Cheerlights – Part 5

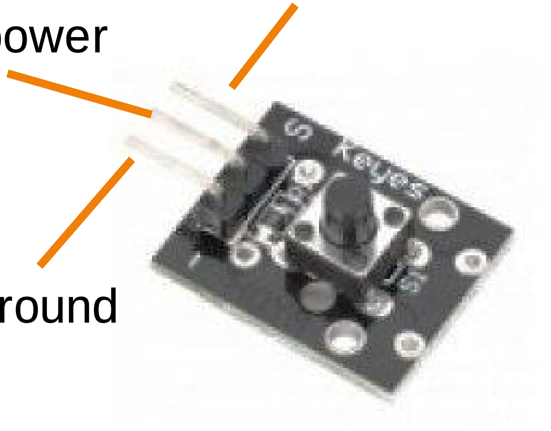
Cheerlights Selector Project

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

- Three pins
  - 5V of power
  - Ground (-)
  - The output pin – will be 1 if button is not pressed, 0 if button is pressed

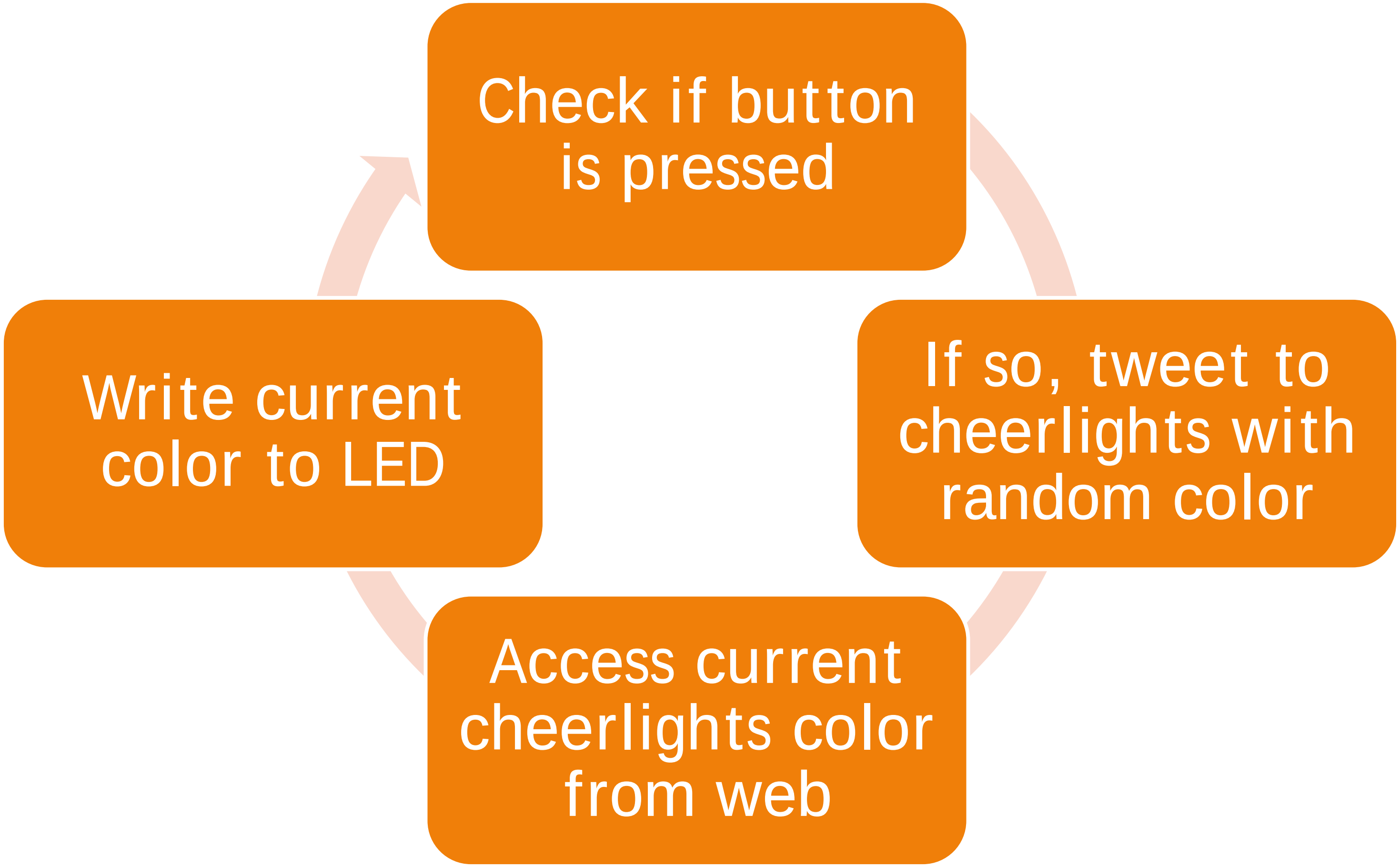


S = output

A = power

- = ground

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!