

Software craftsmanship

Stairway to heaven

Nils LESIEUR

 @Nils_Back

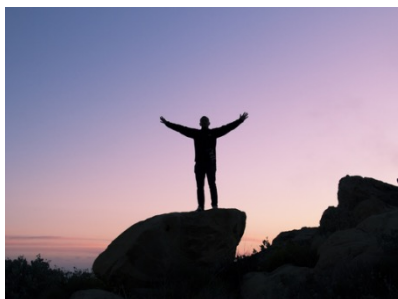
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08 / 07 / 2015



**BREAKING
NEWS**

NYSE HALTS TRADING

DOW **17,600.67**
CHANGE **-175.24**
%CHANGE **-0.99%**

Chevron (CVX) 93.77 ▼ 1.50 Magellan Mid (MMP) 79
iMedx Group (MDXG) 10.88 ▼ 0.14 Equinix (EQIX) 257.



JULY 8, 2015

UNITED AIRLINES FLIGHTS RESUME AFTER WORLDWIDE GROUND STOP



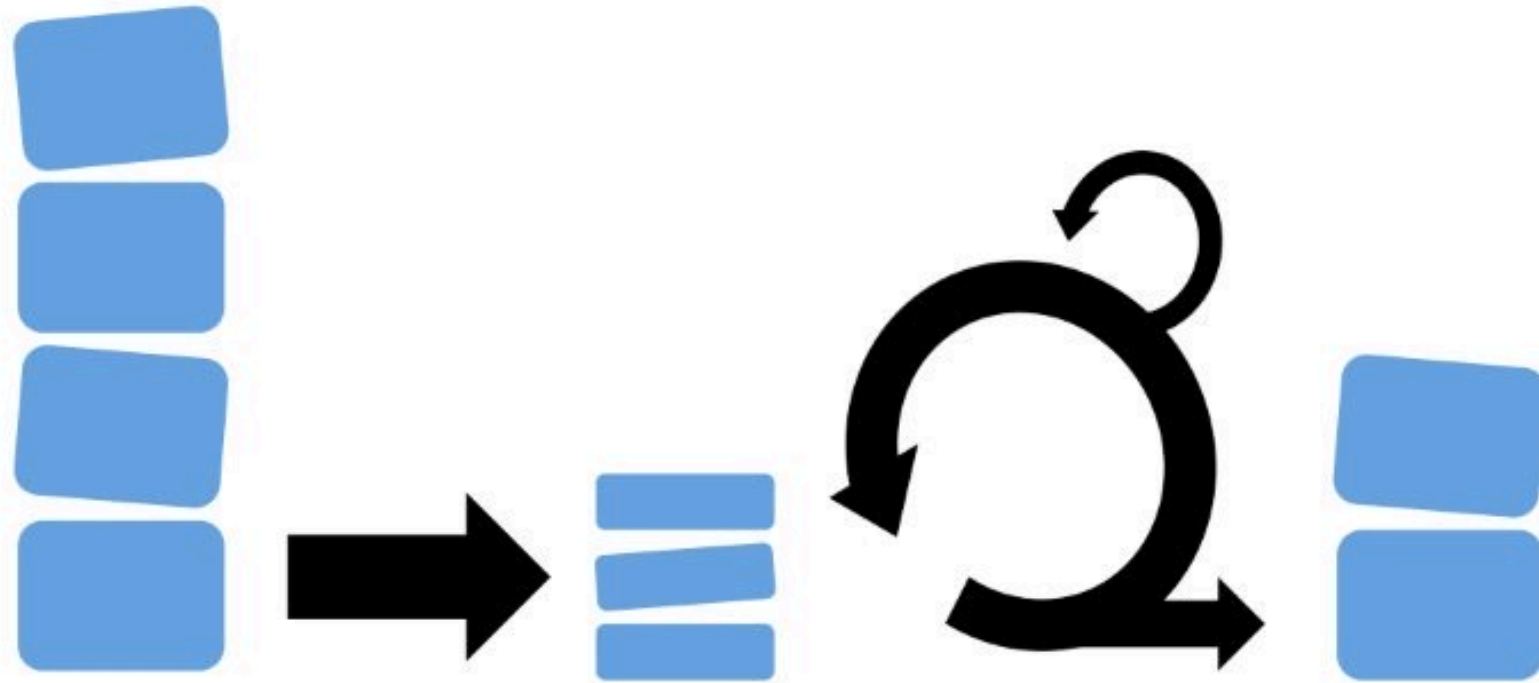
Dev 1.0



Dev 1.1



Dev 2.0

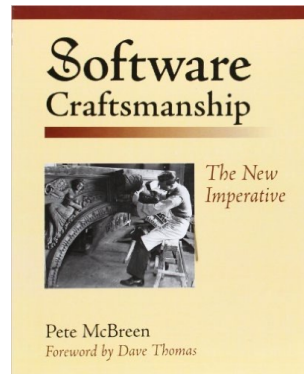


ARE YOU READY

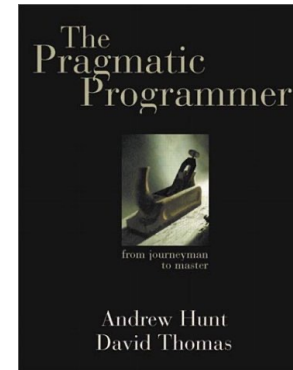
**TO RAISE THE
BAR**

Software Craftsman

1999



2001



2008

Not only working software, but also **well-crafted** software

Not only responding to change, but also **steadily adding value**

Not only individuals and interactions, but also a **community of professionals**

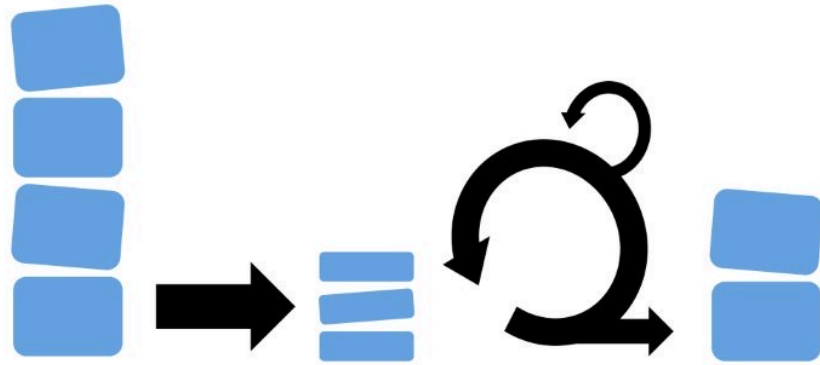
Not only customer collaboration, but also **productive partnerships**

Comment on fait
maintenant?





