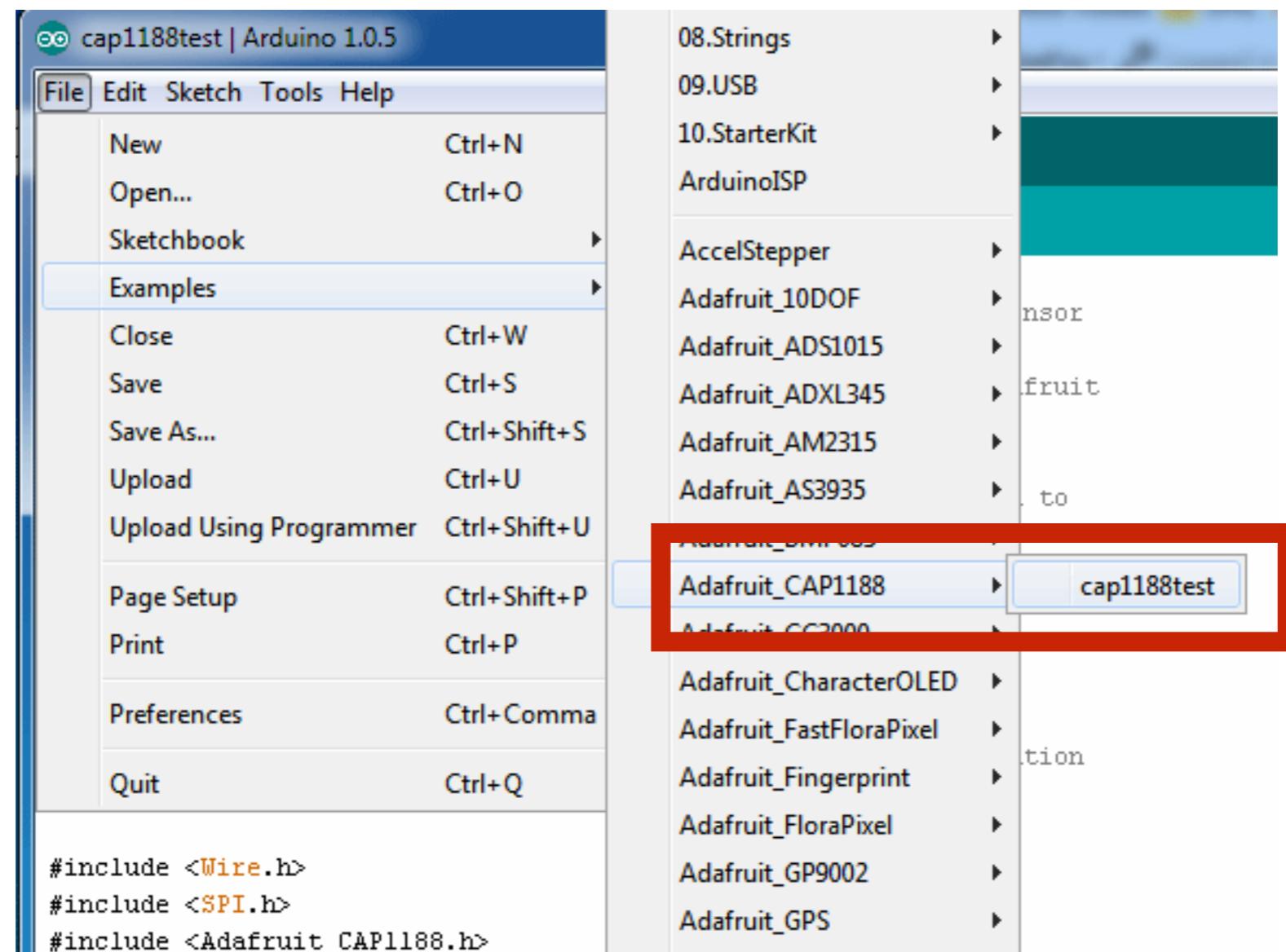
Capacitive Sensor

Install CAP1188 library

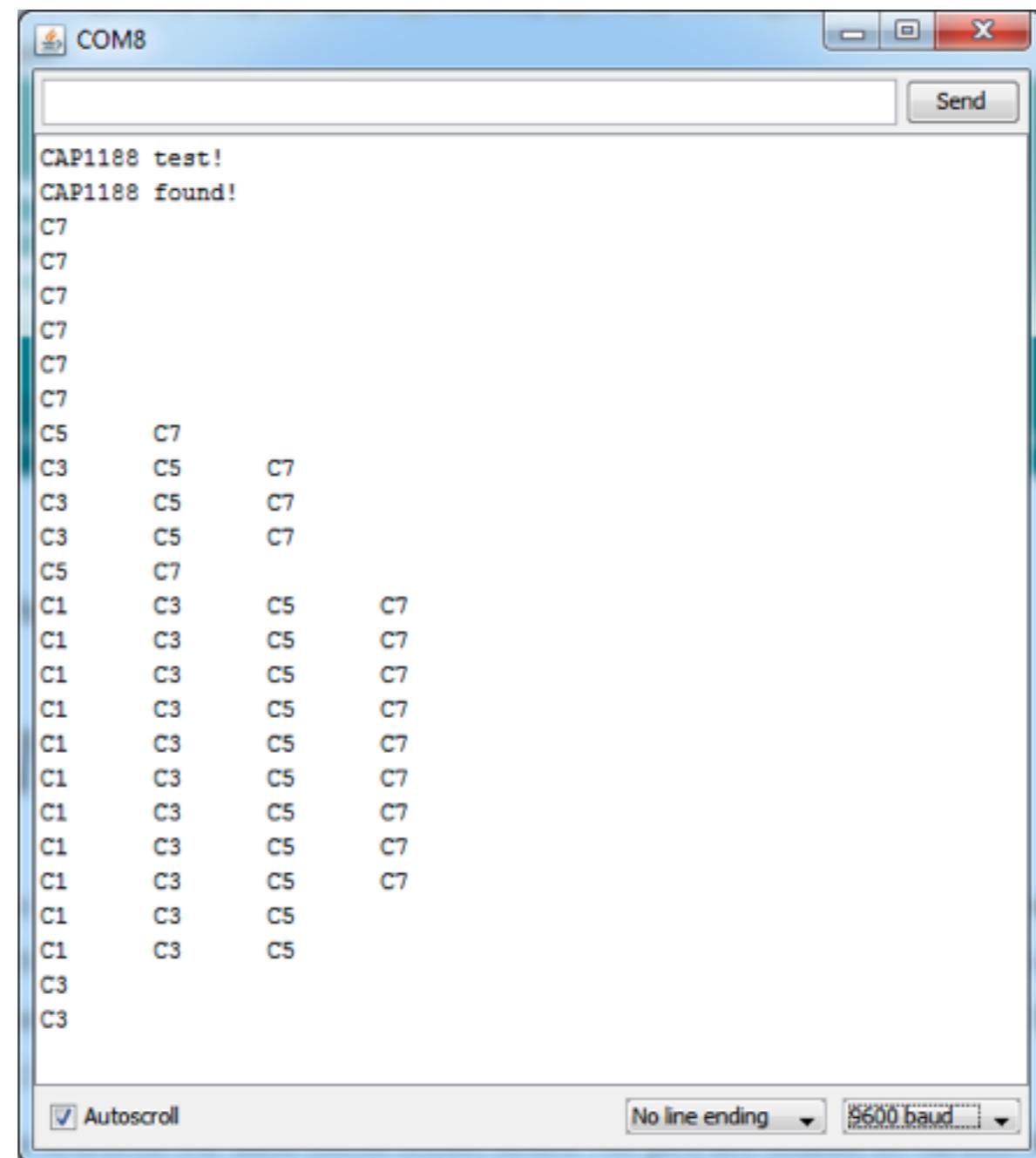
A screenshot of a GitHub repository page. The URL in the address bar is `DramaStuff / session10 / code / libraries / +`. The repository name is `CAP1188 library`. A commit by `maxstricker` was authored a minute ago and has a latest commit at `a5bc94744e`. A file named `CAP1188_Library.zip` was uploaded a minute ago. The right sidebar shows navigation icons for file comparison, issues, and repository status.

| File | Description | Time |
|----------------------------------|-----------------|--------------|
| <code>CAP1188_Library.zip</code> | CAP1188 library | a minute ago |

