

Test Driven Development (TDD)

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A Perspective On TDD

- **TDD is Mostly about Design**
- **Gives Confidence**
- **Enable Change**
- **Is Automated**
- **Validates Your Design**
- **Is Documentation By Example**
- **Provides Rapid Feedback**

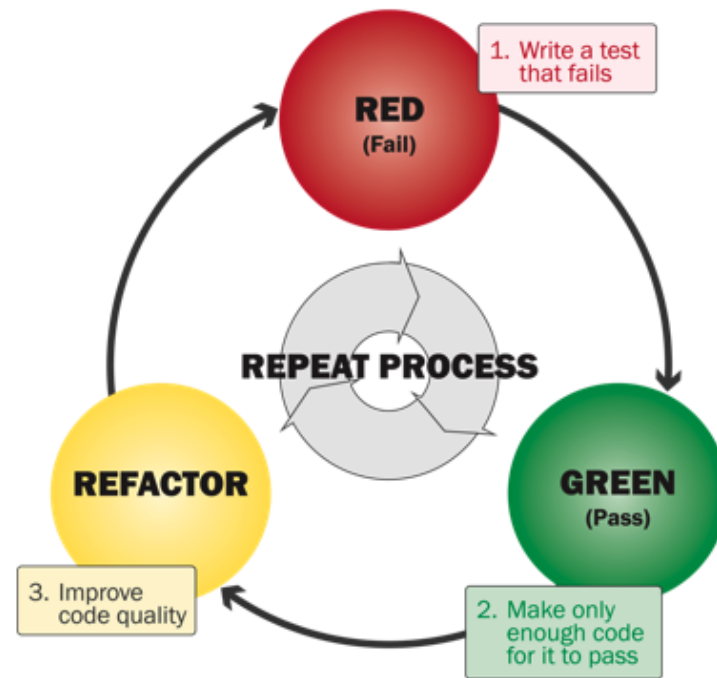


Application and Source Code

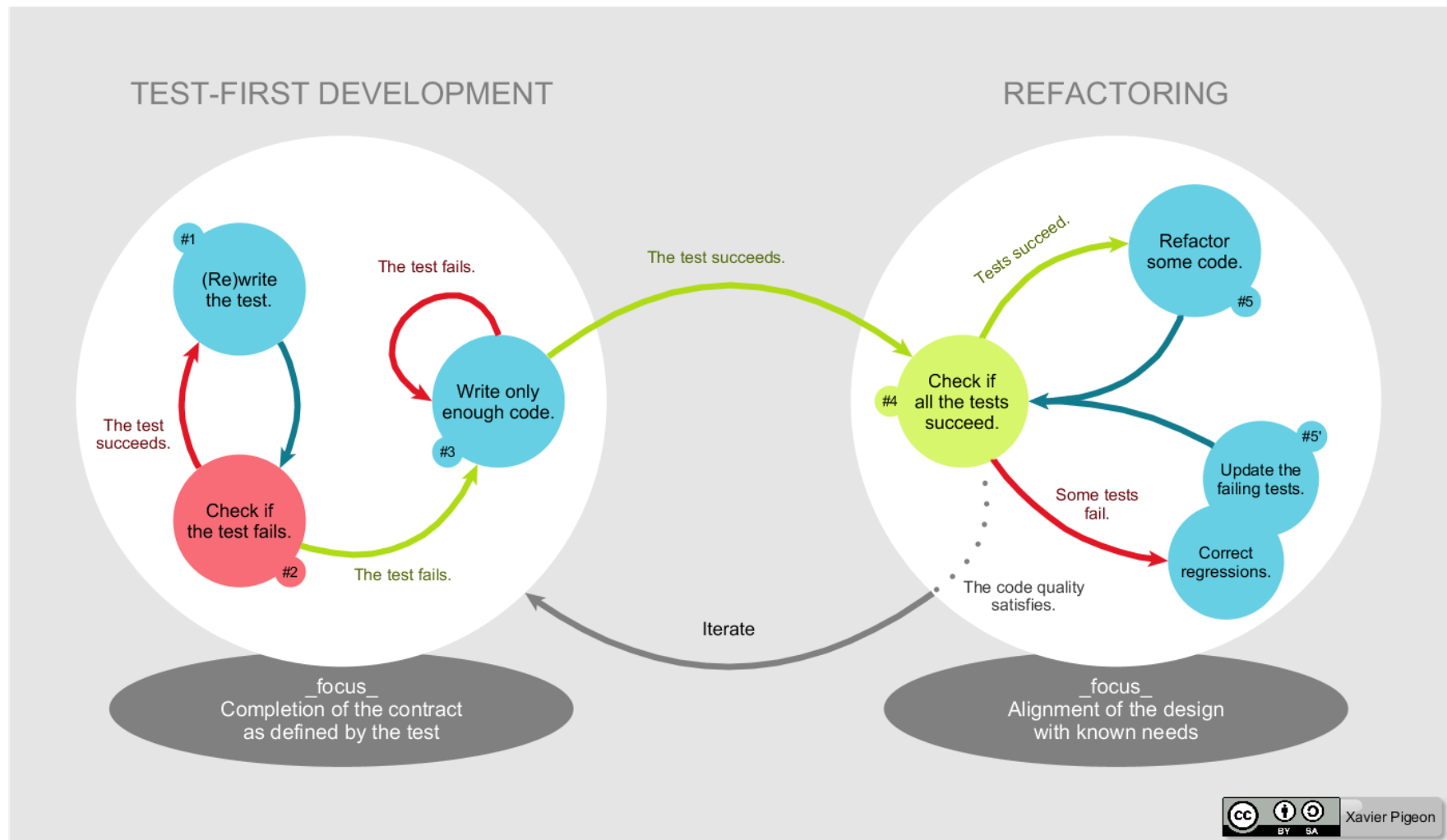
- **Higher Quality**
- **Flexibility**
- **Readability**
- **Maintainability**
- **Predicability**
- **Simplicity**
- **Well-Designed Application**