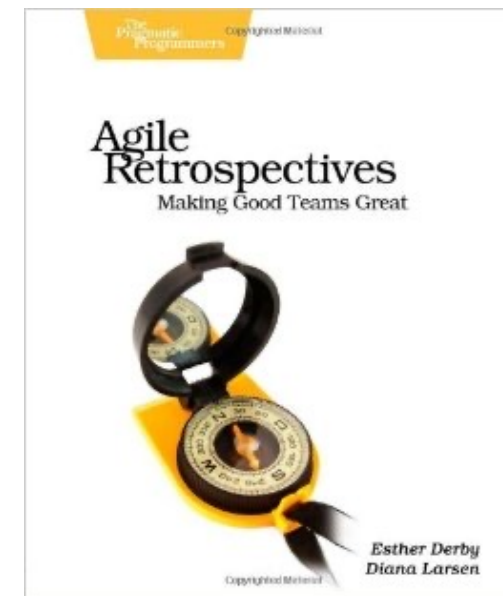
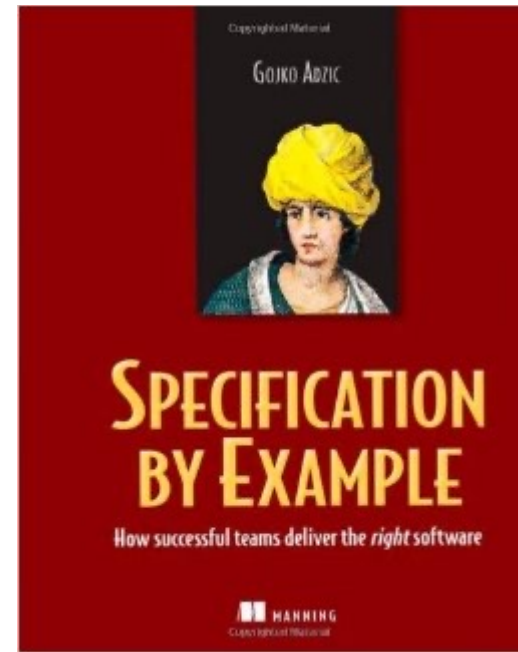
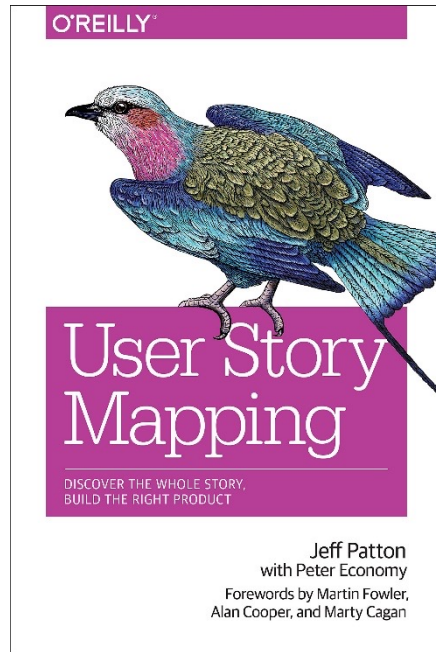
Pratiques 1/2



kanban

Pratiques 2/2







Clean code

Agile

Comment on écrit du Bad code

Essayer d'aller vite

Pas de temps à perdre sur cette feature

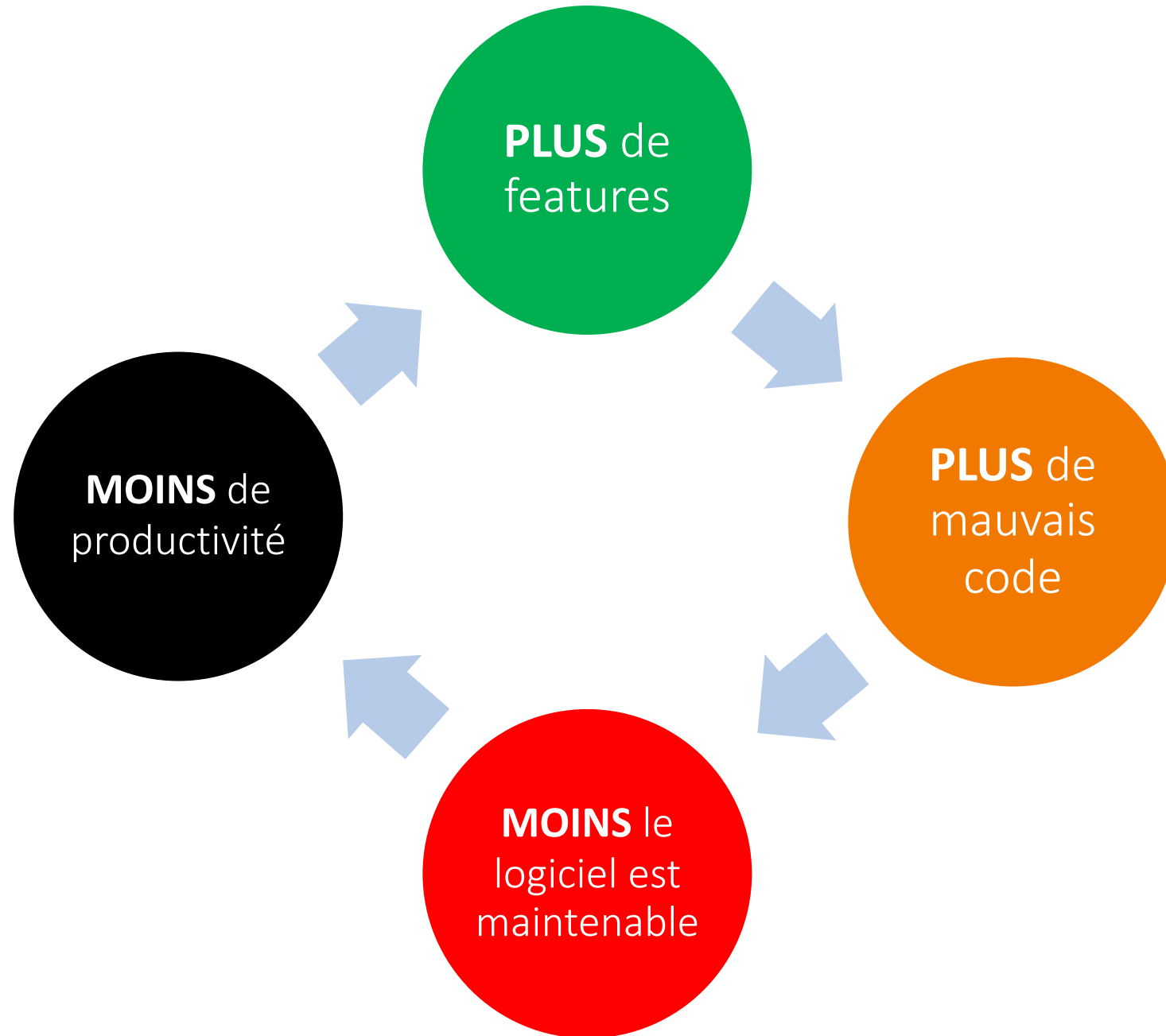
Le Boss serait en colère si vous preniez
le temps de nettoyer votre code

Fatigué de travailler sur ce programme



« Un **mauvais code** qui marche,
c'est **mieux que rien** »





La dette technique



Côté client



Côté développeur

```
for (int i = 0; i < 5; i++)  
{result = i*j;j = j - 3;}
```

```
for (int i = 0; i < 5; i++)  
{  
    result = i * j;  
    j = j - 3;  
}
```

Lisibilité

```
string addressCity;  
string addressHomeNumber;  
string addressPostCode;
```

```
class Address  
{  
    string city;  
    string homeNumber;  
    string postCode;  
}
```

P.O.O


```
int d;  
// elapsed time in days  
int ds;  
int dsm;  
int faid;
```

```
int elapsedTimeInDays;  
int daysSinceCreation;  
int daysSinceModification;  
int fileAgeInDays;
```

Intention

```
//1.  
public void LoadSingleData() { }  
public void FetchDataFiltered() { }  
public void GetAllData() { }
```

```
//1.  
public void GetSingleData() { }  
public void GetDataFiltered() { }  
public void GetAllData() { }
```

1 concept

```
public class EntitiesRelation
{
    Entity o1;
    Entity o2;
}
```

```
public class ProductWithCategory
{
    Entity product;
    Entity category;
}
```

