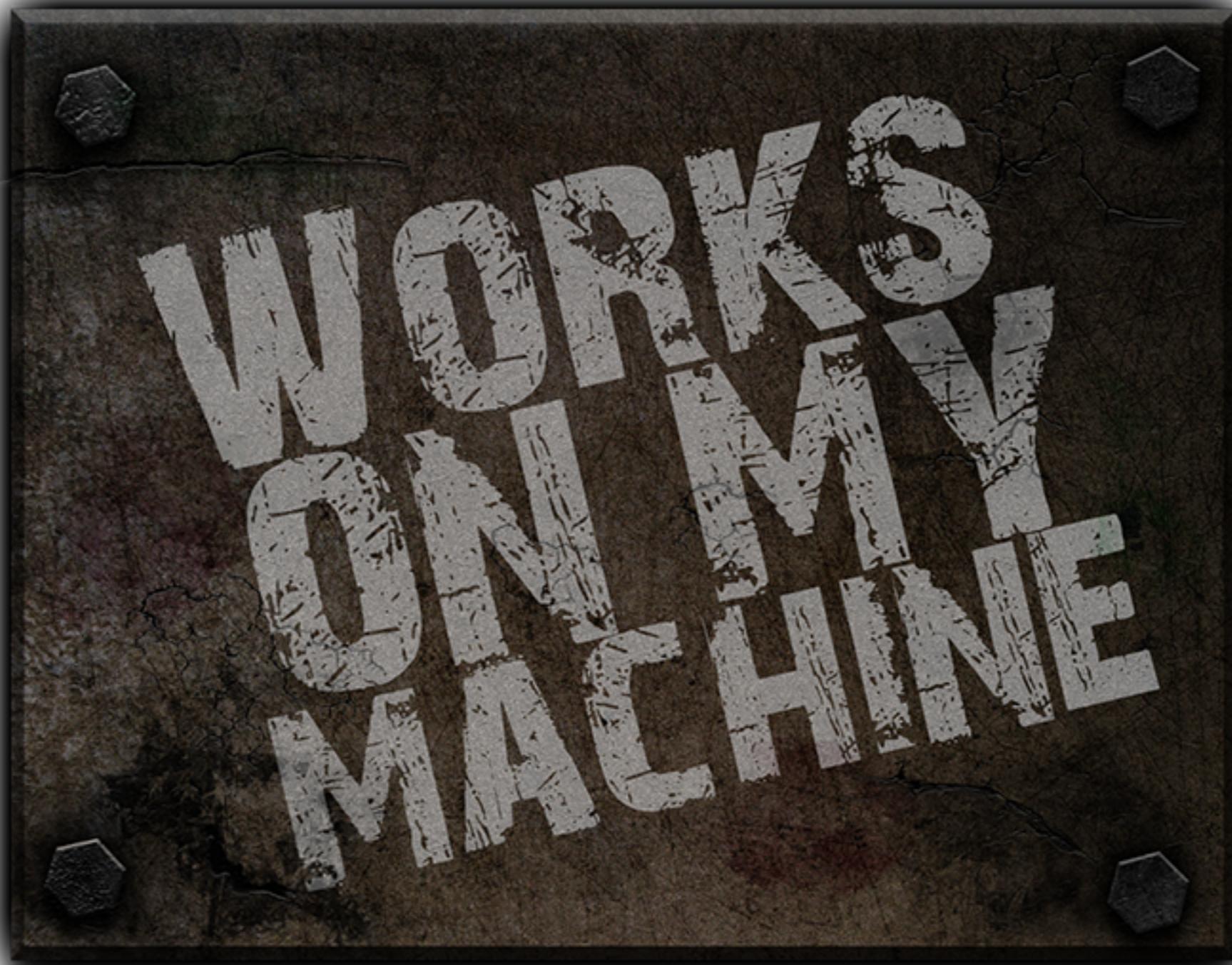
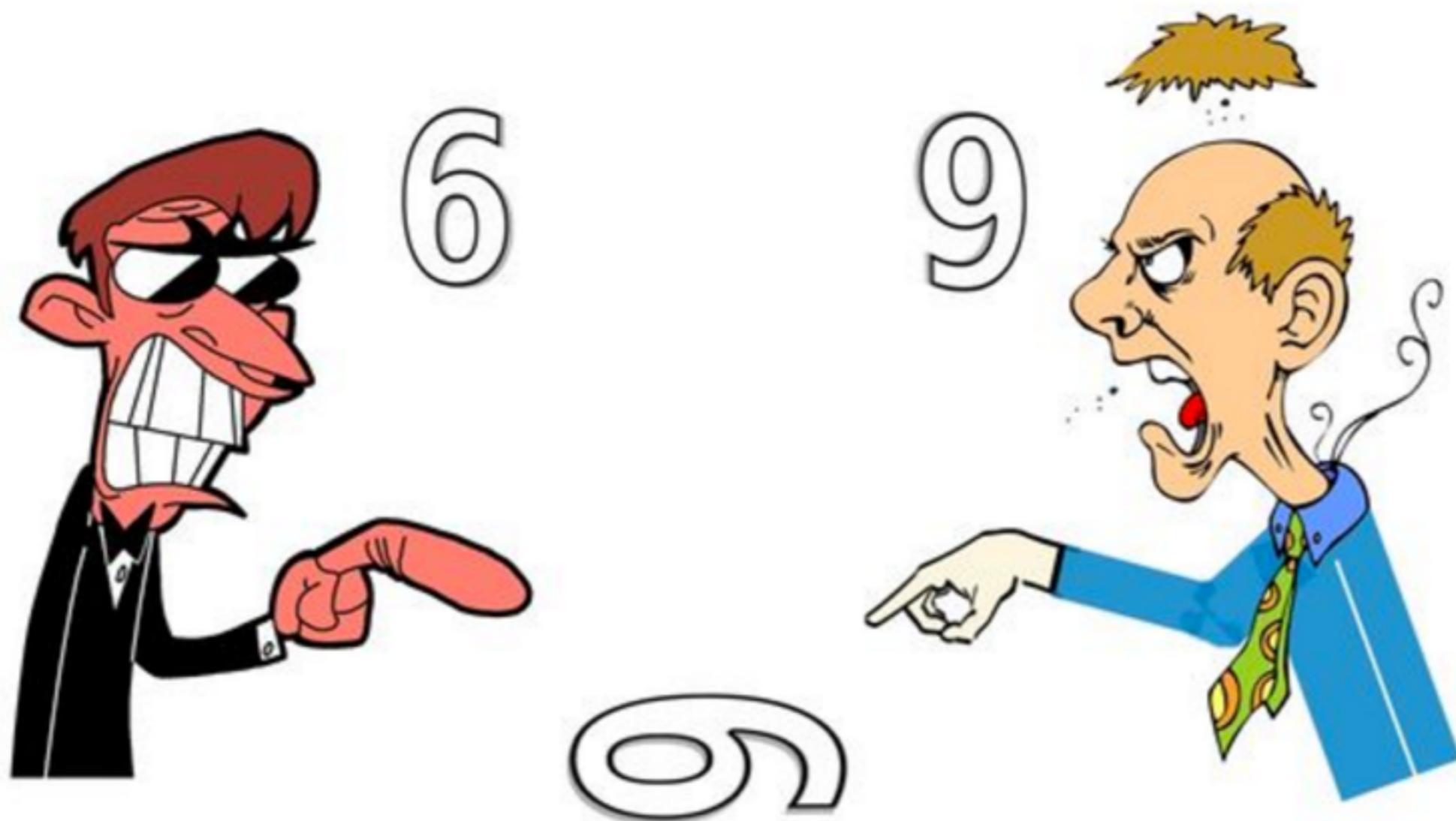