Basic TDD Cycle



TDD Working Cycle



The Three Laws of TDD

- **Not write production code until you have written a failing unit test.**
- **Not write more of a unit test than is sufficient to fail.**
- **Not write more production code than is sufficient to pass the current failing test**



Fundamental Principle

- **Think** about what you are trying to do
- Follow the TDD cycle and three laws
- Never write new functionality without a failing test
- Continually **make small, Incremental** Changes
- Keep the system running at all times
- Keep the all test pass



Feedback

- **Improve your design**
- **Show how it works**
- **Tell you when done**

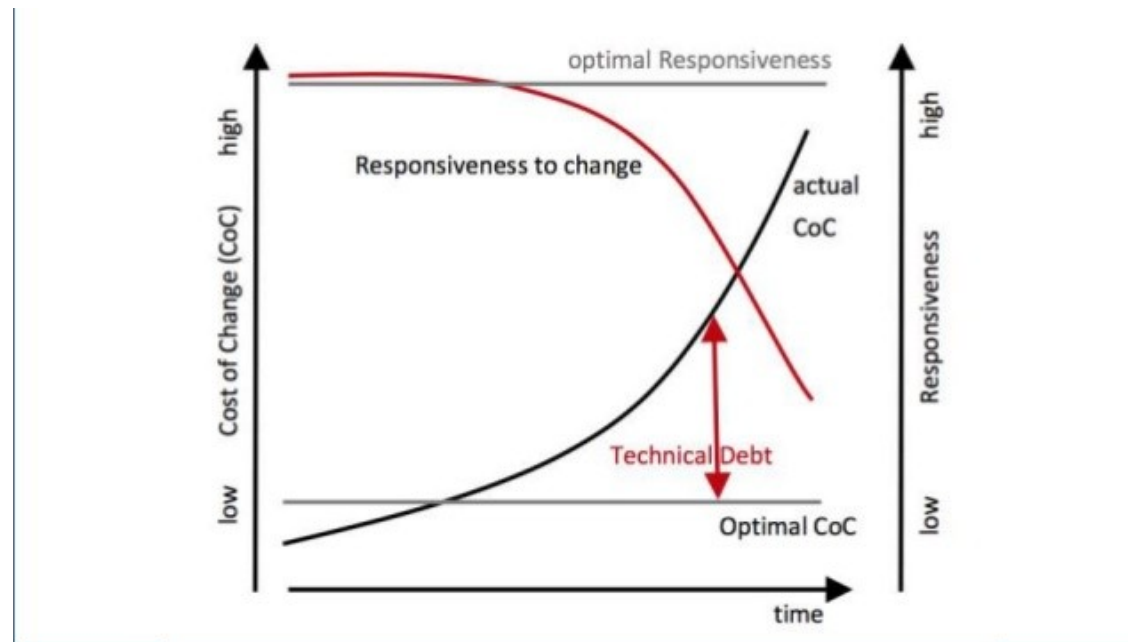


Courage

- **Introduce Change**
- **Refactor**
- **Evolve the design**



How Much Longer Does TDD Take?



