CODECEPTION

HOW WE FILL THE GAP BETWEEN UNIT TESTING AND MANUAL TESTING

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WHOAMI

- 29 years old
- Senior web developer at Connexx
- Working with php for 15 year

SOME QUESTIONS

- Who didn't test on any way?
- Who has experience with automated testing?
- Any experience with Codeception?

WHAT TO TALK ABOUT

- Pros of automated testing
- Cons of automated testing
- Manual testing
- Structural manual testing
- Lets automate it
- Test structure
- Other
- Recap

PROS OF AUTOMATED TESTING

- You know it works
- You can run it again and again and again
- No manual work to test

CONS OF AUTOMATED TESTING

- You need to write test for the code
- Change of code can be change of test
- Why do I need to test if I already know it works

MANUAL TESTING

1. Open the browser
2. Go to the website
3. Login with a test user
4. Fill form to test
5. Check the new content
6. Fill form with wrong data to test the errors
7. Logout
8. Test with invalid login

MANUAL TESTING

1. Open the browser
2. Go to the website
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MANUAL TESTING

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MANUAL TESTING

1. ...No time, I know it works

STRUCTURAL MANUAL TESTING

- Have a testscipt
- Let anyone do the script
  - You
  - An intern
  - Project manager
  - Client
- Get the feedback

LETS AUTOMATE IT

- We have a manual acceptance test
- Everybody talks about unit test
  - People find it difficult to start
  - Seperate everything with mocking (that isn't bad)
  - Do we need to change everything?

```
Class Formtest extends PHPUnit_Framework_TestCase
{
    public function testFormValidation()
    {

    }
}
```

2 UNIT TESTS. 0 INTEGRATION TESTS



AUTOMATE THE ACCEPTANCE TEST

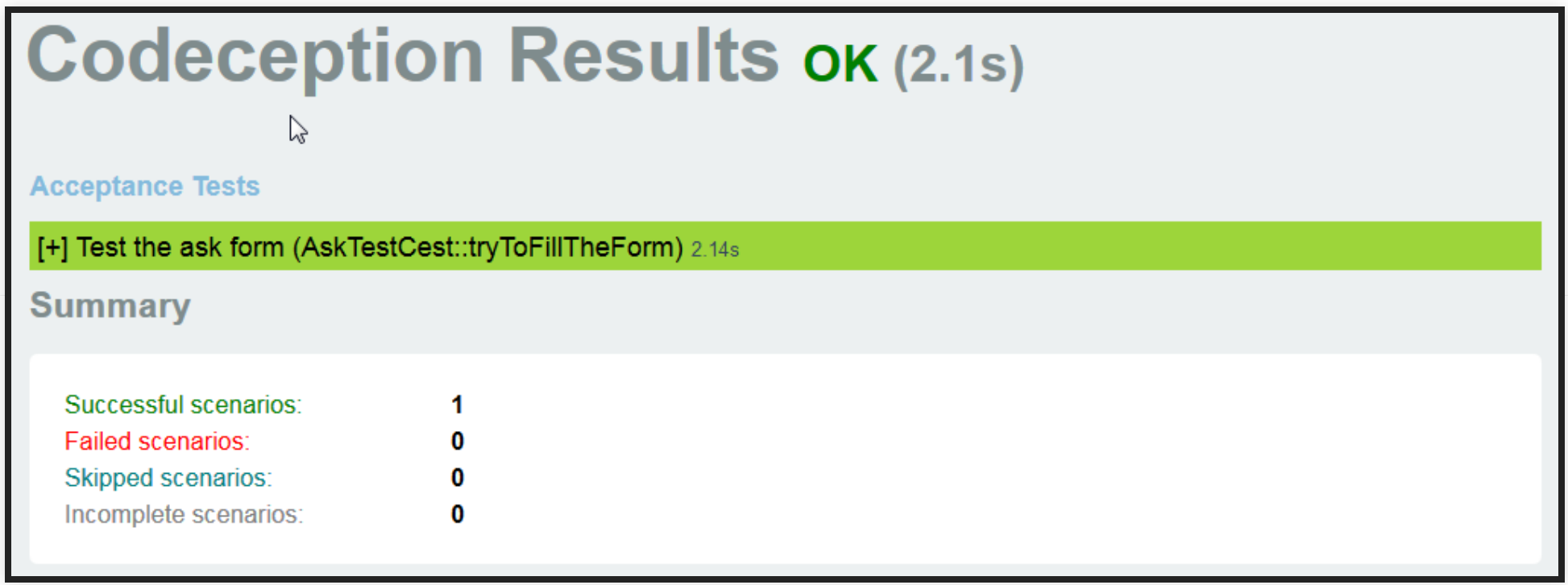
CODECEPTION

```
vendor/bin/codecept generate:cest acceptance AskTest
Test was created in /vagrant/source/tests/acceptance/AskTestCest.php
```