Domaine

SOLID



Single Responsibility

Open Close

Liskov Substitution

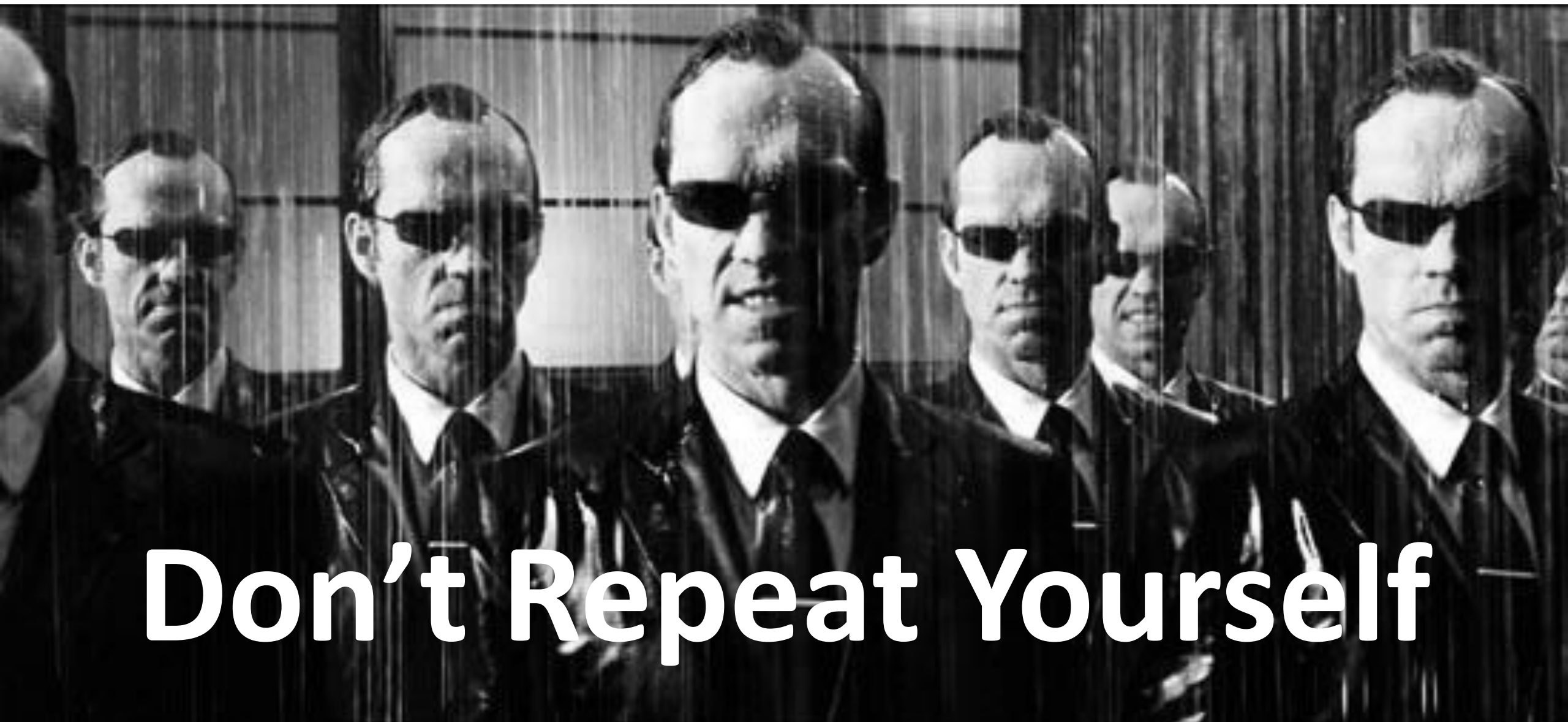
Interface Segregation

Dependency Inversion

Design Patterns

THE 23 GANG OF FOUR DESIGN PATTERNS

C	Abstract Factory	S	Facade	S	Proxy
S	Adapter	C	Factory Method	B	Observer
S	Bridge	S	Flyweight	C	Singleton
C	Builder	B	Interpreter	B	State
B	Chain of Responsibility	B	Iterator	B	Strategy
B	Command	B	Mediator	B	Template Method
S	Composite	B	Memento	B	Visitor
S	Decorator	C	Prototype		



Don't Repeat Yourself



YOU AIN'T GONNA NEED IT

Don't waste resources on what you *might* need.

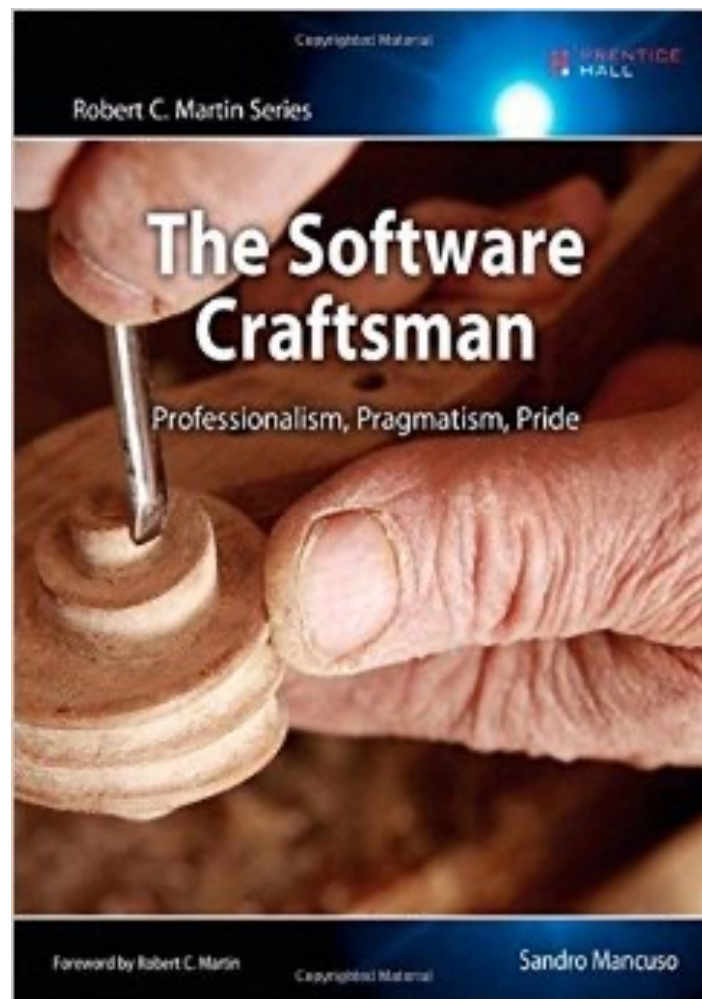
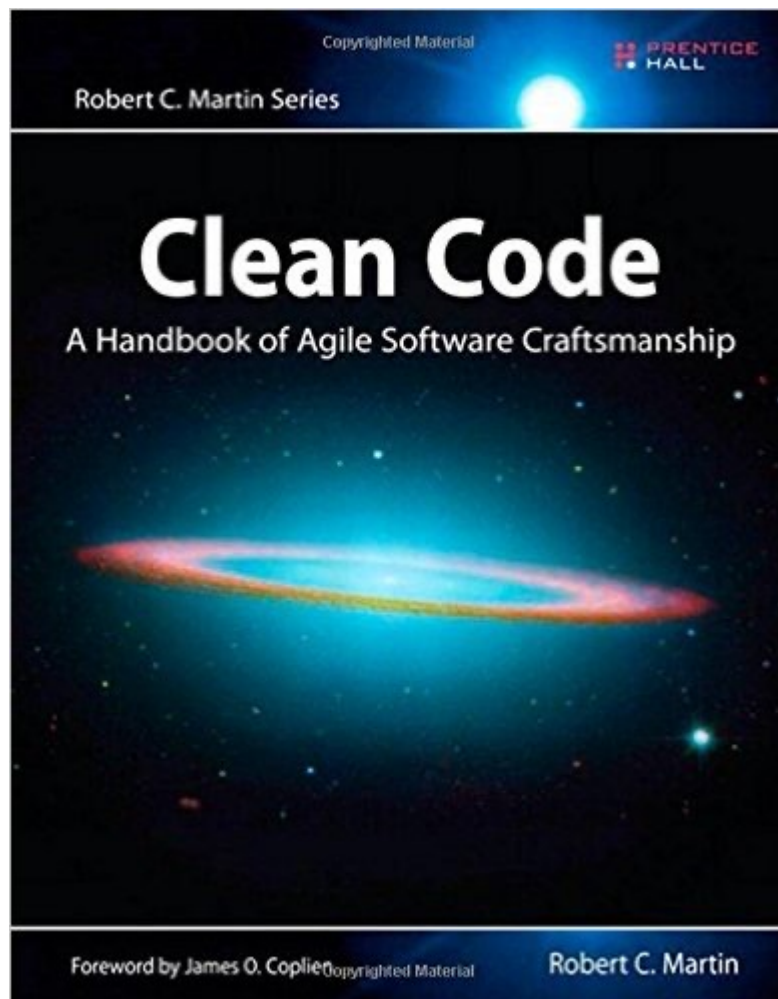
Keep It Simple, Stupid

