NEXGEN CODECAMP

YTP Controller – Part 2

Mar 2018

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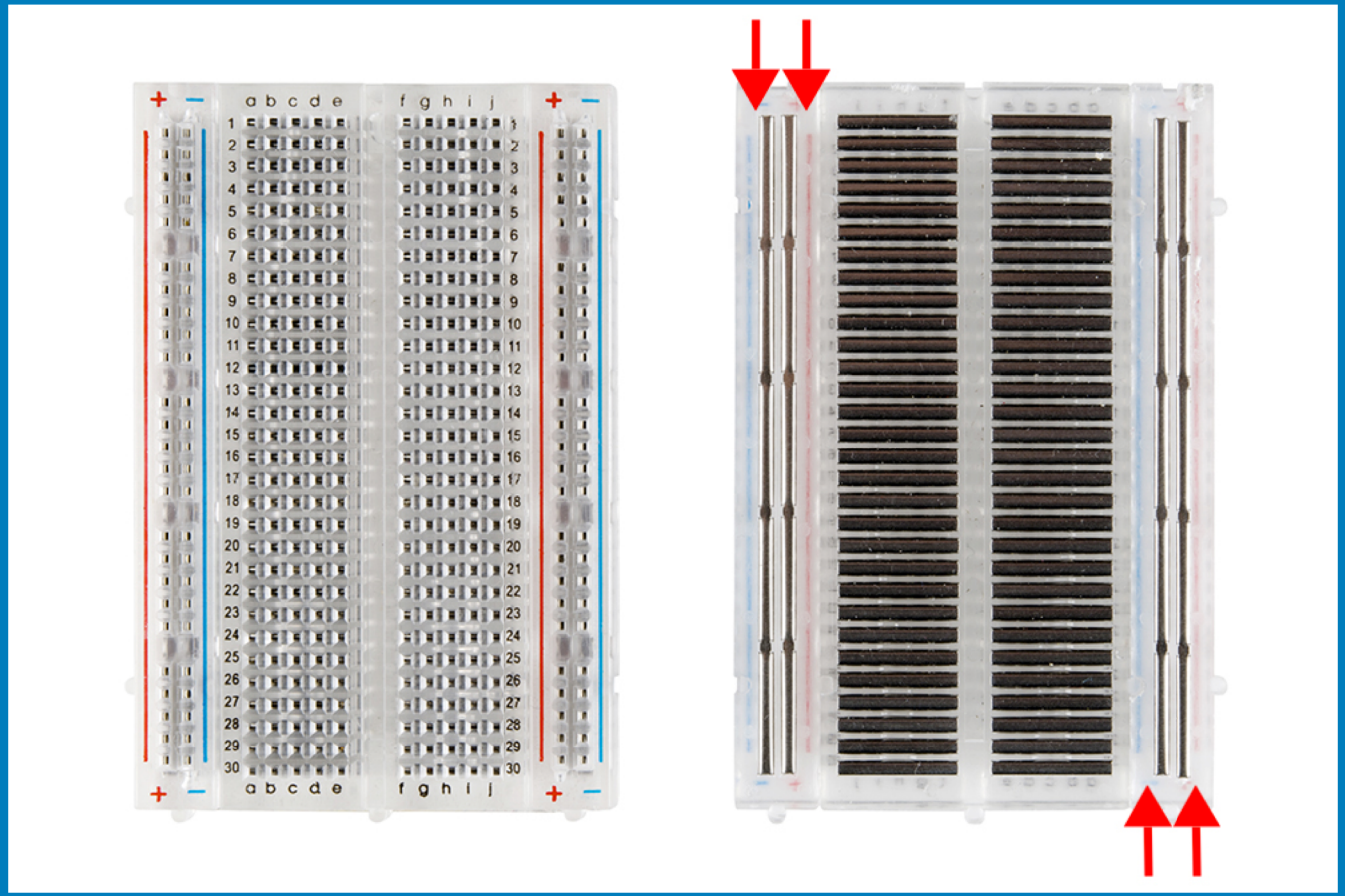
Goals

