
circuitroomba Library Documentation

Release 1.0

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CircuitRoomba is a CircuitPython library for interfacing with Roomba Open Interface devices.

CHAPTER 1

Dependencies

This library depends on:

- [Adafruit CircuitPython](#)

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the [Adafruit library and driver bundle](#).

1.1 Installing from PyPI for blinka boards

```
pip install circuitroomba
```

To install in a virtual environment in your current project:

```
mkdir project-name && cd project-name
python3 -m venv .env
source .env/bin/activate
pip install circuitroomba
```

For CircuitPython boards that don't support blinka copy `/circuitroomba` from `/src` to `/lib` on the CircuitPython board. `make install` has been setup as a helper, but you may need to update the `/Volume` path for your system and board name.

```
make install
```


CHAPTER 2

Usage Example

```
import board
import digitalio
import time
from circuitroomba.series6 import roomba

__repo__ = "https://github.com/AlexanderHagerman/circuitroomba.git"

# initialize roomba
bot = roomba.Commands(board.TX, board.RX, digitalio.DigitalInOut(board.A1))

# wake roomba from sleep mode
bot.wake_up()

# CircuitPython loop
while True:
    # send commands
    bot.start()
    bot.safe()
    bot.clean()

    time.sleep(2)

    bot.power()
    bot.stop()

    break
```

More examples are available in /examples.

Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.

3.1 Sphinx documentation

Sphinx is used to build the documentation based on rST files and comments in the code. First, install dependencies (feel free to reuse the virtual environment from above):

```
python3 -m venv .env
source .env/bin/activate
pip install Sphinx sphinx-rtd-theme
```

Now, once you have the virtual environment activated:

```
cd docs
sphinx-build -E -W -b html . _build/html
```

This will output the documentation to `docs/_build/html`. Open the `index.html` in your browser to view them. It will also (due to `-W`) error out on any warning like Travis will. This is a good way to locally verify it will pass.

CHAPTER 4

Images

5.1 Simple example

Ensure your device works with this simple example.

Listing 1: examples/circuitroomba_roomba.py

```

1  # The MIT License (MIT)
2  #
3  # Copyright (c) 2019 Alexander Hagerman for Alexander Hagerman
4  #
5  # Permission is hereby granted, free of charge, to any person obtaining a copy
6  # of this software and associated documentation files (the "Software"), to deal
7  # in the Software without restriction, including without limitation the rights
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13 # all copies or substantial portions of the Software.
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15 # THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
16 # IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
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18 # AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
19 # LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
20 # OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
21 # THE SOFTWARE.
22 """
23 `circuitroomba`
24 =====
25
26 CircuitPython helper library for interfacing with Roomba Open Interface devices.
27

```

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```
28
29 * Author(s): Alexander Hagerman
30
31 **Hardware:**
32
33 * Adafruit Circuit Playground Express
34
35 **Software and Dependencies:**
36
37 * Adafruit CircuitPython firmware for the supported boards:
38   https://github.com/adafruit/circuitpython/releases
39   """
40
41 import board
42 import digitalio
43 import time
44 from circuitroomba.series6 import roomba
45
46 __repo__ = "https://github.com/AlexanderHagerman/circuitroomba.git"
47
48 bot = roomba.Commands(board.TX, board.RX, digitalio.DigitalInOut(board.A1))
49
50 c = 0
51
52 bot.wake_up()
53
54 while True:
55     bot.start()
56     bot.safe()
57     bot.clean()
58
59     time.sleep(2)
60
61     bot.power()
62     bot.stop()
63
64     c += 1
65
66     print(c)
67
68     bot.wake_up()
69
70     if c == 2:
71         break
```


CHAPTER 6

Indices and tables

- `genindex`
- `modindex`
- `search`

S

`src.circuitroomba`, [12](#)

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`src.circuitroomba` (*module*), [12](#)