$$1 + 1 = [(27/3)/3] - 1$$

Outils









TDD

Clean code

Agile

Tests unitaires

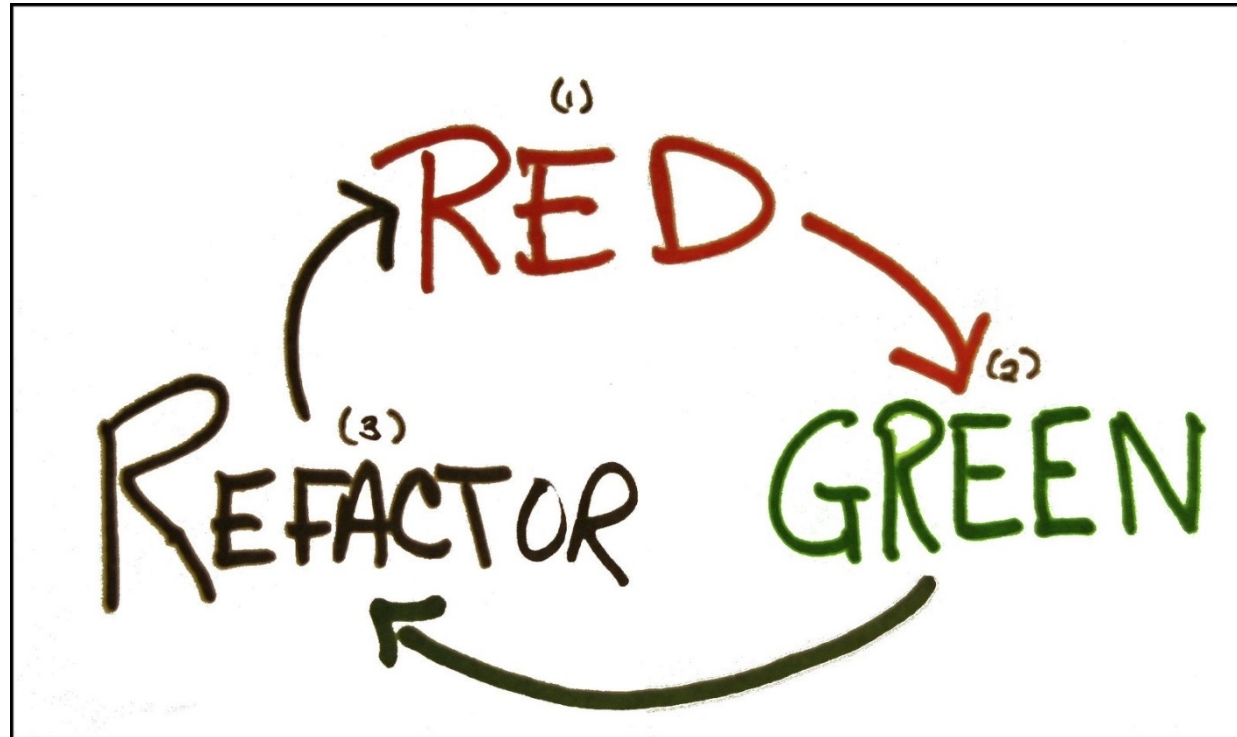
Fast

Independant

Repeatable

Self validating

Timely



**ALL CODE IS GUILTY
UNTIL PROVEN INNOCENT**

```
[TestFixture]
public class FizzBuzzTest
{

    [Test]
    public void Should_return_1_when_1_is_passed()
    {
        var fizzBuzz = new FizzBuzz();

        var actual = fizzBuzz.Handle(1);

        Check.That(actual).IsEqualTo("1");
    }

    [Test]
    public void Should_return_fizz_when_fizzbuzzelement_is_equal_to_three()
    {
        var fizzBuzz = new FizzBuzz();

        var actualFizzBuzzElement = fizzBuzz.Handle(3);

        Check.That(actualFizzBuzzElement).IsEqualTo("Fizz");
    }
}
```






Jasmine



TDD Kata 1 - String Calculator - Osherove

osherove.com/tdd-kata-1/ ▼ Traduire cette page

String Calculator. The following is a **TDD Kata**- an exercise in coding, refactoring and test-first, that you should apply daily for at least 15 minutes (I do 30).

GitHub - garora/TDD-Katas: This repository contains Hands on Test ...

<https://github.com/garora/TDD-Katas> ▼ Traduire cette page

The changes are described at: <http://blog.drorhelper.com/2015/02/fizzbuzz-tdd-kata-using-reactive.html> - Pull Request by: <https://github.com/dhelper> (manually ...

Kata - The only way to learn TDD - Peter Provost's Geek Noise

www.peterprovost.org/blog/2012/.../kata-the-only-way-to-learn-td... ▼ Traduire cette page

2 mai 2012 - My guidance to them is simple. Do a **TDD kata** every morning for two weeks. Limit yourself to 30 minutes each morning. Then pick another **kata** ...

TDD-Katas - Home

<https://tddkatas.codeplex.com/> ▼ Traduire cette page

11 déc. 2011 - ***TDD-Katas*** simply defines the **Test Driven Development Katas**. In this, I tried to create most famous **katas** to understand what is exactly **Kata**.

CodeKata

codekata.com/ ▼ Traduire cette page

Code **Kata** is an attempt to bring this element of practice to software development. A **kata** is an exercise in karate where you repeat a form many, many times, ...