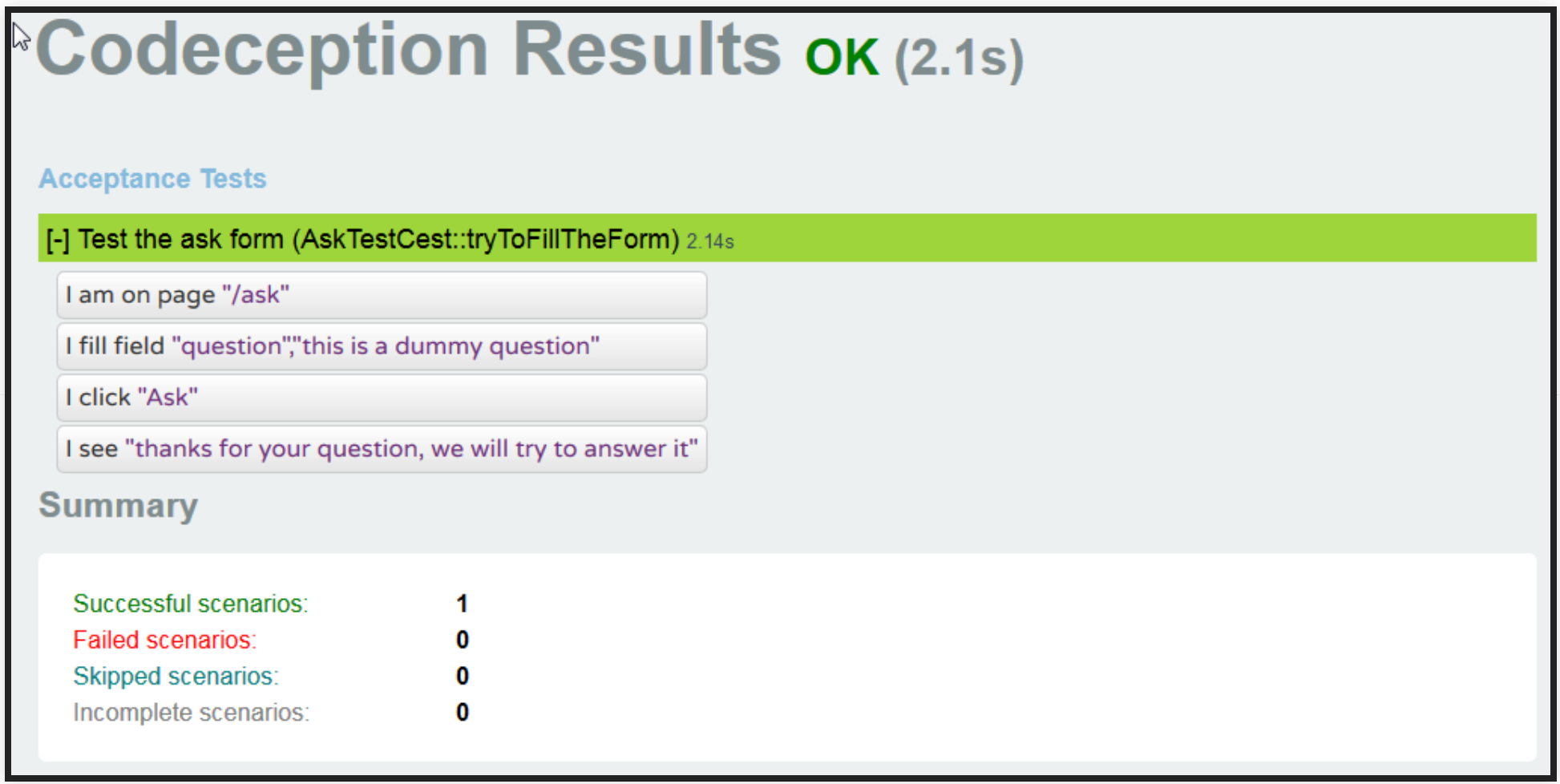
```
public function tryToFillTheForm(AcceptanceTester $I)
{
    $I->wantTo('test the ask form');
    $I->amOnPage('/ask');
    $I->fillField('question', 'this is a dummy question');
    $I->click('Ask');
    $I->see('thanks for your question, we will try to answer it');
}
```

```
[vagrant@vagrant source]$ vendor/bin/codecept run acceptance --html
Codeception PHP Testing Framework v2.1.5
Powered by PHPUnit 4.8.21 by Sebastian Bergmann and contributors.

Acceptance Tests (1) ------------------------------------------------
Test the ask form (AskTestCest::tryToFillTheForm)                  Ok
---------------------------------------------------------------------


Time: 9.65 seconds, Memory: 16.00Mb

OK (1 test, 1 assertion)
- HTML report generated in file:///tests/_output/report.html
[vagrant@vagrant source]$
```

