

Sharing is Caring

sharing pytest fixtures

-

Brian Okken

Slides + Code

pythontest.com/pycascades-2023

Brian Okken

- Podcasts
Python Bytes / Test & Code



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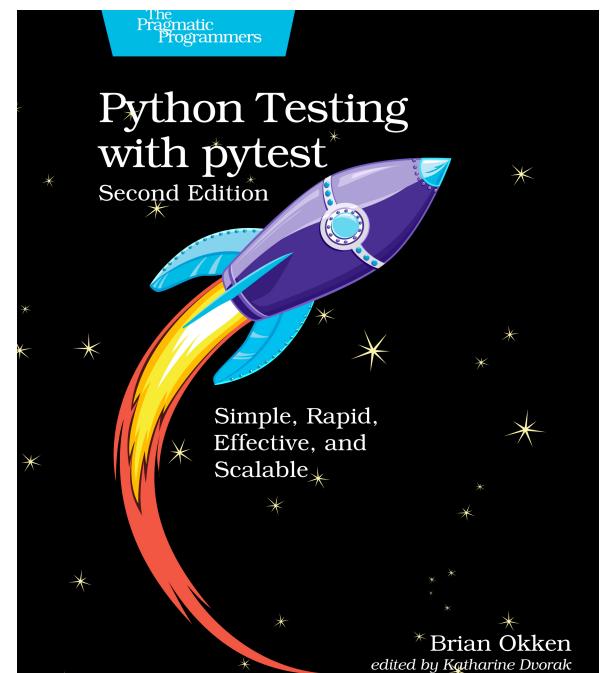
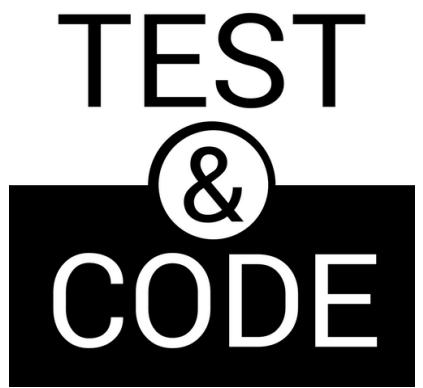
TEST
&
CODE

Brian Okken

- Podcasts
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- Books
Python Testing with pytest



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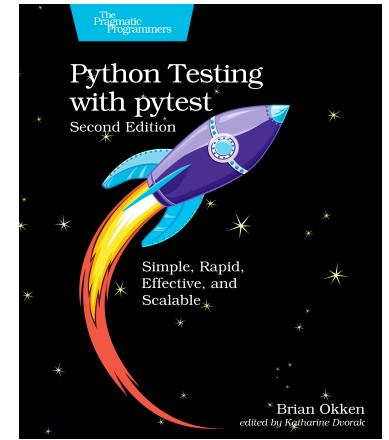
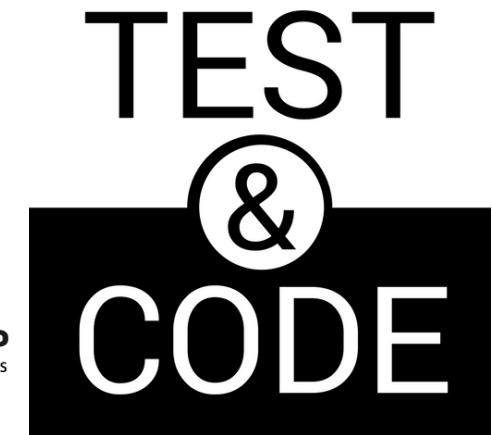


Brian Okken

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Python Testing with pytest
- Training
pythontest.com/courses
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Getting Started with pytest



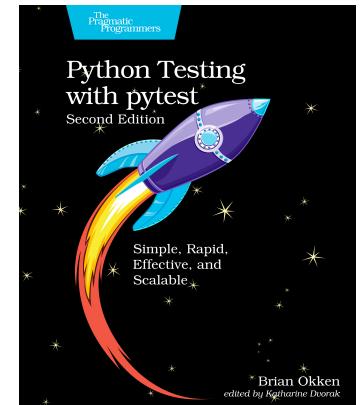
Python's most powerful
test framework

Brian Okken

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TEST
&
CODE

Getting Started with pytest



Python's most powerful
test framework



System level testing

Is what led me to pytest



Why?

pytest fixtures are awesome

- Setup before a test:
Connect, Reset, Configure, ...
- Teardown: reset switches,
check logs, ...
- Multiple levels: Session,
Module, Function, ...



