Test Driven Development

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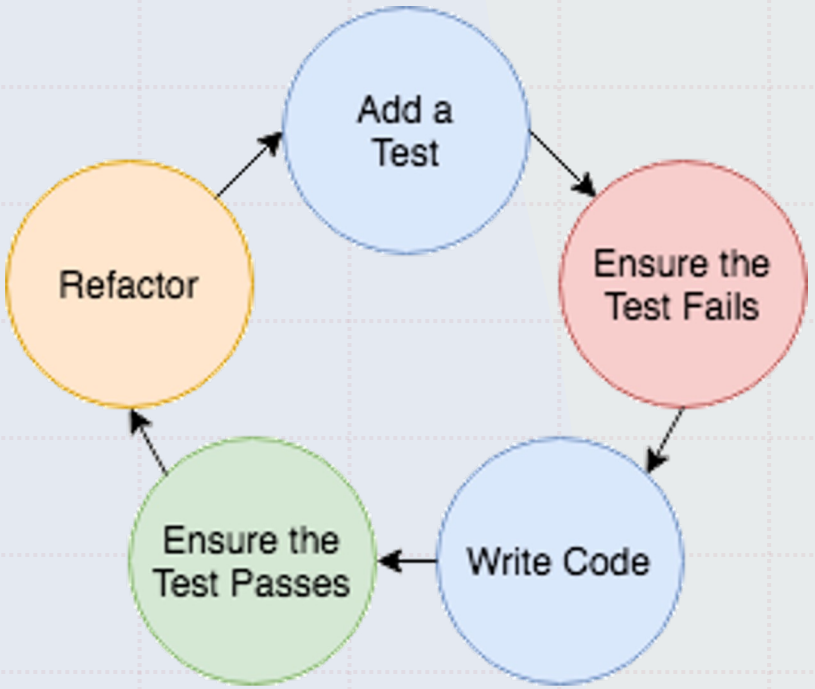
What is TDD?

- Developers write automated tests while they are developing code
- The majority of tests are established prior to the application code they check.
- Continue designing in small steps.

Why TDD?

- Don’t break any existing functionality.
- Improve code quality.
- Reduce future refactoring and fixing costs.
- Enhance the life span of software.
- Small steps ensure continuous progress and regular feedback.

Test - Code - Refactor Cycle



https://testdriven.io/test-driven-development/

- Add a test
- (Red) Run all the tests to ensure the new test fails
- (Green) Write just enough code to get that single test to pass
- Run all tests
- (Refactor) Improve the initial code while keeping the tests green
- Repeat

Demo: Simple Library Management

- Add a book to the system.
- Retrieve book information.
- Update book title.
- Delete books.

Session Inbox

Structure a programming session without forgetting essential details

1. Collect all features/ideas/tests that are necessary to resolve your next programming task
2. Choose one item from the list and solve it using Test-Code-Refactor
3. Maintain inbox:
   - Add new ideas
   - Remove out-of-scope ideas
   - Add additional tasks that are necessary (e.g. refactorings)
4. If the inbox has open items, go to 2.
5. If the inbox is empty, review current code and tests

Thank you for your listening!