

Testing

Why should we test?

- To confirm that the thing has the expected behavior.
- To confirm that we didn't break anything.
- To confirm that all of the code is doing what we think it's doing.

What should we test?

- Public APIs
 - Not implementation details
- Code coverage

When should we test?

- Early and often

Who should test?

- Preferably, a computer

Automated testing!!

How will we test?

- `pytest`

Example

Activity: pass the tests

Sakai>Resources>code>test_navigation.py

Test-driven development

1. Write tests that fail
2. Write code to fix the tests

Code coverage

- Is nice
- Is not everything
 - It's possible to write perfectly functional code with bad code coverage
 - It's possible (but difficult) to write bad, disfunctional code with complete coverage

Activity: write tests with full coverage

Sakai>Resources>code>dedup.py

Types of tests

- Unit tests - small, for a single "unit" of code
 - Regression tests - to catch a bug
- Integration tests - larger, for multiple interconnected units

Mocking

- A function we want to test may depend on other functions, services, the internet, etc.
- We don't want to test all of those things...
- During testing, replace them with things that we control.