HTML REPORT


Codeception Results OK (2.1s)
Acceptance Tests
[+] Test the ask form (AskTestCest::tryToFillTheForm) 2.14s
Summary
Successful scenarios: 1
Failed scenarios: 0
Skipped scenarios: 0
Incomplete scenarios: 0

HTML REPORT


Codeception Results OK (2.1s)
Acceptance Tests
[-] Test the ask form (AskTestCest::tryToFillTheForm) 2.14s
I am on page "/ask"
I fill field "question","this is a dummy question"
I click "Ask"
I see "thanks for your question, we will try to answer it"
Summary
Successful scenarios: 1
Failed scenarios: 0
Skipped scenarios: 0
Incomplete scenarios: 0

WHAT HAS HAPPEN?

- A headless PHP browser
- No javascript

CODECEPTION

Different options for selectors

```
$I->click('Log in');
// CSS selector applied
$I->click('#login a');
// XPath
$I->click('//a[@id=login]');
// Using context as second argument
$I->click('Login', '.nav');
```

CODECEPTION

- click
- amOnPage/amOnSubdomain/amOnUrl
- see/seeElement/seeInSource/seeLink
- fillField/attachFile/checkOption
- selectOption/sendAjaxRequest/submitForm
- grabTextFrom/grabAttributeFrom/grabFromCurrentUrl

WHERE IS LARAVEL?

- Laravel5 module (there is also Laravel4)
- Is an extensions of PHPBrowser
- In functional not in acceptance test

```
modules:
    enabled:
        - Laravel5:
            environment_file: .env.testing
```

FUNCTIONAL

```
vendor/bin/codecept generate:cest functional AskTest2
Test was created in /vagrant/source/tests/functional/AskTest2Cest.php
```

```
public function tryToTest(FunctionalTester $I)
{
    $I->amOnRoute('ask.index');
    $I->seeCurrentUrlEquals('/ask');
    $I->seeCurrentActionIs('AskController@index');
    $I->seeResponseCodeIs(200);
    $I->fillField('question', 'this is a dummy question');
    $I->click('Ask');
    $I->see('thanks for your question, we will try to answer it');
}
```

FUNCTIONAL

```
[vagrant@vagrant source]$ vendor/bin/codecept run functional --html
Codeception PHP Testing Framework v2.1.5
Powered by PHPUnit 4.8.21 by Sebastian Bergmann and contributors.

Functional Tests (1) ------------------------------------------------
Try to test (AskTest2Cest::tryToTest)                              Ok
-----------------------------------------------------------------------


Time: 10.34 seconds, Memory: 23.75Mb

OK (1 test, 3 assertions)
- HTML report generated in file:///tests/_output/report.html
```

FUNCTIONAL

Codeception Results OK (0.8s)

Functional Tests

[+] Try to test (AskTest2Cest::tryToTest) 0.78s

Summary

Successful scenarios:	1
Failed scenarios:	0
Skipped scenarios:	0
Incomplete scenarios:	0

FUNCTIONAL

Codeception Results OK (0.8s)

Functional Tests

[-] Try to test (AskTest2Cest::tryToTest) 0.78s

- I am on route "ask.index"
- I see current url equals "/ask"
- I see current action is "AskController@index"
- I see response code is 200
- I fill field "question","this is a dummy question"
- I click "Ask"
- I see "thanks for your question, we will try to answer it"

Summary

Successful scenarios:	**1**
Failed scenarios:	**0**
Skipped scenarios:	**0**
Incomplete scenarios:	**0**

BUT WHAT?