pytest is awesome

you are awesome

you're here, right?

you will make
fixtures so awesome
you want to share them

Fixture crash course

typical example

```
import pytest

@pytest.fixture()
def db():
    ... # connect to db
    yield _db
    ... # disconnect
```

typical example

```
import pytest

@pytest.fixture()
def db():
    ... # connect to db
    yield _db
    ... # disconnect

def test_foo(db):
    ...
    result = db.action()
    ...

def test_bar(db):
    ...
    result = db.action()
    ...
```

but frankly

that's too useful for this talk

How about

colorful print statements

```
[pytest-crayons] $ pytest -s test_example.py
=====
test session starts =====
collected 1 item

test_example.py
test_colors: this should be in red
test_colors: this should be in green
test_colors: this should be in yellow
test_colors: this should be in blue
test_colors: this should be in magenta
test_colors: this should be in cyan
.

=====
1 passed in 0.00s =====
```

let's start with just one

```
[\$ pytest -s test_example.py::test_magenta
=====
test session starts
collected 1 item

test_example.py
test_magenta: this should be in magenta
.

=====
1 passed in 0.00s
=====
```

Using the fixture

```
def test_magenta(magenta):
    print("")
    magenta("this should be magenta")
```

The fixture

```
import pytest
from functools import partial

MAGENTA = "\x1b[35m"
RESET = "\x1b[0m"
BOLD = "\x1b[1m"

def _color_print(color: str, func_name: str, text: str):
    print(f"{BOLD}{color}{func_name}: {text}{RESET}")

@pytest.fixture()
def magenta(request):
    return partial(_color_print, MAGENTA, request.node.name)
```

More colors

```
@pytest.fixture()
def red(request):
    return partial(_color_print, RED, request.node.name)

@pytest.fixture()
def green(request):
    return partial(_color_print, GREEN, request.node.name)

@pytest.fixture()
def yellow(request):
    return partial(_color_print, YELLOW, request.node.name)

@pytest.fixture()
def blue(request):
    return partial(_color_print, BLUE, request.node.name)

@pytest.fixture()
def magenta(request):
    return partial(_color_print, MAGENTA, request.node.name)

@pytest.fixture()
def cyan(request):
    return partial(_color_print, CYAN, request.node.name)
```

We can use them all!

```
def test_colors(red, green, yellow, blue, magenta, cyan):
    print("")
    red("this should be red")
    green("this should be green")
    yellow("this should be yellow")
    blue("this should be blue")
    magenta("this should be magenta")
    cyan("this should be cyan")
```

Several colors are nice

```
[pytest-crayons] $ pytest -s test_example.py
=====
test session starts =====
collected 1 item

test_example.py
test_colors: this should be in red
test_colors: this should be in green
test_colors: this should be in yellow
test_colors: this should be in blue
test_colors: this should be in magenta
test_colors: this should be in cyan
.

=====
1 passed in 0.00s =====
```

That was fun

But they can't be shared

Yet

They're in the test file

```
import pytest
from functools import partial

# Terminal color codes
RED = "\x1b[31m"
GREEN = "\x1b[32m"
YELLOW = "\x1b[33m"
BLUE = "\x1b[34m"
MAGENTA = "\x1b[35m"
CYAN = "\x1b[36m"
RESET = "\x1b[0m"
BOLD = "\x1b[1m"

def _color_print(color: str, func_name: str, text: str):
    print(f"{BOLD}{color}{func_name}: {text}{RESET}")

@pytest.fixture()
def red(request):
    return partial(_color_print, RED, request.node.name)

@pytest.fixture()
def green(request):
    return partial(_color_print, GREEN, request.node.name)

@pytest.fixture()
def yellow(request):
    return partial(_color_print, YELLOW, request.node.name)

@pytest.fixture()
def blue(request):
    return partial(_color_print, BLUE, request.node.name)

@pytest.fixture()
def magenta(request):
    return partial(_color_print, MAGENTA, request.node.name)

@pytest.fixture()
def cyan(request):
    return partial(_color_print, CYAN, request.node.name)

def test_colors(red, green, yellow, blue, magenta, cyan):
    print("") # for the newline
    red("this should be red")
    green("this should be green")
    yellow("this should be yellow")
    blue("this should be blue")
    magenta("this should be magenta")
    cyan("this should be cyan")

def test_magenta(magenta):
    print("") # for the newline
    magenta("this should be magenta")
```