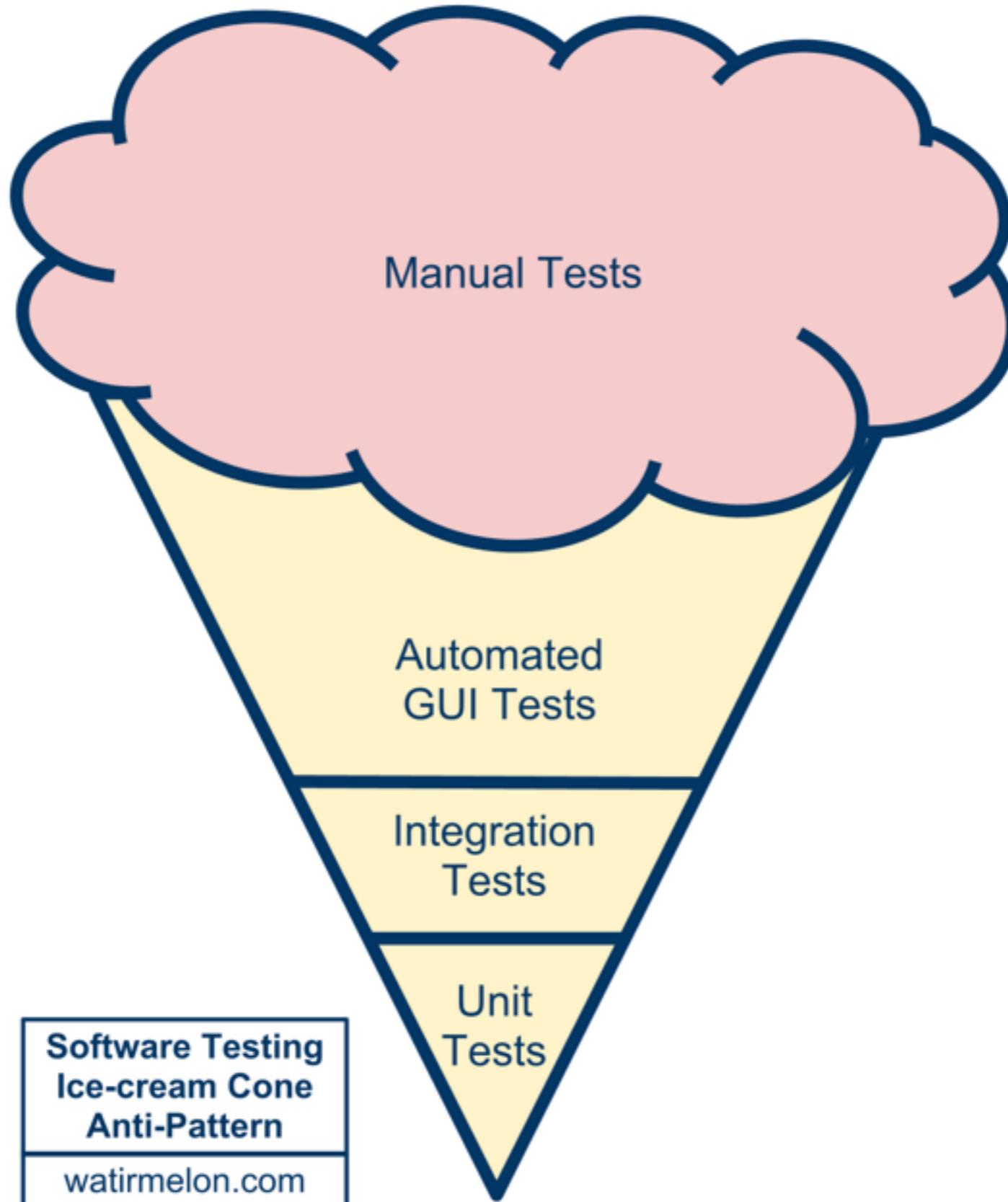
Mobile Testing

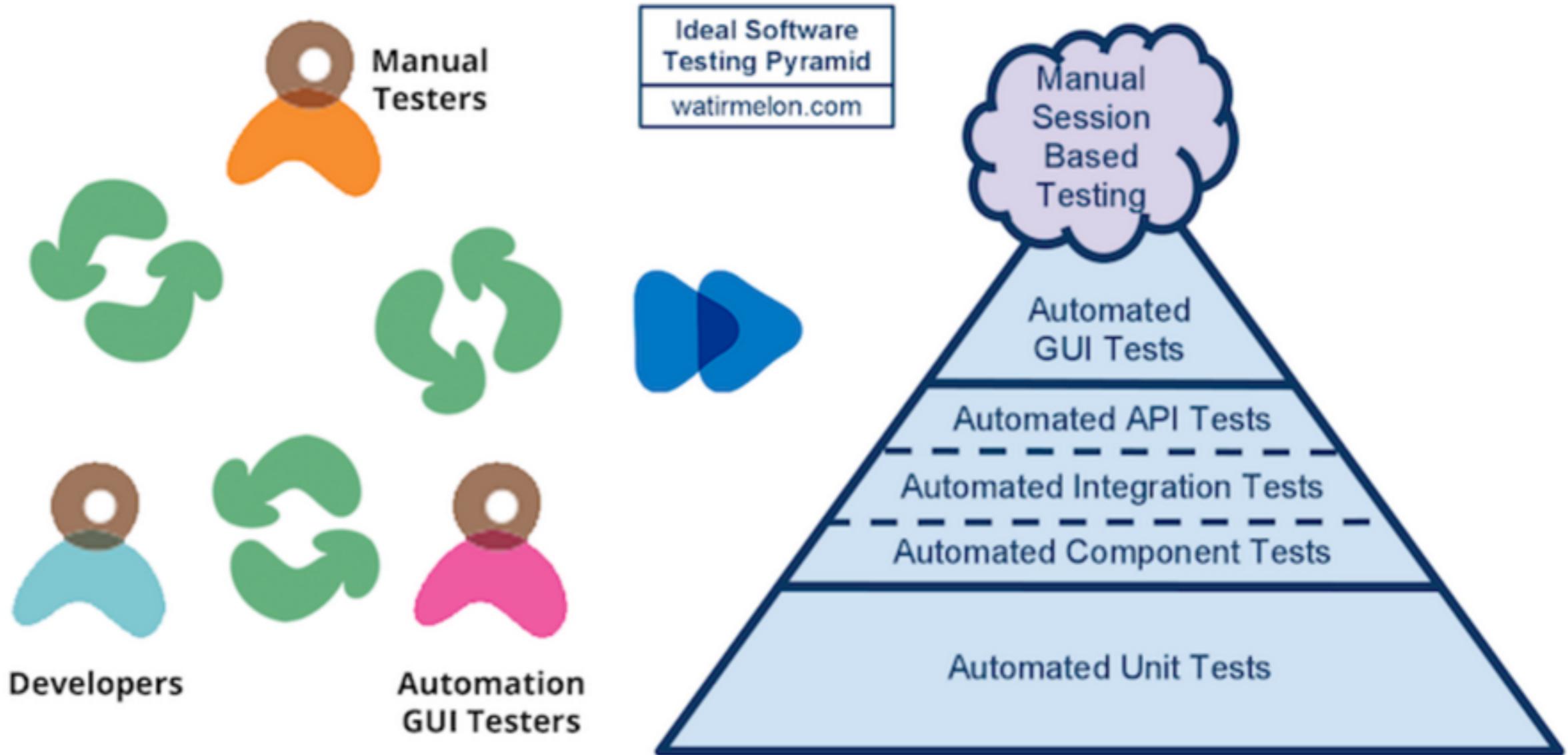




Developer vs Tester

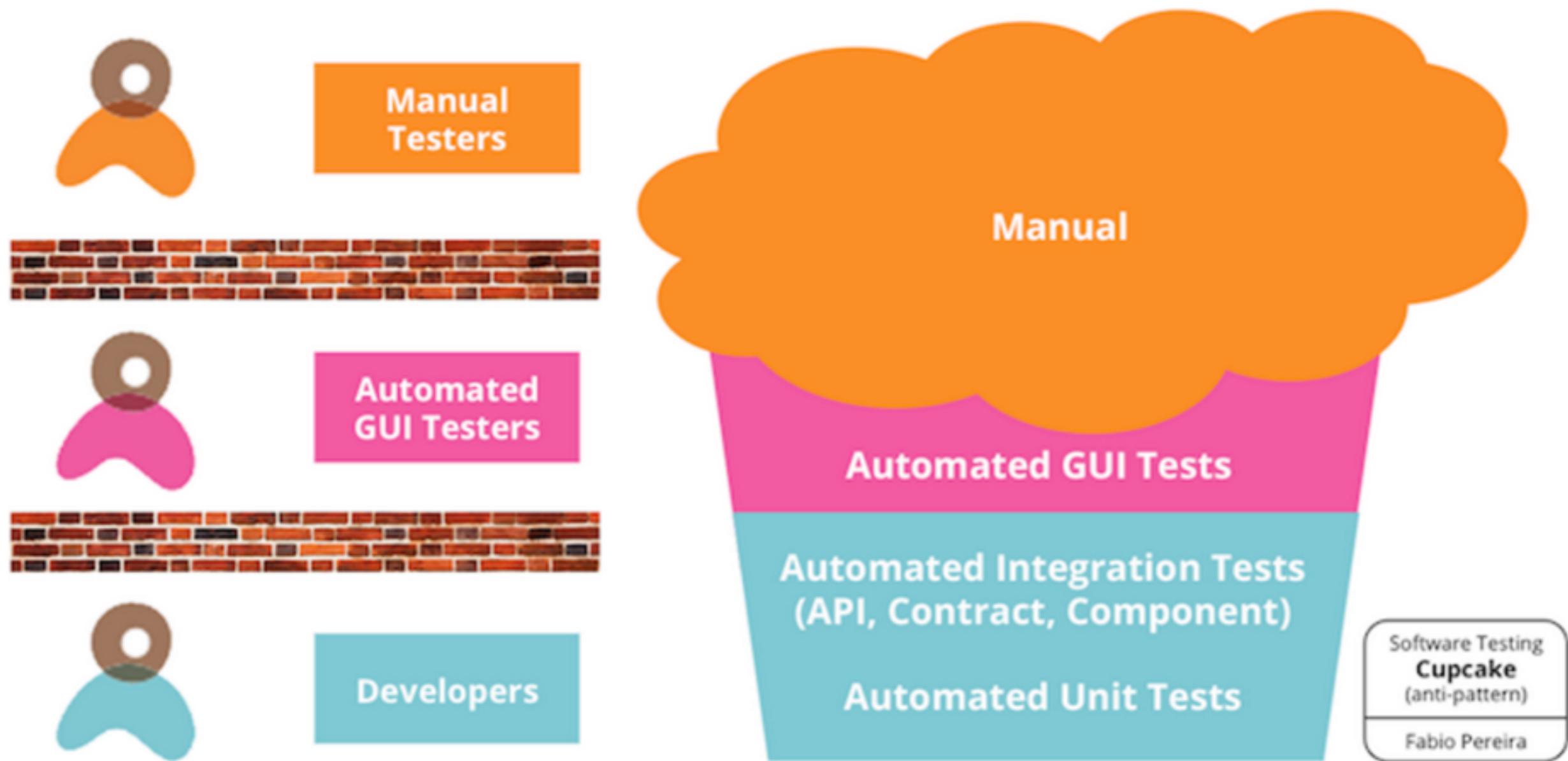






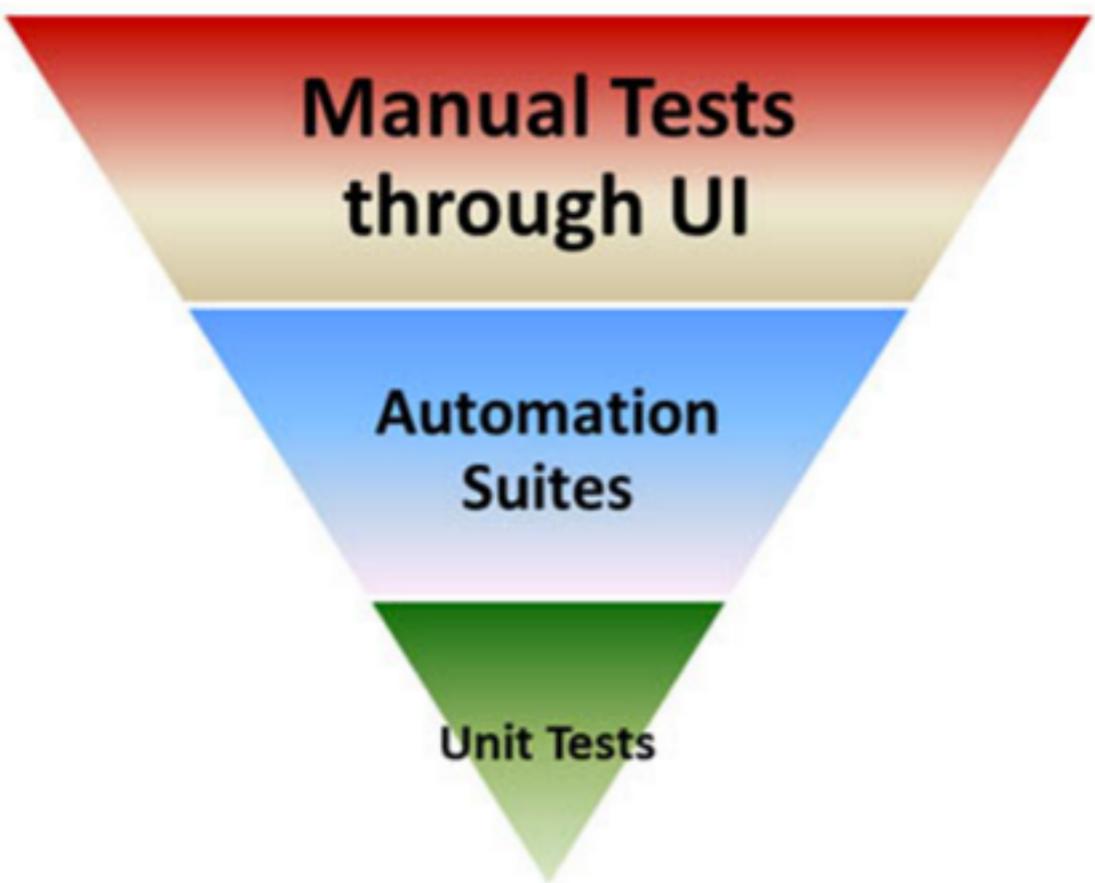
<https://www.thoughtworks.com/insights/blog/introducing-software-testing-cupcake-anti-pattern>