- No server (faster)
- Communicate with Laravel

COMMUNICATE WITH LARAVEL?

```
$I->seeEventTriggered('App\MyEvent');
$I->seeFormHasErrors();
$I->seeFormErrorMessage('username');
$I->seeInSession('key');
$I->seeInSession('key', 'value');
$I->disableEvents();
$I->getApplication();
```

COMMUNICATE WITH LARAVEL?

```
$I->disableMiddleware();
User::create([
    'email' => 'user@email.tld', 'password' => Hash::make('secret')
]);
$I->amLoggedAs(['email' => 'user@email.tld', 'password' => 'secret']);

$I->amLoggedAs(User::create([
    'email' => 'user@email.tld', 'password' => Hash::make('secret')
]));
$I->logout();
$I->dontSeeAuthentication();
```

TEST STRUCTURE

- cept and cest
- Stepobjects
- Pages
- Helpers
- Annotations

STEPOBJECTS

- Extends the Actors (AcceptanceTester / FunctionalTester)

```
php codecept.phar generate:stepobject acceptance Admin
Add action to StepObject class (ENTER to exit): loginAsAdmin
Add action to StepObject class (ENTER to exit):
StepObject was created in .../_support/Step/Acceptance/Admin.php
```

```
namespace Step\Acceptance;

class Admin extends \AcceptanceTester
{
    public function loginAsAdmin()
    {
        $I = $this;
        $I->amOnPage('/admin');
        $I->fillField('username', 'admin');
        $I->fillField('password', '123456');
        $I->click('Login');
    }
}
```

PAGES

```
vendor/bin/codecept generate:pageobject functional AskPage
/vagrant/source/tests/_support/Page/Functional/AskPage.php
PageObject was created in _support/Page/Functional/AskPage.php
```

```
//class AskPageTestCest
public function tryToTest(FunctionalTester $I)
{
    $page = new AskPage($I);
    $page->ask();
}
```

PAGES

```
class AskPage
{
    // include url of current page
    public static $URL = '/ask';

    public function ask() {
        $I = $this->functionalTester;
        $I->amOnPage(self::$URL);
        $I->seeCurrentRouteIs('ask.index');
        $I->seeCurrentActionIs('AskController@index');
        $I->seeResponseCodeIs(200);
        $I->fillField('question', 'this is a dummy question');
        $I->click('Ask');
        $I->see('thanks for your question, we will try to answer it')
        return $this;
    }
```

HELPERS

```
//In FunctionalTester
public function isTrue()
{
    $this->assertTrue(true);
}
```

```
//function.suite.yml
modules:
    enabled:
        - Asserts
        - \Helper\Unit
```

```
public function tryToTestTrue(FunctionalTester $I)
{
    $I->isTrue();
}
```