We need to set them free

And put them in a conftest.py file

```
test_directory
└── conftest.py
└── test_example.py
└── test_example_two.py
```

confest.py

```
import pytest
from functools import partial

# Terminal color codes
RED = "\x1b[31m"
GREEN = "\x1b[32m"
YELLOW = "\x1b[33m"
BLUE = "\x1b[34m"
MAGENTA = "\x1b[35m"
CYAN = "\x1b[36m"
RESET = "\x1b[0m"
BOLD = "\x1b[1m"

def _color_print(color: str, func_name: str, text: str):
    print(f"{BOLD}{color}{func_name}: {text}{RESET}")

@pytest.fixture()
def red(request):
    return partial(_color_print, RED, request.node.name)

@pytest.fixture()
def green(request):
    return partial(_color_print, GREEN, request.node.name)

@pytest.fixture()
def yellow(request):
    return partial(_color_print, YELLOW, request.node.name)

@pytest.fixture()
def blue(request):
    return partial(_color_print, BLUE, request.node.name)

@pytest.fixture()
def magenta(request):
    return partial(_color_print, MAGENTA, request.node.name)

@pytest.fixture()
def cyan(request):
    return partial(_color_print, CYAN, request.node.name)
```

test_example.py

```
def test_colors(red, green, yellow, blue, magenta, cyan):
    print("") # for the newline
    red("this should be red")
    green("this should be green")
    yellow("this should be yellow")
    blue("this should be blue")
    magenta("this should be magenta")
    cyan("this should be cyan")
```

test_example_two.py

```
def test_magenta(magenta):
    print("") # for the newline
    magenta("this should be magenta")
```

Now sharing works

In the same directory

```
test_directory
├── conftest.py
└── test_example.py
    └── test_example_two.py
```

How about different directories?

