

### Useful MATLAB Commands

>> clc	Clears the Command Window
>> clear	Clears all the variables in the Workspace
CTRL + C	Breaks out of an infinite loop

### Provided MATLAB Functions

Functions and Examples	Description
>> soundUI	App to visualize the effect of noise and amplitude on a sound file
>> playNumber playNumber(1:8)	Takes an array of numbers as input and for each number plays a corresponding tone on the speaker
>> miniKeyB	Different keys plot different sound waves with different frequencies
>> plot(data)	Plots the input data in a figure window
>> pause(0.5)	Pauses MATLAB for 0.5 seconds
>> audioread [y, Fs] = audioread('mySong.mp3')	Reads audio files into MATLAB and gives the sample data of the audio(y) and its sampling rate(Fs) as the output
>> audiowrite audiowrite('newFilename.wav', y, Fs)	Writes the audio data(y), with sample rate Fs to a media file
>> playSound playSound('guitar_B4.wav')	Plays audio files in MATLAB

### MATLAB Functions for the Arduino Board

Functions and Examples	Description
>> board.Connect('Port#') board.Connect('4')	Allows MATLAB to speak to the Arduino board via provided port number
>> board.Disconnect	Disconnects board from MATLAB
>> board.readPin('Pin#') board.readPin('A2')	Reads analog and digital sensor information from the specified pin number in the board
>> board.writePin('Pin#', value) board.writePin('D2', 1)	Turns a digital sensor/actuator on or off depending on the input value
>> board.playTone('Pin#', freq, dur) board.playTone('D3', 392, 0.5)	Plays a note from the pin number specified on the board (for a speaker) at the desired frequency for the given duration
>> readVoltage(obj, 'Pin#') readVoltage(obj, 'A2')	Reads the voltage on the specified analog input pins on the board