ANNOTATIONS

- @before
- @after
- @depends
- @group

CONFIG

- codeception.yml
- *.suite.yml
- Environments

BUT I GOT ERRORS

- run -h for the options
- run --steps
- run --debug
- Test them manual

OTHER

- REST module
- buildinserver
- Webdriver
- Code coverage

CODE COVERAGE

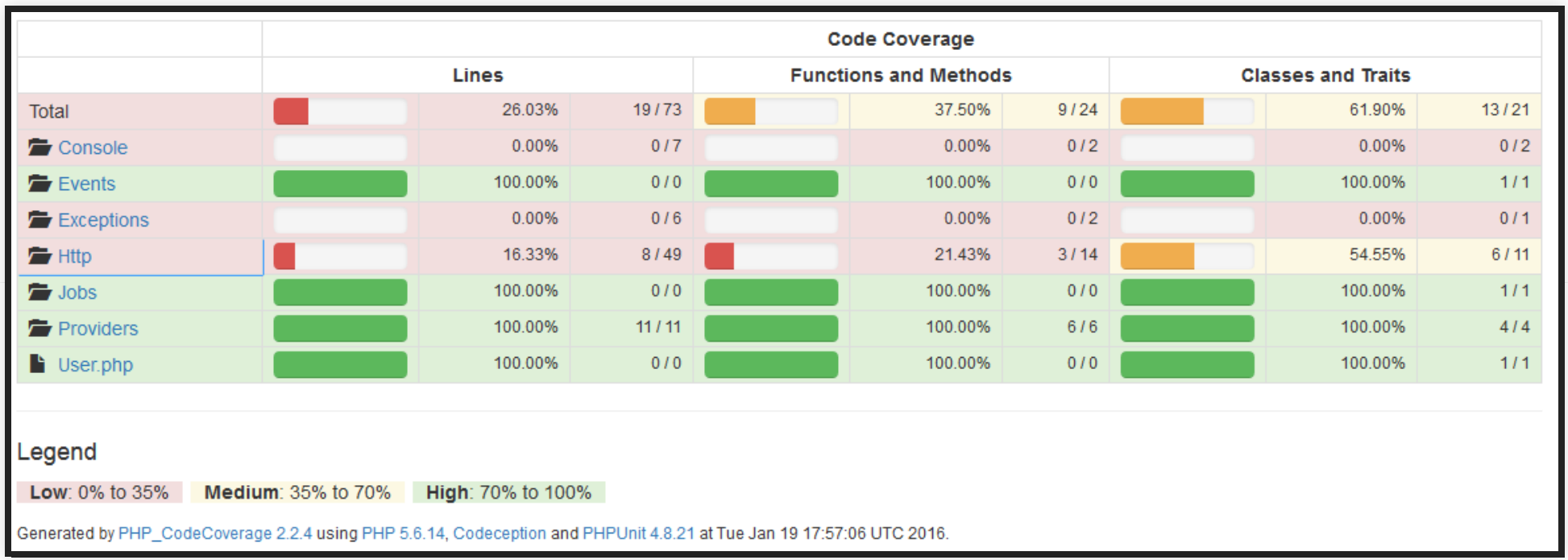
- xdebug
- codeception.yml
- c3.php

```
coverage:
    enabled: true
    include:
        - app/*
    c3_url: 'http://127.0.0.1/'
```

CODE COVERAGE

```
extensions:
    enabled:
        - Codeception\Extension\RunFailed
        - Codeception\Extension\PhpBuiltinServer
    config:
        Codeception\Extension\PhpBuiltinServer:
            hostname: 127.0.0.1
            port: 8185
            documentRoot: ./public
            router: ./public/indexc3.php
            directoryIndex: indexc3.php
            startDelay: 1
coverage:
    enabled: true
    include:
        - app/*
```

CODE COVERAGE



	Code Coverage								
	Lines			Functions and Methods			Classes and Traits		
Total		26.03%	19 / 73		37.50%	9 / 24		61.90%	13 / 21
Console		0.00%	0 / 7		0.00%	0 / 2		0.00%	0 / 2
Events		100.00%	0 / 0		100.00%	0 / 0		100.00%	1 / 1
Exceptions		0.00%	0 / 6		0.00%	0 / 2		0.00%	0 / 1
Http		16.33%	8 / 49		21.43%	3 / 14		54.55%	6 / 11
Jobs		100.00%	0 / 0		100.00%	0 / 0		100.00%	1 / 1
Providers		100.00%	11 / 11		100.00%	6 / 6		100.00%	4 / 4
User.php		100.00%	0 / 0		100.00%	0 / 0		100.00%	1 / 1

Legend

Low: 0% to 35% **Medium**: 35% to 70% **High**: 70% to 100%

Generated by PHP_CodeCoverage 2.2.4 using PHP 5.6.14, Codeception and PHPUnit 4.8.21 at Tue Jan 19 17:57:06 UTC 2016.

CODE COVERAGE

```
17      public function index()
18      {
19          return view('ask.index');
20      }
21
22      /**
23       * Show the form for creating a new resource.
24       *
25       * @return \Illuminate\Http\Response
26       */
27      public function create()
28      {
29          //
30      }
31
32      /**
33       * Store a newly created resource in storage.
34       *
35       * @param  \Illuminate\Http\Request  $request
36       * @return \Illuminate\Http\Response
37       */
38      public function store(Request $request)
39      {
40          return 'Thanks for your question, we will try to answer it';
41      }
```

RECAP

- Acceptance
- Functional
- Unit
- Just start

QUESTIONS?