Unit Testing with Python

Module 3: pytest

Emily Bache
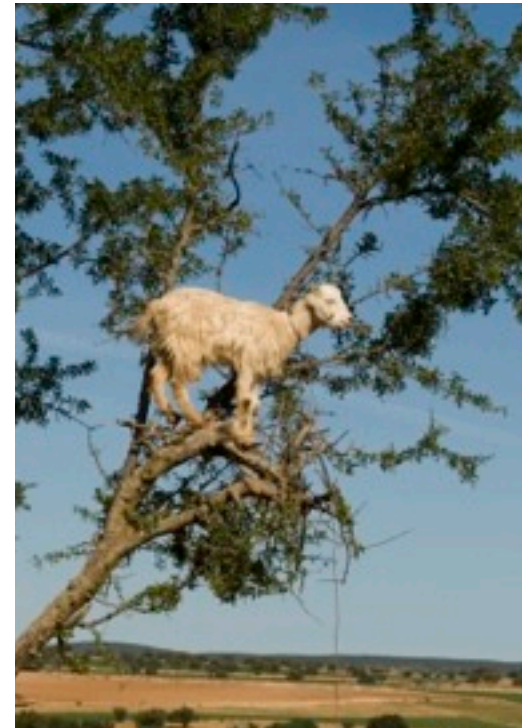http://coding-is-like-cooking.info
emily@bacheconsulting.com

pluralsight
hardcore developer training

Module Overview

- Defining test cases with `py.test`
- Interpreting Test Failures
- Test Fixtures

xUnit

Kent Beck

Erich Gamma

JUnit was originally created by Kent Beck and Erich Gamma

Nose and Pytest

python-nose

A unittest-based testing framework for python that makes writing and running tests easier

https://code.google.com/p/python-nose/

pytest: helps you write better programs

a mature full-featured Python testing tool

http://pytest.org/latest/

- **http://pytest.org/latest/getting-started.html#installation**
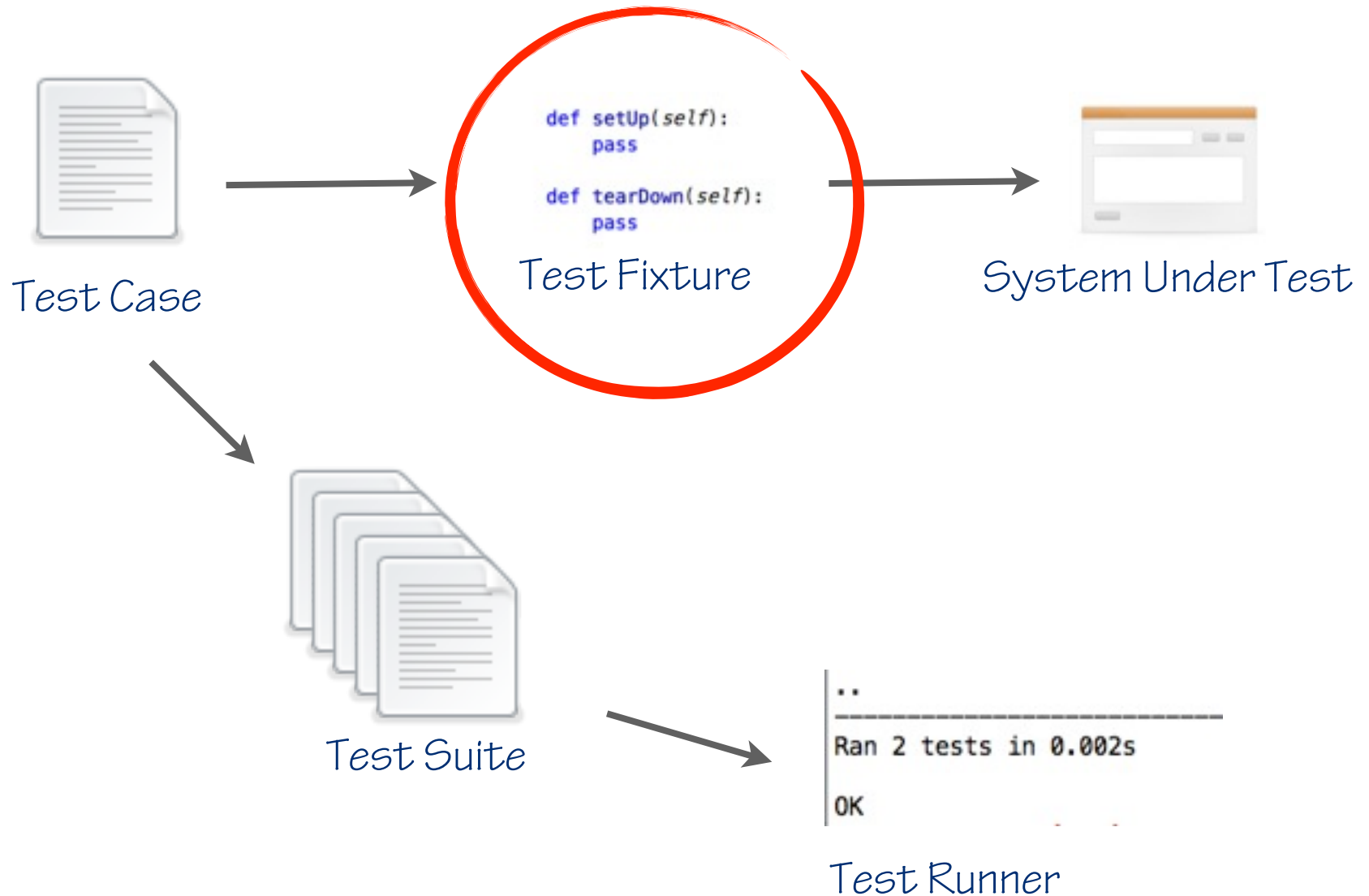
Installation

