Tests automatisés sur Drupal

Par Nuwantha WANASINGHE & Remi TREUSSART - Niji

Niji

Nous sommes 1300+ talents

Notre mantra

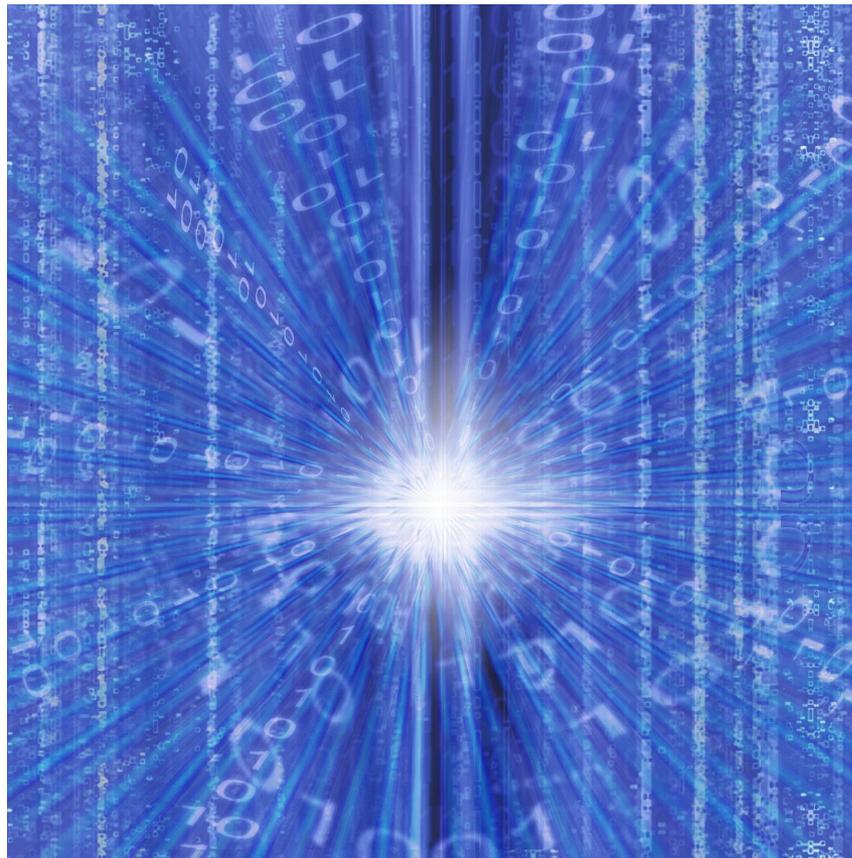Aider les entreprises, les talents et les territoires à se développer grâce à des innovations numériques.

Sommaire

Pourquoi tester ?

Le plus gros bug de l'histoire : 4 juin 1996 - Ariane 5

- 370 millions USD, coût du bug informatique de la fusée Ariane 5 d'Arianespace.
- 36 secondes après son lancement, il explose à 4 000 mètres du sol
- Aucune victime des retombées de la fusée, aucun humain n'était à bord. Or, c'est $370 M de perdus.