THEY DIDN'T USE

TDD



BDD

TDD

Clean code

Agile



Feature: Calculator

Scenario Outline: Add two numbers

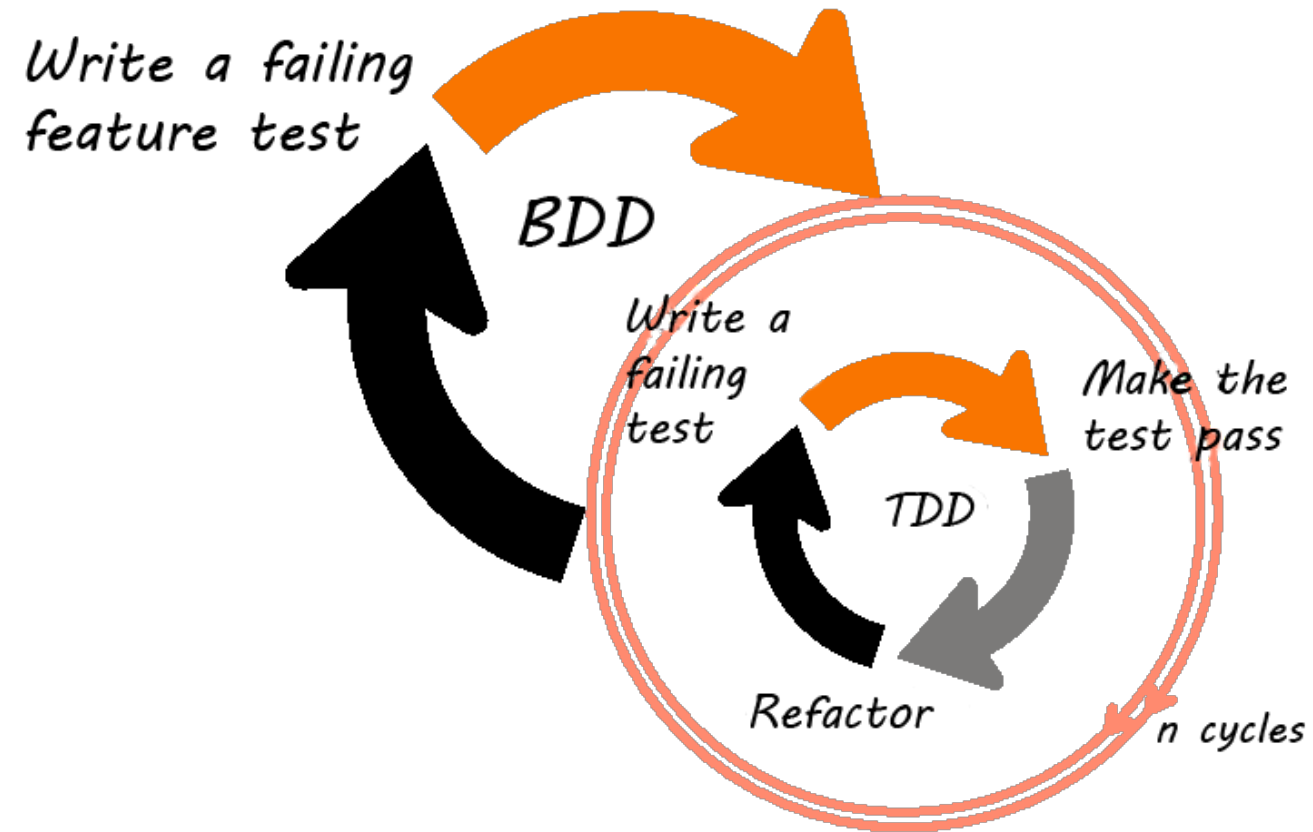
Given I have entered <a> into the calculator