Installation options:

```
pip install -U pytest # or
easy_install -U pytest
```
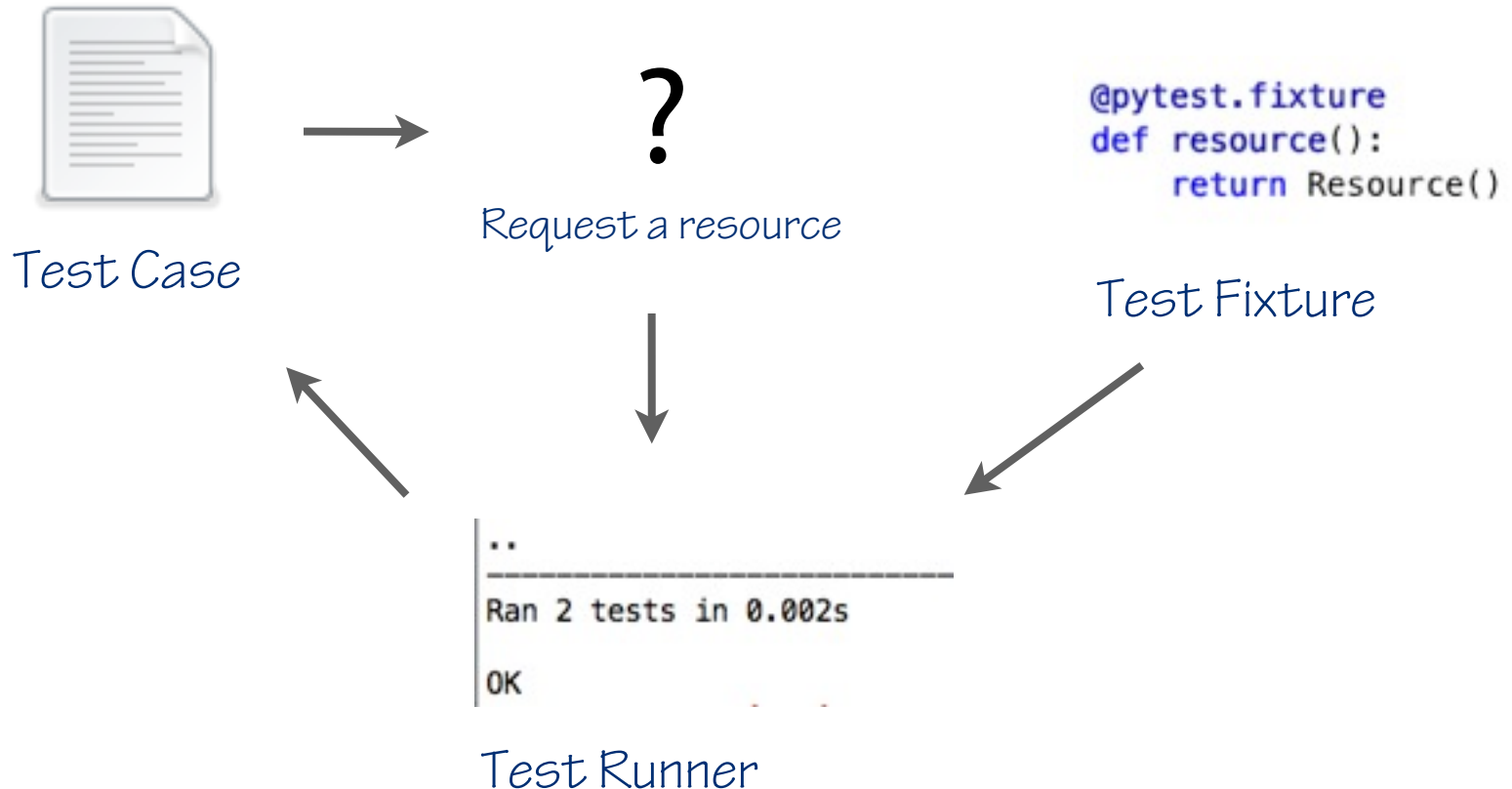
To check your installation has installed the correct version:

```
$ py.test --version
This is py.test version 2.3.5, imported from /home/hpk
```