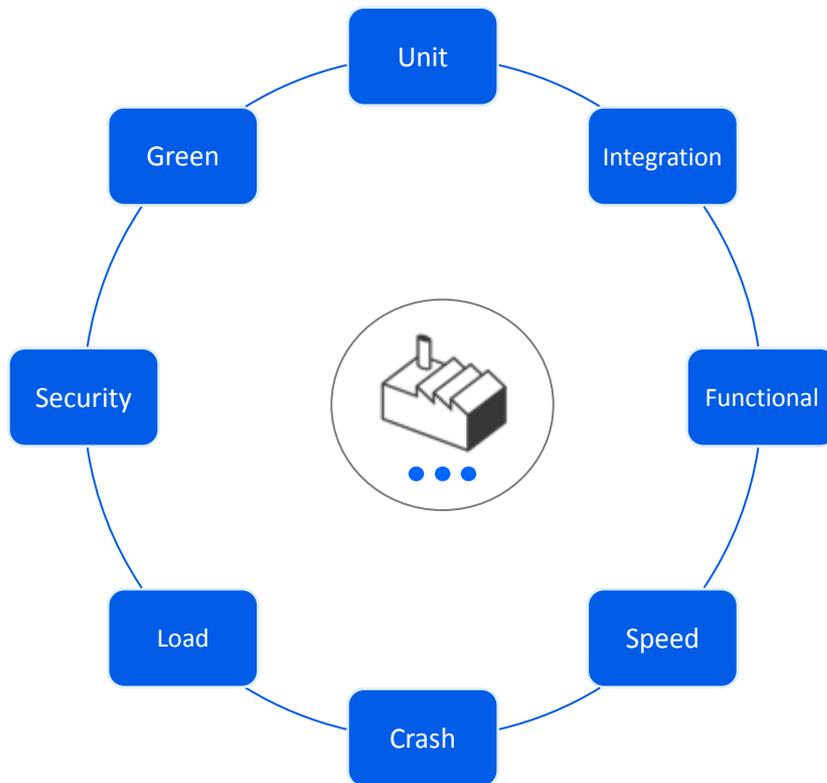**Variable de 8 bits pour stocker une valeur qui**

peut être supérieur à 300

Un copier/coller de code d'Ariane 4

Et pas testé correctement !!!
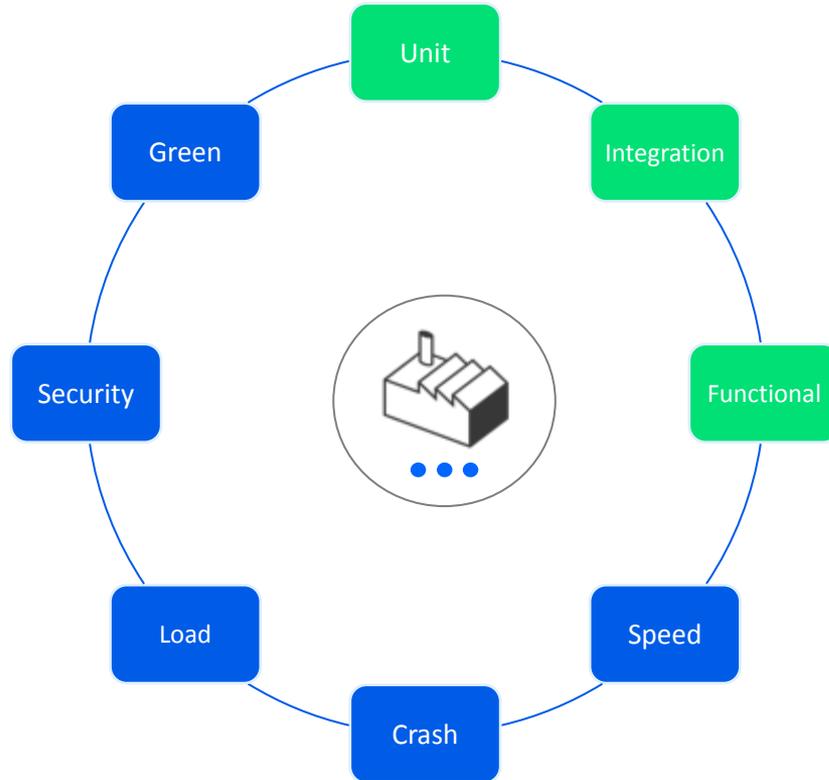
Les différents types de tests