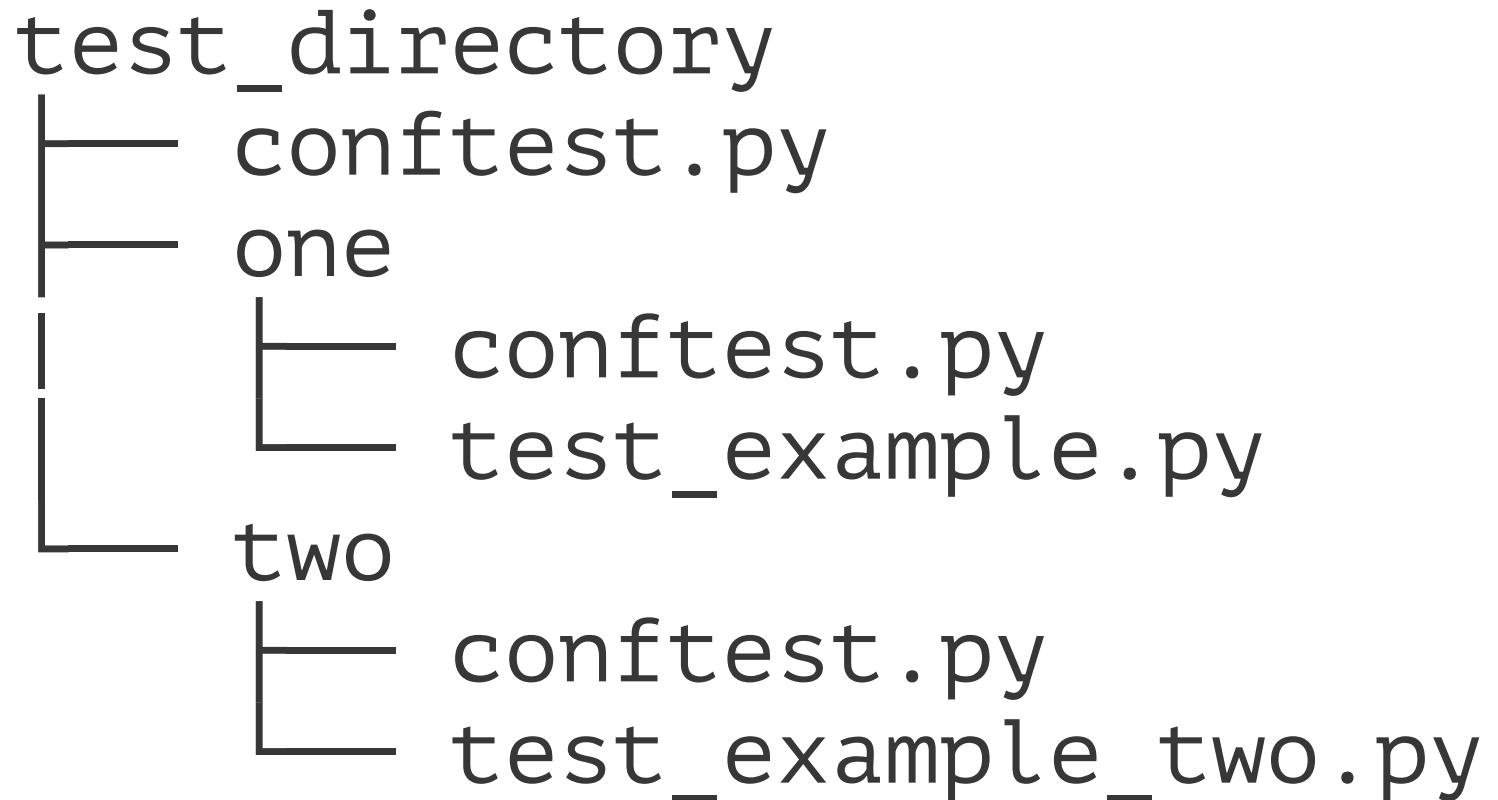
For tests in subdirectories

It's still fine

```
test_directory
├── conftest.py
└── one
    └── test_example.py
└── two
    └── test_example_two.py
```

Multiple conftest.py files

Still fine



How about sharing between projects?

This is where it gets fun

Before I show you the next couple of slides

- promise you won't run away
- it's actually not as bad as it seems at first

We're going to start here

```
test_directory
├── conftest.py
└── test_example.py
    └── test_example_two.py
```

And move to

test_directory

└── conftest.py

└── test_example.py

└── test_example_two.py

pytest-crayons

└── LICENSE

└── README.md

└── examples

 └── test_example.py

 └── test_example_two.py

└── pyproject.toml

└── pytest_crayons.py

└── tests

 └── conftest.py

 └── test_colors.py

└── tox.ini

Yes. We're going to talk about ...

Packaging

and
building a
pytest plugin

Packaging pytest plugins

Trust me
it's not that bad

So how do we get from here to there?

```
test_directory
├── conftest.py
└── test_example.py
└── test_example_two.py
```

```
pytest-crayons
├── LICENSE
├── README.md
└── examples
    ├── test_example.py
    └── test_example_two.py
├── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

test_directory -> pytest-crayons

test_directory

```
├── conftest.py  
└── test_example.py  
    └── test_example_two.py
```

pytest-crayons

```
├── LICENSE  
├── README.md  
└── examples  
    ├── test_example.py  
    └── test_example_two.py  
├── pyproject.toml  
├── pytest_crayons.py  
└── tests  
    ├── conftest.py  
    └── test_colors.py  
tox.ini
```

Fixtures: conftest.py -> pytest_crayons.py

```
test_directory
├── conftest.py
└── test_example.py
    └── test_example_two.py
```

```
pytest-crayons
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
├── pyproject.toml
└── pytest_crayons.py
    ├── tests
    │   ├── conftest.py
    │   └── test_colors.py
    └── tox.ini
```

src is also an option

```
test_directory
├── conftest.py
└── test_example.py
    └── test_example_two.py
```

```
pytest-crayons
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
├── pyproject.toml
└── src
    └── pytest_colors.py
└── tests
    ├── conftest.py
    └── test_colors.py
└── tox.ini
```

or you can get fancy

```
test_directory  
└── conftest.py  
└── test_example.py  
└── test_example_two.py
```

```
pytest-crayons  
├── LICENSE  
├── README.md  
├── examples  
│   └── test_example.py  
│   └── test_example_two.py  
├── pyproject.toml  
└── src  
    └── pytest_colors  
        ├── __init__.py  
        └── plugin.py  
└── tests  
    └── conftest.py  
    └── test_colors.py  
tox.ini
```

But let's stick with `pytest_crayons.py`

```
test_directory
├── conftest.py
└── test_example.py
    └── test_example_two.py
```

```
pytest-crayons
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
├── pyproject.toml
└── pytest_crayons.py
    ├── tests
    │   ├── conftest.py
    │   └── test_colors.py
    └── tox.ini
```

examples -> examples

```
test_directory
├── conftest.py
└── test_example.py
    └── test_example_two.py
```

```
pytest-crayons
├── LICENSE
├── README.md
└── examples
    ├── test_example.py
    └── test_example_two.py
├── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

existing stuff

```
test_directory
├── conftest.py
└── test_example.py
└── test_example_two.py
```

```
pytest-crayons
├── LICENSE
├── README.md
└── examples
    ├── test_example.py
    └── test_example_two.py
├── pyproject.toml
└── pytest_crayons.py
tests
└── conftest.py
    └── test_colors.py
tox.ini
```

New stuff

```
test_directory
├── conftest.py
└── test_example.py
    └── test_example_two.py
```

```
pytest-crayons
├── LICENSE
├── README.md
└── examples
    ├── test_example.py
    └── test_example_two.py
├── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

LICENSE

pytest-crayons

```
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
├── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

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Permission is hereby granted, . . .