Unit Test Vocabulary

Test Case

```
def setUp(self):
    pass

def tearDown(self):
    pass
```

Test Fixture

System Under Test

Test Suite

```
..
----------------------------------------
Ran 2 tests in 0.002s

OK
```

Test Runner

Test Fixture Functions

Test Case

?

Request a resource

```
@pytest.fixture
def resource():
    return Resource()
```

Test Fixture

```
..
----------------------------
Ran 2 tests in 0.002s

OK
```

Test Runner

Test Fixture - cleaning up

Test Case

```
def setUp(self):
    pass

def tearDown(self):
    pass
```

Test Fixture

System Under Test

Test Suite

```
..
----------------------------------------
Ran 2 tests in 0.002s

OK
```

Test Runner

Test Fixture Functions

?

Request a resource

```
@pytest.fixture
def resource():
    return Resource()
```

?

Request a resource

Test Case

Test Fixture

```
..
--------------------------------
Ran 2 tests in 0.002s

OK
```
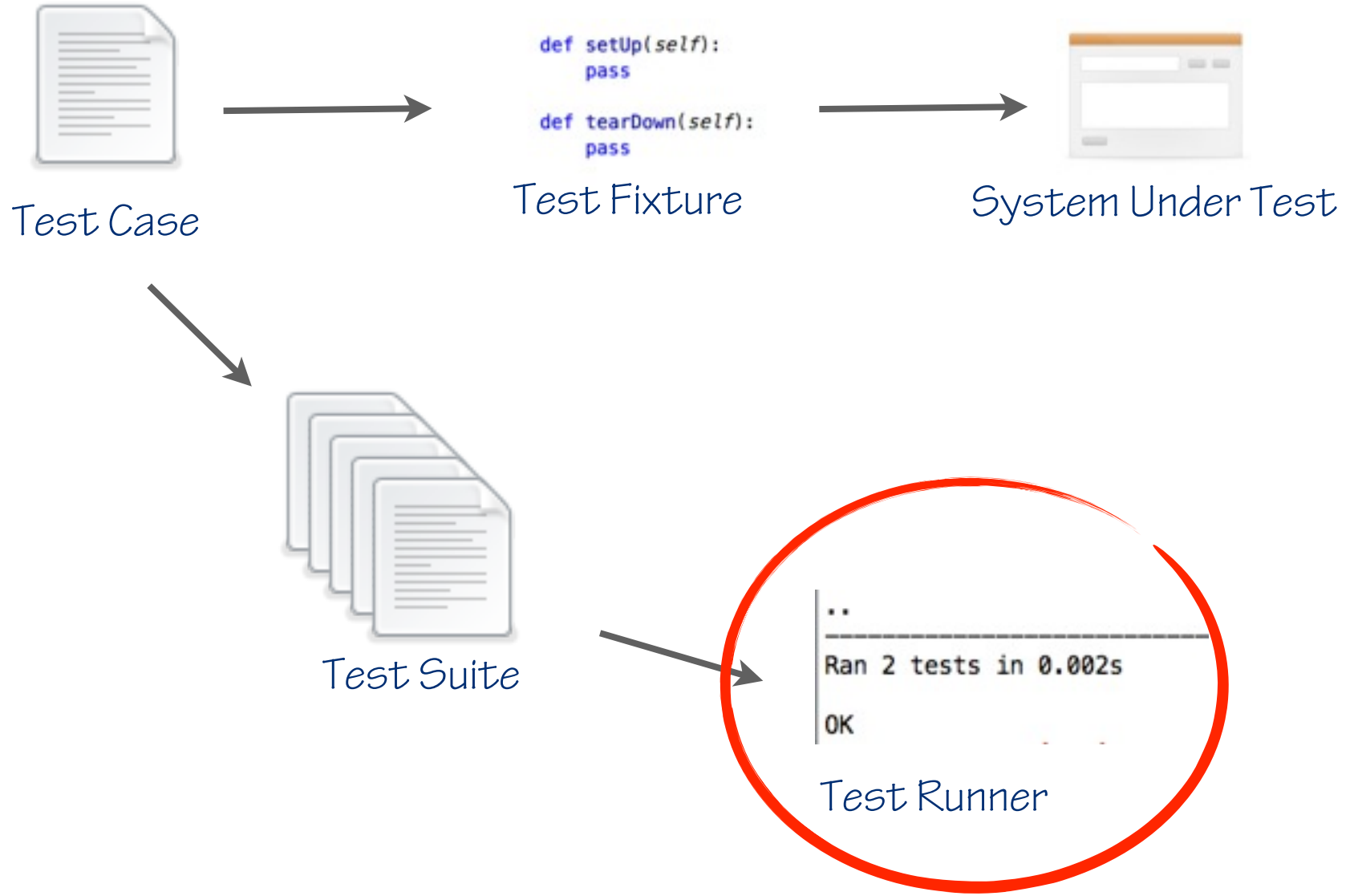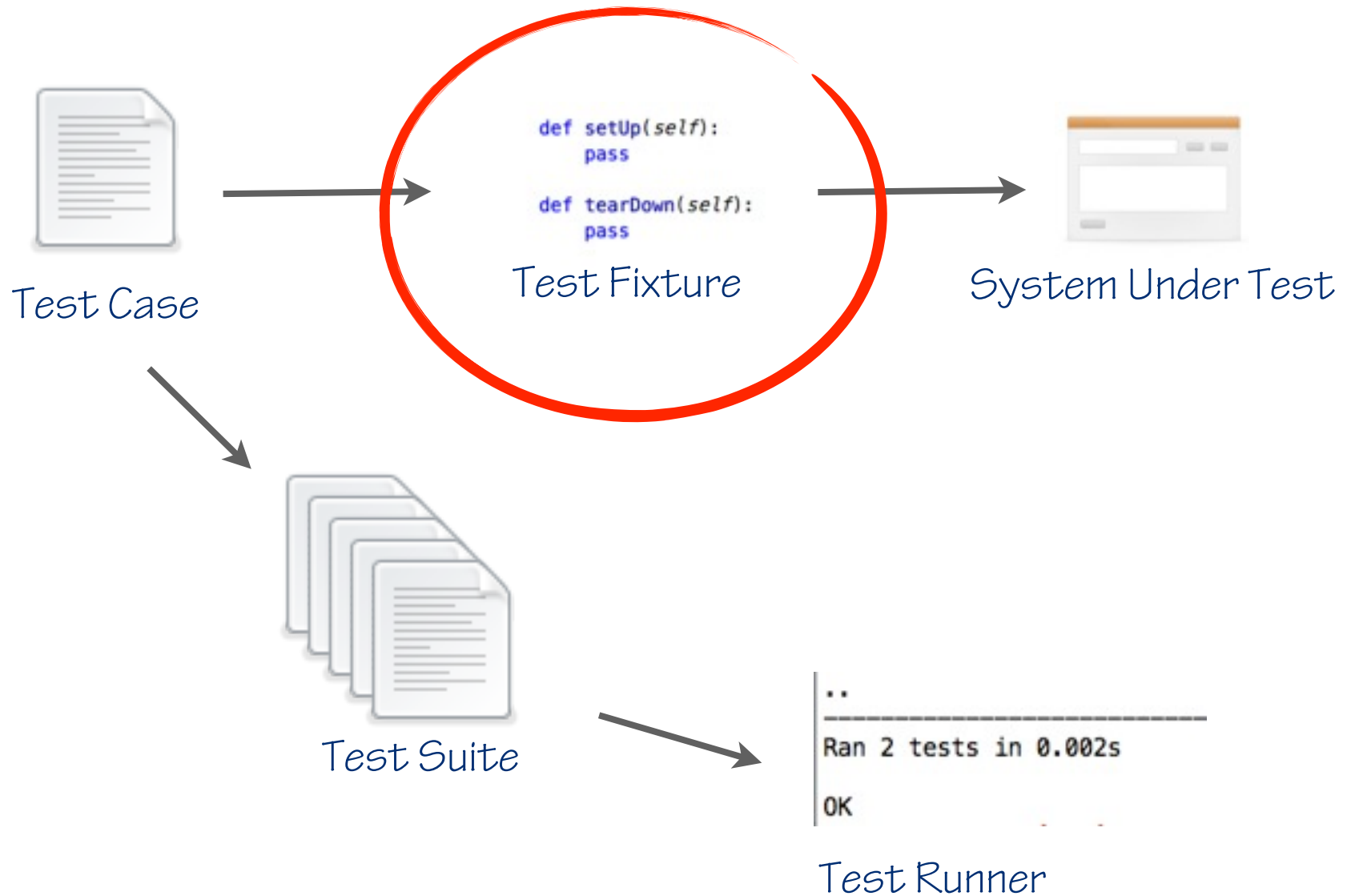
Test Runner
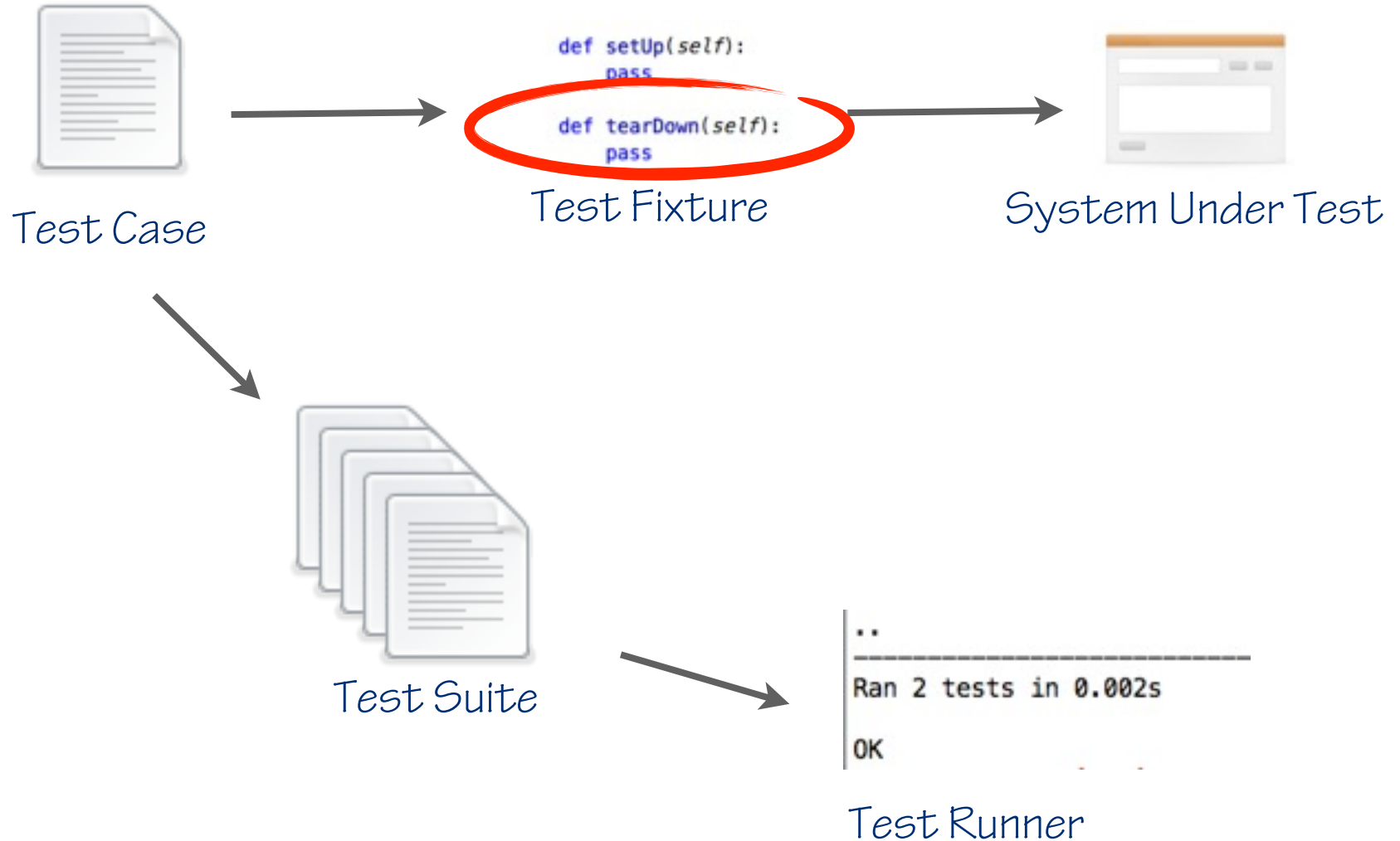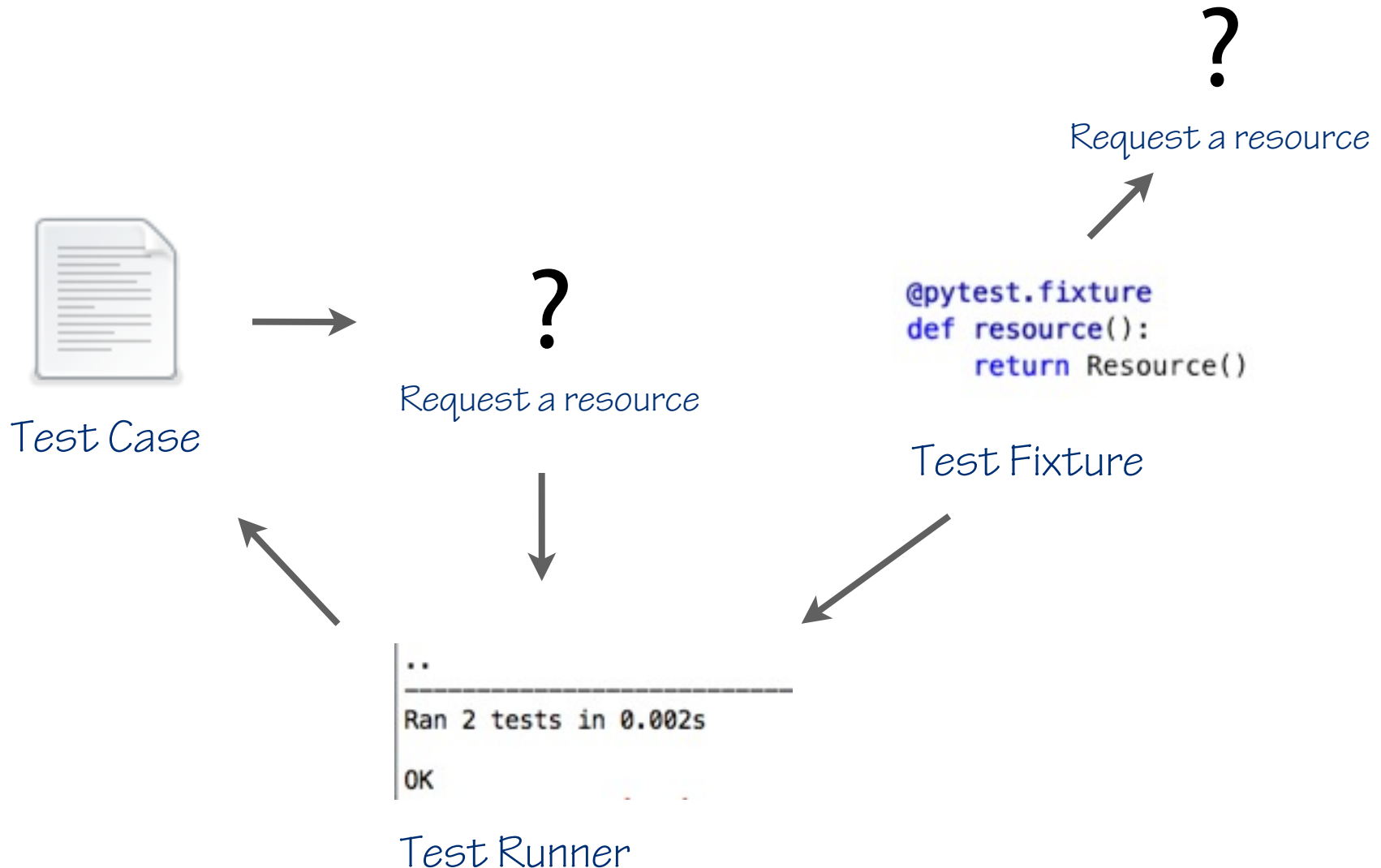
Unit Tests should be In Memory