Couvrir la plupart des dysfonctionnements généralement constatés

Les différents types de tests

Couvrir la plupart des dysfonctionnements généralement constatés

Différentes méthodes

Manuel

Semi-automatisé

Automatisé

Tests manuels

Tests Semi-automatisé

Automatisé + Manuel

Manuel   Automatisé
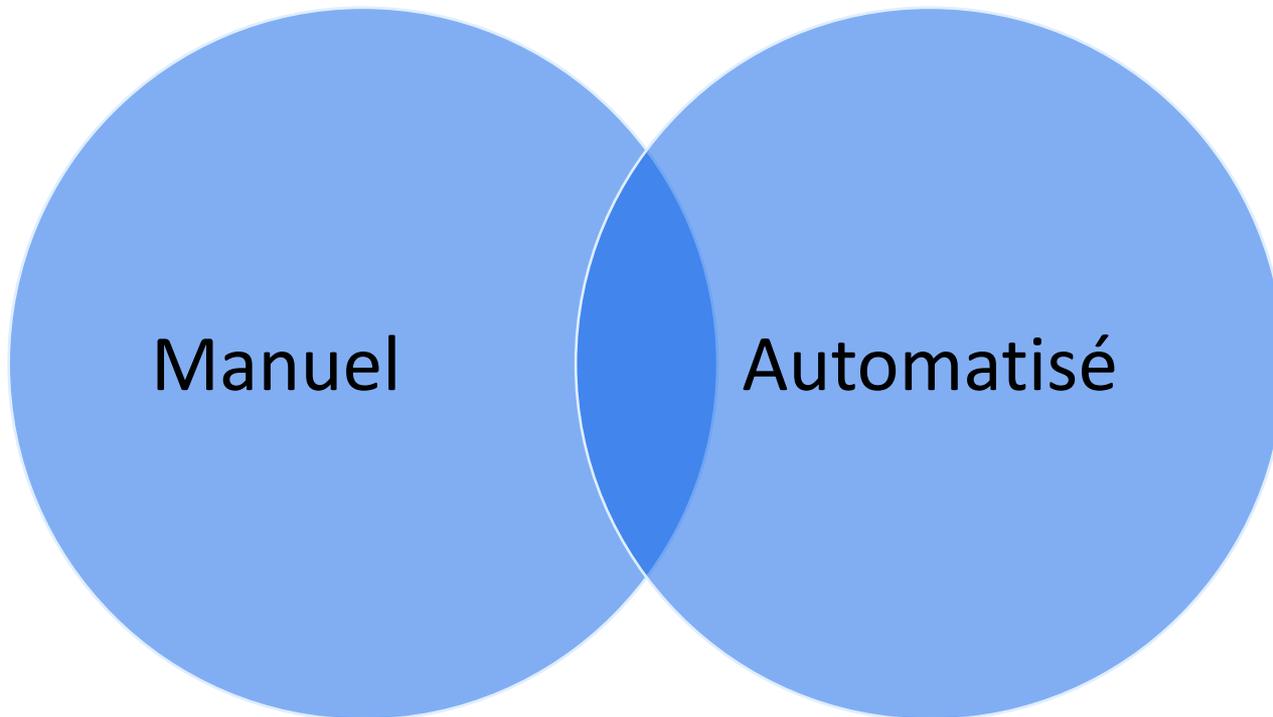
Exemple de tests semi-automatisés

