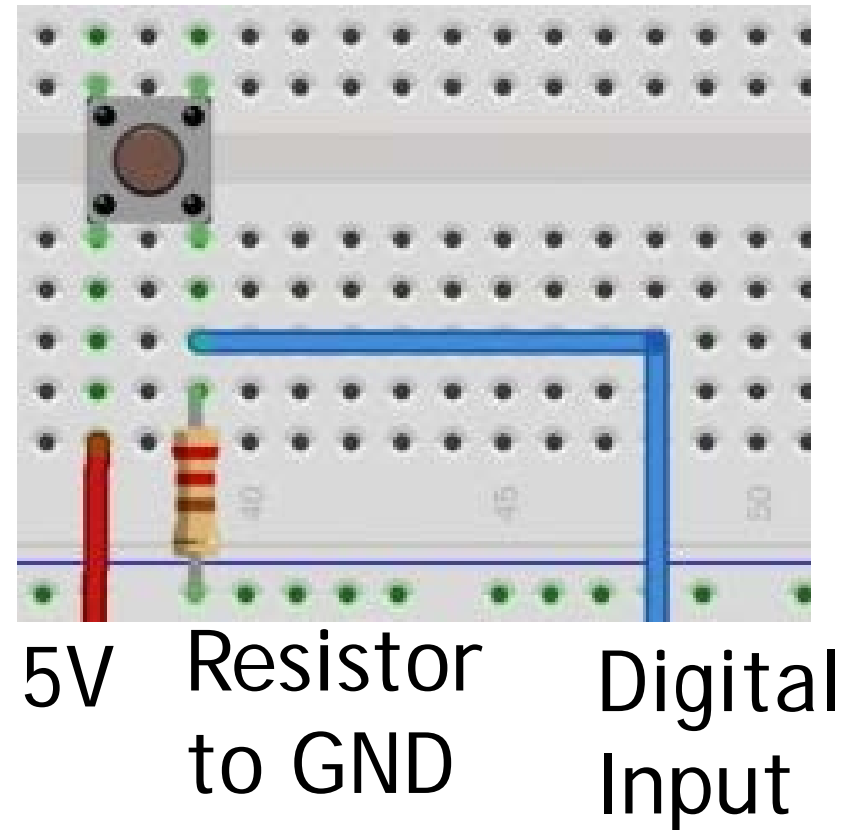# Cheerlights – Part 5

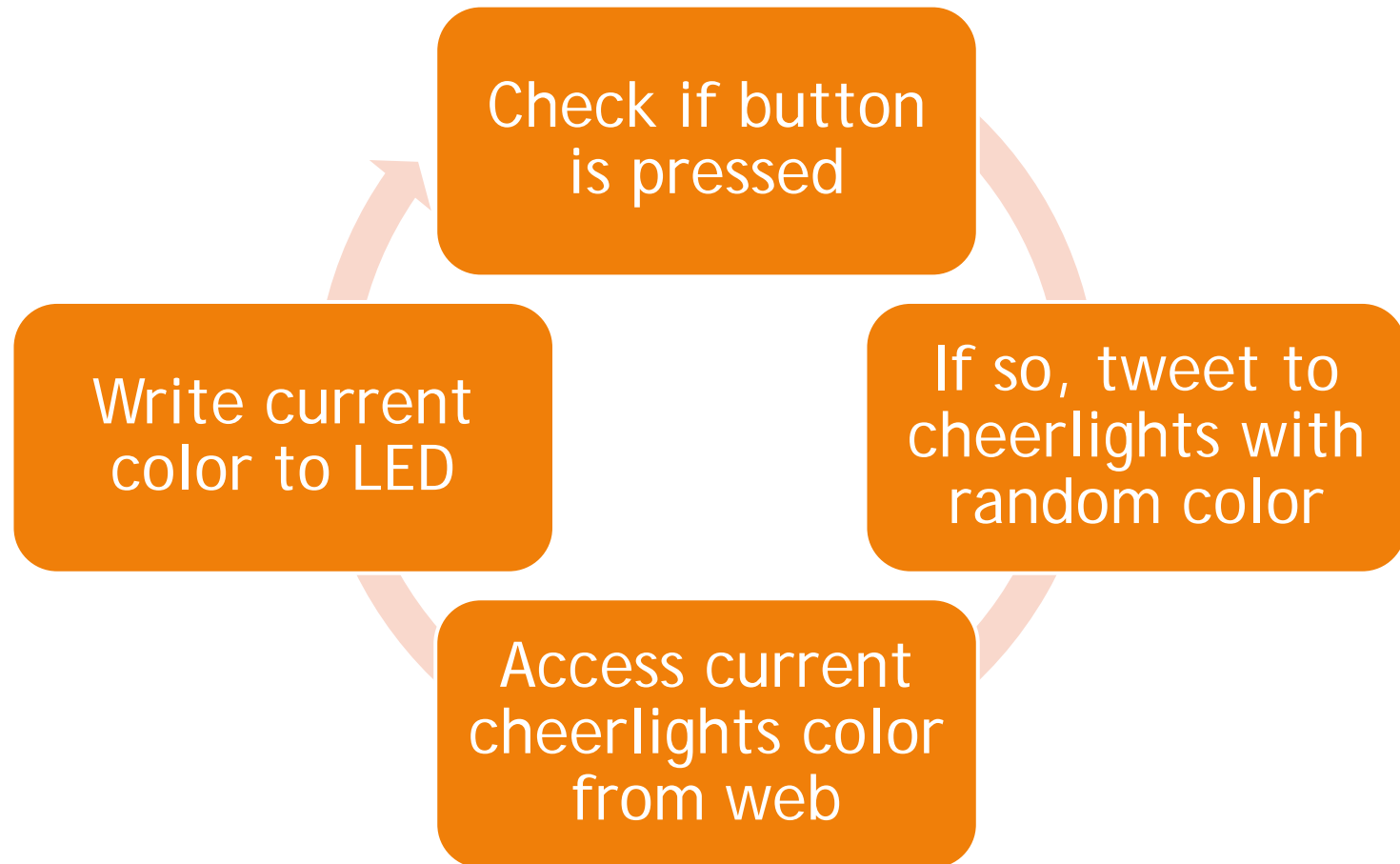## Cheerlights Selector Project

The Project

- Integrate all the steps we've learned so far
- The goal: add a push button to your breadboard such that when the button is pressed, your code chooses a random color and tweets it to cheerlights, changing the color of all LEDs

The Push Button

- Input will be 0 if button is not pressed, 1 if button is pressed

5V   Resistor to GND   Digital Input

Code Structure

Check if button is pressed

If so, tweet to cheerlights with random color

Access current cheerlights color from web

Write current color to LED

Python Code

- You'll need a Python script that will be able to choose a random color and tweet it to cheerlights
- The *cheerlights_sender_random.ino* code has laid out the components but has some pieces that need to be filled in
    (marked by the # **TODO** comment)
- Be sure to save this file in the `/media/realroot` directory in Linux so we can access it from Arduino

Arduino – Read the Push Button

- Open *tricolor_led_cheerlights_selector.ino*
- It has missing code you need to fill in
- On your breadboard, connect the push button to a digital pin (I used pin 8)
- Create a pin variable for that pin and set it to the correct mode in the `setup()` function
- In the loop function, read the digital value from the pin and print it to the Serial Monitor
- Run the code and watch the value change in the Serial Monitor while you press the button

Arduino – Read the Push Button

- In each loop, we need to check if the button value has changed from 1 to 0
  - You need to look for the *change* – if you just check if the value if 0, then it will send the tweet way too many times
- This means we have to keep track of what the button value was last time the code ran
- Fill in the next TODO sections to check if the button has changed value

Arduino – Call the Python Script

- At the bottom of the script, fill in the last TODO
- Make a function that will execute our *cheerlights_sender_random.py* code
- Make sure all TODOs are filled out and that your Python code is correct, and then run it!