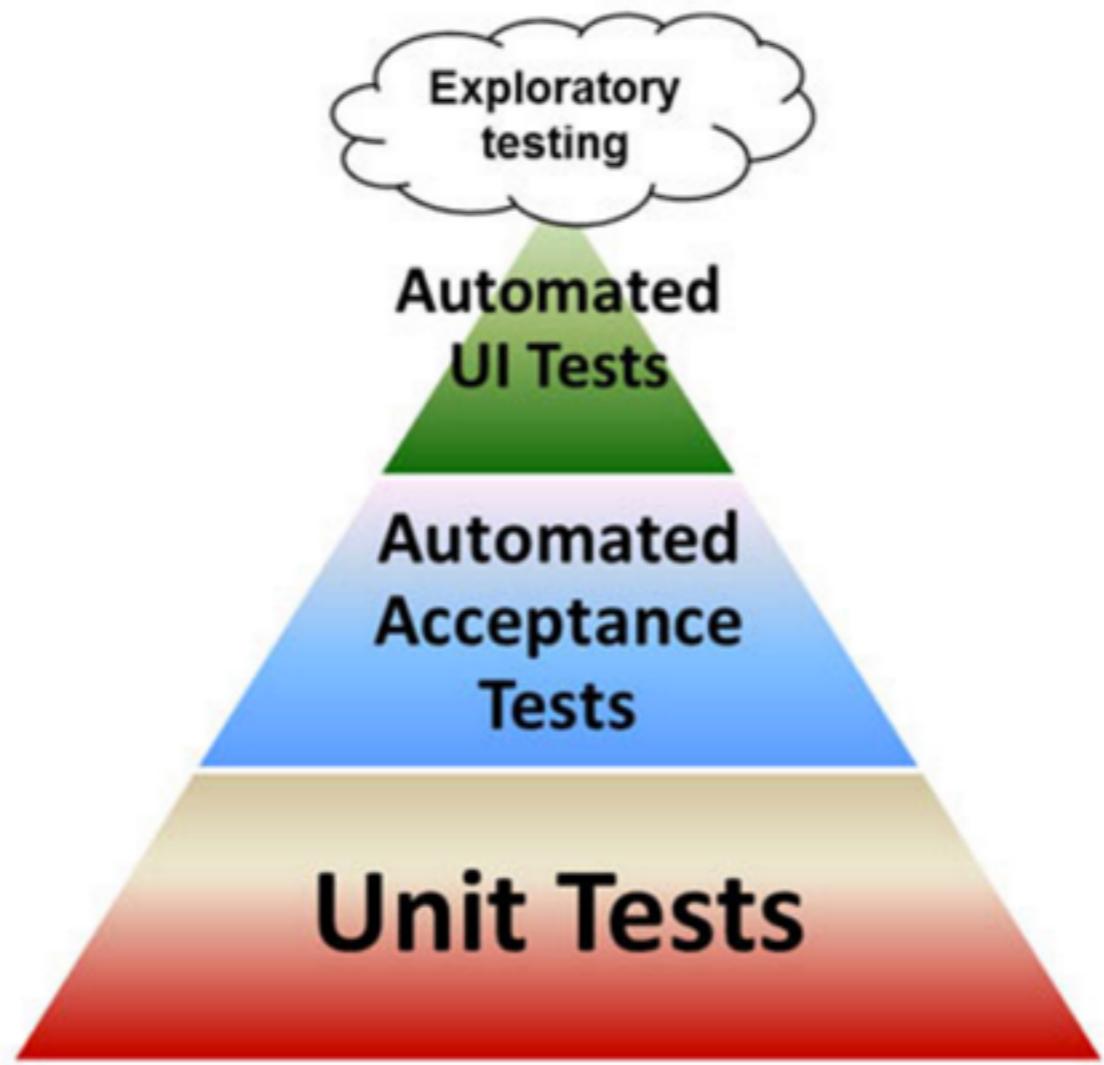


<https://www.thoughtworks.com/insights/blog/introducing-software-testing-cupcake-anti-pattern>





Traditional
(find bugs)



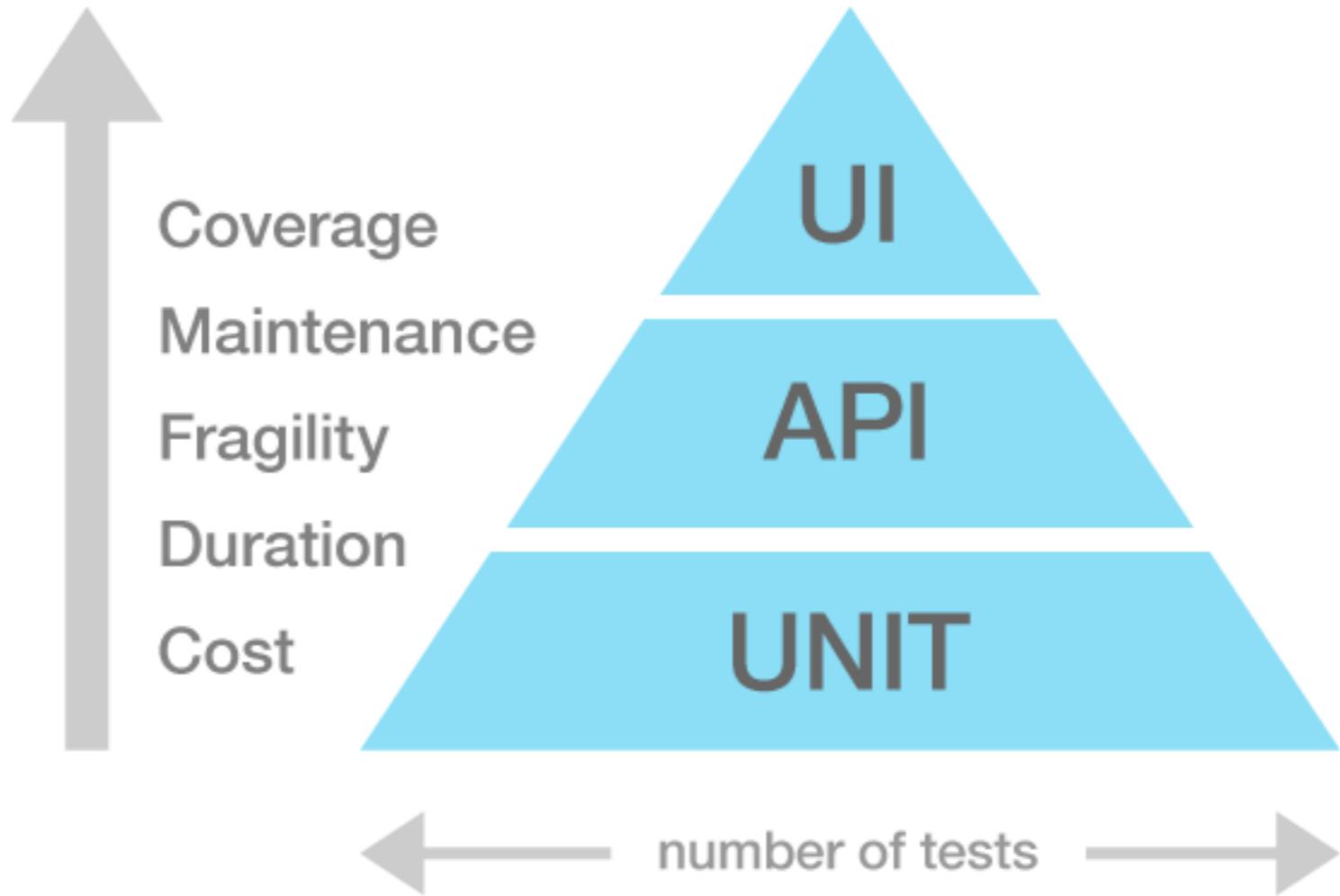
Agile
(prevent bugs)

