Journal Report 7
10/14/19-10/28/19
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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.

Tuesday October 15

Began writing code to have multiple LEDs flash in coordination to the MIDI file (Yankee Doodle)

Thursday October 17

Continued working on having multiple LEDs flash in coordination to the MIDI file through building and accessing data matrix
Since the Arduino only has pins labeled 0-14, I needed to subtract 54 from each MIDI pitch value to correspond accurately to its respective Arduino pin

Monday October 21

Successfully had multiple LEDs flash in coordination to the MIDI file

Tuesday October 22

Began looking into shift registers, another 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 40 actual LEDs

Thursday October 24

Continued research into shift registers

Timeline

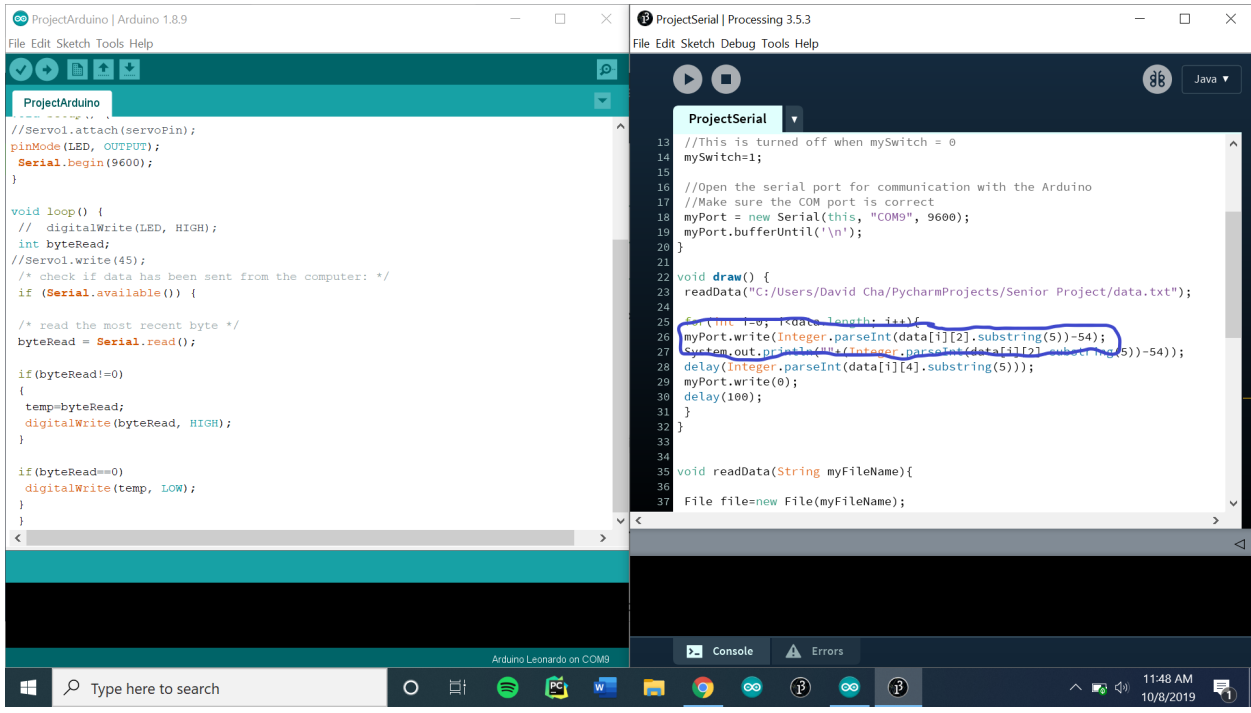
Date	Goal	Met
October 7	Coordinate single LED with MIDI music file	Yes; goal successfully met
October 14	Coordinate multiple LEDs with MIDI music file (one LED per note)	Partially met; I am able to control multiple LEDs, however, I have not coordinated them with the MIDI file
October 28	Coordinate multiple LEDs with MIDI music file (one LED per note)	Yes; goal successfully met
November 4	Coordinate even more LEDs with MIDI file that contains more than 14 notes	
November 11	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 met this week's goal of coordinating multiple LEDs with the MIDI file. This was achieved by subtracting 54 from the note's MIDI value, so that it would correspond to a pin number on the Arduino (as shown below). In terms of a next step, I have to look more into which option I should choose in order to gain access to more LEDs with my limited number of input pins. Charlieplexing seems promising in terms of sheer number of LEDs able to be controlled, but shift registers seem less complicated to wire. Also, considering the xylophone we are ordering probably only has around 30 notes, (and thus only around 30 output LEDs/Servos), charlieplexing may not even be necessary.

(7).png (7).png


ProjectArduino | Arduino 1.8.9
File Edit Sketch Tools Help
ProjectArduino
//Servo1.attach(servoPin);
pinMode(LED, OUTPUT);
Serial.begin(9600);
}
void loop() {
// digitalWrite(LED, HIGH);
int byteRead;
//Servo1.write(45);
/* check if data has been sent from the computer: */
if (Serial.available()) {
/* read the most recent byte */
byteRead = Serial.read();
if(byteRead!=0)
{
temp=byteRead;
digitalWrite(byteRead, HIGH);
}
if(byteRead==0)
digitalWrite(temp, LOW);
}
}
Arduino Leonardo on COM9
ProjectSerial | Processing 3.5.3
File Edit Sketch Debug Tools Help
Java
ProjectSerial
//This is turned off when mySwitch = 0
mySwitch=1;
//Open the serial port for communication with the Arduino
//Make sure the COM port is correct
myPort = new Serial(this, "COM9", 9600);
myPort.bufferUntil('\n');
}
void draw() {
readData("C:/Users/David Cha/PycharmProjects/Senior Project/data.txt");
myPort.write(Integer.parseInt(data[i][2].substring(5))-54);
System.out.println(""+(Integer.parseInt(data[i][2].substring(5))-54));
delay(Integer.parseInt(data[i][4].substring(5)));
myPort.write(0);
delay(100);
}
}
void readData(String myFileName){
File file=new File(myFileName);
Console
Errors
Type here to search
11:48 AM
10/8/2019