Arduino/Python API Documentation

# Summary:

* This contains the modules, class, and methods we used to connect and use the Arduino uno. Everything used here is from pyFirmata

# Modules:

Arduino

* + This module lets us set up a specified port as an Arduino board, allowing us to read data from the sensors on it.

Util

* + Collection of methods used by pyFirmata – in this program we use the iterator() class

# Class: Arduino Summary:

Arduino(Board): By inputting the serial port where the Arduino is connected, this will create an instance of an Arduino board allowing us to use the methods get\_pin() and read() that are required to obtain data from the attached sensors. This class is from pyFirmata.

# Class Iterator() Summary:

Iterator(): This class starts an iterator thread when created. It is useful for analog data so it won’t clog up the serial port.

# Methods Summary (Arduino & Iterator):

read(self): This method returns the current value of the pin. We use this function to read either a 1 or a 0 depending on whether or not the sensors detect anyone at the time.

get\_pin(self, pin\_def): This method returns the activated pin that is entered, it also checks that the pin entered exists and is not already in use.

Start(): Starts the iterator thread created by Iterator()

Methods Summary (Other):

Sleep(): Creates a delay in the program – having us wait for the sensors to reset before performing read() again.

onLED(): Sets a pin connected to the Arduino board to HIGH

offLED(): Sets a pin connected to the Arduino board to LOW

connectArduino(): Attempts to connect to the Arduino through the serial port inputted. If it fails, we will get an error message and exit the program

sys.exit(): Exits the current program, we use this in the case that we cannot connect to Arduino board in the connectArduino method.

Other Information:

<https://github.com/tino/pyFirmata> Contains all of the source code for Pyfirmata – also contains information on how to install and use pyFirmata.