. . .

README.md

```
pytest-crayons
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
├── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

```
# pytest-crayons
... < what it does >
... < why you should use it >

## Installation
... < how to install it >

## Usage
... < code sample >
... < how to use it >
```

pyproject.toml

```
pytest-crayons
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
└── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

Let's come back to that

more tests and tox

pytest-crayons

```
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
├── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

pyproject.toml

```
pytest-crayons
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
└── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

Now might be
a good time for a
deep breath

pyproject.toml

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
readme = "README.md"
license = {file = "LICENSE"}
dependencies = ["pytest"]
classifiers =
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

[project.entry-points.pytest11]
pytest_crayons = "pytest_crayons"

[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

Project

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
readme = "README.md"
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classifiers =
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

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[build-system]
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build-backend = "flit_core.buildapi"

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```

Project

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[project]
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requires-python = ">3.7"
readme = "README.md"
license = {file = "LICENSE"}
dependencies = ["pytest"]
classifiers = [
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]
```

Classifiers

```
classifiers = [  
    "License :: OSI Approved :: MIT License",  
    "Framework :: Pytest"  
]
```

- These need to be exact matches
- Look them up at pypi.org/classifiers/
- Mostly needed if you want to publish to PyPI
- Or for avoiding PyPI

URL

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
readme = "README.md"
license = {file = "LICENSE"}
dependencies = ["pytest"]
classifiers =
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

[project.entry-points.pytest11]
pytest_crayons = "pytest_crayons"

[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

URL

```
[project.urls]  
Home = "https://github.com/okken/pytest-crayons"
```

pytest entry point

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
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dependencies = ["pytest"]
classifiers =
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

[project.entry-points.pytest11]
pytest_crayons = "pytest_crayons"

[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

pytest entry point

```
[project.entry-points.pytest11]  
pytest_crayons = "pytest_crayons"
```

pytest entry point

```
[project.entry-points.pytest11]  
pytest_crayons = "pytest_crayons"
```

Supposedly it's:

```
plugin_name = "module"
```

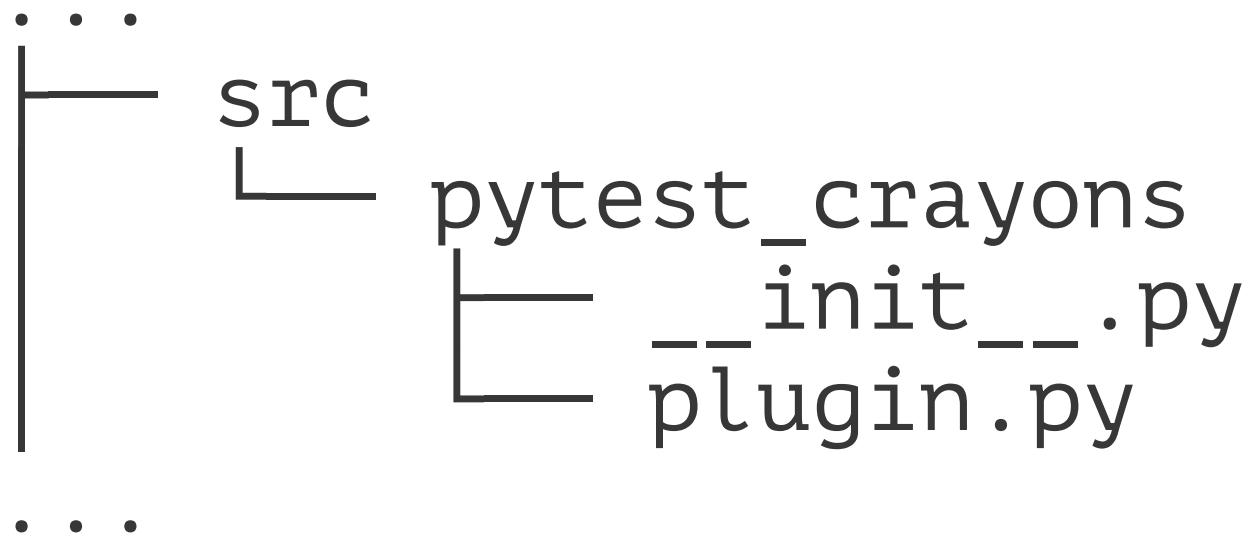
pytest entry point