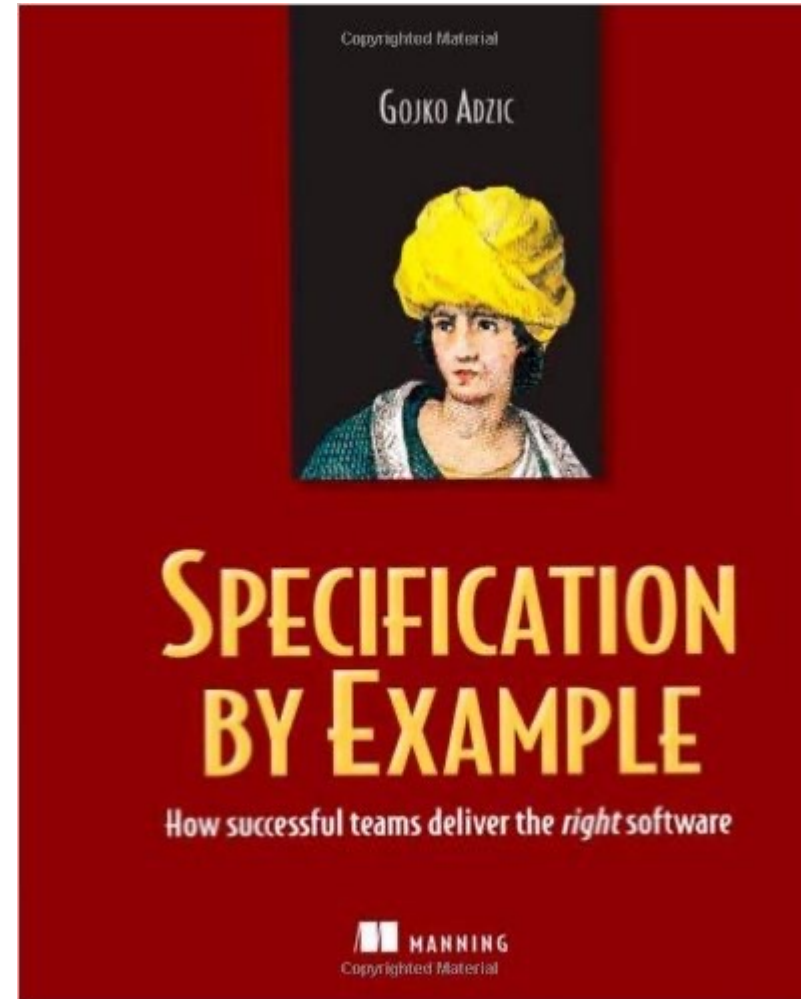
And I have entered into the calculator

When I press add

Then the result should be <result> on the screen

Double boucle







Refactoring legacy code

BDD

TDD

Clean code

Agile



**Tests
manuels**

**Tests
IHM**

**Tests de
services**

**Tests
unitaires**



Refactoring Legacy Code Workshop

```

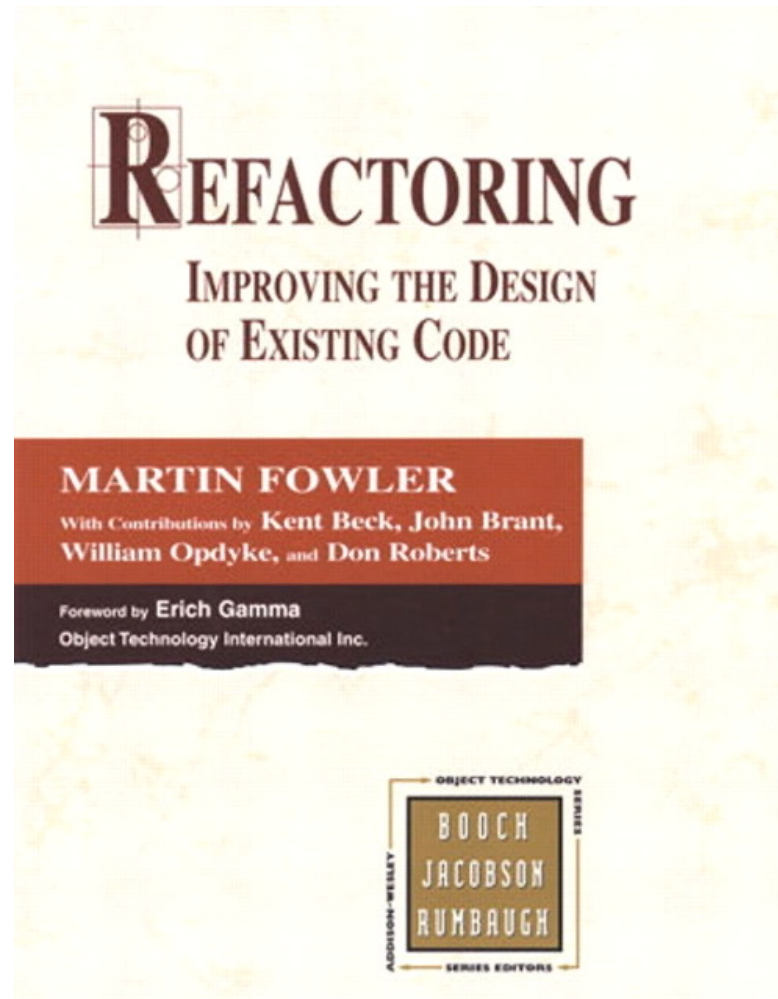
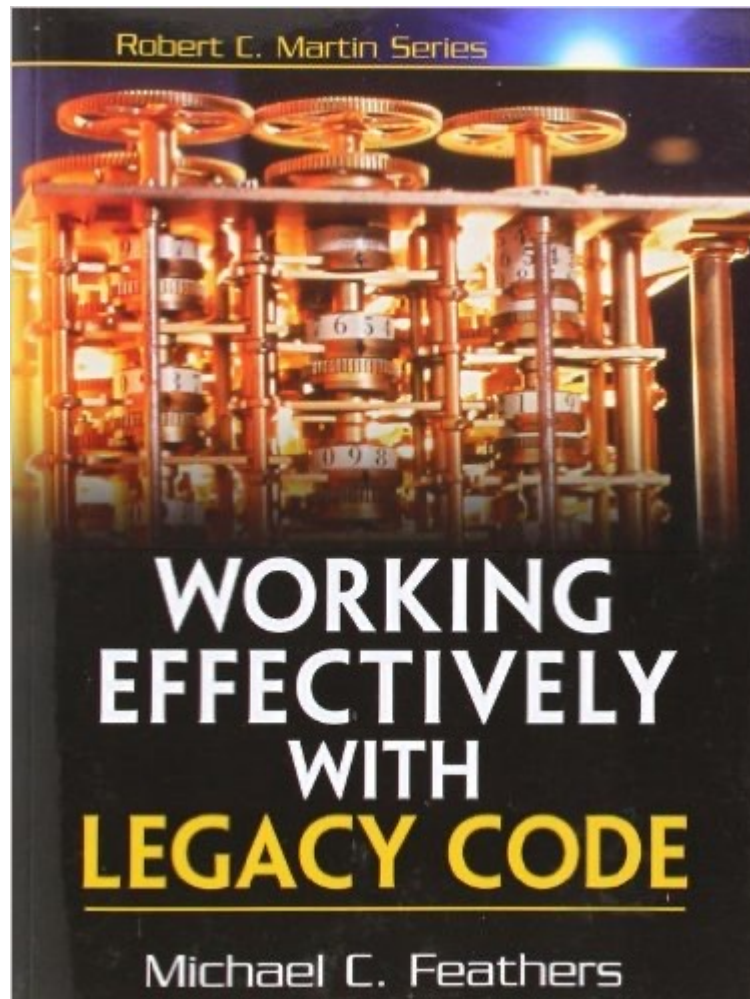
public void updateQuality() {
    for (int i = 0; i < items.length; i++) {
        if (!items[i].name.equals("Aged Brie")
            && !items[i].name.equals("Backstage passes to a TAFKAL80ETC concert")) {
            if (items[i].quality > 0) {
                if (!items[i].name.equals("Sulfuras, Hand of Ragnaros")) {
                    items[i].quality = items[i].quality - 1;
                }
            }
        } else {
            if (items[i].quality < 50) {
                items[i].quality = items[i].quality + 1;

                if (items[i].name.equals("Backstage passes to a TAFKAL80ETC concert")) {
                    if (items[i].sellIn < 11) {
                        if (items[i].quality < 50) {
                            items[i].quality = items[i].quality + 1;
                        }
                    }
                }

                if (items[i].sellIn < 6) {
                    if (items[i].quality < 50) {
                        items[i].quality = items[i].quality + 1;
                    }
                }
            }
        }
    }
}