<http://testingtweaks.com/what-is-agile-testing/>



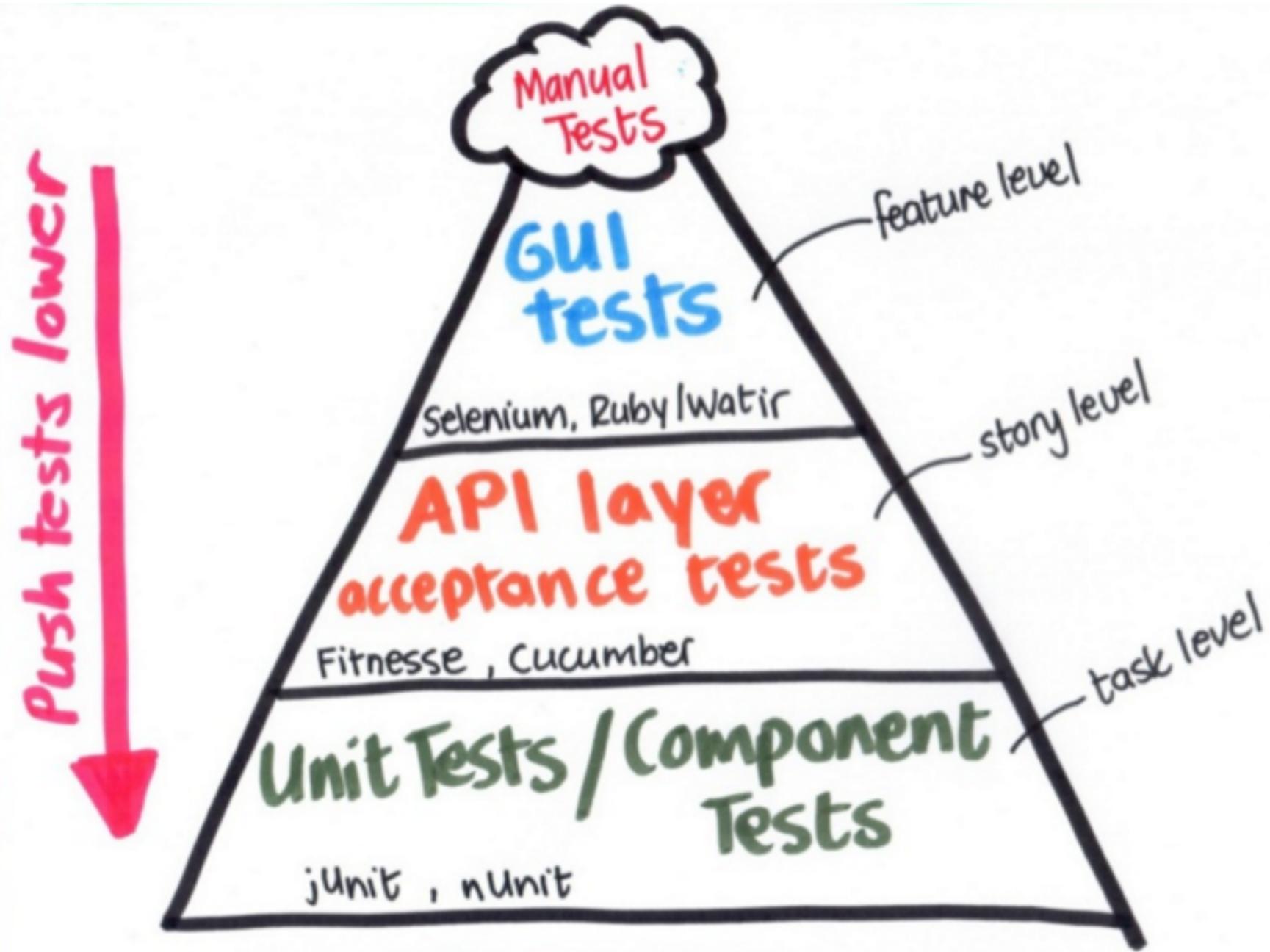
บริษัท สยามชนาญกิจ จำกัด และเพื่อนพ้องน้องพี่

The Automation Pyramid



<http://mr selenium.blogspot.com/2014/12/the-automation-pyramid.html>

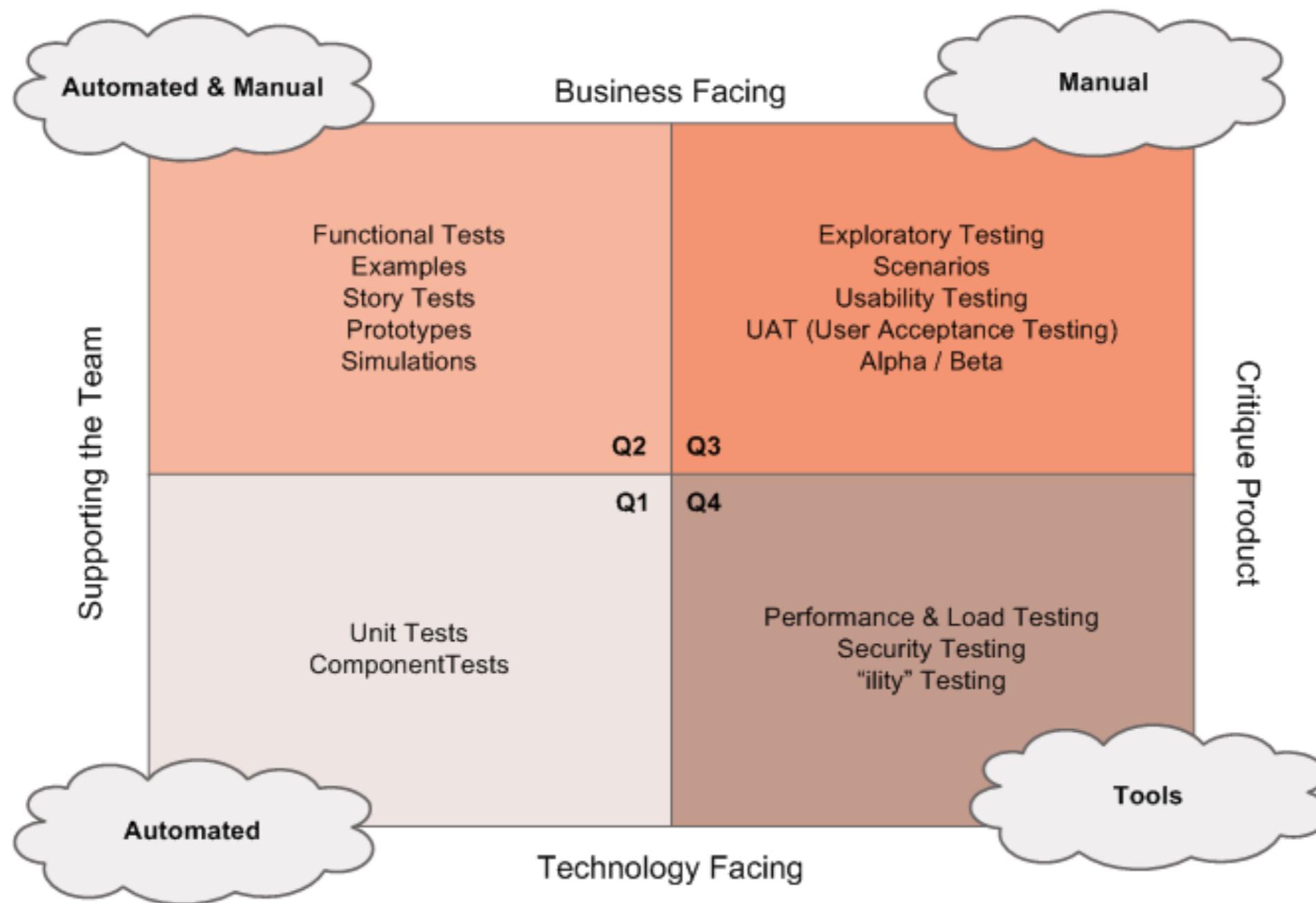




<http://www.slideshare.net/growingagile/expoqa-tutorial-agile-testing-techniques-for-the-whole-team>



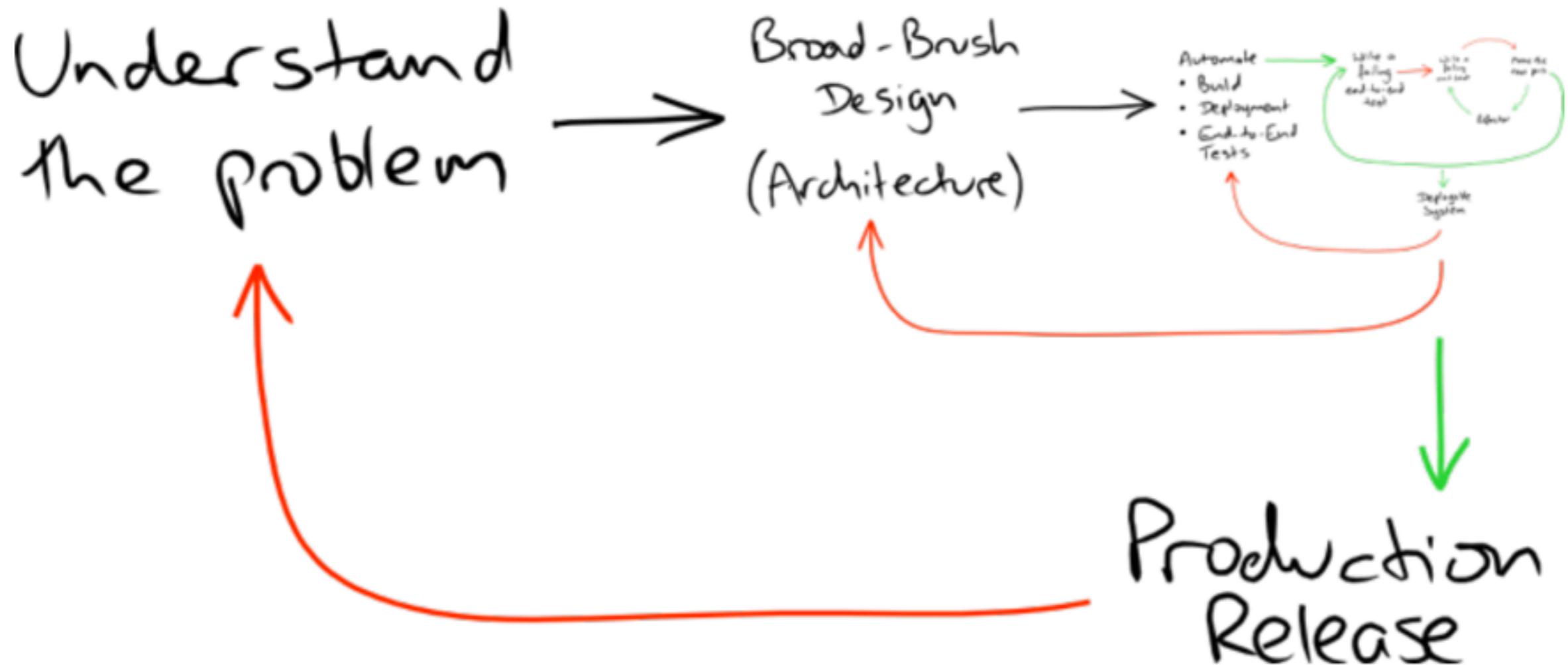
Agile Testing Quadrants



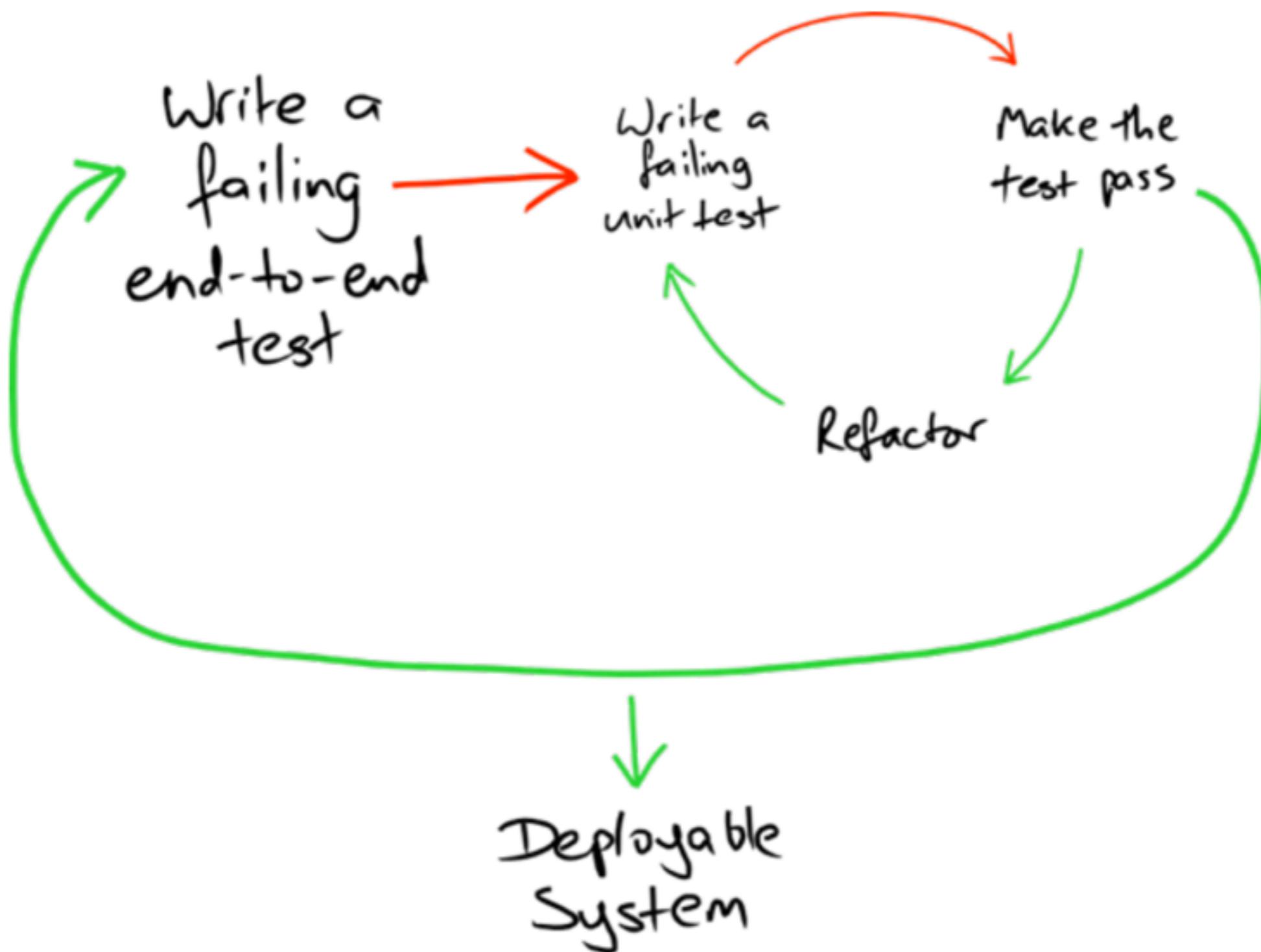
เริ่มอย่างไรดี ?