BackstopJS
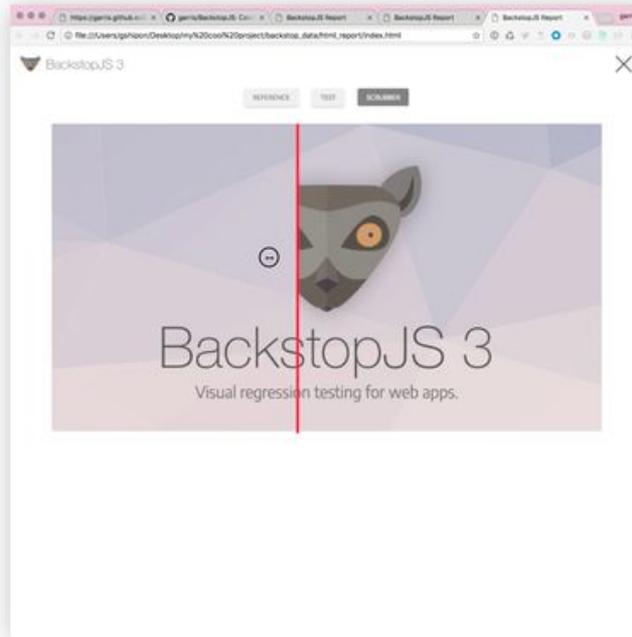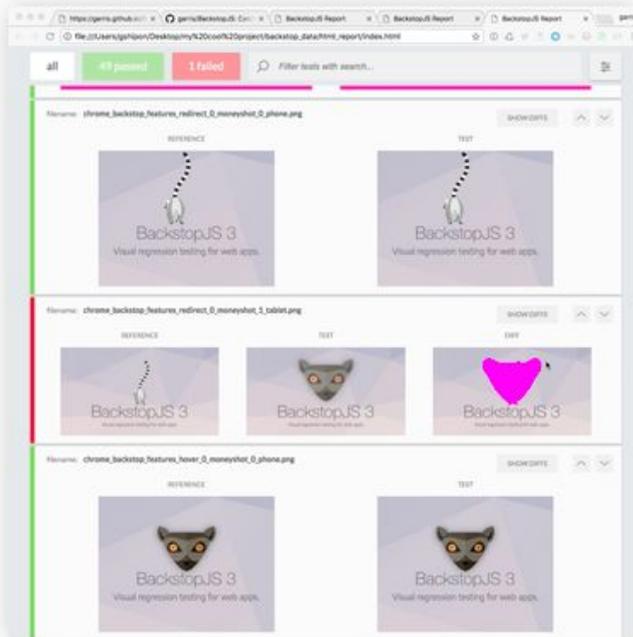
Tests Automatisés

Avantages du test automatisé

Avantages et inconvénients des tests automatisés

Gain de temps

Fiable

Réduire les erreurs humaines

Permet CI/CD

Inconvénients

Avantages et inconvénients des tests automatisés

Quelques outils pour les tests automatisés

Les outils orientés tests unitaires

behat

PHPUnit

Drupal™

Exemple d'implémentation Behat (1/2)

behat

Cucumber

```
Feature: Drupal
  Scenario: Testing drupal.org
    Given I am on "/"
    Then I should see "Drupal is powered by an open source community"
```

```
# language: fr
Fonctionnalité: Drupal
  Scénario: Test de drupal.org
    Quand Je suis sur "/"
    Alors Je devrais voir "Drupal is powered by an open source community"
```

Exemple d'implémentation Behat (2/2)

Sur Drupal

Simpletest : Histoire
Framework de test sur Drupal 7

Possibilités

UnitTest, KernelTest, FunctionalTest (JSFunctionalTest)

UnitTest   Very fast   Unit Only, No dupal
                < 0,01 s   Must mock

KernelTest Slow   Minimal bootstrap
                About 0,5-1 s No theme

FunctionalTest Very slow Full bootstrap
                   > 10 s   Theme & JS

Exemple d'implémentation framework Drupal

Écrire des tests

Structure
Dossier MODULE/tests


```php
namespace Drupal\Tests\devel\Unit;

use ...

/** Tests ClientSideFilterTable element. ...*/
class DevelClientSideFilterTableTest extends UnitTestCase {

  /**
   * @covers ::getInfo
   */
  public function testGetInfo() {
    $translation = $this->getStringTranslationStub();

    $expected_info = [...];

    $table = new ClientSideFilterTable([], plugin_id: 'test', plugin_definition: 'test');
    $table->setStringTranslation($translation);
    $this->assertEquals($expected_info, $table->getInfo());
  }

  /**
   * @covers ::preRenderTable
   * @dataProvider providerPreRenderTable
   */
  public function testPreRenderTable($element, $expected) {
    $result = ClientSideFilterTable::preRenderTable($element);
    $this->assertEquals($expected, $result);
  }

  /** Data provider for preRenderHtmlTag test. ...*/
  public function providerPreRenderTable() {...}
```