1. Understand how to build and test a controller with multiple input buttons.

Success Criteria

1. Build a controller with 2 buttons and 2 test LEDs


+ −
a b c d e
f g h i j
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
+ −
a b c d e
f g h i j

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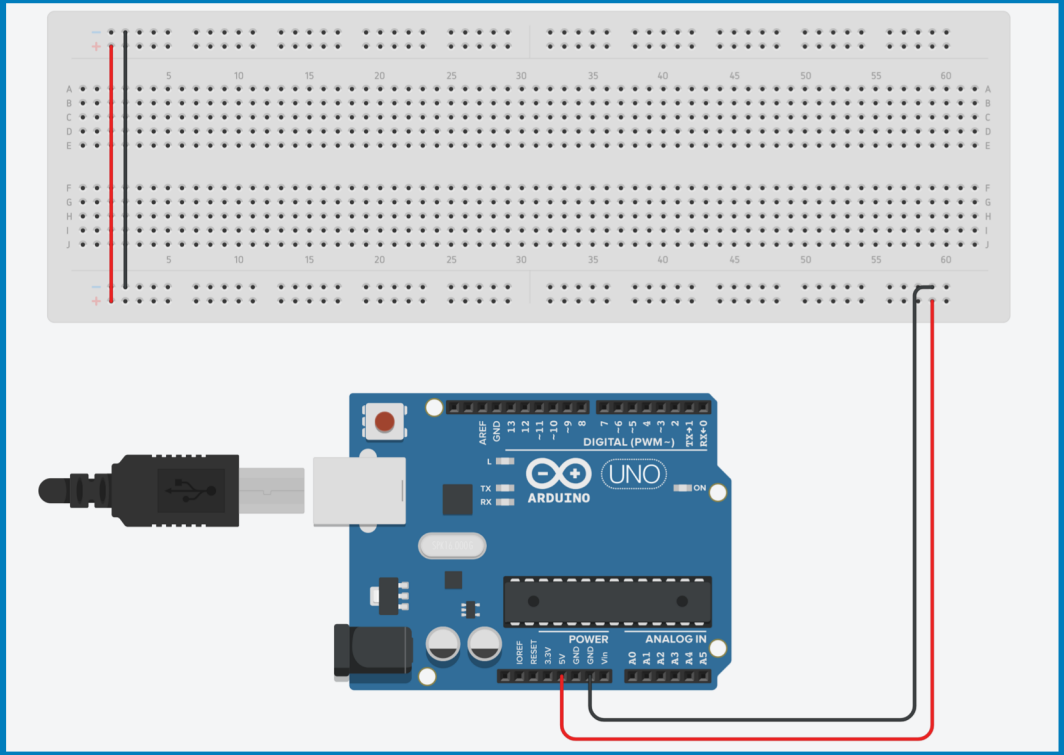
Step 1 - Connect the Arduino to the Breadboard

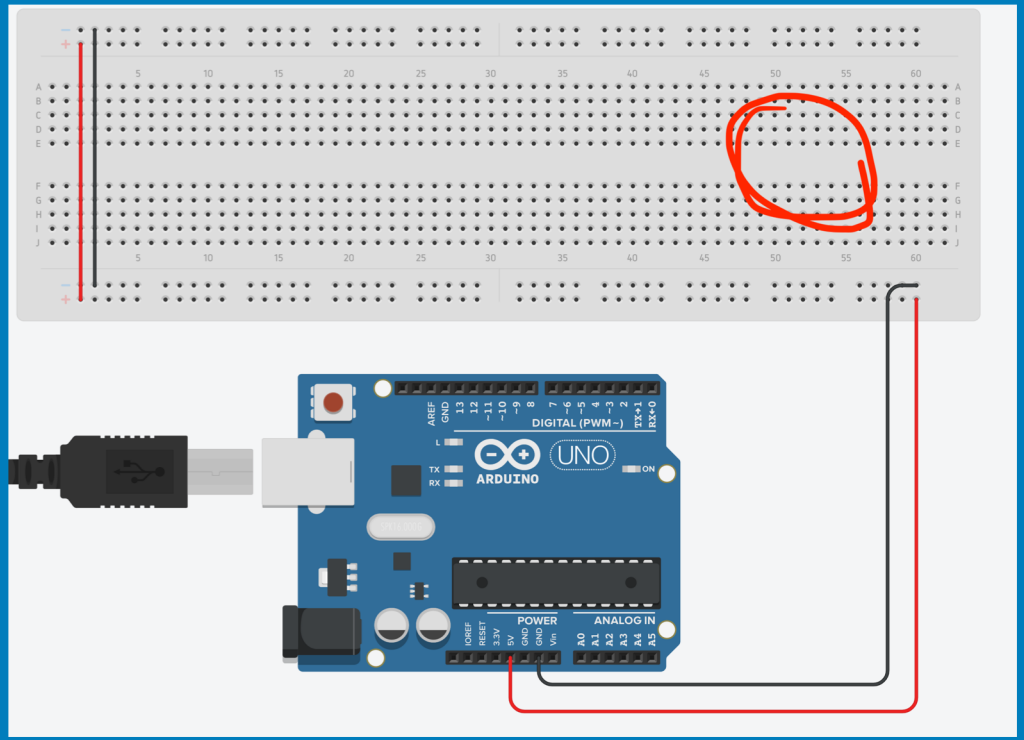
- Connect a jumper cable from 5v to the positive rail on the Breadboard.
- Connect a jumper cable from GND to the negative rail on the Breadboard.

