

# Unit Testing with Python

Module 6: Test Coverage

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hardcore developer training

# Module Overview

- Parameterized tests with `unittest` and `pytest`
- Measuring coverage of tests
- Using code coverage metrics when adding test cases



# Parameterized Tests

- Same function or method
- Different parameters

# Tennis



- Love-All
- Fifteen-Love
- Fifteen-Thirty
- Fifteen-Forty



# Measuring Coverage

Coverage for **tennis** : 87%

36 statements

32 run

4 missing

0 excluded

1 partial

```
1 def tennis_score(plpoints, p2points):  
2     game = TennisGame("Player 1", "Player 2")  
3     game.plpoints = plpoints  
4     game.p2points = p2points  
5     return game.score()
```

- `pip-3.3 install coverage`
- `pip-3.3 install pytest-cov`

# Gilded Rose Refactoring Kata

The screenshot shows the GitHub repository page for 'GildedRose-Refactoring-Kata' by user 'emilybache'. The repository has 128 commits, 1 branch, 0 releases, and 12 contributors. A commit message states: 'Removed all the code except for the GildedRose kata from this repo', authored by emilybache 5 months ago. The commit history shows several folders: C, Java, Smalltalk, cpp, csharp, js, and python, all with the same removal message. The right sidebar contains links to Code, Issues (0), Pull Requests (0), Wiki, Pulse, Graphs, Network, and Settings. The SSH clone URL is provided as 'git@github.com:emi1'.

Starting code for the GildedRose Refactoring Kata in many programming languages. — Edit

128 commits 1 branch 0 releases 12 contributors

branch: master GildedRose-Refactoring-Kata

Removed all the code except for the GildedRose kata from this repo

emilybache authored 5 months ago latest commit 567c27854a

C	Removed all the code except for the GildedRose kata from this repo	5 months ago
Java	Removed all the code except for the GildedRose kata from this repo	5 months ago
Smalltalk	Removed all the code except for the GildedRose kata from this repo	5 months ago
cpp	Removed all the code except for the GildedRose kata from this repo	5 months ago
csharp	Removed all the code except for the GildedRose kata from this repo	5 months ago
js	Removed all the code except for the GildedRose kata from this repo	5 months ago
python	Removed all the code except for the GildedRose kata from this repo	5 months ago

Code

Issues 0

Pull Requests 0

Wiki

Pulse

Graphs

Network

Settings

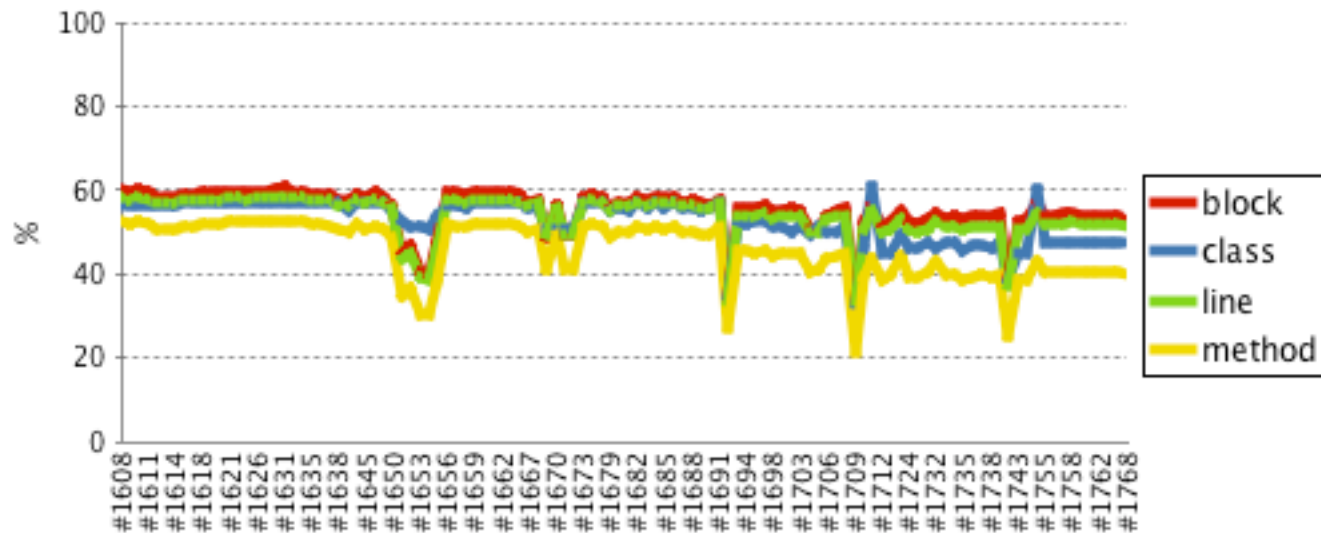
SSH clone URL

git@github.com:emi1

- <https://github.com/emilybache/GildedRose-Refactoring-Kata>

# Interpreting Coverage Data

- Find missing test cases
- Get legacy code under test
- Continuous Integration - constant measurement