```

Kata Gilded Rose by Emily Bache





Tests end to end

Refactoring legacy code

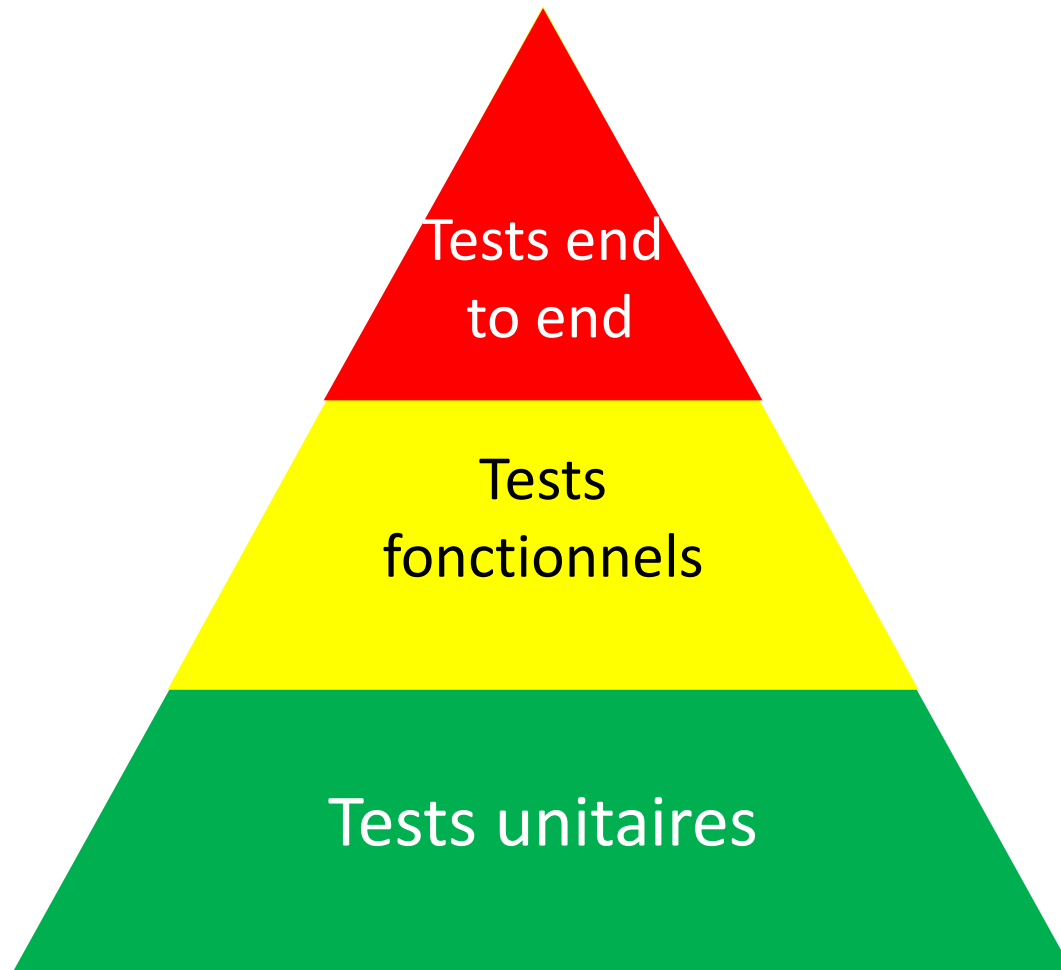
BDD

TDD

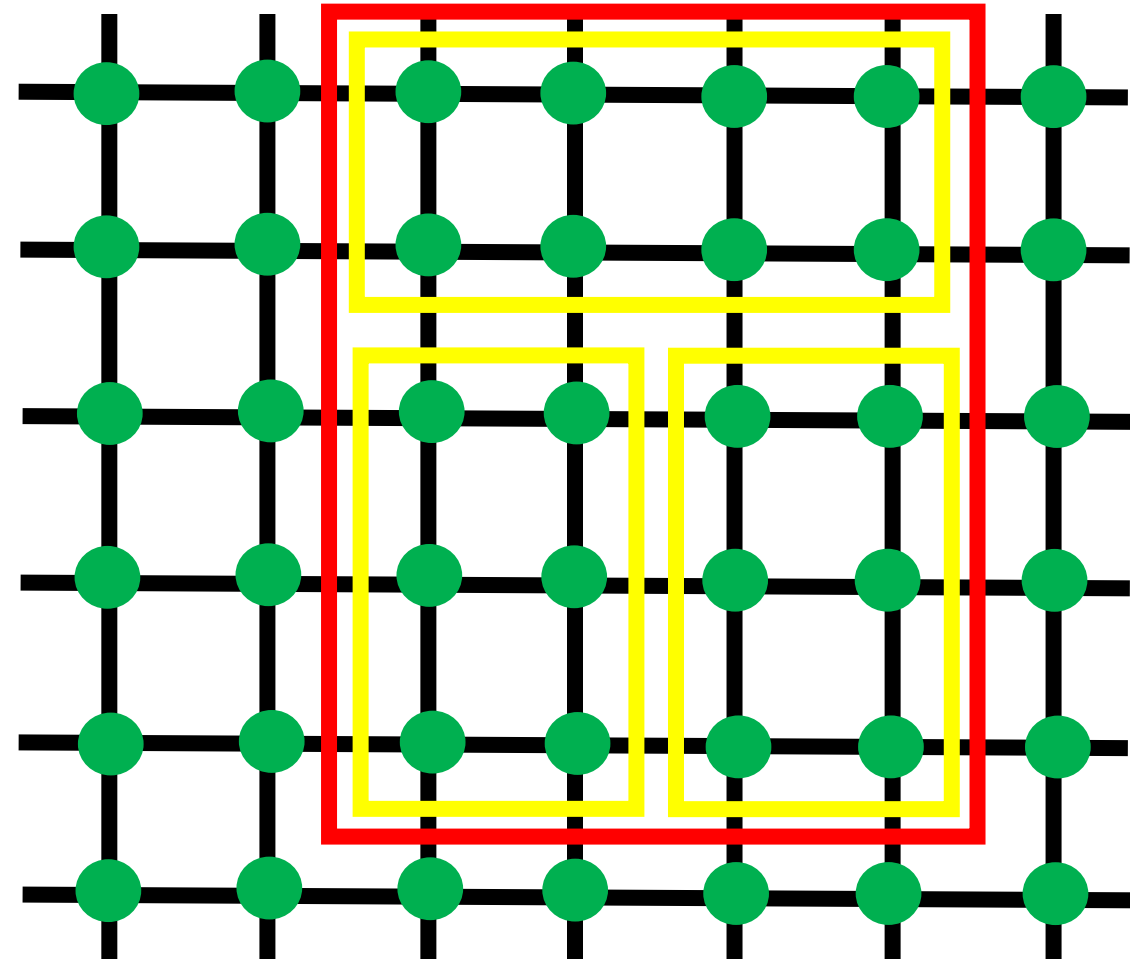
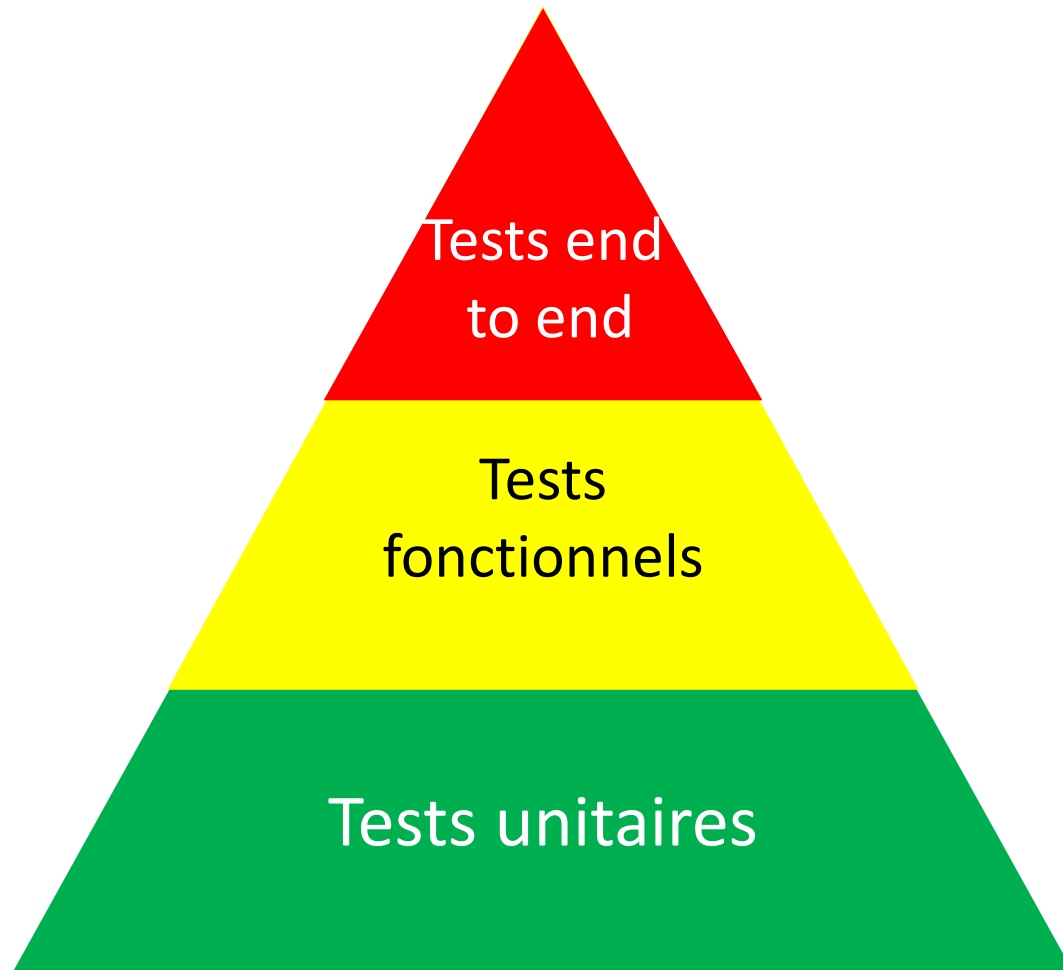
Clean code