```
[project.entry-points.pytest11]
pytest_crays = "pytest_crays"
```

Plugin name	Module name
• <code>pytest_crayons</code> or	
• <code>pytest-crayons</code> or	
• <code>crayons</code>	

If we have package.module

```
[project.entry-points.pytest11]  
pytest_crayons = "pytest_crayons.plugin"
```



But we didn't

```
[project.entry-points.pytest11]  
pytest_crayons = "pytest_crayons"
```

```
...  
├── pytest_crayons.py  
...  
...
```

Build system

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
readme = "README.md"
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classifiers =
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    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

[project.entry-points.pytest11]
pytest_crayons = "pytest_crayons"

[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

Build system

```
[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"
```

Module

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
readme = "README.md"
license = {file = "LICENSE"}
dependencies = ["pytest"]
classifiers =
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

[project.entry-points.pytest11]
pytest_crayons = "pytest_crayons"

[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

Module

```
[tool.flit.module]  
name = "pytest_crayons"
```

Module

```
[tool.flit.module]  
name = "pytest_crayons"
```

```
[project]  
name = "pytest-crayons"
```

Module

```
[tool.flit.module]  
name = "pytest_crayons"
```

```
[project]  
name = "pytest-crayons"
```

```
...  
├── pytest_crayons.py  
...  
...
```

Flit based pyproject.toml

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
readme = "README.md"
license = {file = "LICENSE"}
dependencies = ["pytest"]
classifiers =
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

[project.entry-points.pytest11]
pytest_crayons = "pytest_crayons"

[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

Flit specific

```
[project]
name = "pytest-crayons"
description = "A pytest plugin for colorful print statements"
version = "0.0.4"
authors = [{name = "Brian Okken"}]
requires-python = ">3.7"
readme = "README.md"
license = {file = "LICENSE"}
dependencies = ["pytest"]
classifiers =
    "License :: OSI Approved :: MIT License",
    "Framework :: Pytest"
]

[project.urls]
Home = "https://github.com/okken/pytest-crayons"

[project.entry-points.pytest11]
pytest_crayons = "pytest_crayons"

[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

flit

```
[build-system]
requires = ["flit_core >=3.2,<4"]
build-backend = "flit_core.buildapi"

[tool.flit.module]
name = "pytest_crayons"
```

hatch

```
[build-system]
requires = ["hatchling"]
build-backend = "hatchling.build"
```

setuptools

```
[build-system]
requires = ["setuptools"][label](https://github.com/okken/pytest-crayons)
build-backend = "setuptools.build_meta"
```

That wasn't too bad, was it?

Guess what?

We can share our code now

Seriously

We could just push to a git repo now

A screenshot of a GitHub repository page for 'okken/pytest-crayons'. The page shows a recent commit by 'okken' refactoring various files. The commit details are as follows:

File	Message	Time Ago
.github	refactor	12 hours ago
docs	refactor	12 hours ago
examples	refactor	12 hours ago
tests	refactor	12 hours ago
.coveragerc	refactor	12 hours ago
.gitignore	Initial commit	last month
LICENSE	initial commit	last month
README.md	refactor	12 hours ago
pyproject.toml	refactor	12 hours ago
pytest_crayons.py	refactor	12 hours ago
tox.ini	refactor	12 hours ago

We can
install directly from git

```
$ pip install git+https://github.com/okken/pytest-crayons.git
```

Even usable with requirements.txt

```
...  
pytest  
git+https://github.com/okken/pytest-crayons.git  
tox  
...
```

We haven't even built the wheel yet

pip install builds the wheel

```
$ pip install git+https://github.com/okken/pytest-crayons.git
Collecting ...
  Cloning ...
    Running command git clone ...
      Resolved ...
        Installing build dependencies ... done
        Getting requirements to build wheel ... done
        Preparing metadata (pyproject.toml) ... done
      Building wheels for collected packages: pytest-crayons
        Building wheel for pytest-crayons (pyproject.toml) ... done
          Created wheel for pytest-crayons: ...
        Successfully built pytest-crayons
      Installing collected packages: pytest-crayons
        Successfully installed pytest-crayons-0.0.1
```