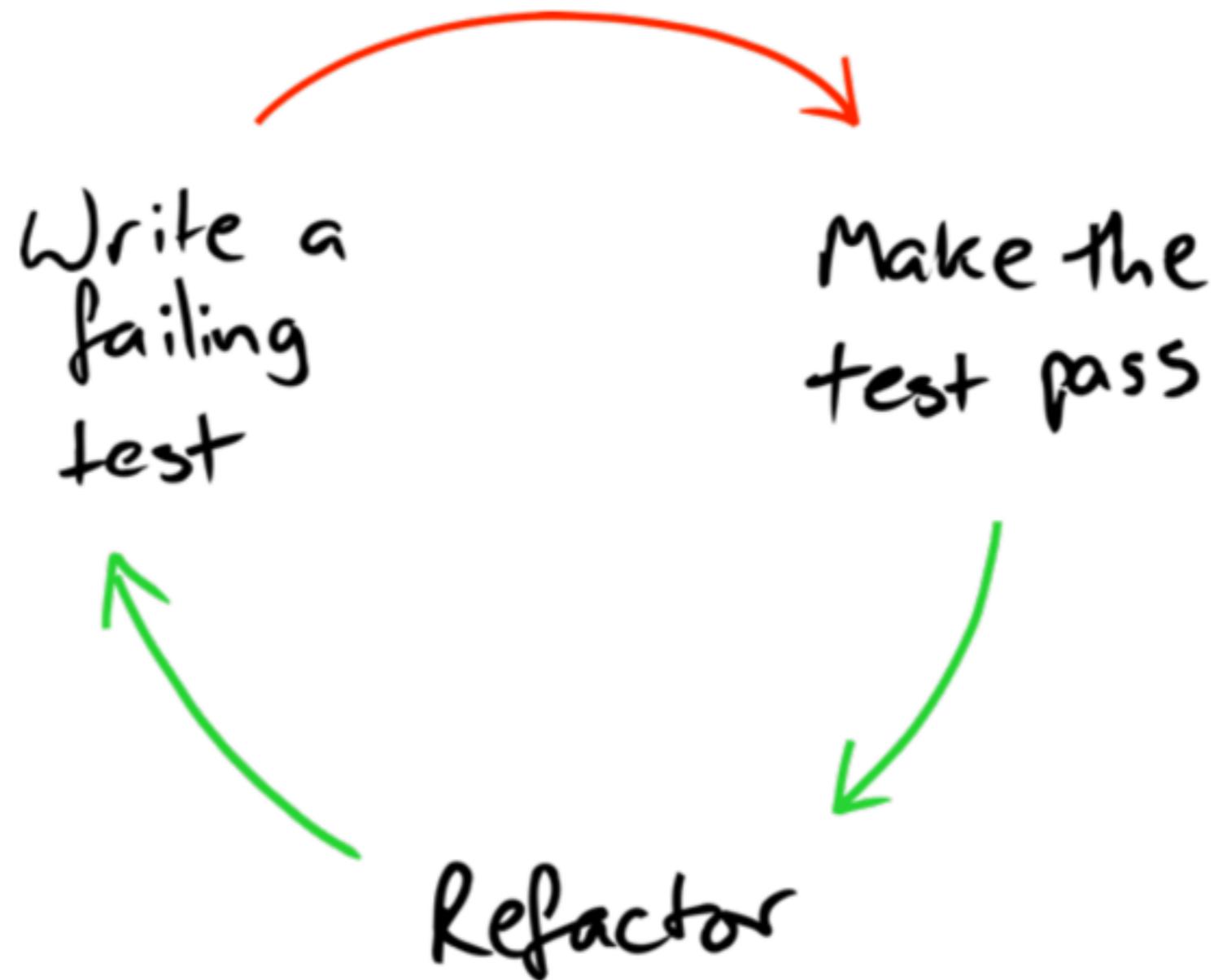
LARGER FEEDBACK LOOP



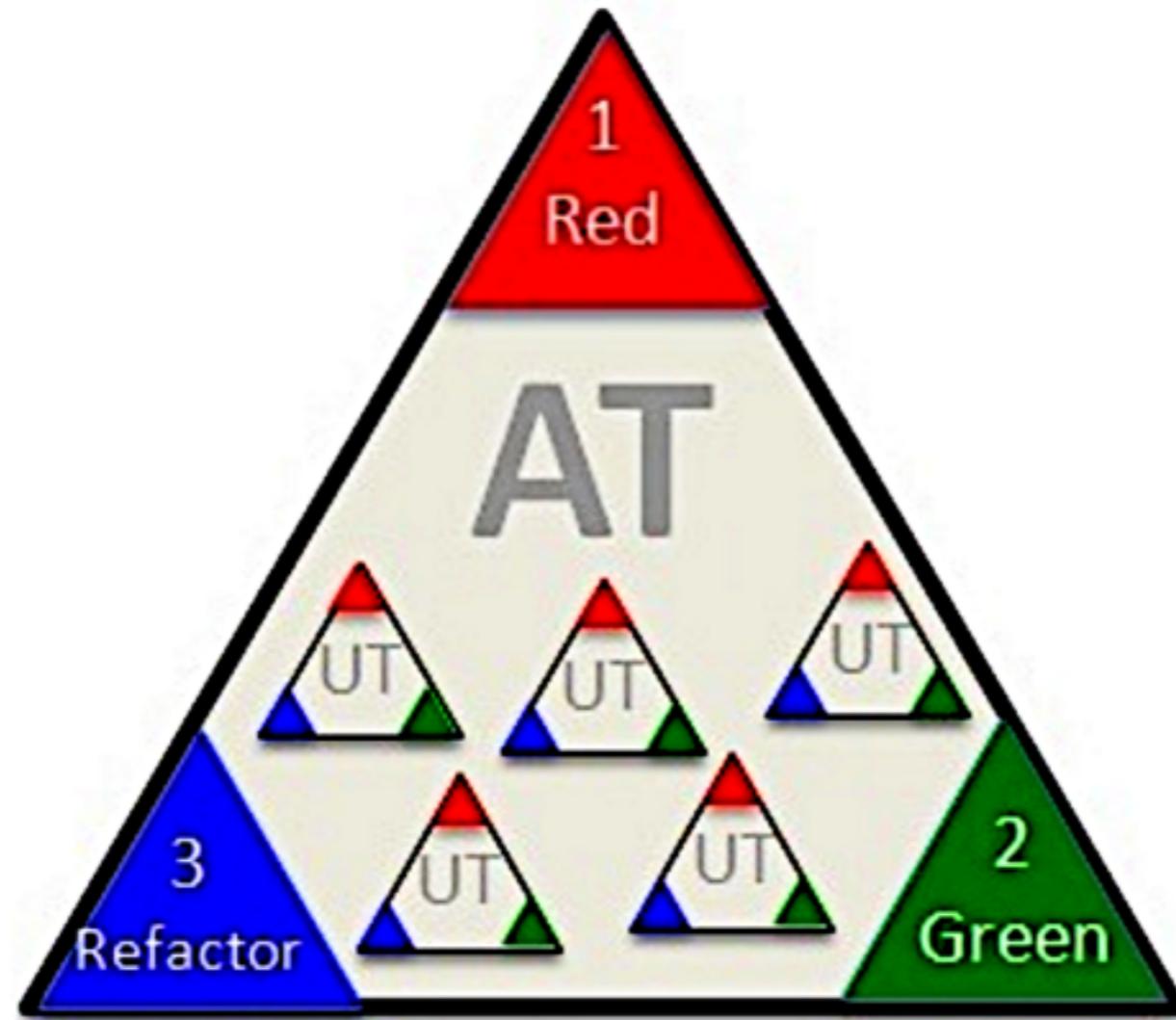
ACCEPTANCE TEST DRIVEN DEVELOPMENT

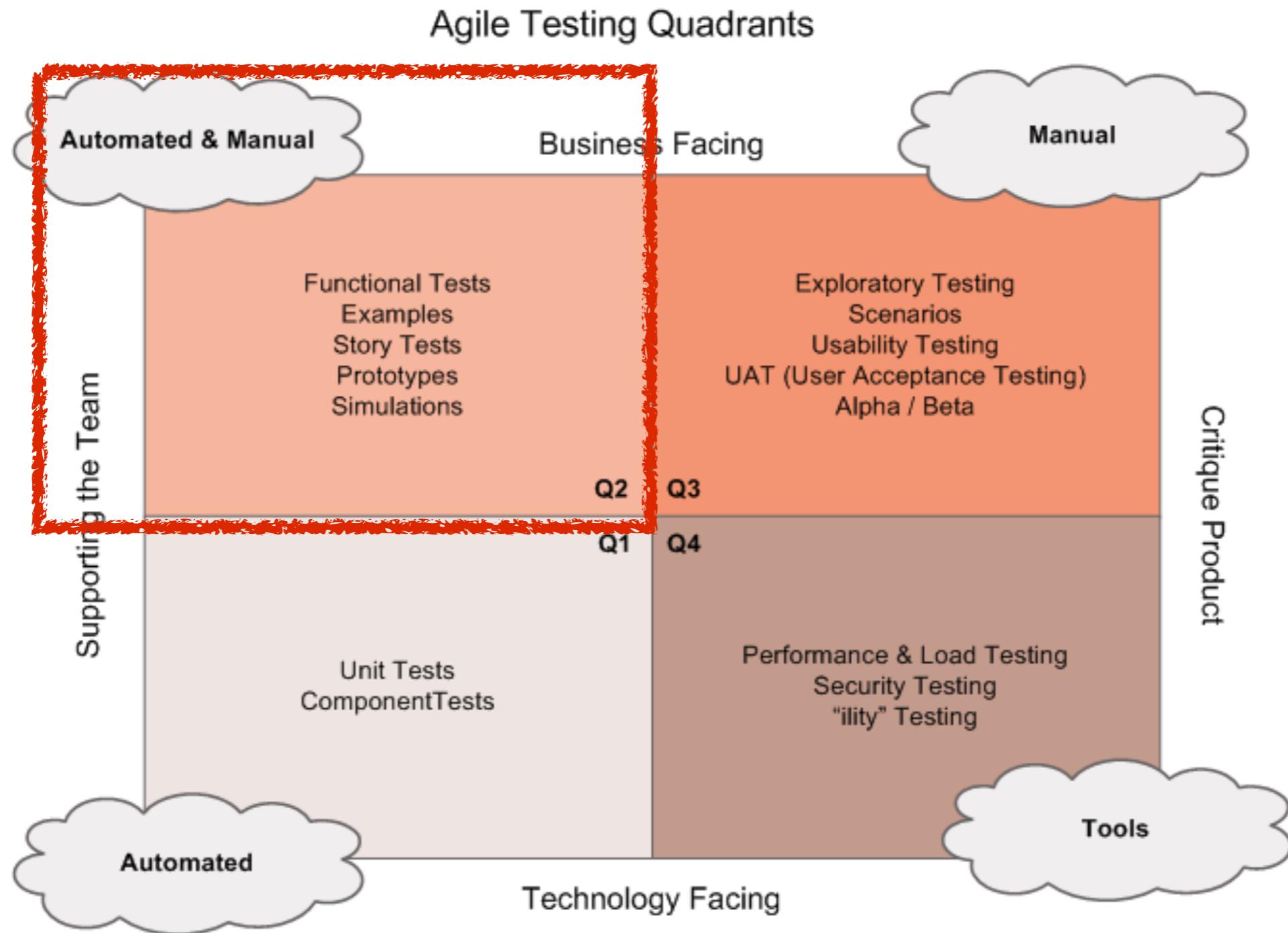


TDD Cycle

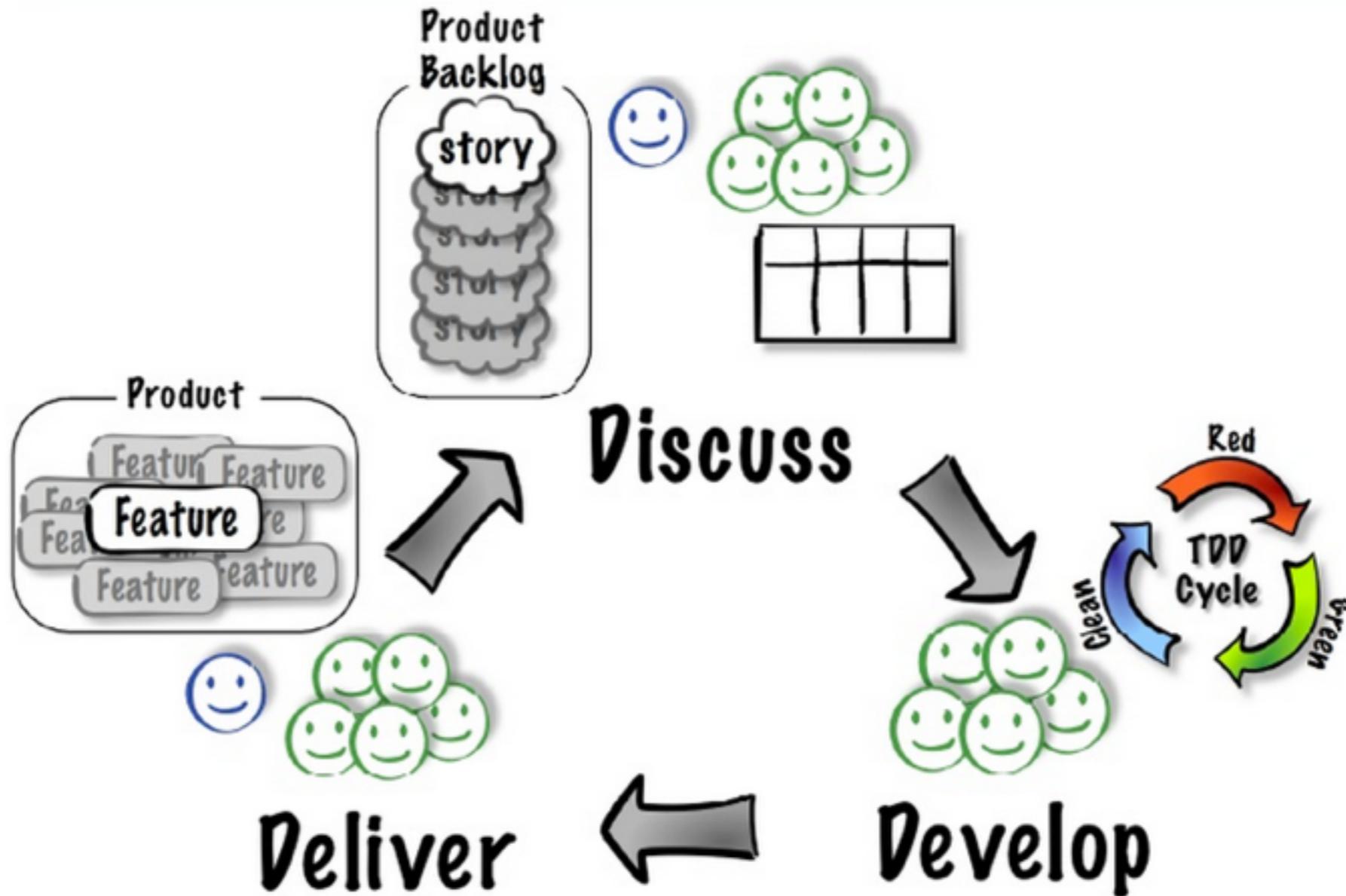


ATDD





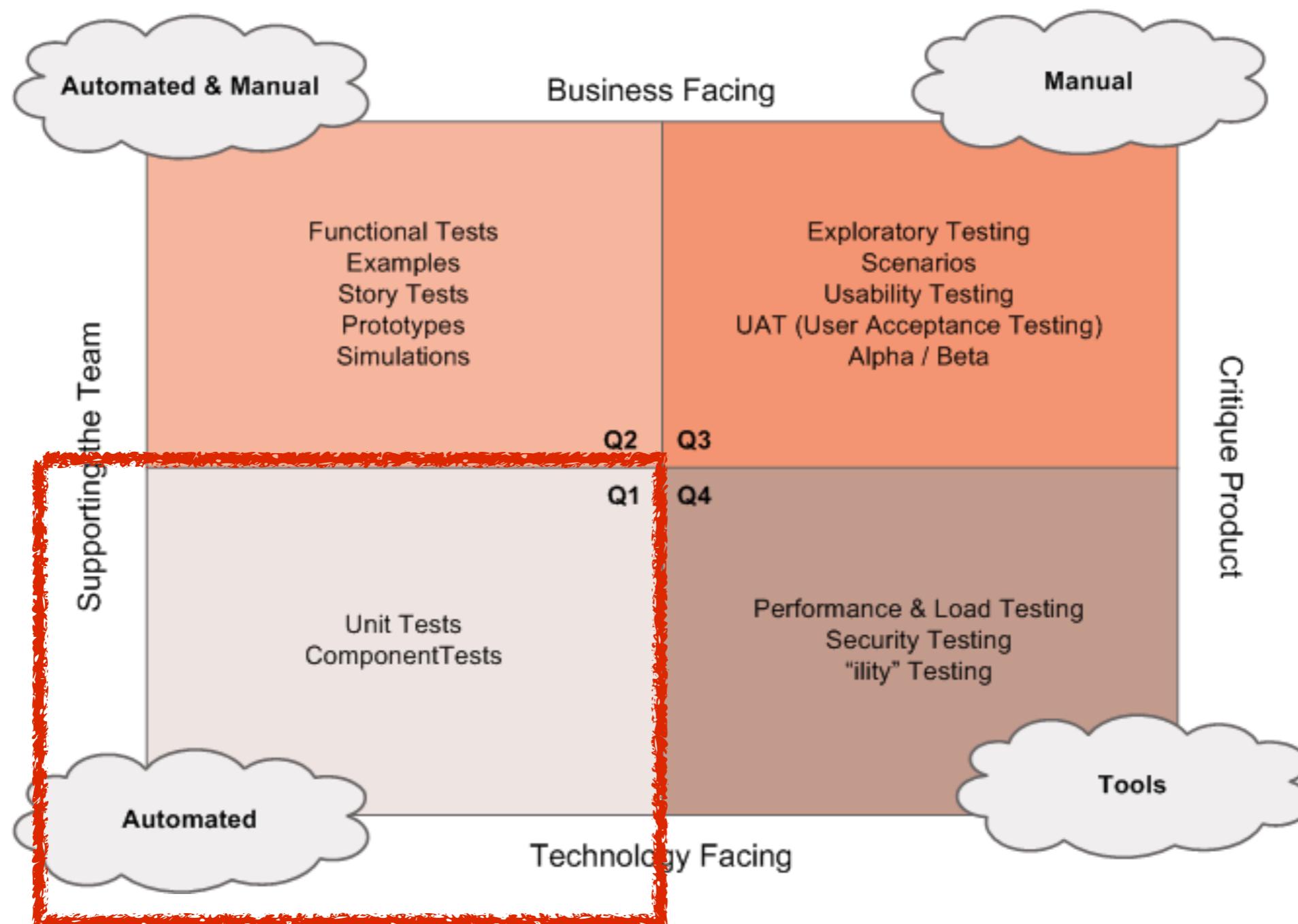
ATDD Cycle



(Model developed with Pekka Klärck, Bas Vodde, and Craig Larman.)



Agile Testing Quadrants



Unit Test คืออะไร ?