Step 1 - Connect the Arduino to the Breadboard



Step 2 - Connect a button to the Breadboard

- Get a button and a resistor together with a long jumper cable and a piece of short jumper wire
- Add the button to the right of the breadboard so that it sits across the bridge down the middle of the breadboard.



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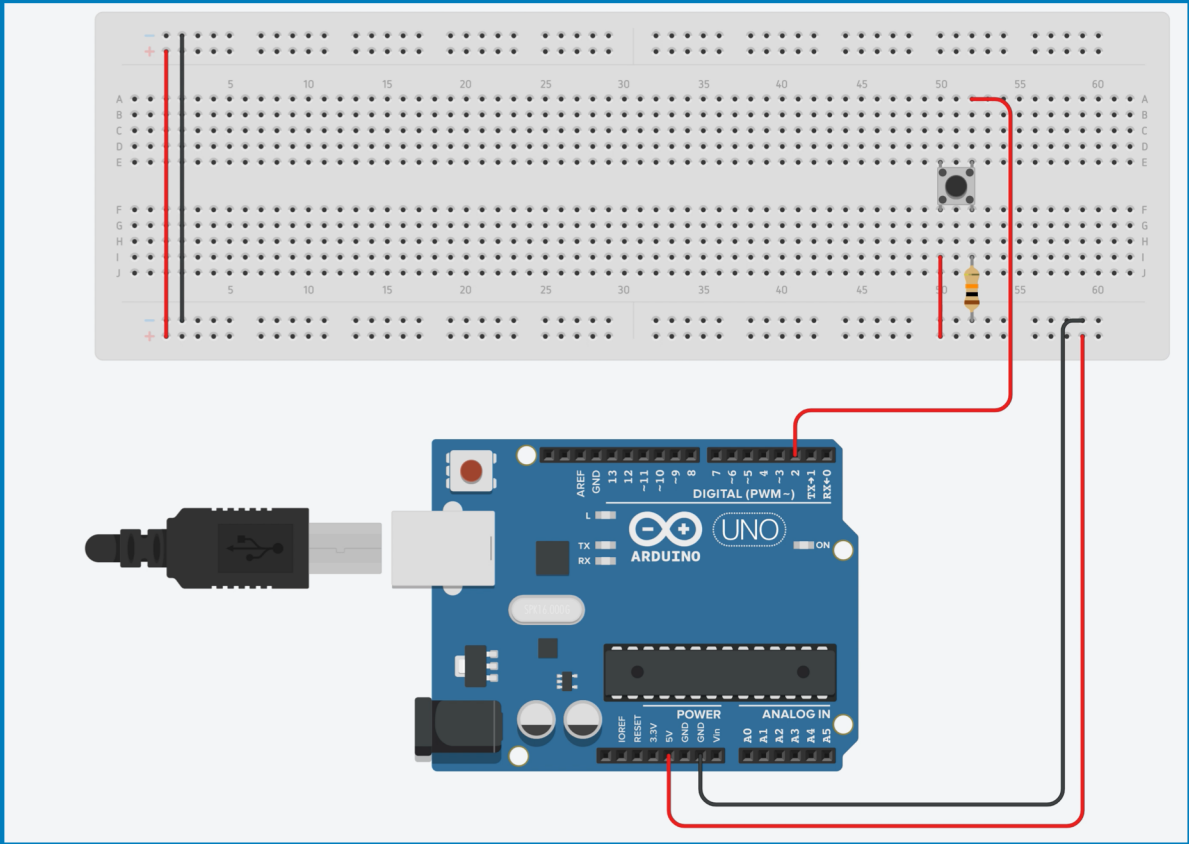
Step 2 - Connect a button to the Breadboard

