

Breadboards Circuits & Signals

EECE2150

Michael BRODSKIY

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Partner: Juan ZAPATA
Instructor: Professor SUN

1 Introduction

The experiment that was undertaken concerned the analysis and physical reconstruction of basic electrical diagrams on a breadboard. The purpose of this was to familiarize ourselves with rudimentary functions of a breadboard.

2 Experimental Data

The voltage drops across each component were as follows:

| Component | Voltage Drop [V] |
|---------------|------------------|
| Resistor 1 | 1.0708 |
| Resistor 2 | 1.0708 |
| LED 1 (Red) | 1.9511 |
| LED 2 (Green) | 1.9811 |

None of the measured voltages were negative for us; however, if we were to reverse the polarity (*i.e.* switch the black and red voltmeter terminals), then the produced values would have the same magnitude but opposite sign.

The two LEDs did not have the same voltage drop. The red LED had a drop of 1.9511[V] and the green one had a drop of 1.9811[V]

The circuits constructed did all work on the first try; however, real-world circuits, which are significantly more complex, almost definitely do not work on the first try.

3 Constructed Circuits

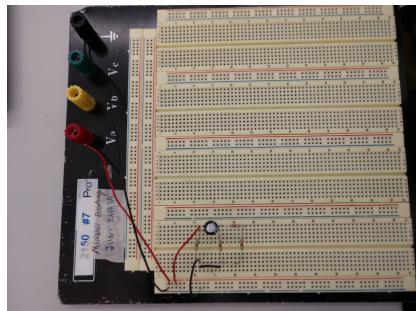


Figure 1: Circuit 1 Implementation

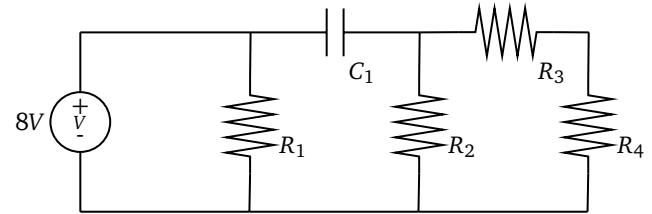


Figure 2: Circuit 1 Diagram

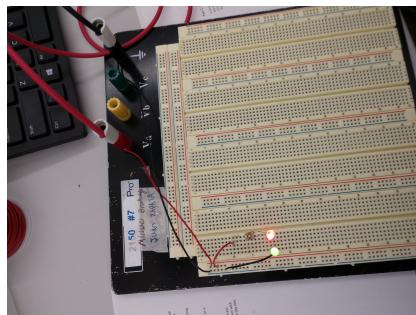


Figure 3: Circuit 2 Implementation

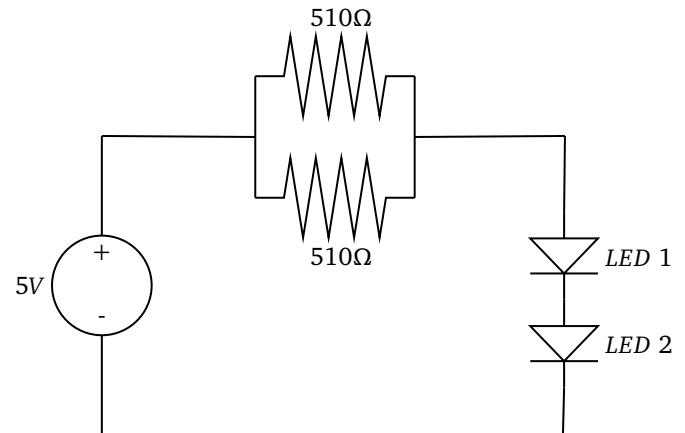


Figure 4: Circuit 2 Diagram

4 Conclusion

Overall, breadboards seem to be a good substitute for soldering, especially when constructing the simple circuits shown above. Additionally, it is logical that the green LED would consume more volts, as green is higher on the photon energy spectrum than red, and, as such, would take more volts to power.