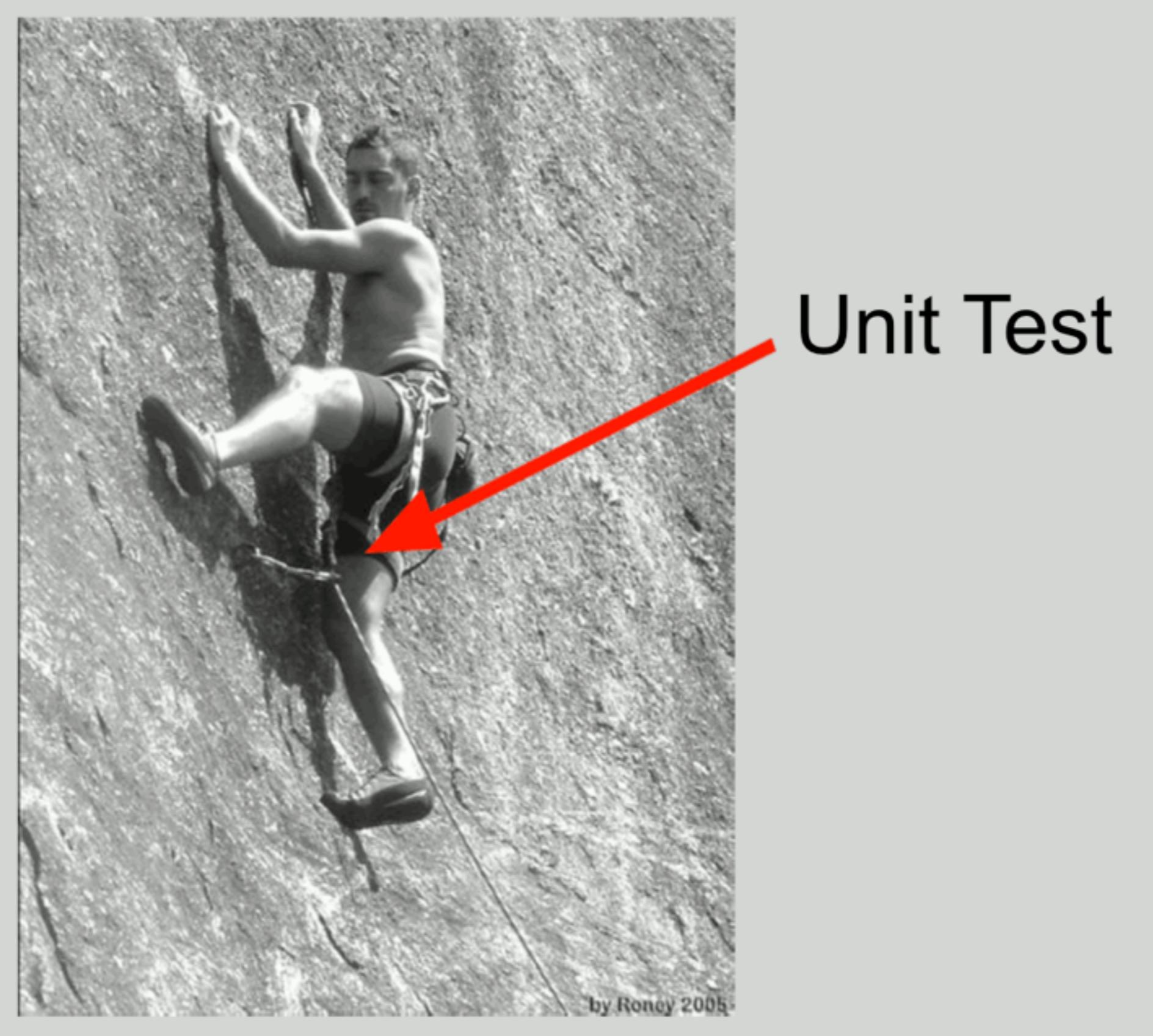


ส่วนหนึ่งของ code ที่เรียกใช้งานส่วนอื่นๆ ของ code



ใช้ตรวจสอบ สมมุติฐานว่าถูกต้องหรือไม่



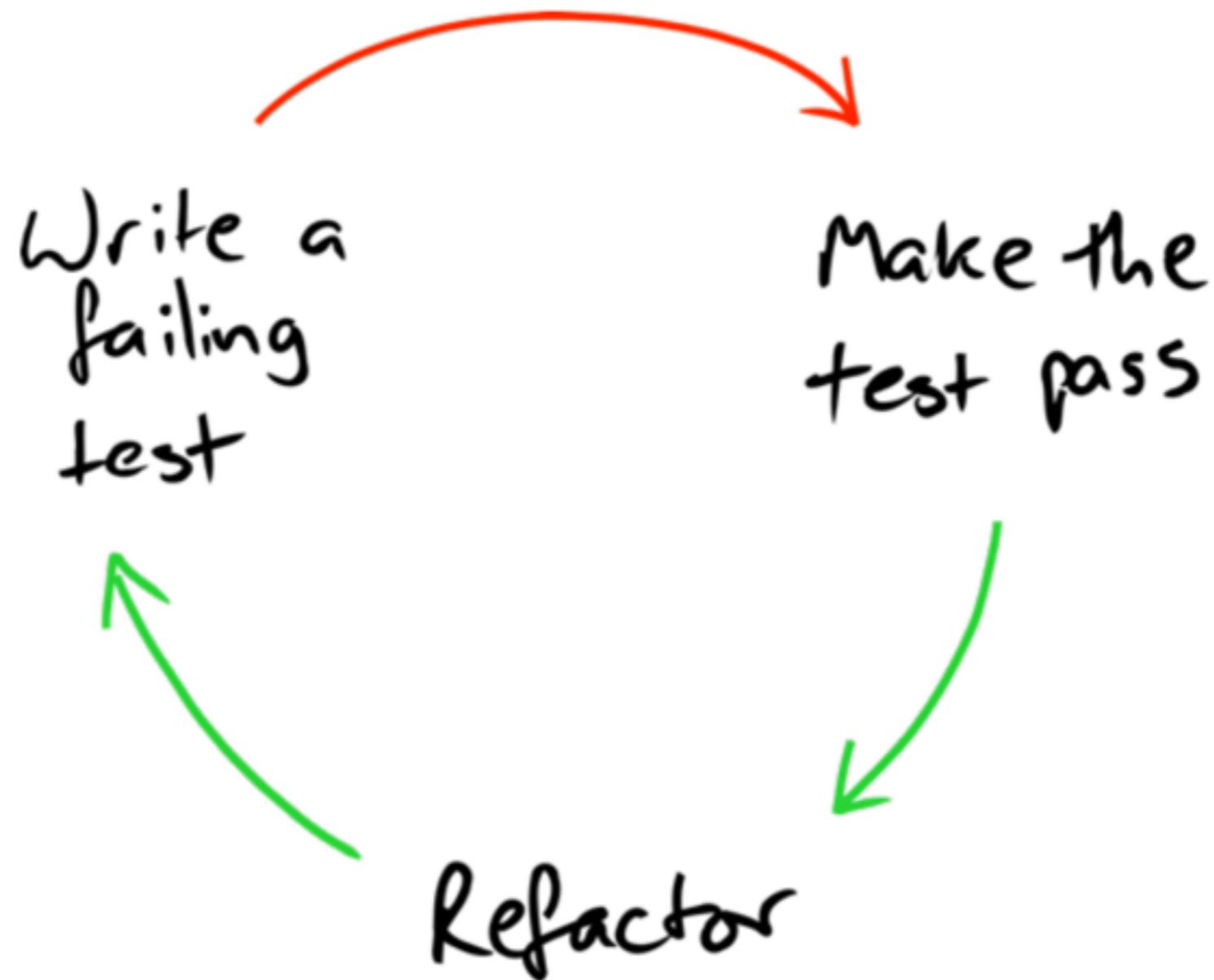


Unit Test

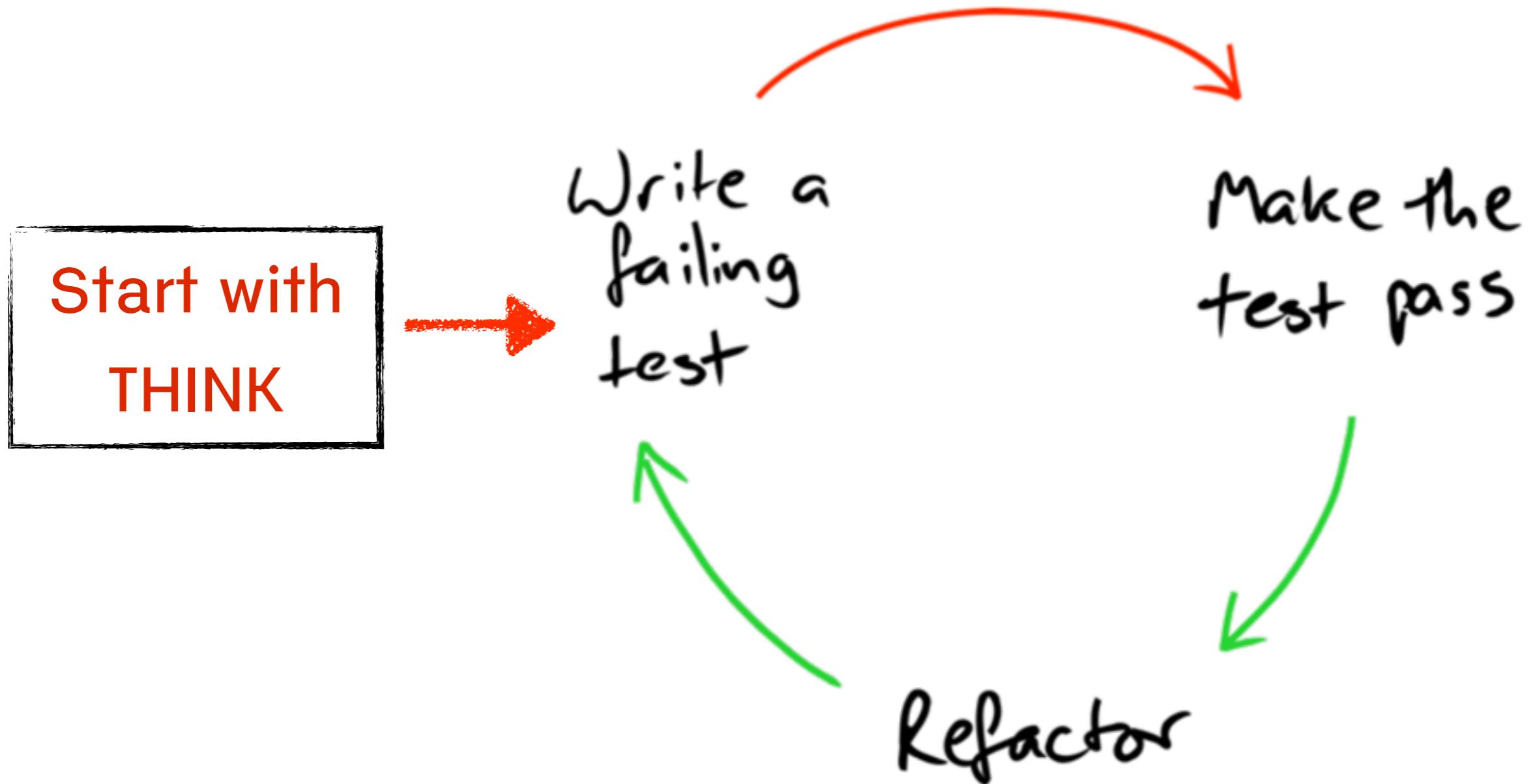
<http://less.works/less/technical-excellence/unit-testing.html>



TDD Cycle



Improve TDD Cycle



Simple TDD Rules

**Write a failing automated test before
you write any code**

Remove duplication



วิธีการทำให้ Test Pass

Fake or Hard code

Triangulation

Use obvious implementation



Why TDD ?



ทำไมต้อง TDD

เพื่อทำความเข้าใจกับปัญหาต่างๆ

คุณเข้าใจปัญหาหรือไม่ ?



ทำไมต้อง TDD

Software **เปลี่ยนแปลงอยู่เสมอ**

คนเรามัก**โน** และ **ทำผิดพลาดอยู่เสมอ**



ทำไมต้อง TDD

บอกคุณว่า ผิดตรงไหน
ไม่ต้องเสียเวลา **debug**



ทำไมต้อง TDD

ได้รับ feedback ที่รวดเร็ว

Many small changes vs One Big Change



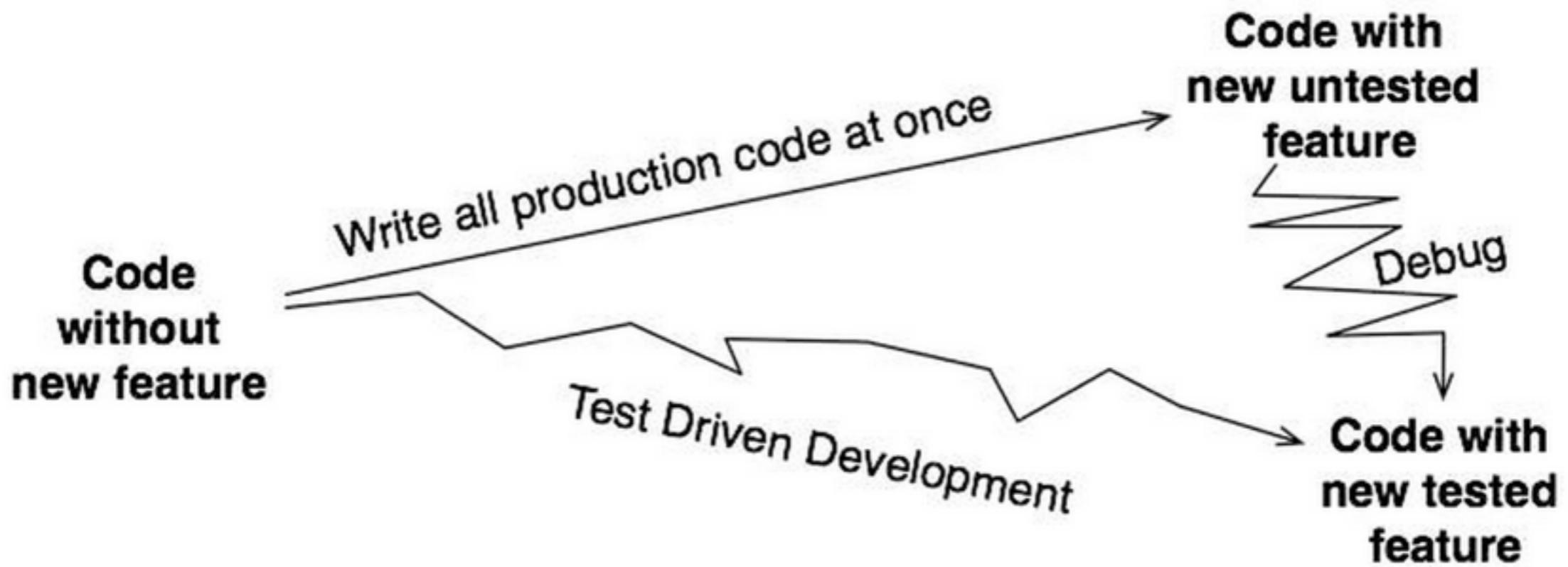
ทำไมต้อง TDD

ให้ developer ทำงานเป็นทีมได้ดีขึ้น



TDD vs DLP

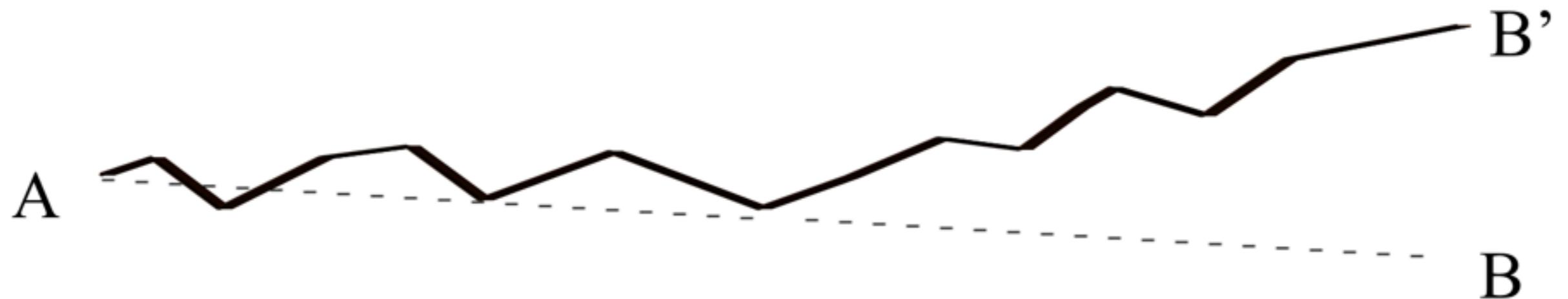
DLP = Debug Later Programming



รูปจาก <http://www.renaissancesoftware.net/>



Remember :: Small step



Test ที่ดีต้อง FIRST

Fast
Independent
Repeatable
Self-validating
Timely



Use the word “should”

```
transferShouldDeductSumFromSourceAccountBalance()
```

```
transferShouldAddSumLessFeesToDestinationAccountBalance()
```

```
depositShouldAddAmountToAccountBalance()
```



Guide to Test Writing

Test class names are important too

Structure your test well

Tests are **deliverable** too



Test Structure



The ratio of time spent (code)
versus writing is
over 10 to 1

Robert C. Martin, Clean Code



Good Unit Test

```
@Test  
public void sayFizzWhenNumberIsDevidedByThree() {  
Arrange   FizzBuzz fizzBuzz = new FizzBuzz();  
Act       String actualResult = fizzBuzz.say(3);  
Assert    assertEquals("Fizz", actualResult);  
}
```



Test coverage

Packages

All
[demo.grade](#)
[launch](#)

All Packages

Classes

[GradeController \(0%\)](#)
[Main \(0%\)](#)

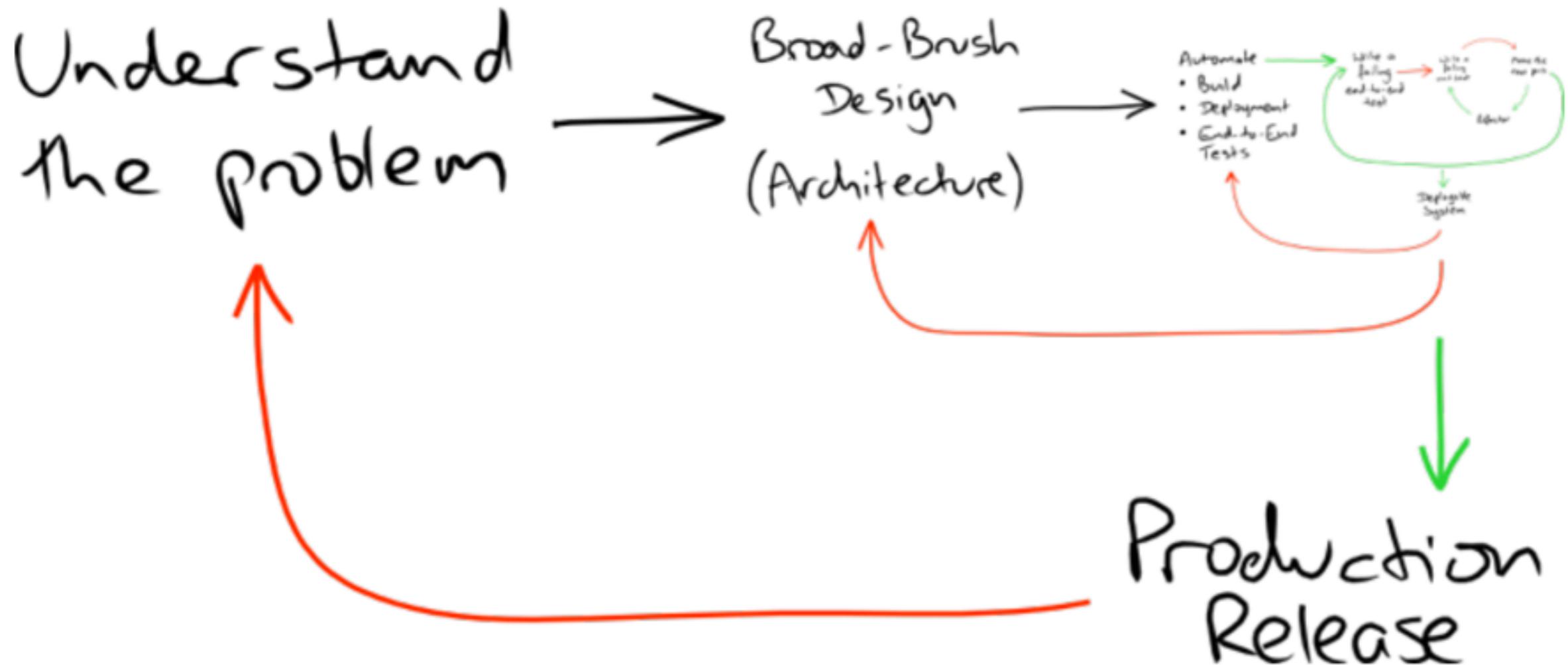
Coverage Report - All Packages

Package	# Classes	Line Coverage	Branch Coverage	Complexity
All Packages	2	0% 0/27	0% 0/8	2
demo.grade	1	0% 0/14	0% 0/4	1.667
launch	1	0% 0/13	0% 0/4	3

