DRI Code Sessions

- TDD - Test Driven Development

Introduction to TDD, Unit Testing and some short examples in PHP with PHPUnit.

TDD – What is it?

- Software Development technique
- Short development cycle
- Write tests before any production code
- Write only the minimum amount of code required to pass the tests
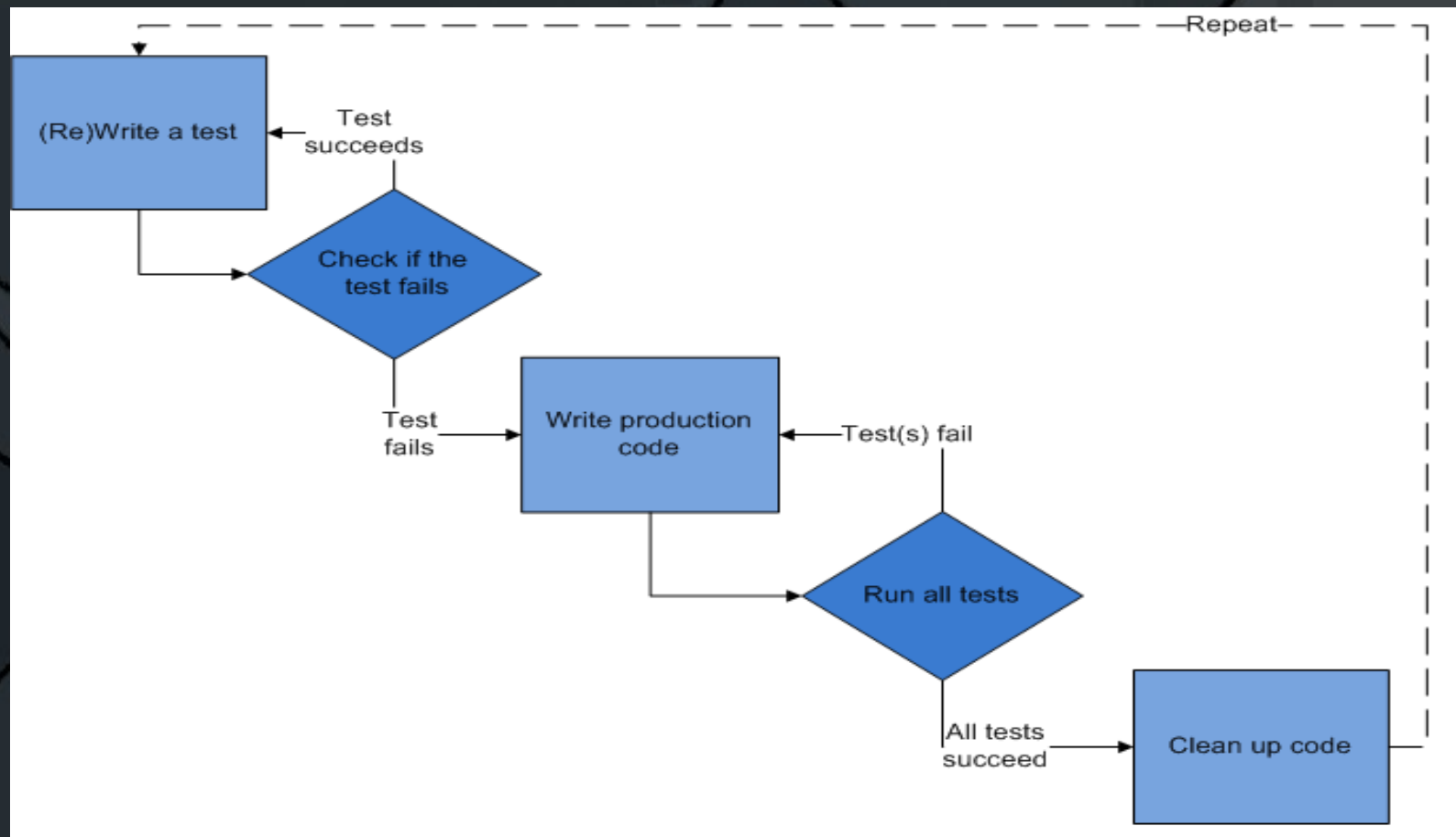- It's great for code documentation

TDD Cycle

Image from Wikipedia

Common excuses

- "We have no time to write tests"
- "Testing is boring"
- "My code is good enough"
- "That's not my job, tests are for QA Department"
- "This is just something simple. It's not worth it"

TDD - Pros

- Some studies conclude that TDD raises productivity – less time spent debugging

- Makes programmers focus on interface before implementation

- Provides greater level of confidence in the code

- Can lead to more modularized, flexible and extensible code

- Tests are a source of documentation

TDD - Cons

- Difficult to use with GUI's and code that works with databases

- Badly written tests become a burden to maintain

- Specs misinterpretation leads to wrong tests and wrong code

- Management support is crucial

Unit Testing

- Not TDD
- Part of TDD
- Unit = The smallest testable part of an application

Unit Testing

"Whenever you are tempted to type something into a print statement or a debugger expression, write it as a test instead."

Martin Fowler

Unit Testing Frameworks in PHP

- PHPUnit

- SimpleTest

PHPUnit

- http://www.phpunit.de

- PEAR Package

- Created by Sebastian Bergmann

- Port of Junit (Java)

- Regression test framework to implement unit tests in PHP

SimpleTest

- http://www.lastcraft.com/simple_test.php
- Created by Marcus Baker
- Can test web interfaces
- Cute web interface for displaying test results

Code Examples

Let's see some code, but first...

Some Cool Game

- Contract:
  - Player life points
    - Is initially 100
    - Cannot become negative
    - Cannot be more than 150

- Interface:
  - getLife()
  - setLife($value)
  - gainLife($value)
  - loseLife($value)

Code Samples

Download available at:

http://whit.me/dricodesessionstdd

Or fork and improve it:

```
git clone http://github.com/rogeriopvl/dri_codesessions_tdd
```

References

- http://en.wikipedia.org/wiki/Test_driven_development

- http://en.wikipedia.org/wiki/Unit_testing

- http://www.viddler.com/explore/RoyOsherove/videos/19/

- http://www.slideshare.net/Skud/test-driven-development-tutoria

- http://artofunittesting.com/

- http://xunitpatterns.com

The End

Questions?