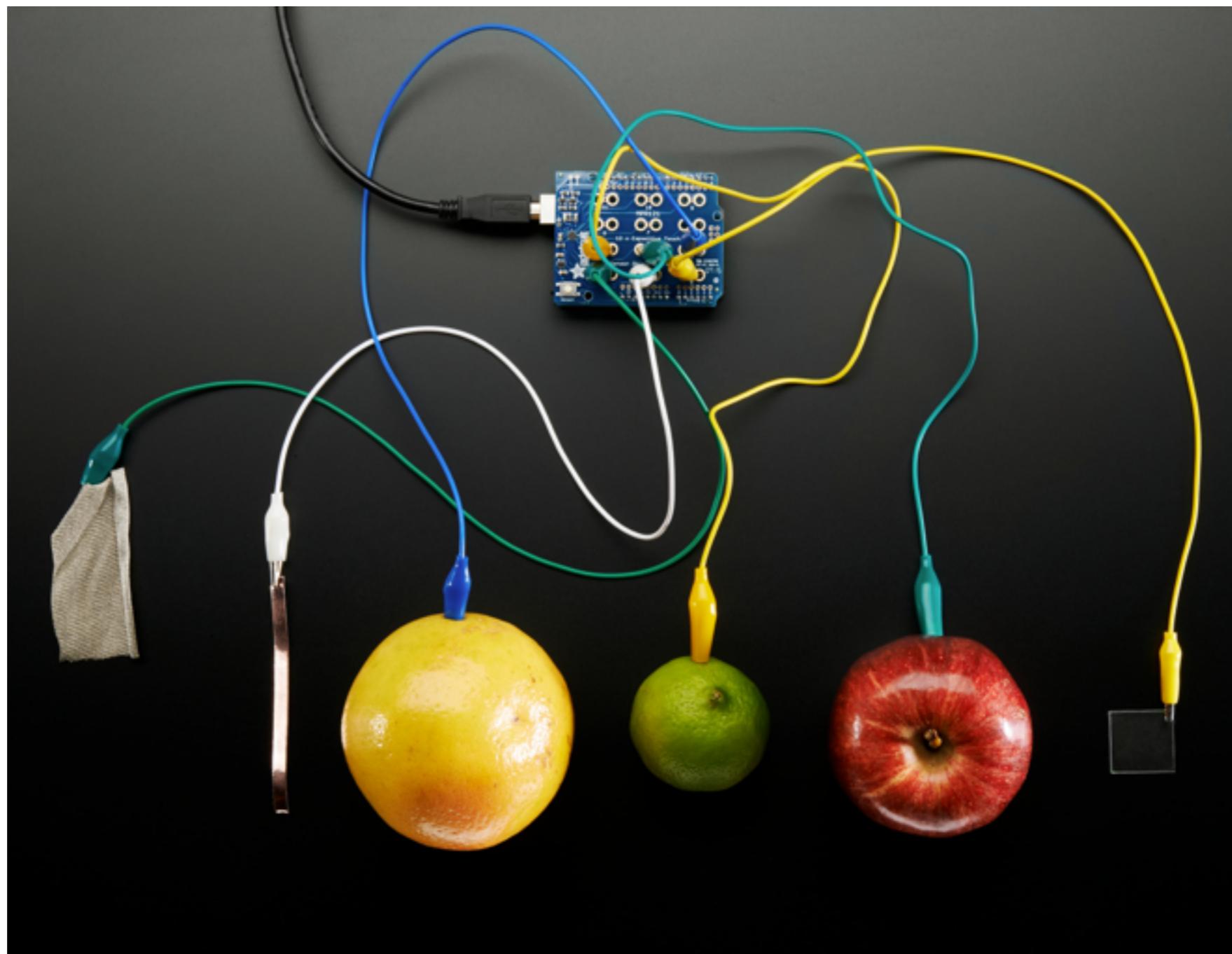
Capacitive Sensor



Capacitive Sensor



Capacitive Sensor

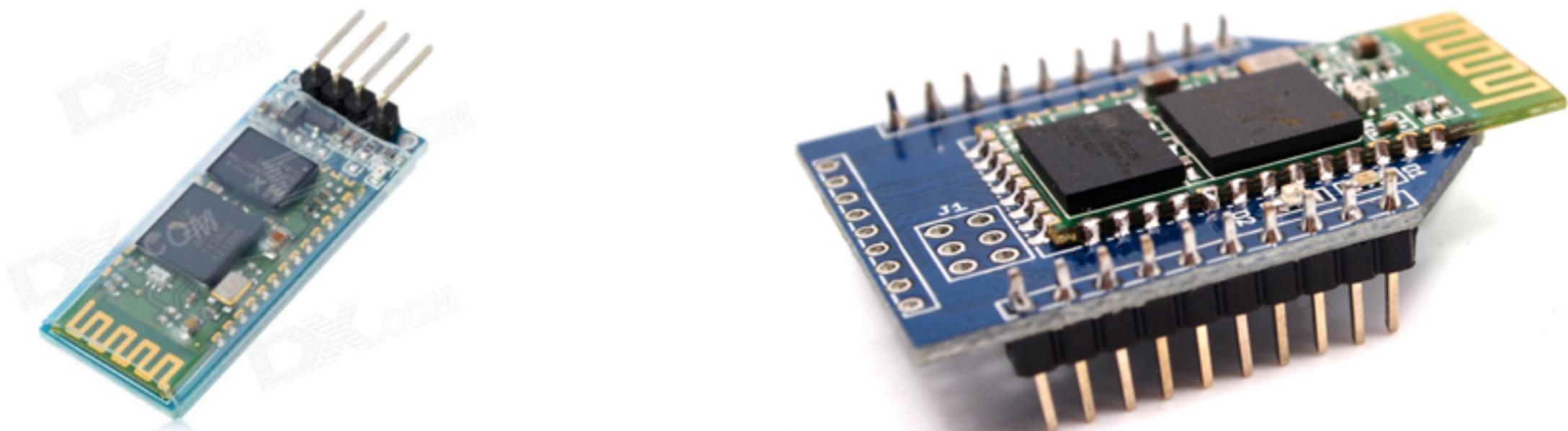


Capacitive Sensor

Exercise

Try to identify touch on different objects

Bluetooth



Bluetooth

Wiring

RX → TX

TX → RX

3,3V → VCC

GND → GND

Bluetooth



The screenshot shows the Arduino IDE interface with the following details:

- Title Bar:** DramaLab_BluetoothLed | Arduino 1.0.6
- Toolbar:** Standard Arduino IDE toolbar with icons for file operations (New, Open, Save, Print, etc.) and project management.
- Sketch Name:** The sketch is titled "DramaLab_BluetoothLed".
- Code Area:** The main code area contains the following C++ code:

```
/*
 * DramaLab_BluetoothLed: Control Led on Pin 13 using bluetooth,
 * with the Arduino MP3 Shield v1.2
 *
 * http://dramalab.unibz.it/
 * Max Stricker, 11.04.2015
 */
char val;
int ledpin = 13;

void setup()
{
    Serial.begin(9600);
    pinMode(ledpin,OUTPUT);
}

void loop()
{
    if(Serial.available()){
        val = Serial.read();
    }
    if(val=='H'){
        digitalWrite(ledpin, HIGH);
    }else if(val=='L'){
        digitalWrite(ledpin, LOW);
    }
    delay(100);
}
```
- Status Bar:** Shows the message "Gespeichert." (Saved).
- Bottom Status:** Displays the memory usage: "Bindre Sketchgröße: 2.482 Bytes (von einem Maximum von 32.256 Bytes)".
- Bottom Right:** Shows the connection status: "Arduino Uno on /dev/tty.usbmodem14131".

Bluetooth

Sending commands:



pair with MacBook, Terminal: screen /dev/XXX



App BlueTerm



App BT Terminal



not possible

H →



L →



Bluetooth + Processing



send rgb color codes via BT to
control RGB-Led

Message Format:
ON/OFF|R|G|B

Bluetooth + Processing

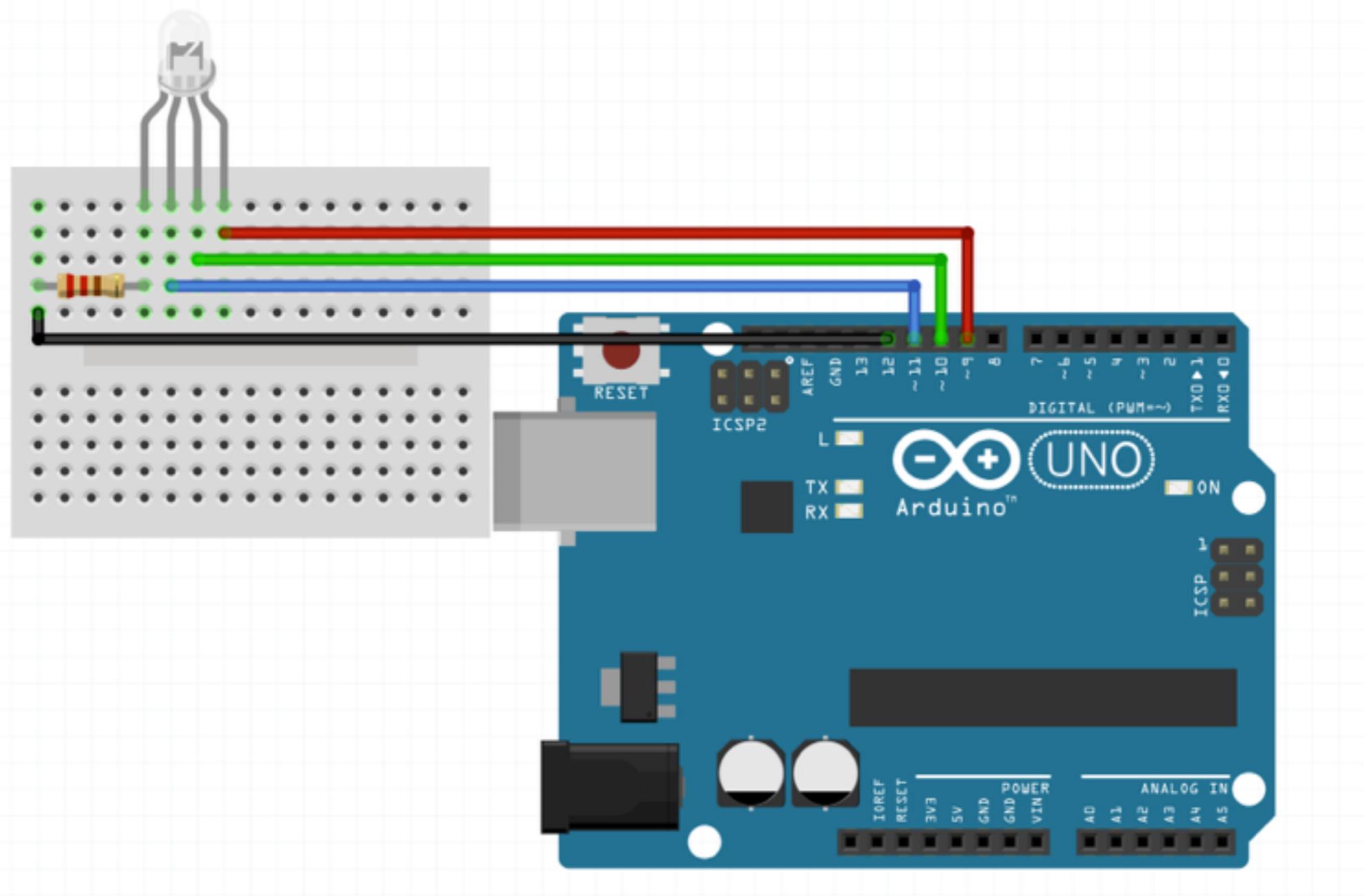
Processing Code:

A screenshot of a GitHub repository page for 'DramaStuff / session10 / code / Processing'. The repository name is 'Processing BluetoothColorController'. A commit by 'maxstricker' was made a minute ago, with the latest commit hash being '362574e0c2'. The file 'DramaLab_BluetoothColorController.zip' was also updated a minute ago.