# Coverage metric to aim for?

Coverage for **tennis** : 86%

36 statements

31 run

5 missing

0 excluded

Coverage for **html\_pages** : 100%

34 statements

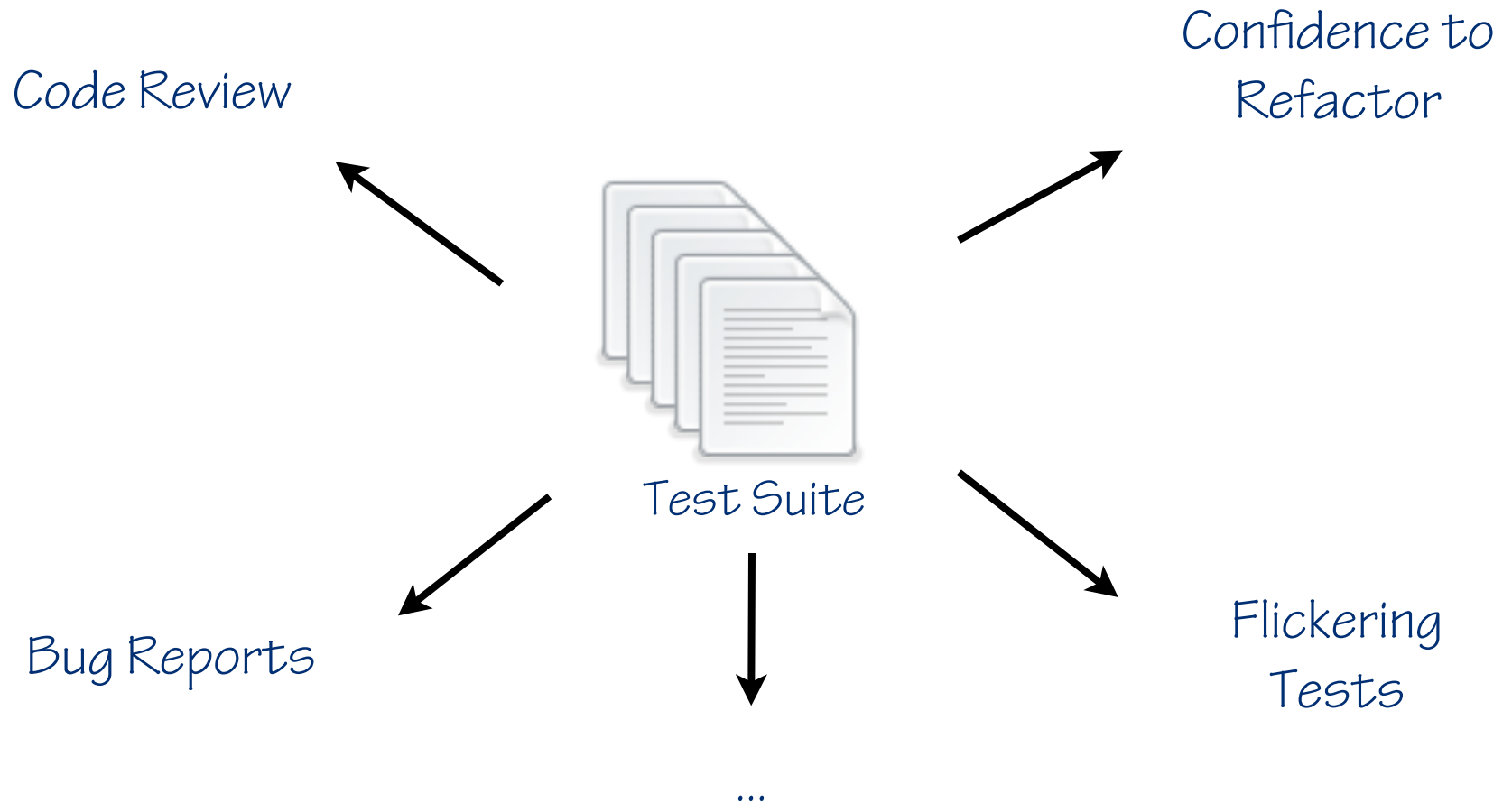
34 run

0 missing

0 excluded



# Test Quality != Coverage



# Module Review

- Parameterized tests with `unittest` and `pytest`
- Measuring coverage of tests
  - to find missing test cases
  - to improve regression protection
- Interpreting coverage data