UnitTest

Environ 0.01 s

KernelTest

```php
/** Tests sending mails with debug interface. ...*/
class DevelMailLogTest extends KernelTestBase {

    /** Modules to enable. ...*/
    public static $modules = ['devel', 'devel_test', 'system'];

    /** The mail manager. ...*/
    protected $mailManager;

    /** {@inheritdoc} ...*/
    protected function setUp() {...}

    /** Tests devel_mail_log plugin as default mail backend. ...*/
    public function testDevelMailLogDefaultBackend() {...}
```

Drupal™

Environ 0.5-1 s

```php
class DevelMailLogTest extends KernelTestBase {

    /** Modules to enable. ...*/
    public static $modules = ['devel', 'devel_test'
```

FunctionalTest / JSFunctionalTest


```php
<?php

namespace Drupal\Tests\my_test\Functional;

use ...

/** Test some pages. ...*/
class ExampleBrowserTest extends BrowserTestBase {

  /** Modules to enable. ...*/
  protected static $modules = ['node'];

  /** {@inheritdoc} ...*/
  protected mixed $defaultTheme = "classy";

  /** {@inheritdoc} ...*/
  protected function setUp(): void {...}

  /**
   * Test user page.
   */
  public function testPages() {
    $account = $this->drupalCreateUser(['access content']);
    $this->drupalLogin($account);
    $this->drupalGet(path: '/user');
    $this->assertSession()->statusCodeEquals(code: 200);
    $this->assertSession()->pageTextContains(text: 'Member for');
  }
}
```

> 10 s

```php
/** Tests basic wizard functionality. ...*/
class CToolsWizardTest extends BrowserTestBase {

  use StringTranslationTrait;
  public static $modules = ['ctools', 'ctools_wizard_test'];
```
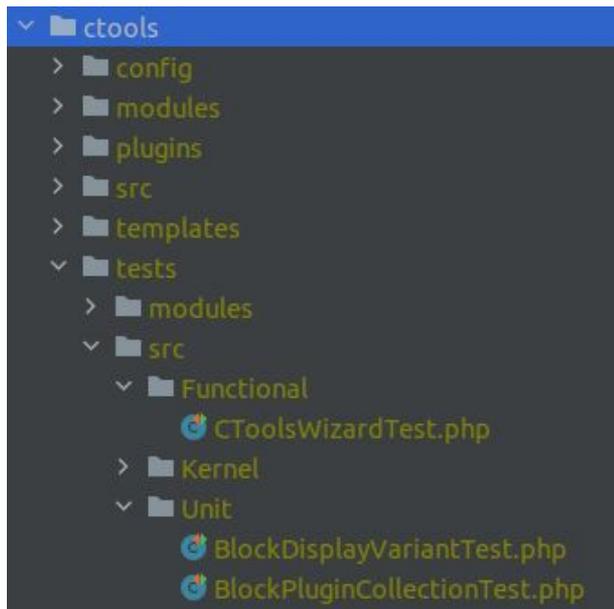
```php
use Drupal\FunctionalJavascriptTests\WebDriverTestBase;

/**
 * Tests the JS functionality in the block add form.
 *
 * @group block
 */
class BlockAddTest extends WebDriverTestBase {
```