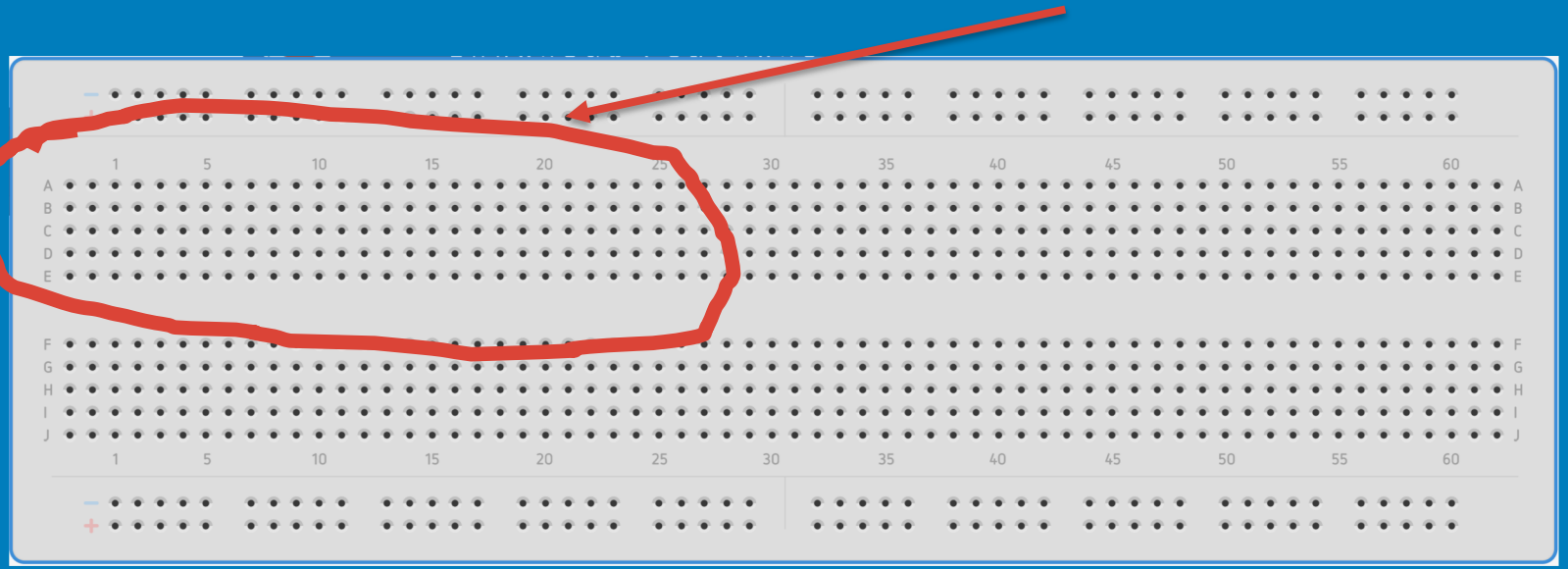
- Use the resistor to connect the right side of the button to the GND rail on the breadboard.
- Use the piece of short jumper wire to connect the left side of the button to the 5v rail on the breadboard.

