PHPUnit

Internetove a intranetove aplikacie

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Agenda:

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Unit-testing?

- Unit testing involves breaking your program into pieces, and subjecting each piece to a series of tests.
- It is good practice of covering your code.
- Code testing takes about 20-30% of the whole time of development. And a lot of people do skip unit-testing.

But if we have had the next code

```
<?php

print (int)((0.1 + 0.7) * 10);
```

You think, the answer is 8

But if we use BCMath?..

BCMath - arbitrary precision mathematics

(http://php.net/manual/en/book.bc.php)

Advantages/Disadvantages

+ Problems are discovered early.

+ Good for big projects. Especially when there’re 5+ developers per project.

- Time consuming.

- Does not show absence of errors.

Frameworks

But PHPUnit became a standard of testing PHP code

Installing

Write in your server machine

➜ wget https://phar.phpunit.de/phpunit.phar

➜ chmod +x phpunit.phar

➜ sudo mv phpunit.phar /usr/local/bin/phpunit

➜ phpunit —version

more on https://phpunit.de/getting-started.html

Example

MyClass.php

```
<?php

class MyClass {

    public function power($x, $y) {

        return pow($x, $y);

    }

}
```

MyClassTest.php

```
<?php

require_once 'PHPUnit/Framework.php';

require_once 'MyClass.php';

class MyClassTest extends
PHPUnit_Framework_TestCase {

    public function testPower() {

        $my = new MyClass();

        $this->assertEquals(8, $my->power(2, 3));

    }

}
```

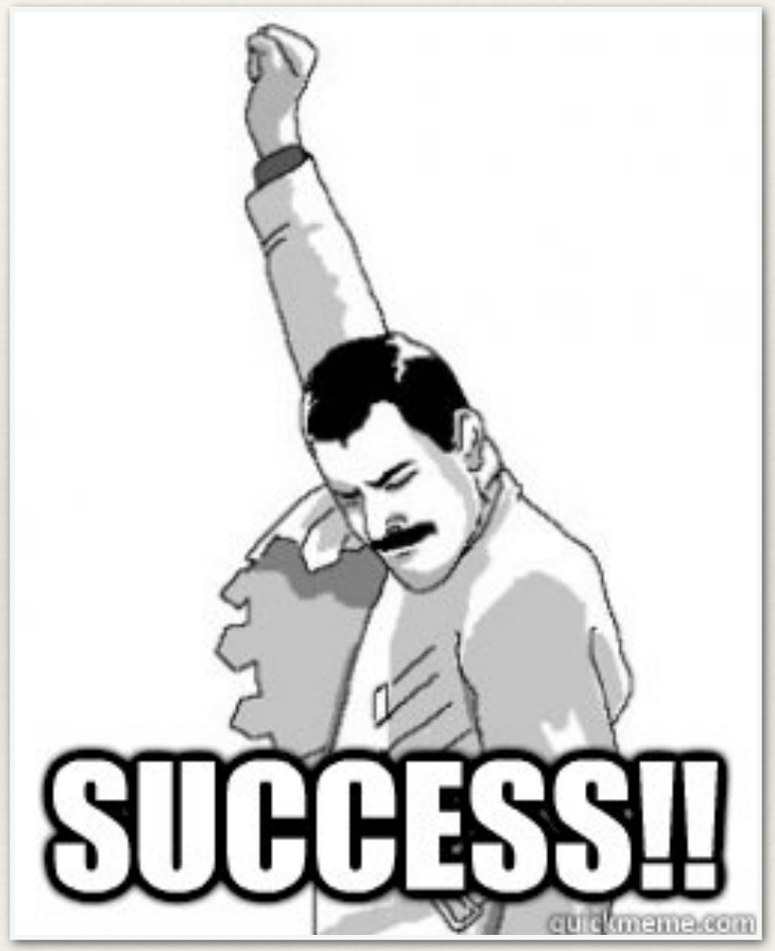
Testing response

$ phpunit MyClassTest

.

Time: 247 ms, Memory: 2.75 mb

OK (1 test, 1 assertion)



Info

- Test class' name consists of the word «Test» + class being tested
- Testing class inherits the PHPUnit_Framework_TestCase
- Every test is a public-method, which name begins with prefix «test»
- Inside the test we use an assert-method to find out if the test result is equal to desired result.

Data Providers

- A test method can accept arbitrary arguments. These arguments are to be provided by a data provider method.
- The data provider method to be used is specified using the @dataProvider annotation.

Asserts

- There are a lot of asserts. Each of them targets on separate action.
- Two simple asserts are assertFalse() and assertTrue(). They check if the returned value is true or false.
- assertEquals() / assertNotEquals()
- assertGreaterThan()
- assertGreaterThanOrEqual()
- assertLessThan()
- …

more https://phpunit.de/manual/current/en/appendixes.assertions.html

Asserts

Chuck Norris can unit test entire applications with a single assert

Exceptions

MyClass.php

```
//…
    public function divide($x, $y) {
        if (!(boolean)$y) {
            throw new
MathException('Division by zero');
        }
        return $x / $y;
    }
//…
```

MyClassTest.php

```
//…
    /**
     * @expectedException MathException
     */
    public function testDivision1() {
        $my = new MyClass();
        $my->divide (8, 0);
//…
```

Testing Output

Method	Meaning
void expectOutputRegex(string $regularExpression)	Set up the expectation that the output matches a $regularExpression.
void expectOutputString(string $expectedString)	Set up the expectation that the output is equal to an $expectedString.
bool setOutputCallback(callable $callback)	Sets up a callback that is used to, for instance, normalize the actual output.

Practical Usage

- For instance, we could use PHPUnit in our first control work

What else?

- Database testing
- Using of mock-objects
- Code Coverage Analytics
- and much more…

Conclusion

Using of unit-testing is not the silver bullet, it will not prevent from unexpected crashes, but it will decrease their amount.

Literature & Sources

- presentation source: github.com/braves/phpUnitTesting
- phpunit.de
- (RU) habrahabr.ru/post/56289/
- BCMath: php.net/manual/en/book.bc.php

Thank you.

Questions?

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