Exemple

Page générée par le le Framework de test

```
ID #1 (Previous | Next)
Called from GuzzleHttp\Promise\FulfilledPromise::GuzzleHttp\Promise\{closure}() line 41
GET request to: http://apache/user/login
Skip to main content

Log in

Username [                                              ]
Enter your Drupal username.
Password [                                         ]
Enter the password that accompanies your username.
[ Log in ]

Headers:

array (
  'Date' => 'Thu, 16 Jun 2022 15:16:17 GMT',
  'Server' => 'Apache/2.4.53 (Unix) OpenSSL/1.1.1l',
```

```
GET request to: http://apache/user/2?check_logged_in=1
Skip to main content

administrator

Member for

8 seconds
```

Status report

2 Errors Errors Details
1 Warning Warning Details
17 Checked Checked Details

General System Information

Drupal Version

9.3.9

Last Cron Run

Last run 7 seconds ago (more information)Run cron

Web Server

Apache/2.4.53 (Unix) OpenSSL/1.1.1l

PHP

Version

8.0.17 (more information)

Exécuter des tests

Localement

Drupal.org

Exécuter localement

Ajouter le framework de test

```
"dg/bypass-finals": "^1.4",
"drupal/core-dev": "^10.0.",
"drupal/devel": "^5"
```

```
composer require drupal/core-dev
```

Phpunit.xml Configuration

Copy /core/phpunit.xml.dist to /phpunit.xml

```xml
<php>
  <ini name="xdebug.mode" value="coverage"/>
  <!-- Set error reporting to E_ALL. -->
  <ini name="error_reporting" value="32767"/>
  <!-- Do not limit the amount of memory tests take to run. -->
  <ini name="memory_limit" value="-1"/>
  <env name="SIMPLETEST_BASE_URL" value="http://apache"/>
  <!-- Example SIMPLETEST_DB value: mysql://username:password@localhost/databasename#table_prefix -->
  <env name="SIMPLETEST_DB"
       value="mysql://drupal:drupal@mariadb/drupal#simpletest"/>
  <!-- Example BROWSERTEST_OUTPUT_DIRECTORY value: /path/to/webroot/sites/simpletest/browser_output -->
  <env name="BROWSERTEST_OUTPUT_DIRECTORY"
       value="web/results/browser_output"/>
  <env name="SYMFONY_DEPRECATIONS_HELPER" value="weak"/>
</php>
<!-- TestSuites -->
<testsuites>
  <testsuite name="modules">
    <directory>web/modules/custom/example4_jsfunctional</directory>
  </testsuite>
</testsuites>
```

Example via CLI

Via command line interface: **vendor/bin/phpunit**

Exécuter automatiquement

Jenkins

Gitlab CI/CD

...

