Journal Report 6
10/7/19-10/14/19
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Period 2, White

Daily Log

Detail for each day about what you researched, coded, debug, designed, created, etc. Informal style is OK.

Monday October 7

Acquired necessary supplies to integrate multiple LEDs (breadboard, more LEDs, jumper wires, and 330 ohm resistors)
Began re-learning how to connect and control multiple LEDs with a breadboard and Arduino

Tuesday October 8

Continued looking into how to use multiple LEDs with an Arduino and breadboard through online research and YouTube tutorials
Successfully ran code from 9th grade Design and Tech class utilizing breadboard design, completing my refresher on how to connect and control multiple LEDs with a breadboard and Arduino

Thursday October 10

Began looking into CharliePlexing, an Arduino technique that allows for multiple LEDs to be controlled by fewer digital pins
This means that even though there are only 14 individual pins on the Arduino, I can potentially control 182 actual LEDs

Timeline

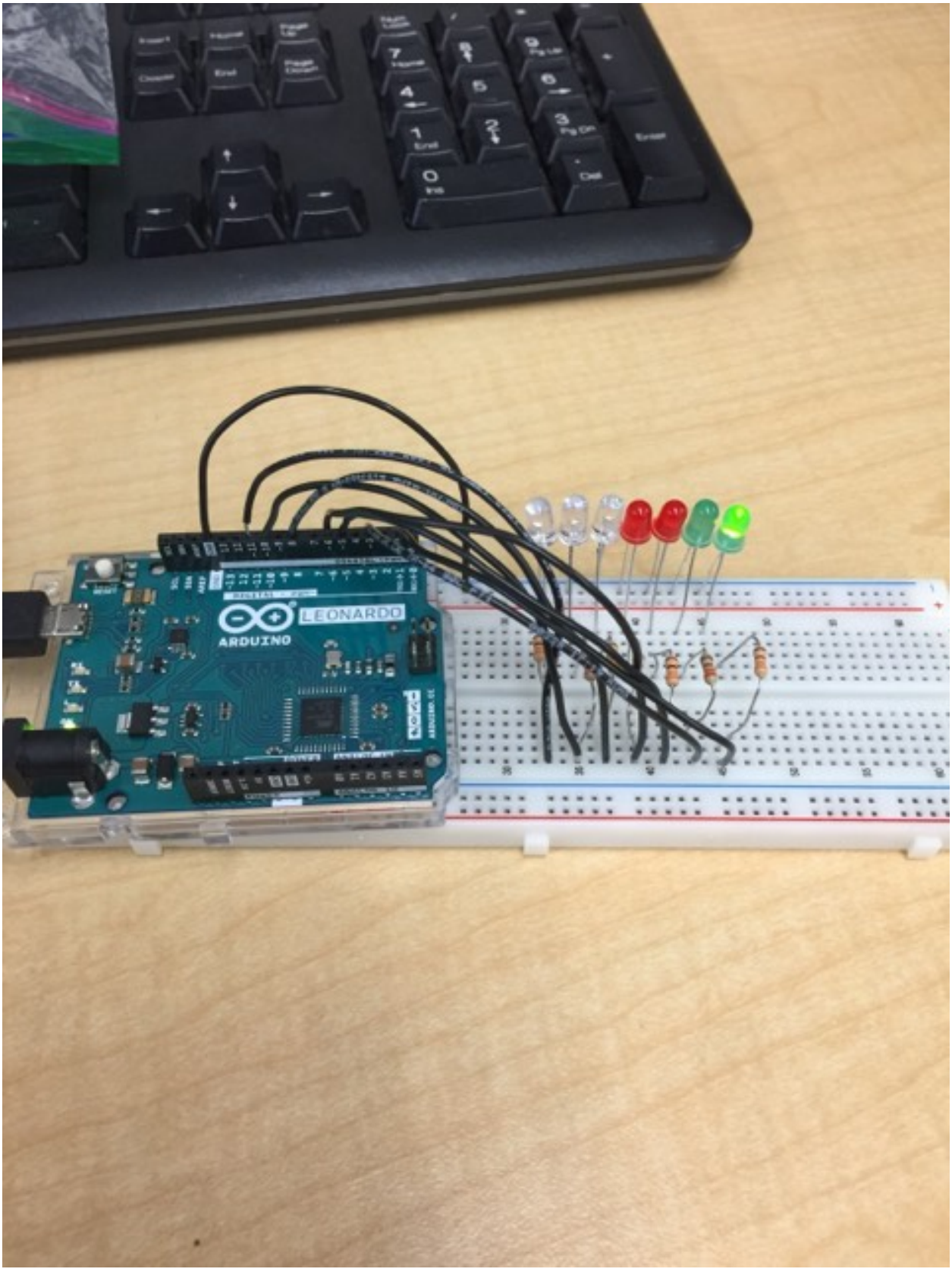
Date	Goal	Met
September 30	See if robot can successfully play a note	not met; my partner did not have a robot ready for me to test
October 7	Coordinate single LED with MIDI music file	Yes; goal successfully met
October 14	Coordinate multiple LEDs with MIDI music file (one LED per note)	Partially met; I am able to control multiple LEDs, however, I have not coordinated them with the MIDI file
October 21	Successfully play a single note on Jason's robot	
October 28	Successfully play a single note on Jason's robot	

Reflection

In narrative style, talk about your work this week. Successes, failures, changes to timeline, goals. This should also include concrete data, e.g. snippets of code, screenshots, output, analysis, graphs, etc.

Overall, I am satisfied with my accomplishments this week. I partially met this week's goal of coordinating multiple LEDs with the MIDI file. This was achieved by connecting various wires to input pins and the negative ground, and utilizing resistors to ensure that the LEDs do not burn out (as shown below). In terms of a next step, I can either choose to coordinate the LEDs with the MIDI file, which should not be too hard and rather straightforward, or I can continue looking into more ways I can connect more LEDs to the Arduino such as Charlieplexing. This latter possibility will probably require more research, and I may or may not have to rearrange deadlines to account for this research.

Ultimately, however, no matter when I start researching, I will eventually have to address the problem of only having 14 input pins while also having songs that can potentially contain dozens of notes. This means that each pin will have to control more than one note.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