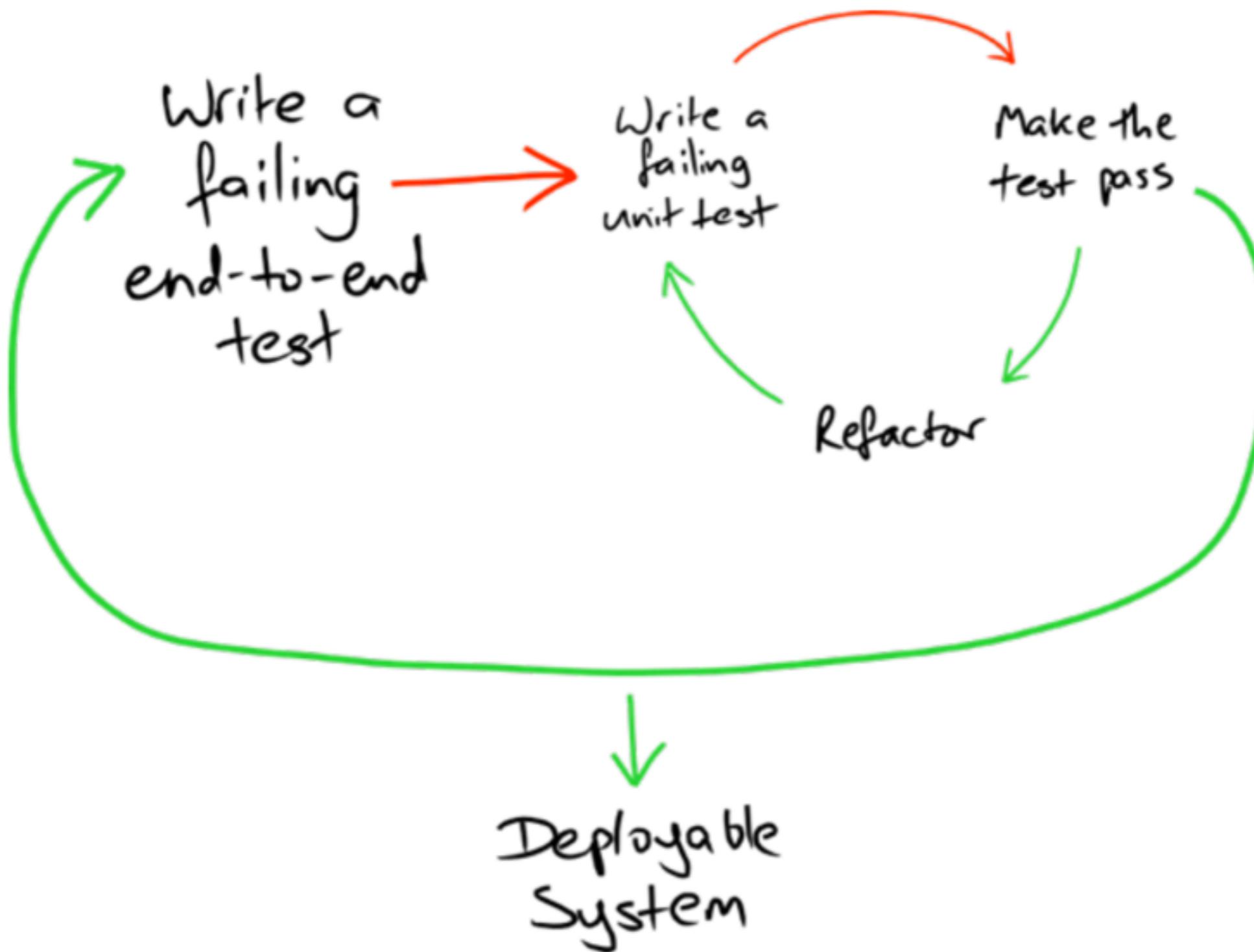
Report generated by [Cobertura](#) 2.0.3 on 3/23/16 12:10 PM.



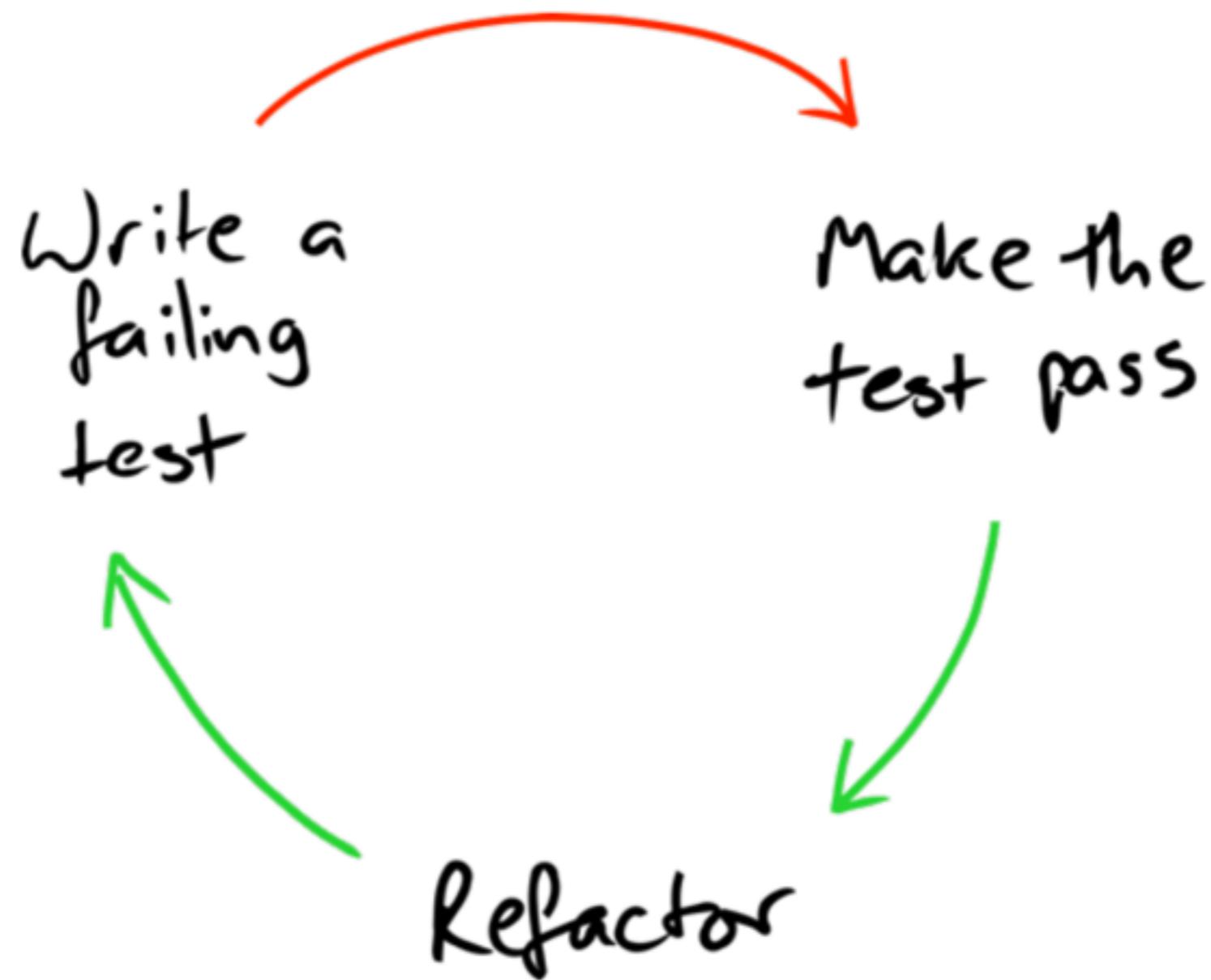
LARGER FEEDBACK LOOP



ACCEPTANCE TEST DRIVEN DEVELOPMENT

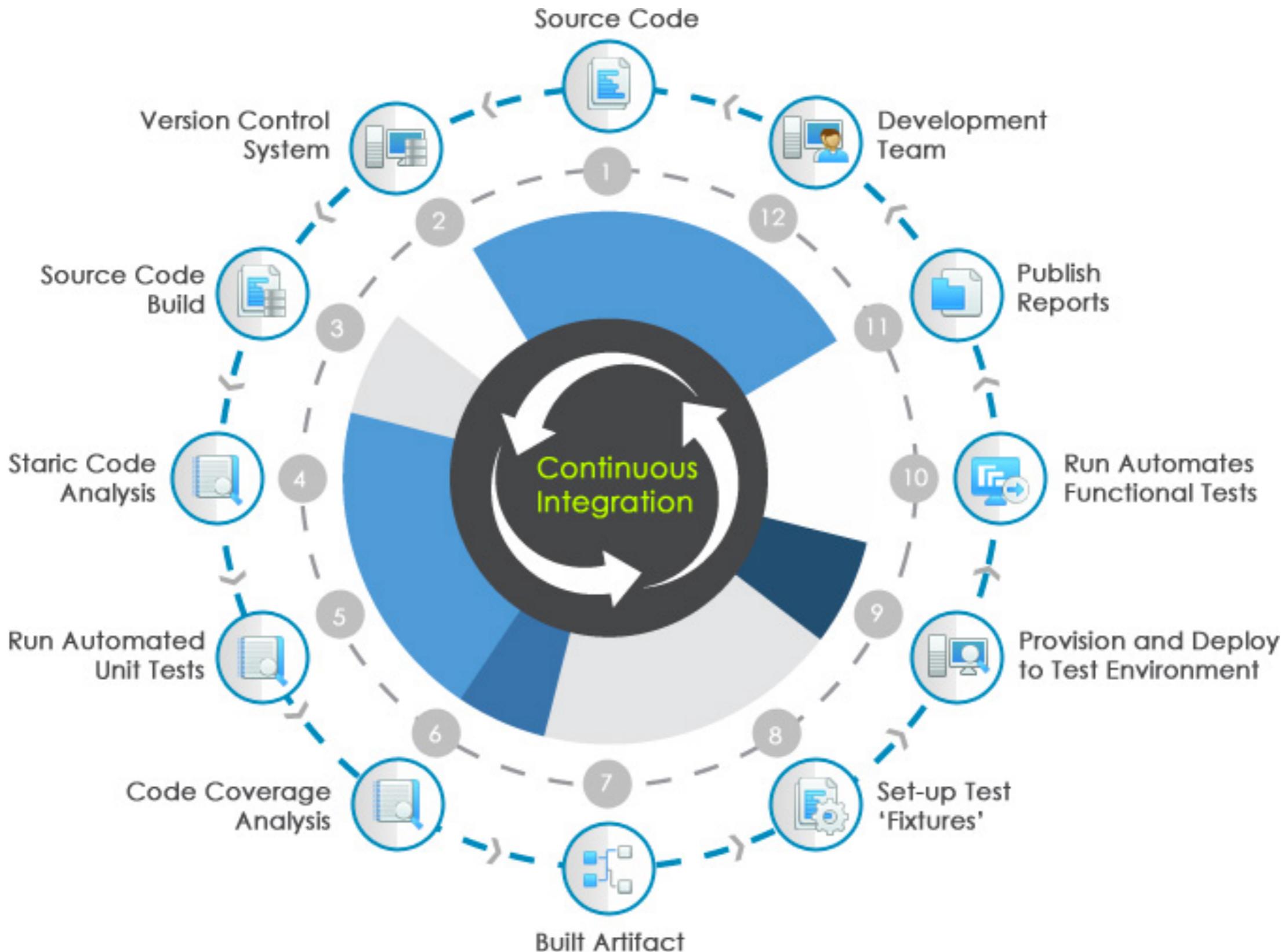


TEST DRIVEN DEVELOPMENT



ทำอะไรต่อไปดี ?