Agile

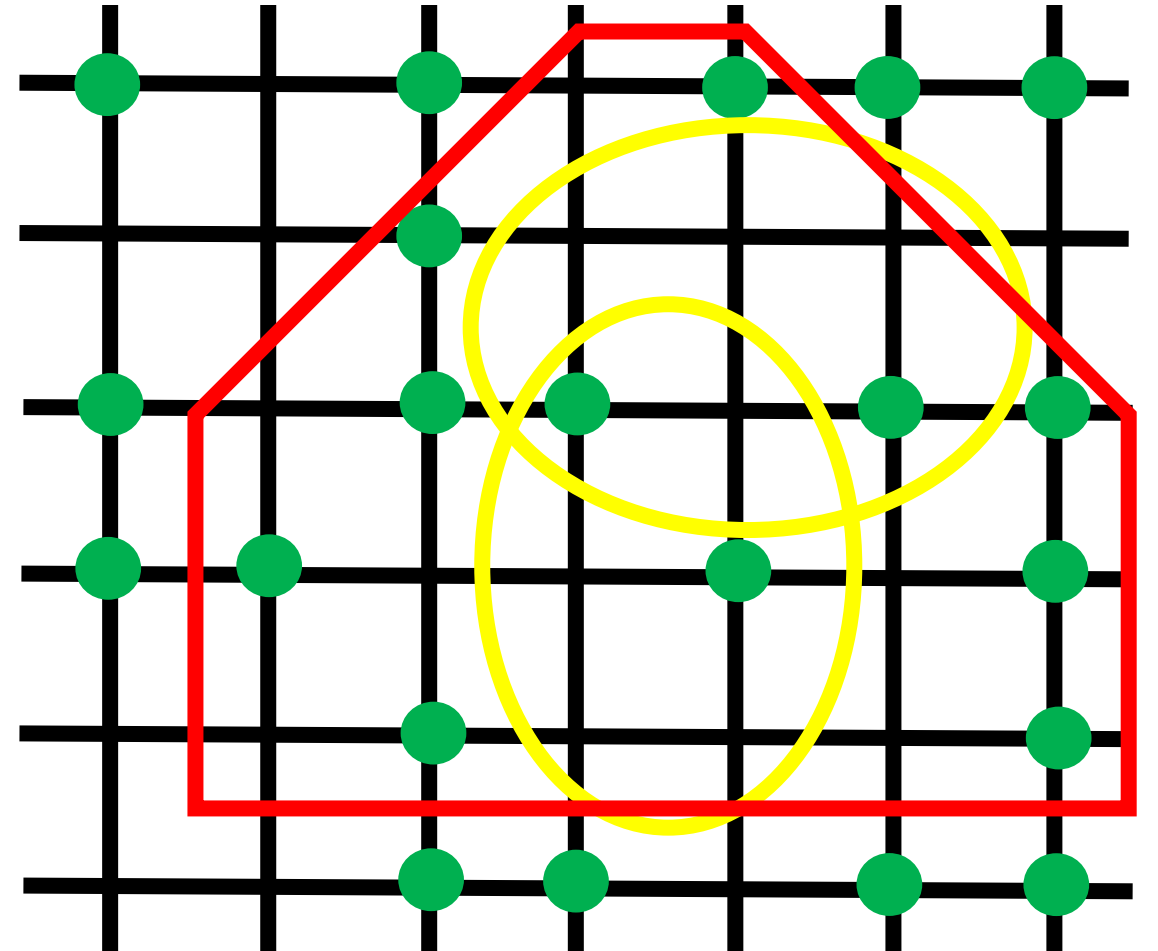
Pyramide de tests



Pyramide de tests



Pyramide de tests



Tests end to end



Les tests unitaires et d'intégration ne suffisent pas!

Outils





HEAVEN

DDD

Tests end to end

Refactoring legacy code

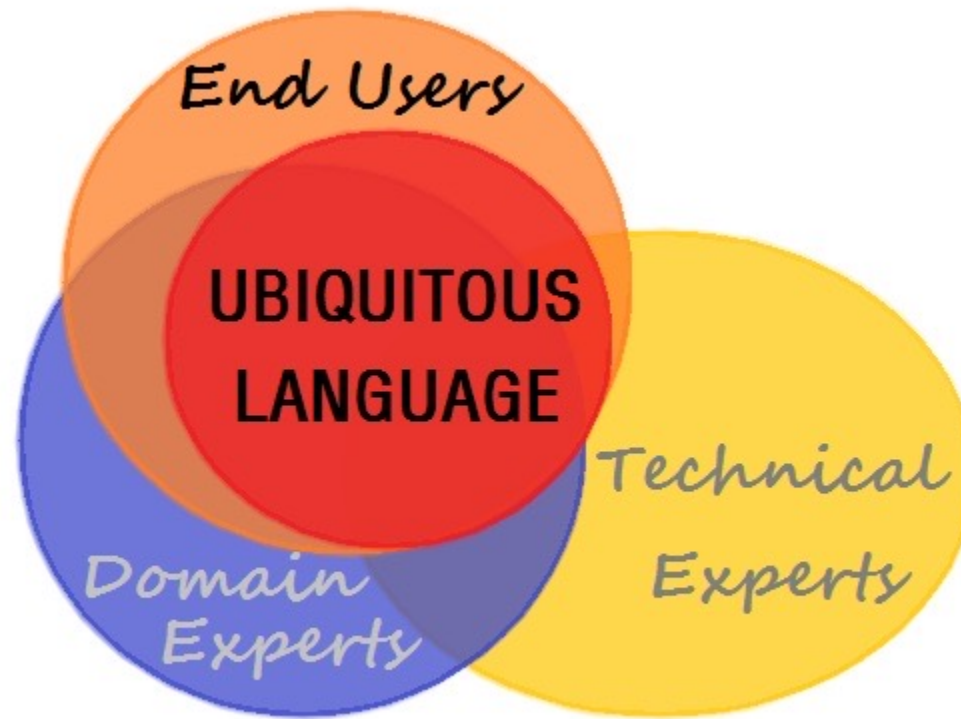
BDD

TDD

Clean code

Agile

Ubiquitous Language



Value Objects



**LE COIN
DES BONNES
D' AFFAIRES**

Value Objects

Expriment le **domaine**
Absorbent la **complexité**



Domain-Driven

DESIGN

Tackling Complexity in the Heart of Software



Eric Evans
Foreword by Martin Fowler



If you think test-first is hard,
try debug-after.



QualityCoding.org

CC BY 2.0, <https://www.flickr.com/photos/mccun934/16040676220>

Et maintenant,
vous faites quoi ?

Des initiatives locales pour lancer le sujet

Je milite pour avoir un **product backlog** drivé avec la business value

J'installe un outil **d'Intégration continue**

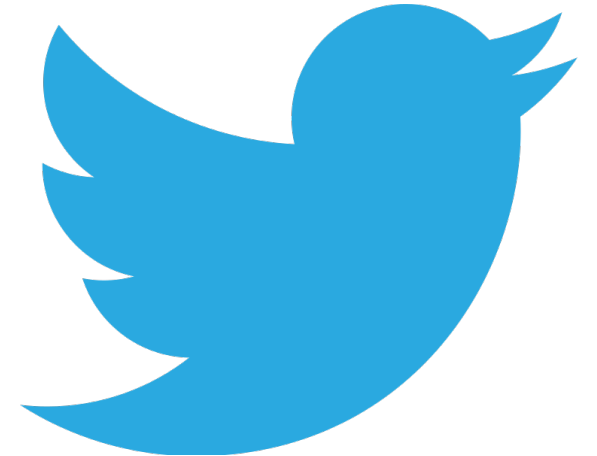
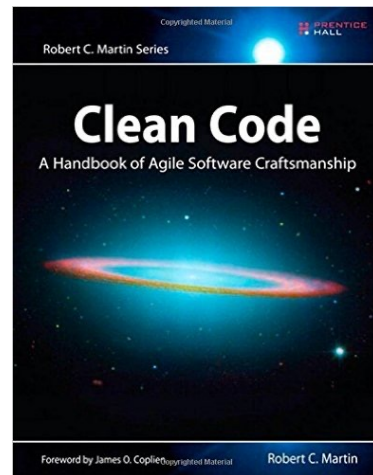
J'installe les outils **tests unitaires**

Je corrige chaque nouveau bug en **TDD**

Je code la prochaine tâche **à deux** et en TDD

J'invite mon équipe pour un **kata** BDD la semaine prochaine

Soyez **ACTEUR** de votre formation



Software craftsmanship

Stairway to heaven

THANK
YOU