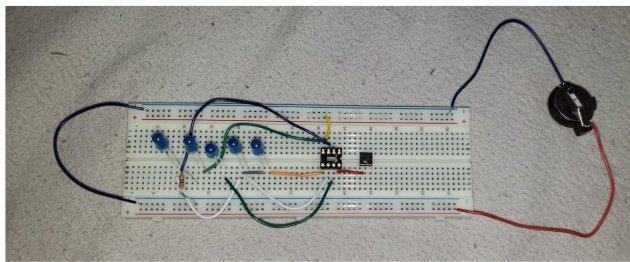


Alexandra Salois
September 27th 2019
CART 360

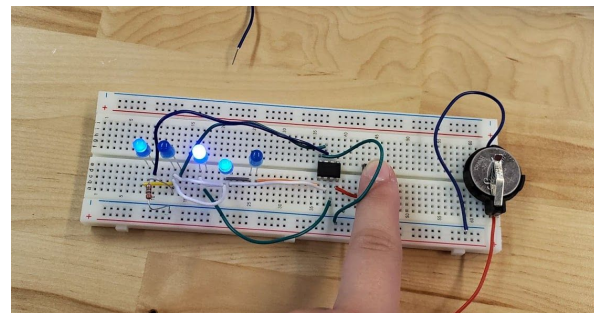
Etude Two

PART 1

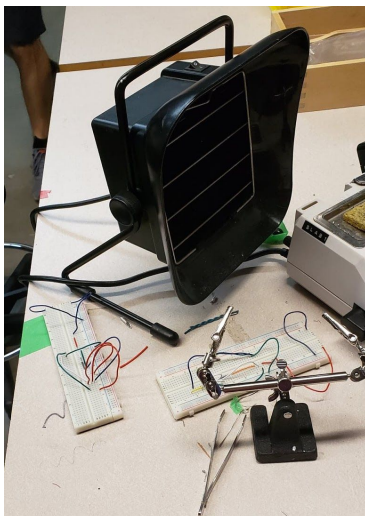
For the first part, building the circuit on the breadboard wasn't too bad, thanks to the circuit examples. I started by placing the LEDs, and then proceeded with the button, and the ATtiny chip. However, I forgot to put the base attachment under the chip while testing the LEDs, but good thing it wasn't soldered on. After installing those, I went ahead and connected everything to each other with the cables, and finished with the empty battery holder. I had to restart the cables quite a bit since one of the references had a missing cable, and that confused me for a while, but after getting help at the open lab, success! It worked very well. The battery was added at the last step, to make sure everything was in place before having power circulate through it.



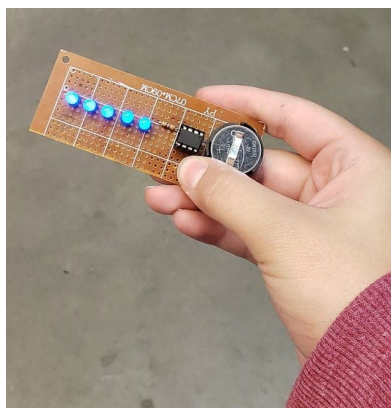
Attempt 1: Does not work, missing cables and battery not at the right place.



After fixing cables, success! It lights up.



The workplace ended up a little messy.



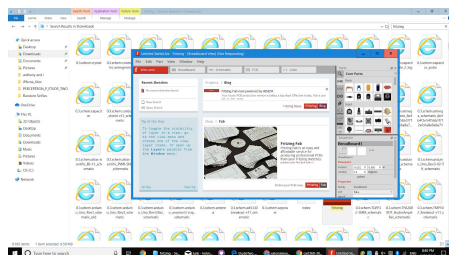
End result transferred on the other board, soldered and everything. Had to ask Elio for help, the soldering was much too thin at some places, but still, success!

PART 2

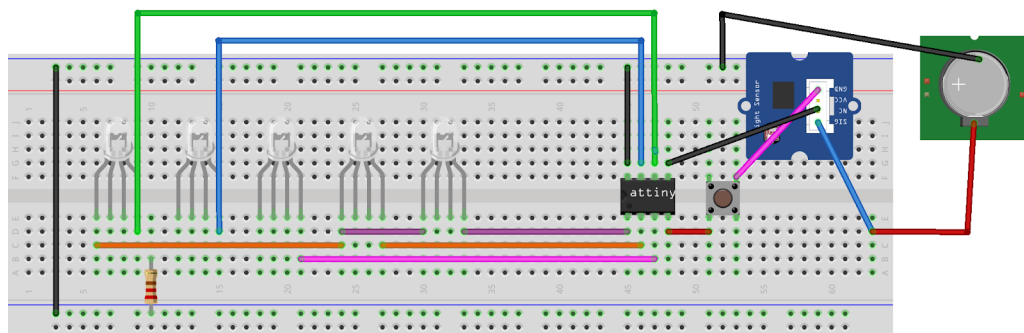
The main difference between the two circuits are the placement of the Resistors. In fact, the built circuit has one resistor that regulates the system before it reaches all of the other LEDs. As for the alternate circuit, there is not only one resistor, but rather 5 resistors for each of the LEDs. In the built circuit, the resistor is placed in series with the LEDs (who are in parallel to each other), and the alternate circuit has its resistors placed in parallel, just like the LEDs. In both circuits, the voltage remains constant, but the amps do change drastically. In fact, in the build circuit, the amps only go through one resistor which is positioned in series, therefore there is more current going through each of the LEDs. With the alternate circuit, the current goes through 5 resistors, and the overall current is separated between them, therefore not as much goes through to the LEDs.

The more reliable circuit in my opinion would be the Alternate Circuit, since having a separate resistor for each LED means that if one of the resistors breaks, the other LEDs will still work since they are in parallel. In contrast, the built circuit only has one, therefore if it ever malfunctions, all the LEDs will be in danger of also malfunctioning. Also, not as much current goes through each LED, which to me makes it a safer option, since it won't be as high and the chances of breaking the LEDs are lower.

To make the experience more meaningful, I would add a light sensor, so that when the prop is in the dark, the LEDs will flash with different colours to make it into more neon, with “cyberpunk” vibes, almost like a prop to go dancing with, and make cooler lighting effects on camera and in real life. It will be like a secret tool, that you can only experience if you use the circuit in optimal conditions and are active in wanting to see the effects of the prop.



(oops, not responding)



fritzing

(honestly don't understand how to plug in the sensor and integrate smoothly in the system...)

PART 3

Completed circuit with lighting effect:
(video in a different file)