Test Case

File System
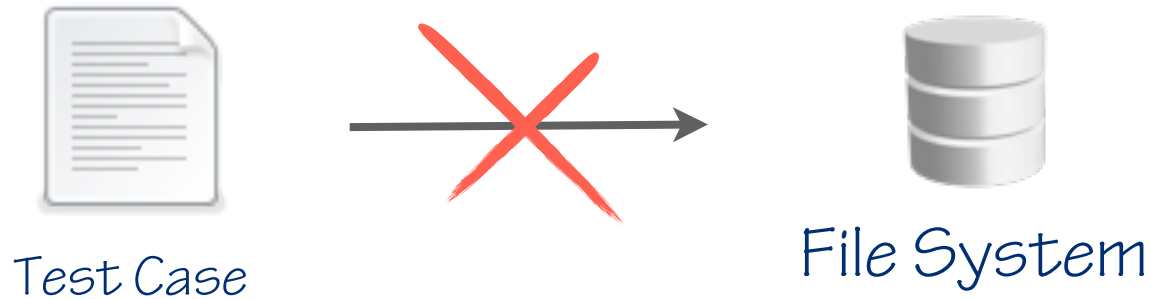
Integration Tests may need test fixtures that provide slow and expensive subsystems

Pytest + unittest

Test Case

```
def setUp(self):
    pass

def tearDown(self):
    pass
```

Test Fixture

System Under Test

Test Suite

```
..
----------------------------------------
Ran 2 tests in 0.002s

OK
```

Test Runner

Pytest + unittest

Test Case

```
def setUp(self):
    pass

def tearDown(self):
    pass
```

Test Fixture

System Under Test

Test Suite

```
..
----------------------------------------
Ran 2 tests in 0.002s

OK
```

Test Runner

Module Review

- Defining test cases with `py.test`
- Interpreting Test Failures
- Test Fixtures