Step 2 - Connect a button to the Breadboard



Step 3 - Connect an LED to the Breadboard

- Get the red LED, a resistor and a long jumper cable
- Place the LED in the upper left part of the breadboard



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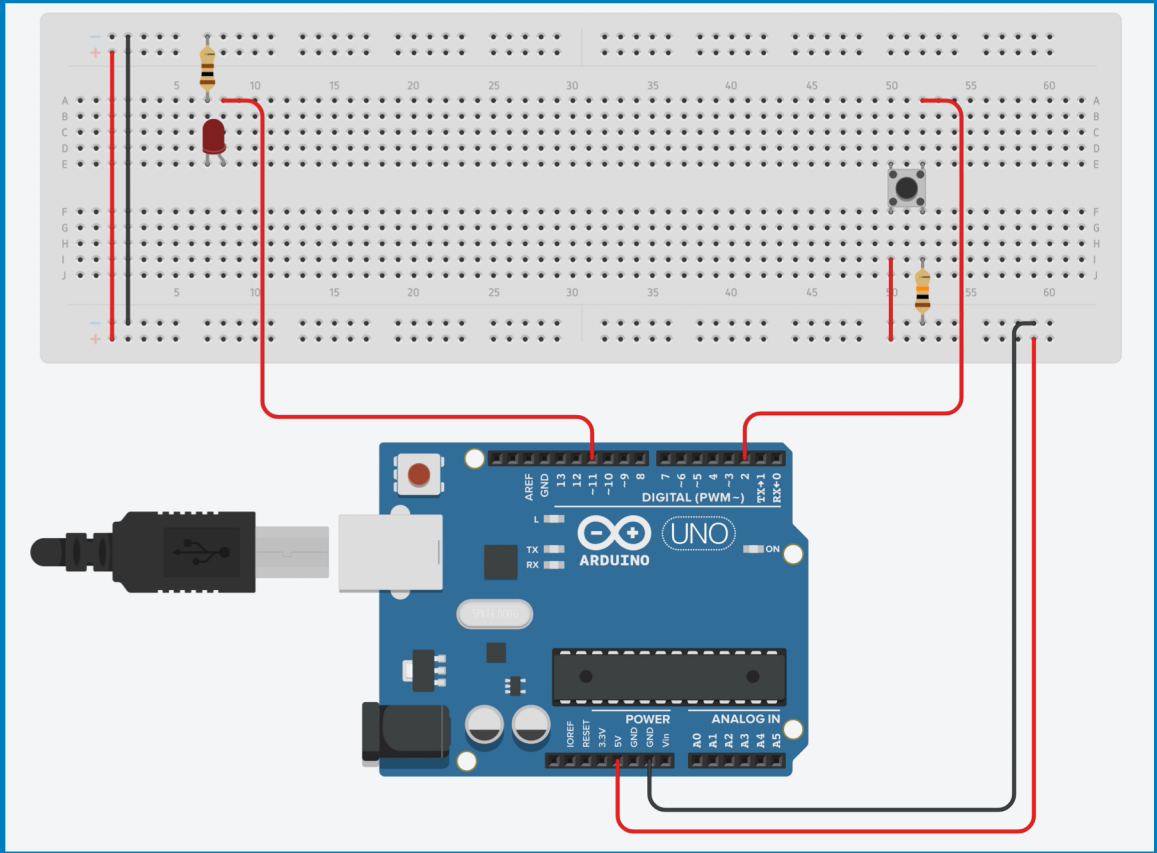
Step 3 - Connect an LED to the Breadboard

