
Arduino

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Patrick Huang

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SETUP

First, install the Python module.

```
pip install python-arduino
```

Next, plug in an Arduino board. Locate the device file that corresponds to it:

```
user@comp:~$ cd /dev

user@comp:/dev$ ll | grep ttyACM
crw-rw----  1 root    dialout 166,   0 Nov  6 00:00 ttyACM0  # This is the device file

user@comp:/dev$ sudo chmod 666 ttyACM0  # Allow all users to control it
```

Before you can control the board, compile and upload the Firmata program to it. Open the Arduino IDE and open File >> Examples >> Firmata >> StandardFirmata, and compile and upload.

class `arduino.Clock`(*t: float = 0*)
Clock based on absolute time rather than relative. Can tick at a constant rate.

reset(*t: float = 0*)
Reset time (or set to t).

tick(*t*)
Wait until time is t + last_tick.

time()
Return time since elapse.

waitto(*t*)
Sleep until time is t.

MOTOR

class `arduino.motor.Stepper`(*board: pyfirmata.pyfirmata.Board, spr: int*)
Base stepper motor class. Extend from this to create a specific motor.

clock: `arduino.core.Clock`

Motor's clock. Set at init so no overhead for creating the object.

property pos: `float`

The current position in degrees.

rotate(*deg: float, rpm: float*)

Rotate the motor.

Parameters

- **deg** – The angle to rotate in degrees.
- **rpm** – Speed in revolutions per minute.

rotate_for(*deg: float, t: float*)

Rotate **deg** for **t** seconds.

rotate_to(*deg: float, rpm: float*)

Rotate to **deg** at **rpm** rotations per minute.

rotate_to_for(*deg: float, t: float*)

Rotate to **deg** for **t** seconds.

spr: `int`

Steps per revolution.

step(*cw: bool, t: float*)

Step the motor. Calls `self._step(cw, t)`. Define in a subclass.

Parameters

- **cw** – True if clockwise, False if counter-clockwise.
- **t** – Total step time.

This is a Python module which provides an API to controlling Arduino boards. It uses PyFirmata to communicate, and provides functions which implement individual pin controls.

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