Jenkins

Bamboo



TeamCity

> go™



Hudson





Jenkins

Bamboo

CI is about what people do
not about what tools they use



Hudson



CI is a practice

Discipline to integrate frequently



CI is a practice

Strive to make small change

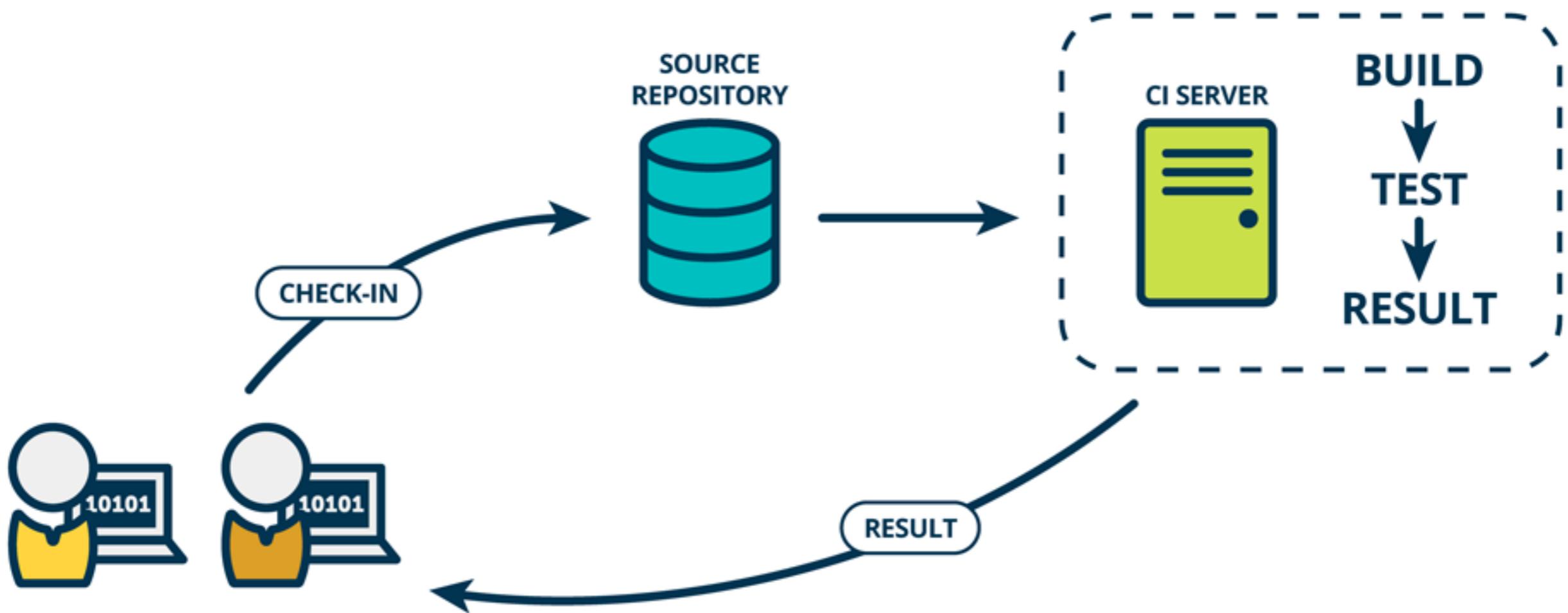


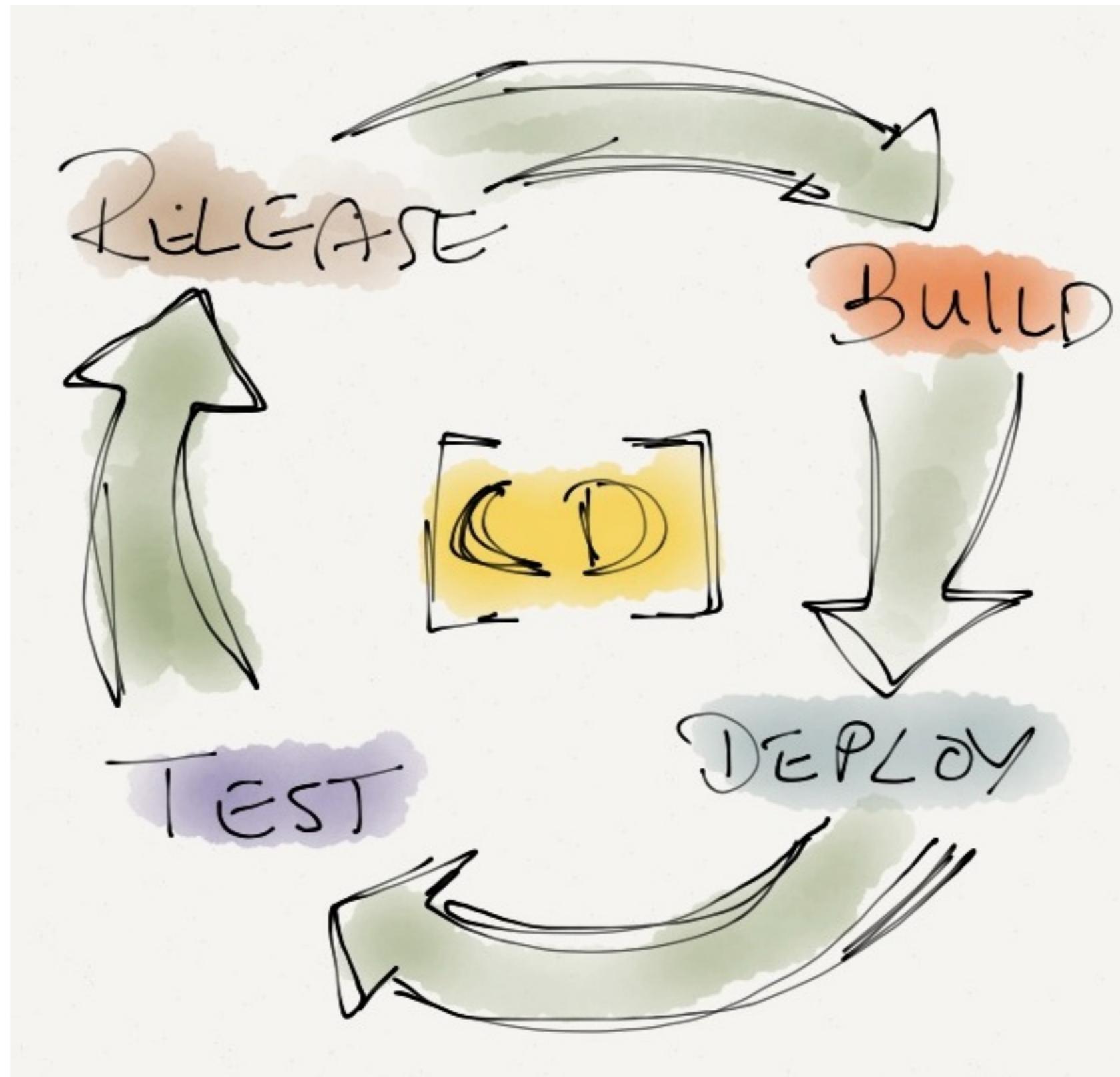
CI is a practice

Strive for **fast feedback**



Continuous Integration





CONTINUOUS DELIVERY



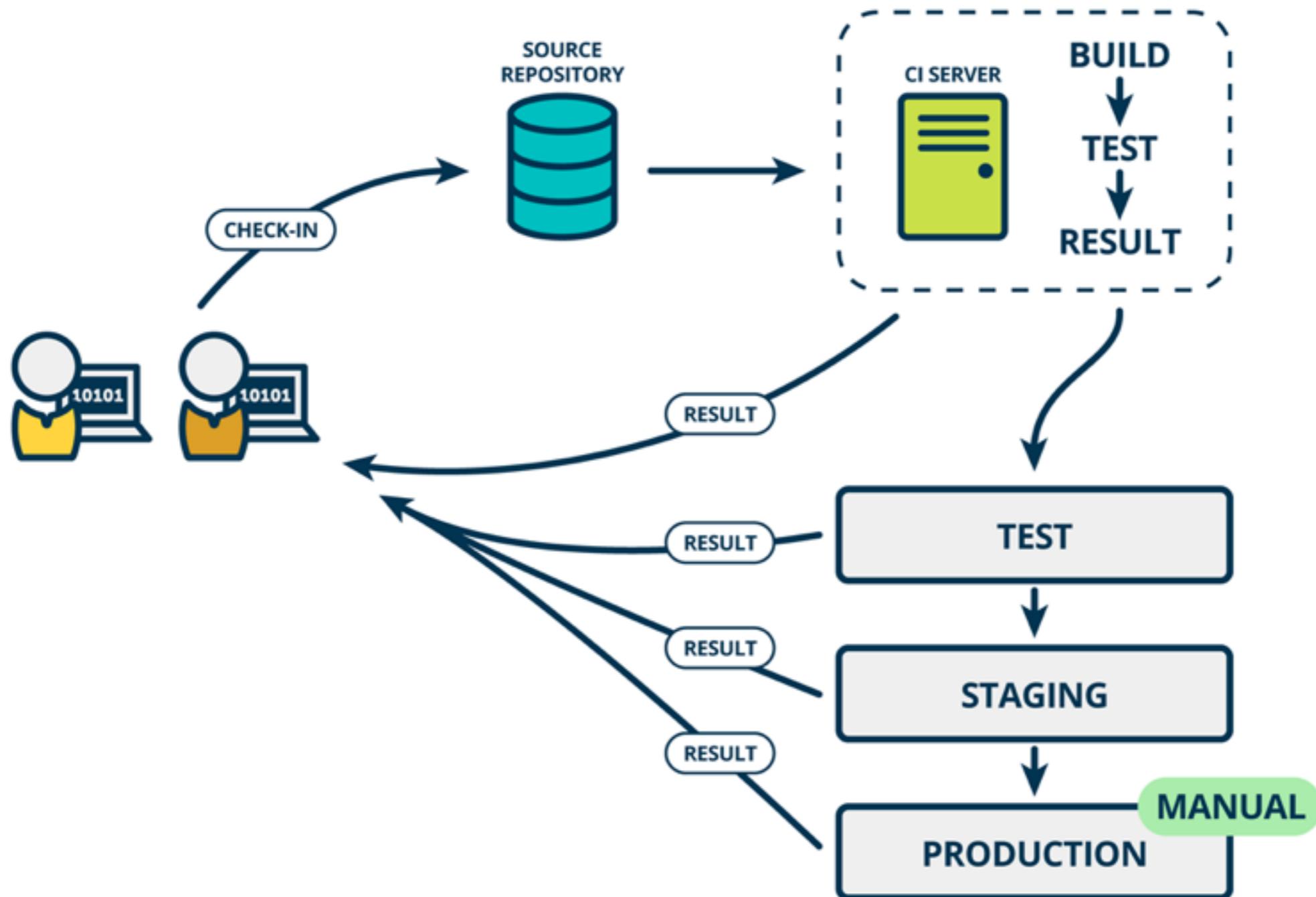
CONTINUOUS DEPLOYMENT



<http://blog.crisp.se/2013/02/05/yassalsundman/continuous-delivery-vs-continuous-deployment>



Continuous Delivery



BUILD PIPELINE

Build Pipeline



Run



History



Configure



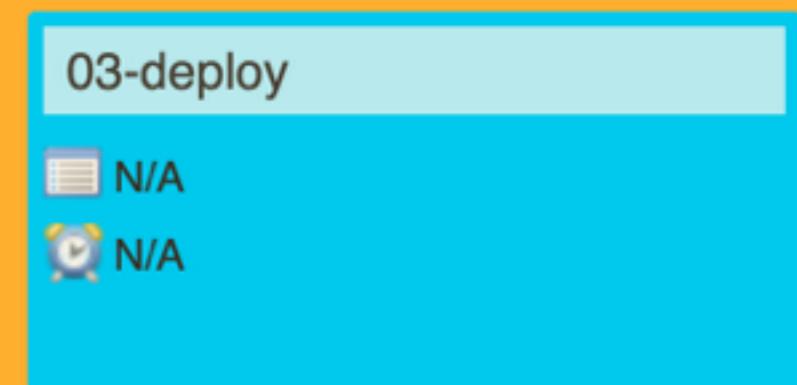
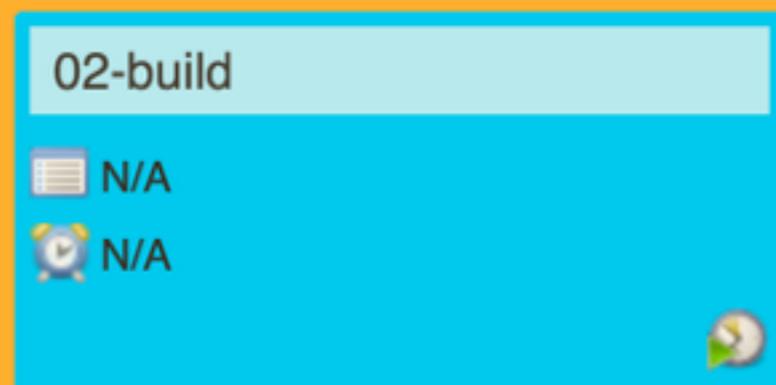
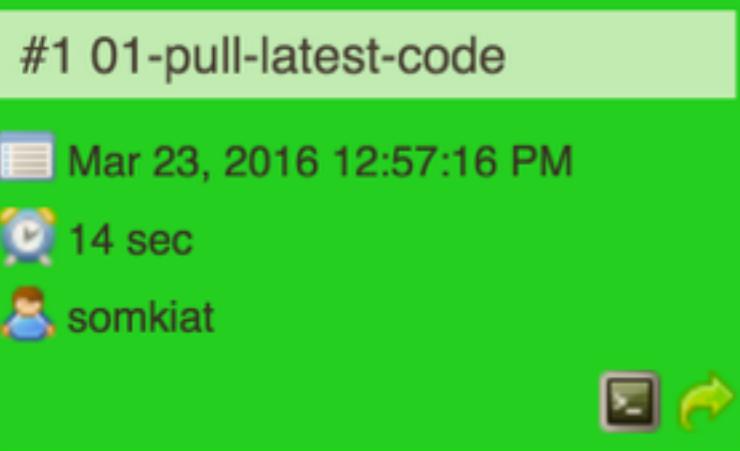
Add Step



Delete

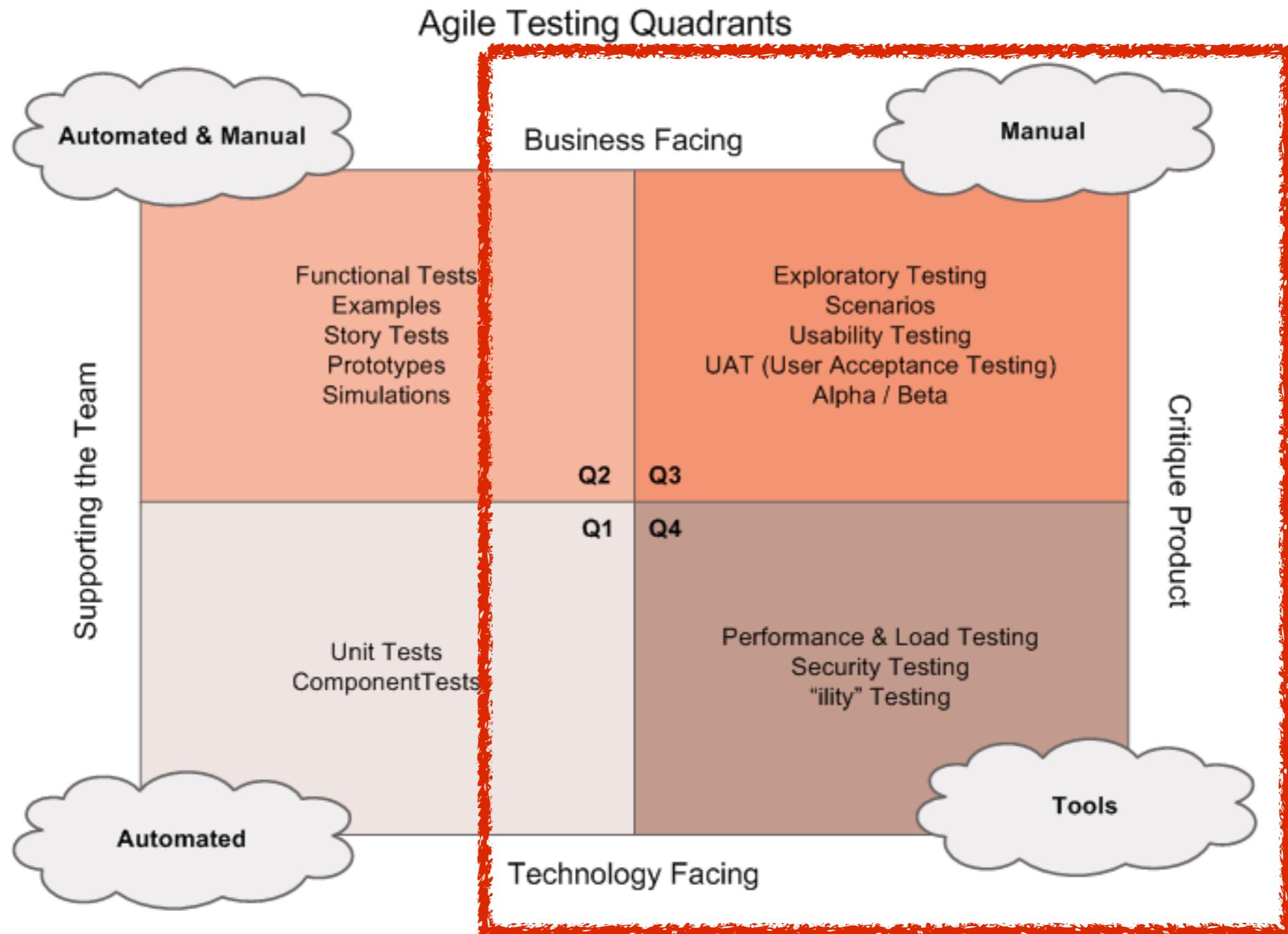


Manage



ยังไม่หมด !!





Are you too busy to improve?





LEGACY CODE

บริษัท สยามชานาญกิจ จำกัด และเพื่อนพ้องน้องพี่



“Quality is the responsibility of everybody.”