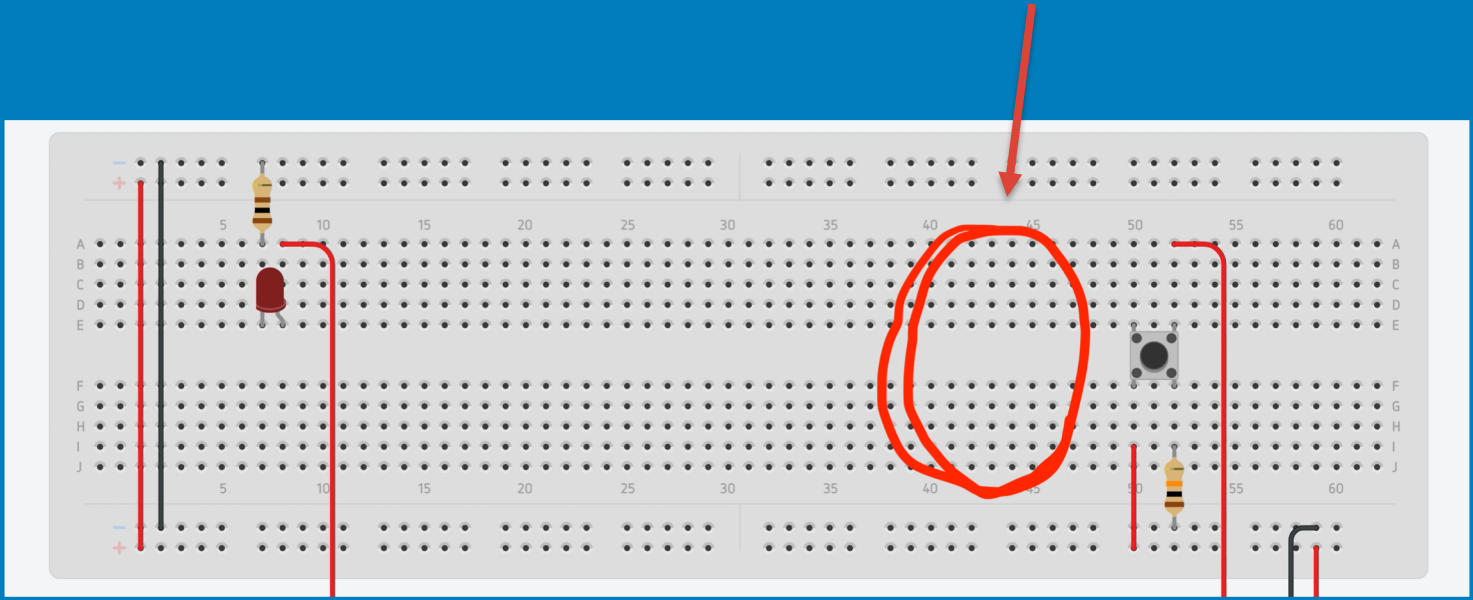
- Using the resistor, connect the negative leg of the LED to one of the GND rails on the breadboard.
- Connect the positive (long) leg of the LED to PIN 11 on the Arduino using a long jumper cable.

Step 3 - Connect an LED to the Breadboard



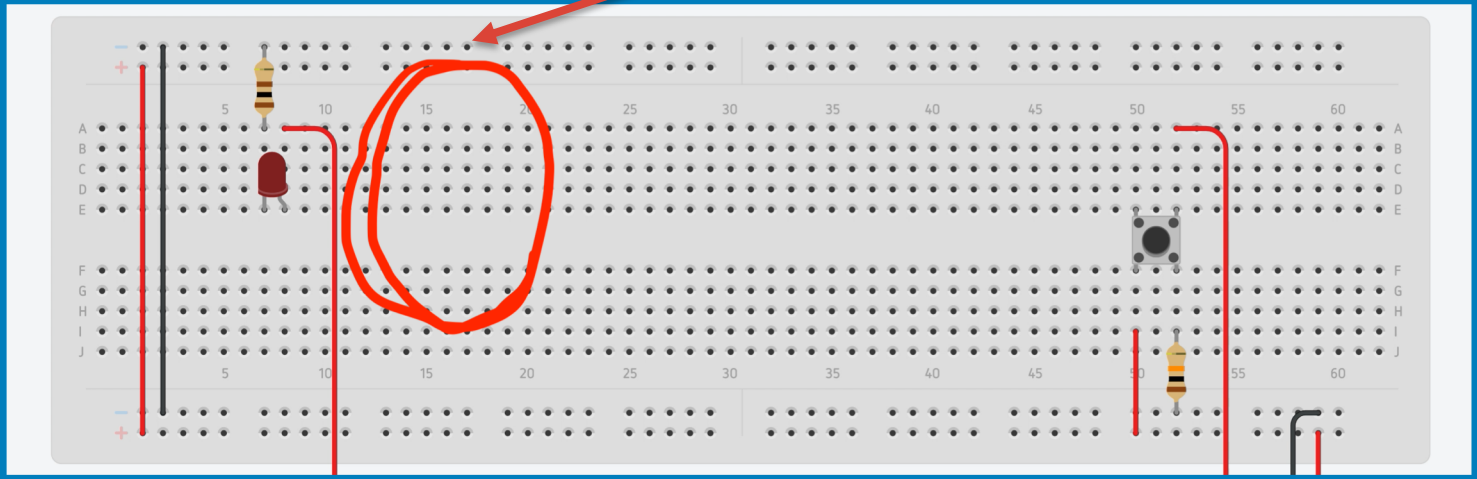
Step 4 – Add a 2nd Pushbutton to the Circuit