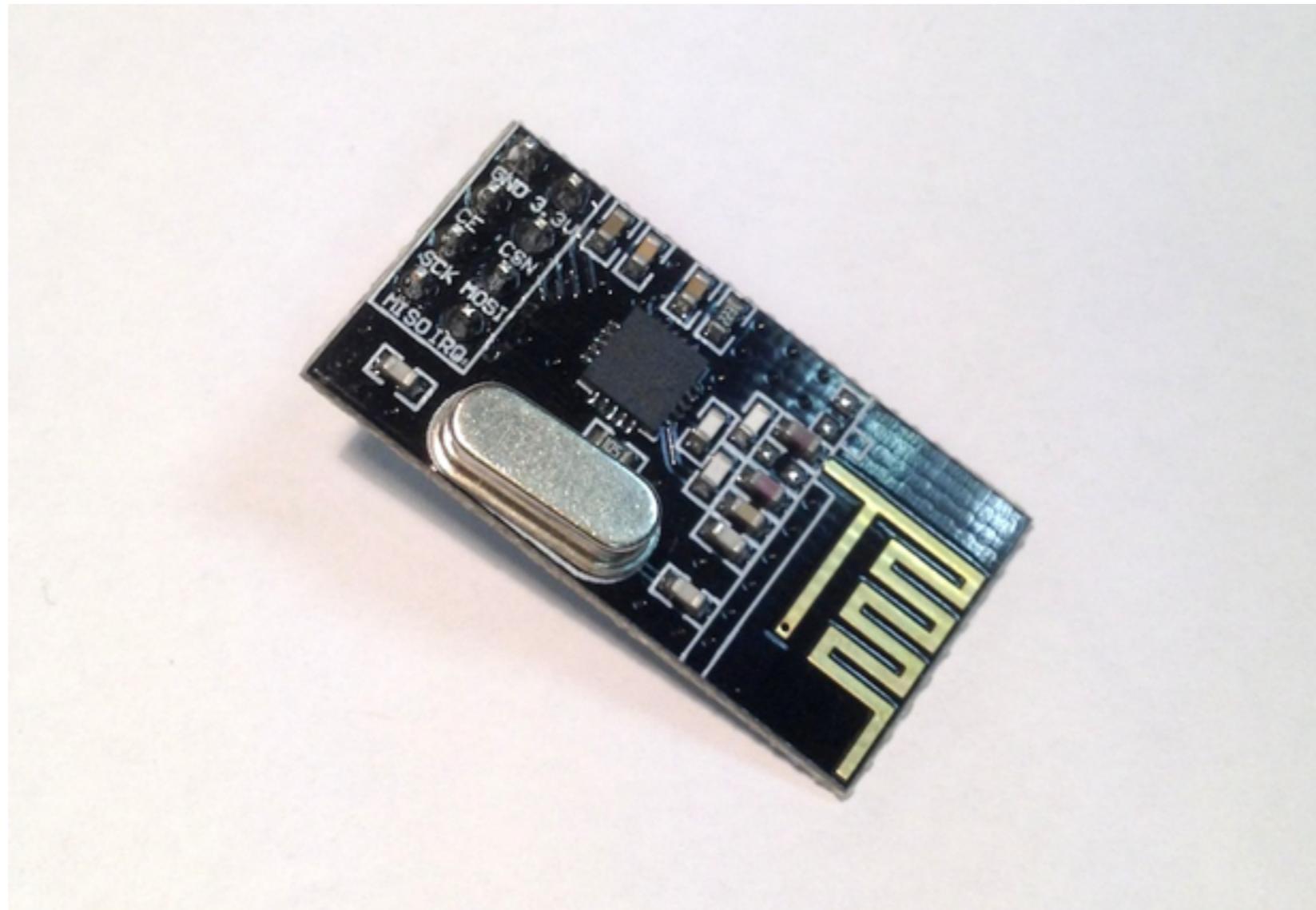
Arduino Code (template):

A screenshot of a GitHub repository page for 'DramaStuff / session10 / code / DramaLab_BluetoothRGBLed'. The repository name is 'Arduino Bluetooth RGB Led Code'. A commit by 'maxstricker' was made 11 seconds ago, with the latest commit hash being 'c04ab7c01b'. The file 'DramaLab_BluetoothRGBLed.ino' was updated 11 seconds ago.

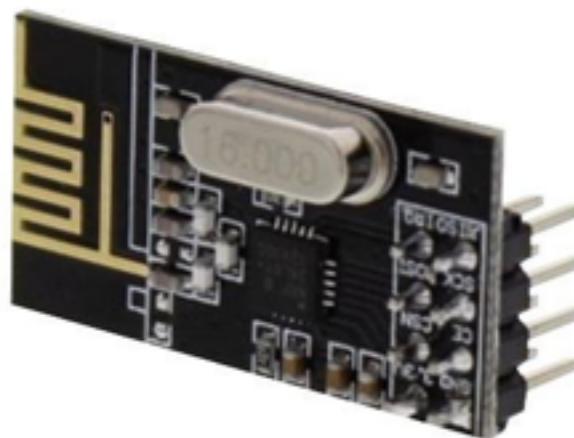
Bluetooth + Processing



Wireless with 2.4GHz



Wireless with 2.4GHz



| | |
|---|------|
| 1 | GND |
| 2 | VCC |
| 3 | CE |
| 4 | CSN |
| 5 | SCK |
| 6 | MOSI |
| 7 | MISO |
| 8 | IRQ |

Arduino Pin 11 to RF Module Pin 6 (MOSI)
Arduino Pin 12 to RF Module Pin 7 (MISO)
Arduino Pin 13 to RF Module Pin 5 (SCK)
Arduino Pin 7 to RF Module Pin 4 (CSN)
Arduino Pin 8 to RF Module Pin 3 (CE)
Arduino 3.3V to RF Module Pin 2 (VCC / 3.3V)
Arduino GND to RF Module Pin 1 (GND)

Wireless with 2.4GHz

Demo: Wireless Chat

