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 CART 360  
 Etude 2

**Determine the feature(s) that distinguish these two circuits – what makes them different? Why?**

The built circuit has five lines of current going into one resistor that then has to light up five lights.

The alternate circuit also has five lines of current but each line of current has its own resistor, that then lights up its own LED light.

I think that having more than more resistors help the current move faster than only having one.

**Which of the circuits presented would be more reliable circuit – Why?**

The alternate circuit would be a more reliable circuit because it has five resistors, compared to the Built Circuit that has one resistor. This means that each LED light has its own independent resistor and voltage.

**What is occurring with the  $V/I/R$  in the area(s) that you have discerned as important?**

What is happening with the current is that is flowing in parallel lines. The Current is coming out of the pins and into the resistors, to the lights. There is 300 ohms / 5. Which means the resistors are working in parallel. The more LED lights that are on, the less resistor will be needed. The less LED lights are on that the more resistor will be used.

**How would you further extend the Perceptron-P, what would you introduce to the Perceptron-P in order to make the experience more meaningful?**

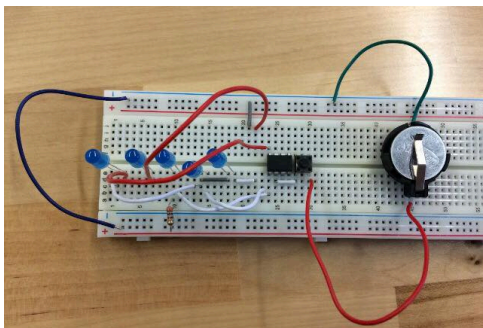
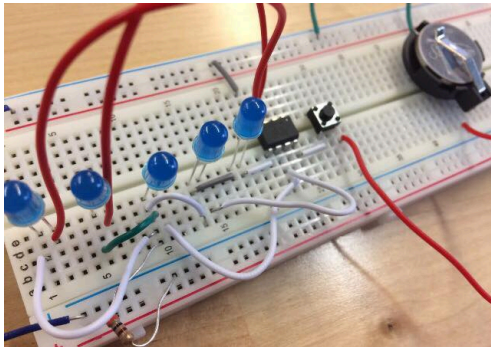
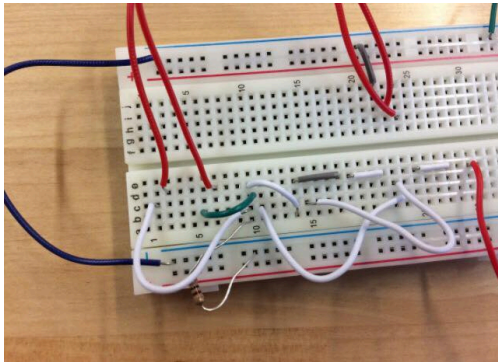
What I would add to the Perceptron-P to make it more meaningful might be to have different color LED and not the same color or to have more than one character with your word.

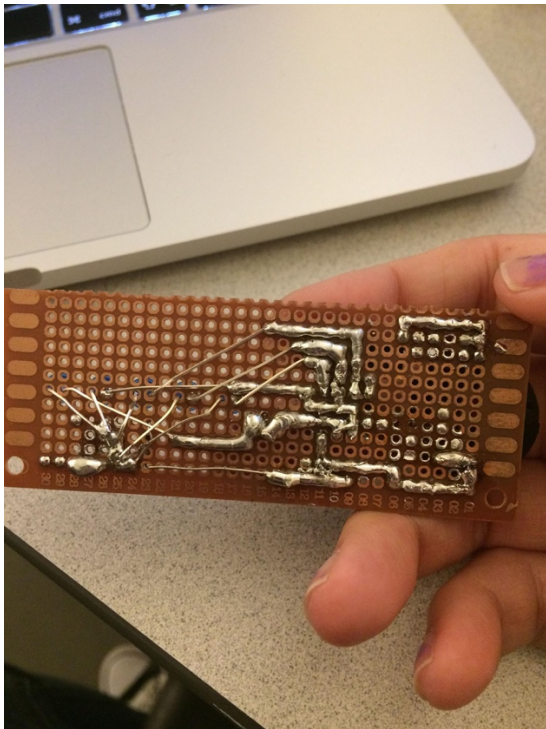
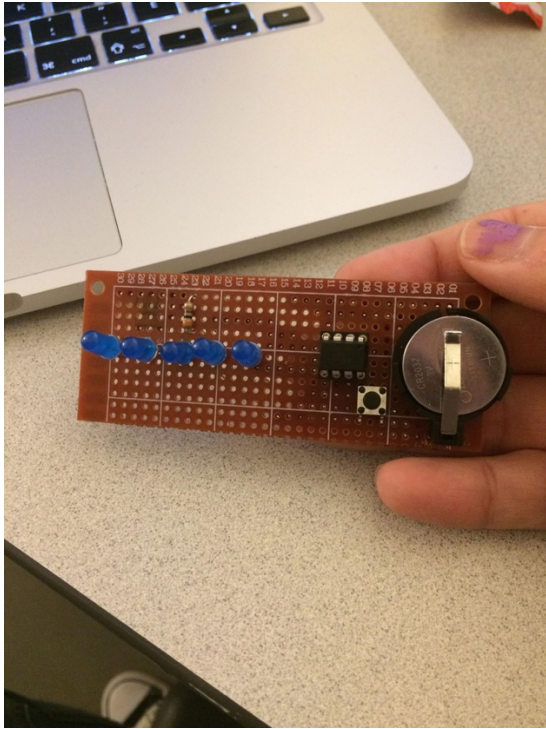
**What I did**

The circuit is complete but it does not work to its full capabilities. My character and my word have been coded into the Arduino file, when the code was uploaded it all worked, meaning the microcontroller was programmed. The pieces are all place on the PCP board in the right order however, the lack of solder experience really took over and I was unable to solder my board well. The cover of the board was no longer there in some spots so it was impossible for me to solder on that spot so I had to work around a big part of the board. I was left with the only option of connecting the battery to pin 4 another way than the originally way I intended, which was a shorter was than the one I ended up with. Same goes for the battery to the button. I had to redo, those two sections two or three times each because the solder kept on building up in these fat lines of sliver metal. There was also these fat blobs of solder and the littlest, tiniest space in between the blobs and trying to fill the hole it would make the blobs even bigger, and it would make this fat line of solder, which had to be removed and done correctly. Removing, it removed the copper on the board, it was an endless circle of failure on some parts.

In the only four of my LED lights work, LED four to one are the ones that work. Three to one are full light and LED four and five flickers. The light that does not work is because, I crossed the wires, the negative wire of LED four to one is over the positive wire of LED five. The LED lights are a bit off too, when I press the button and only LED three goes on and then I press the button again and LED three to one goes on full bright and you can see LED four being very dim. Also, sometimes when I hold the circuit horizontally and I press the button only LED three works and when I hold it vertically LED three to one works. To top it all off in the dark LED five and four shows to be on but it is very dim.

## Documentation





HABS

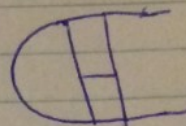
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10

18

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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

5, 4, 5



like cup  
to Pin are

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

1, 1, 2, 1, 1

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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

3, 3, 3, 4, 2

ARRAY

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0	0	0	0	0

0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0

3, 2, 2, 2, 3