So hopefully the build works

Some testing would be good

Look! Some tests

```
pytest-crayons
├── LICENSE
├── README.md
├── examples
│   ├── test_example.py
│   └── test_example_two.py
├── pyproject.toml
├── pytest_crayons.py
└── tests
    ├── conftest.py
    └── test_colors.py
tox.ini
```

Testing packaging and plugins

- `pytester` for testing `pytest` plugins
- `tox` for testing packaging
 - and running our tests

Let's start with tox

```
...  
└── tests  
    ├── conftest.py  
    └── test_colors.py  
└── tox.ini
```

You promised
you wouldn't run away

tox.ini

```
[tox]
envlist = py37, py38, py39, py310, py311, py312
skip_missing_interpreters = true
isolated_build = True

[testenv]
commands = pytest
description = Run pytest

[pytest]
testpaths =
    examples
    tests
```

Running tox

For example

```
$ pip install tox  
$ tox -e py310
```

or all environments

```
$ tox
```

- creates a new empty virtual environment
- builds a wheel
- installs all dependencies
- installs your code
- runs the tests

tox example

```
[code] $ tox -q -e py311
=====
 test session starts =====
collected 4 items

examples/test_example.py .
examples/test_example_two.py ..
tests/test_colors.py .

=====
 4 passed in 0.05s =====
py311: OK (2.02=setup[1.74]+cmd[0.28] seconds)
congratulations :) (2.07 seconds)
```

tests

```
...  
|   └── examples  
|       └── test_example.py  
|       └── test_example_two.py  
  
...  
|   └── tests  
|       └── conftest.py  
|       └── test_colors.py  
└── tox.ini
```

tests/conftest.py

```
pytest_plugins = "pytester"
```

tests/test_colors.py

```
def test_colors_get_printed(pytester):
    pytester.copy_example("examples/test_example.py")
    pytester.makepyfile(__init__ = "")
    result = pytester.runpytest("-s")
    result.assert_outcomes(passed=1)
    bold, reset = '\x1b[1m', '\x1b[0m'
    result.stdout.fnmatch_lines(
        [
            f"*{bold}\x1b[31mtest_colors: this should be red{reset}",
            f"*{bold}\x1b[32mtest_colors: this should be green{reset}",
            f"*{bold}\x1b[33mtest_colors: this should be yellow{reset}",
            f"*{bold}\x1b[34mtest_colors: this should be blue{reset}",
            f"*{bold}\x1b[35mtest_colors: this should be magenta{reset}",
            f"*{bold}\x1b[36mtest_colors: this should be cyan{reset}",
        ],
    )

```

We're testing a lot

- We're testing
 - the examples that use the fixtures
 - the actual output of the running tests
 - including the color ASCII codes
 - packaging: building, installing, and dependencies
 - on multiple versions of Python

ahhh. confidence.

Is it ready for PyPI?

Actually, yes.

We won't go through those details

But essentially it's:

- Register with both test.pypi.org / pypi.org
- Build
- Publish to TestPyPI / PyPI:

Build

- flit build
- hatch build
- python -m build
 - requires pip install build

Pubilish

First to TestPyPI, then PyPI

- `flit publish`
- `hatch publish`
- `twine upload dist/*`

A screenshot of a Mac OS X desktop showing a browser window with the PyPI project page for `pytest-crayons`. The page title is `pytest-crayons · PyPI`. The main header features a blue navigation bar with a search bar labeled "Search projects" and icons for Help, Sponsors, Log in, and Register. A user profile icon is visible in the top right. The main content area has a dark blue header with the project name `pytest-crayons 0.0.4`, a green "Latest version" button with a checkmark, and a release timestamp "Released: about 12 hours ago". Below this is a light gray section containing the project's description: "A pytest plugin for colorful print statements". On the left, a "Navigation" sidebar lists "Project description" (selected), "Release history", and "Download files". On the right, the "Project description" section contains the project name `pytest-crayons`, a brief description "A pytest plugin for colorful print statements.", and an "Installation" section with the command `pip install pytest-crayons`. There is also a "Usage" section.

Navigation

Project description

Project description

Release history

Download files

Installation

Usage

Absolutely don't want PyPI?

