



# E11: Autonomous Vehicles

## PS 2: Music and Memory Game

In this problem set you will write two programs: one will play music on your Mudduino and the other will play a memory game. These programs will help you become comfortable using arrays, control statements, and function calls in C.

**Important:** keep track of how long it takes for each program by placing the following comment on the first line of each program file (where xx is the number of hours that it took you):

```
// Time to complete program = xx hours
```

### Part 1: Playing a Song on the Mudduino

Program your Mudduino to play the sequence of notes – specified as a frequency and duration – shown in Table 1. Your program should include a 30 ms delay between each note (frequency) that is played. Name this sketch ps2\_1\_Lastname\_Firstname.

Frequency	Duration (ms)
294	220
294	220
392	970
587	470
523	135
494	135
440	135
784	970
587	470
523	135
494	135
440	135
784	970
587	470
523	135
494	135
523	135
440	1470

**Table 1.** Notes to play on your Mudduino

You may find these two arrays useful:

```
int frequency[18] = {294, 294, 392, 587, 523, 494, 440, 784, 587, 523, 494, 440, 784, 587, 523, 494, 523, 440};
```



Make sure your files have .ino extensions (not .txt)

The files are due on 9/27 at 11:59pm.

## **Grading**

Your code will be graded as follows

- 0.5 points for each program that compiles
- 0.5 additional points for each program that works according to the requirements described above.
- 1.0 additional points for your 3 programs being commented
- This results in 3.0 points maximum