- Place another button next to the first in the area below making sure it is across the middle bridge of the breadboard.



Step 5 – Add a 2nd LED to the Circuit

- Place a green LED next to the red one in the area below. You will also need a resistor and a jumper cable which you will plug into Arduino pin 10.



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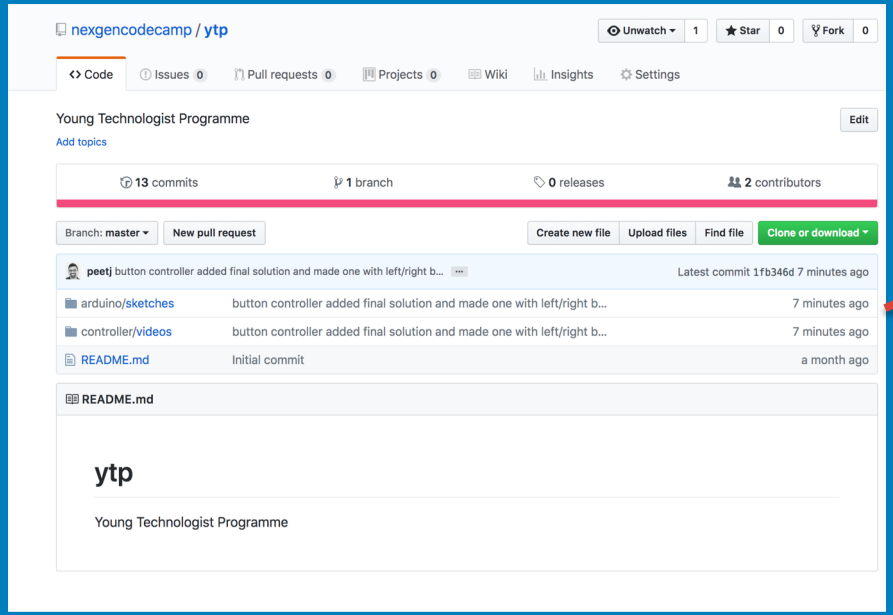
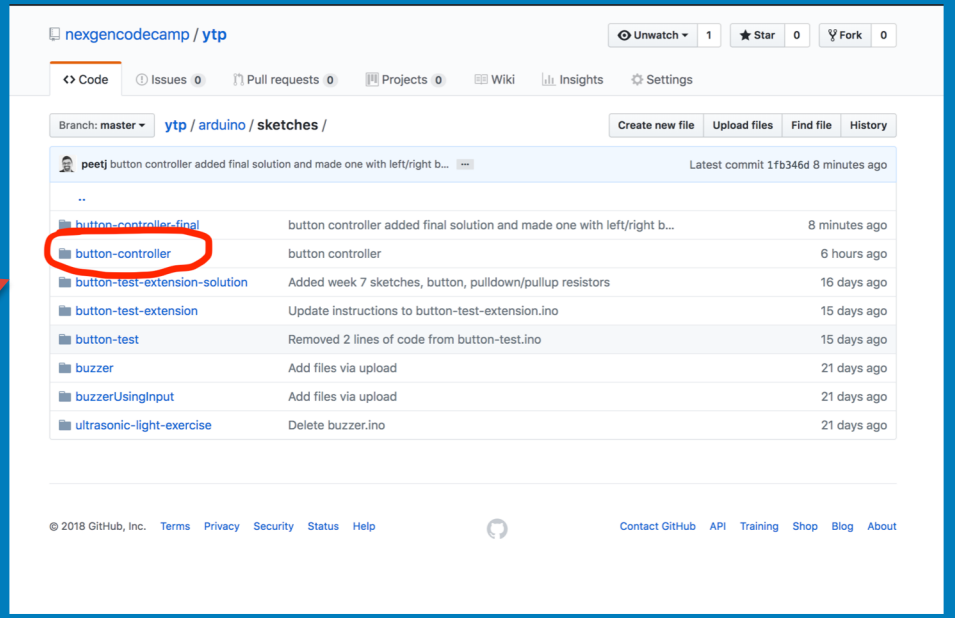
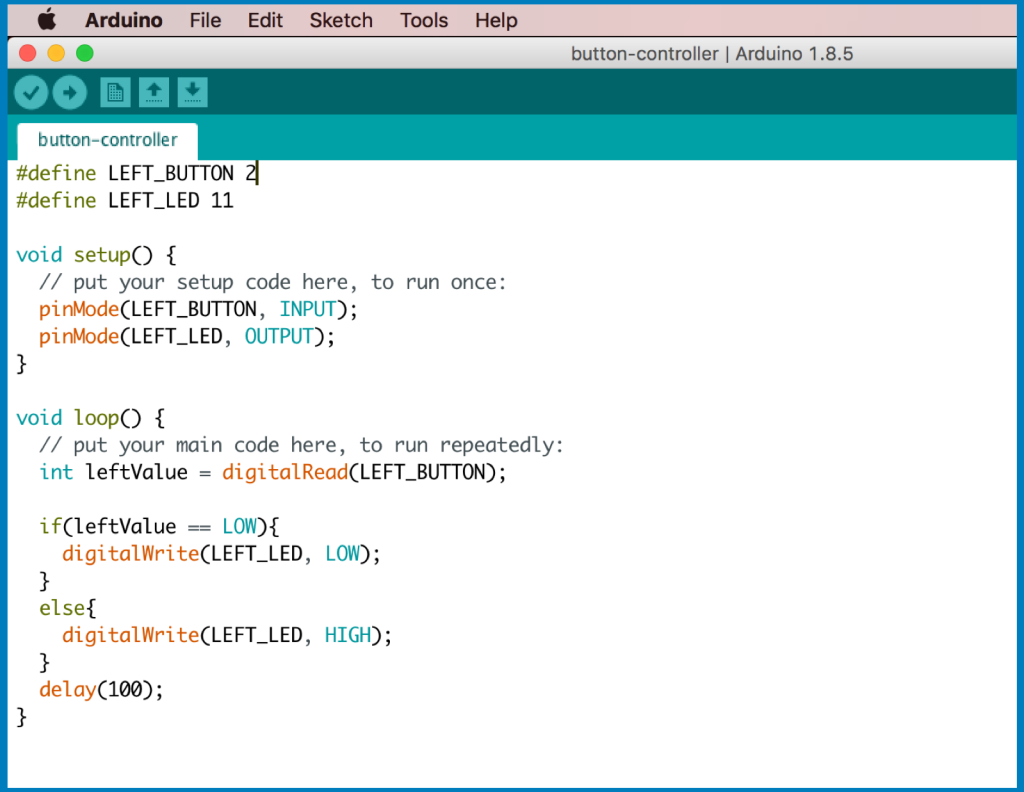
Run the Code

Open the ‘button-controller’ sketch





Run the Code



Make sure you:

1. Check your port
2. Verify/compile the code
3. Upload the code

Test your code:

1. Press your buttons
2. What happens?

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Week 9 - Extension Activity

Connect button 3 and button 4, then LED 3 and LED 4

CIRCUIT

1. Connect button 3 next to button 2
2. You should be able to copy what you have done already in the circuit.
3. Connect LED 3 next to LED 2

CODE

1. In your current sketch add some more code for another button and more code for another LED.
2. The code is essentially the same with some very small changes.

Do the CIRCUIT first then the CODE. Once complete, verify your code by compiling it. If it compiles, upload it to your Arduino and test it.