Preventing PyPI upload

```
classifiers = [  
    "License :: OSI Approved :: MIT License",  
    "Framework :: Pytest",  
    "Private :: Do Not Upload"  
]
```

PyPI will always reject packages with classifiers beginning with
"Private ::". - pypi.org/classifiers

Learned this from Brett Cannon

We covered

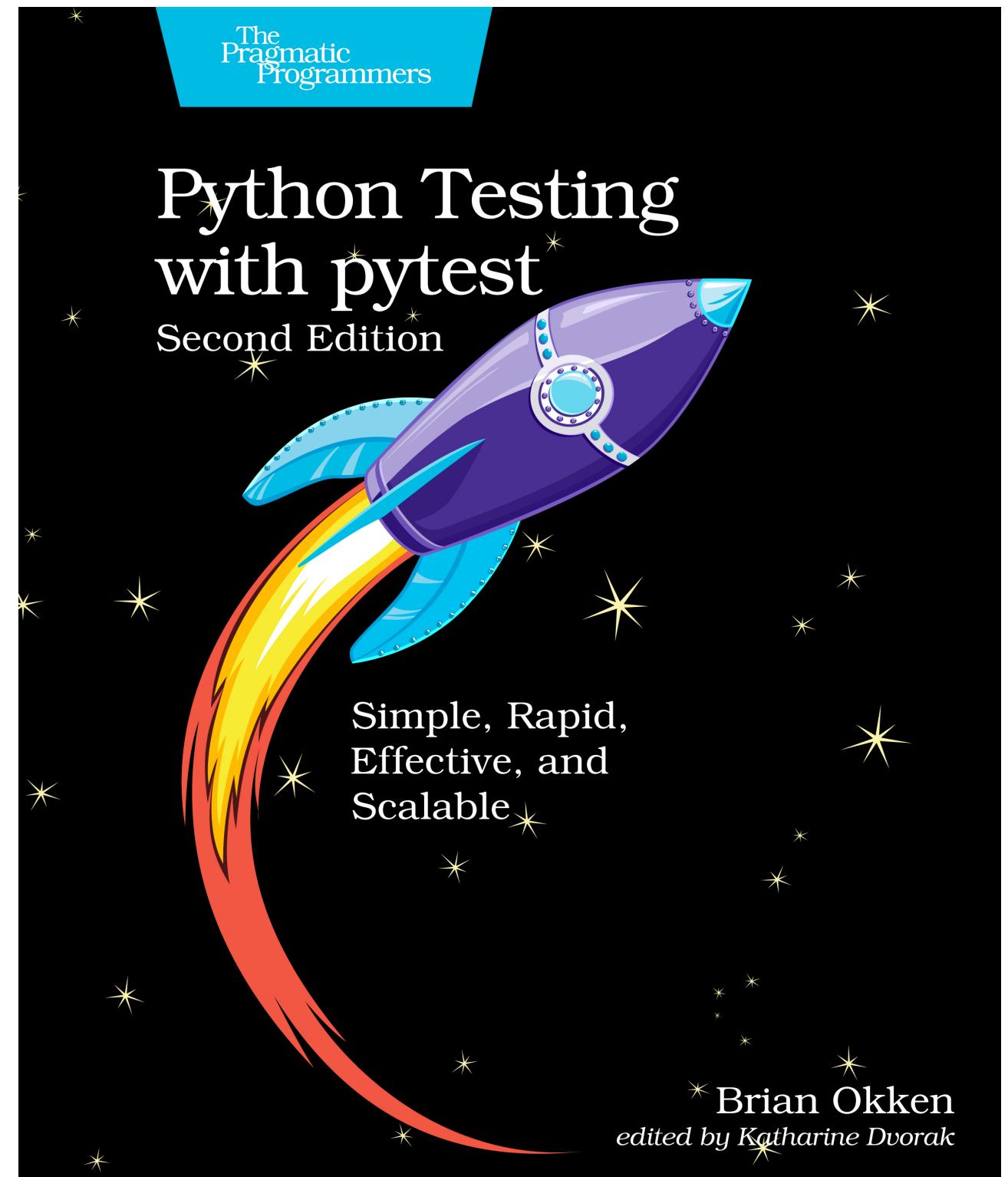
- pytest fixtures
- conftest.py for sharing fixtures
- creating a pytest plugin
- packaging with flit, hatch, setuptools
- sharing via git repository
- tox for testing packaging
 - on multiple Python versions
 - testing functionality with pytester
 - uploading to PyPI

Not too bad, was it?

If you want to know more about
building and testing fixtures and plugins

See:

- Ch 3 for fixtures
- Ch 15 for building plugins
- Ch 11 includes
 - tox
 - GitHub Actions



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