Dylan Hourihan, Aughdon Breslin

Our project is soldering and we want to familiarize ourselves with soldering techniques we can use for future projects. Our goal, by the end of the learning module, is to achieve good soldering techniques, and become familiar with a variety of electronic components.

The methods and resources we will use to learn soldering is Solder Practice Kit and online videos. The main Role of Dylan is to do most of the soldering and some research. The main role for Audie is to do most of the research and some soldering.

Timeline

1. Read the manual Solder Practice Kit
2. Watch the tutorial video on soldering
3. Solder Practice
4. Practice cleaning tools
5. Get to actual soldering

Day 1 Log

We learned about the basics of soldering and the process of heating up the soldering iron, touching the solder to the area for soldering, and then touching the soldering iron to the solder to create the connection. We also set up the Doc.

Day 2 Log

We practiced soldering the wires to the solder on the practice board. In the process we learned to use clamps to hold the wire in place without putting our fingers at risk of burns. We also learned how to strip wires successfully and consistently to use for bridges.

Day 3 Log

We started applying the resistors to the board, and after a quick mix-up with reading, we realized we made the mistake f using the incorrect resistor for a few spots. We had to melt the solder while simultaneously pulling out the resistor while the solder is liquid in order to fix our mistakes, due to difficulties with the solder-remover. Overall we finished soldering the resistors and got started on the capacitors.

Day 4 Log

We finished the construction of the PC Board and set up the speaker. We also got the speaker to work and fixed ½ of the LEDs.

Day 5 Log

We corrected the second LED and finished the correct construction of the board. Both the sound and lighting works and we moved on to mess around with the voice changing module. As it turns out the robotic option yields a series of ear-piercing screeches.

Final Report

Our group consisted of Aughdon Breslin and Dylan Hourihan. We learned and practiced soldering and maneuvering small pieces to make connections. This also involved figuring out how to undo mistakes such as putting the negative lead in the positive place or by stripping the wires too far and accidentally having the open wires connect before their designated holes and short circuiting the board.

Problems we encountered within this activity include hooking up the wires in the wrong spot. We also had the wrong side of the LEDs hooked up and had to desolder them and flip them around. We stripped the wires too far and had to use electric tape to make sure the circuit wasn’t cut short by unintentional connections.

Other suggestions for people who might pursue this activity is to read the directions carefully and make sure you know which resistors are represented by each label.

A summary on the experience is that, although soldering can burn and often results in plumes of smoke, it is fun to do and witness your work come to life with sounds and lights of success.