Some Design Principals

- **Loosely coupled, highly cohesive**
- **Dependency Injection/Inversion of Control (IOC)**
- **Single Responsibility Principal**
- **Simplicity**
- **Separation of Concerns**
- **Encapsulation**
- **Favor Immutability**
- **Clean Code**
- **Package by Feature**
- **Design Pattern (MVC MVP MVVM)**



Tools

- **Unit Test Framework**
- **Mocking Framework**
- **Acceptance Test Framework**
- **Automated Build Tool**
- **Source Code Management**
- **Build and Continuous Integration Servers**
- **Test Coverage Tools**
- **Code Quality Tools**



Best Practices F.I.R.S.T

- **Fast**
- **Independent**
- **Repeatable**
- **Self-validating**
- **Timely**



TDD by Example



Mission: Impossible 6 is an upcoming American action spy film written, co-produced and directed by Christopher McQuarrie. [Wikipedia](#)

Initial release: July 27, 2018 (USA)

Director: [Christopher McQuarrie](#)

Music composed by: [Joe Kraemer](#)

Production companies: [Bad Robot Productions](#), [Skydance Media](#)

Producers: [Tom Cruise](#), [Christopher McQuarrie](#), [J.J. Abrams](#), [Dana Goldberg](#), [David Ellison](#), [Bryan Burk](#), [Don Granger](#)

Normal

1,000 Point

+ 2 -

Honeymoon

1,500 Point

+ 2 -

Total 5,000 Point

Next

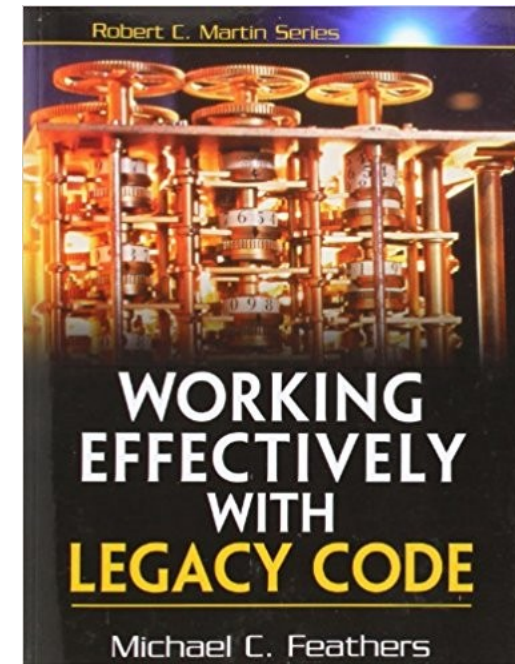
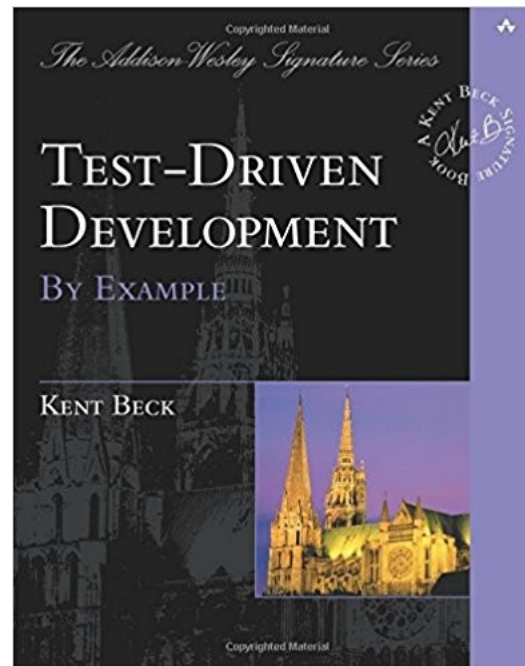
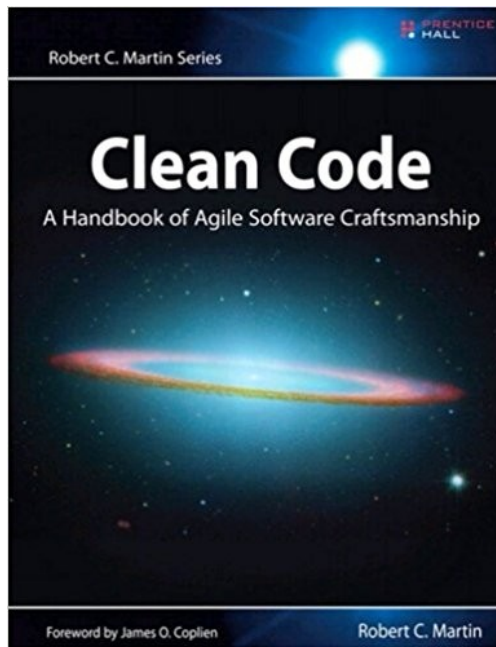


Project

- [**https://github.com/9tae2013/testing-example**](https://github.com/9tae2013/testing-example)
- [**https://github.com/9tae2013/multipart-upload**](https://github.com/9tae2013/multipart-upload)



Book



Q & A