CLI – Git hook

Lancer par git hook

From : .git/hooks/pre-commit
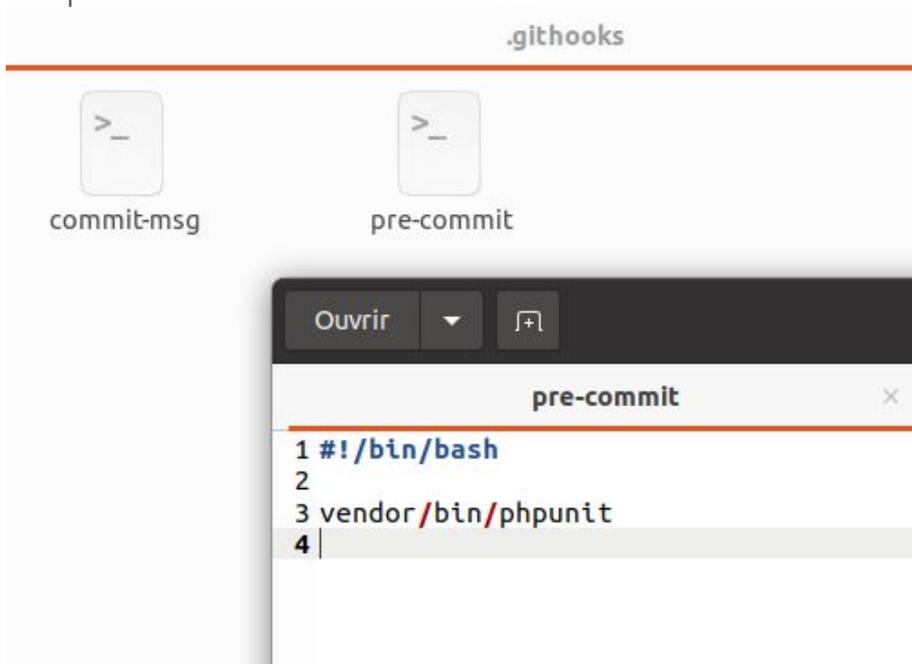
Exemple

Launch via CLI and generate coverage report : (php -d

	Code Coverage								
	Lines			**Functions and Methods**			**Classes and Traits**		
Total		0.00%	0 / 131		0.00%	0 / 17		0.00%	0 / 6
📁 Controller		0.00%	0 / 87		0.00%	0 / 9		0.00%	0 / 4
📁 Form		0.00%	0 / 34		0.00%	0 / 3		0.00%	0 / 1
📁 Service		0.00%	0 / 10		0.00%	0 / 5		0.00%	0 / 1

Legend

Low: 0% to 50%   **Medium**: 50% to 90%   **High**: 90%

```
Test 'Drupal\Test\niji_preprocessing\Unit\NijiPreprocess
Test 'Drupal\Test\niji_preprocessing\Unit\NijiPreprocess
Test 'Drupal\Test\niji_preprocessing\Unit\NijiPreprocess


Time: 00:00.109, Memory: 20.00 MB

OK, but incomplete, skipped, or risky tests!
Tests: 128, Assertions: 128, Incomplete: 2.
```

Sur Drupal.org

Modules contribué
Sur drupal.org

Install: `$ composer require 'drupal/admin_toolbar:^3.1'`

Development version: 3.x-dev updated 11 May 2022 at 04:18 UTC

Testing result: PHP 7.4 & MySQL 8, D9.3 17 pass all results

Admin Toolbar

View   Version control   Automated testing

? DrupalCI testing is supported by Drupal Association members and supporting partners.

3.x-dev

PHP 7.4 & MySQL 8, D9.3 17 pass tested on commit, issue testing default

PHP 8.0 & MySQL 5.7, D9.3 17 pass tested weekly

PHP 8.1 & MySQL 5.7, D9.3 17 pass tested weekly

8.x-2.x-dev

PHP 7.3 & MySQL 5.7, D8.9.16 7 pass disabled, testing configuration no longer available

8.x-1.x-dev

No test results.

Options
Versions & Schedule

Patches

Test a patch for drupal core or contrib module

| Comment	File	Size	Author
#85	interdiff_81-85.txt	950 bytes	vsujeetkumar
	2880011-85.patch	3.27 KB	vsujeetkumar
#85	9.3.x: PHP 8.0 & MySQL 5.7 29,510 pass		
	PHP 8.1 & MySQL 5.7 29,477 pass		
	9.2.x: PHP 7.4 & MySQL 5.7 28,640 pass		
	9.4.x: PHP 8.1 & MySQL 5.7 29,688 pass		
	Add test / retest		
#81	interdiff_75-81.txt	2.76 KB	Anandhi Karnan
	inline_form_error_2880011-81.patch	3.29 KB	Anandhi Karnan
#81	9.3.x: PHP 8.0 & MySQL 5.7 28,841 pass, 2 fail		
	9.2.x: PHP 7.3 & MySQL 5.7 28,612 pass		
	Add test / retest		
	2880011-add-disable-errors-summary-property-75.patch	5.26 KB	tsplash
#75	9.2.x: PHP 7.3 & MySQL 5.7 28,100 pass, 1 fail		
	PHP 7.3.x-dev & MySQL 5.7 28,100 pass, 1 fail		
	Add test / retest		

Couverture

Couverture des tests automatisés
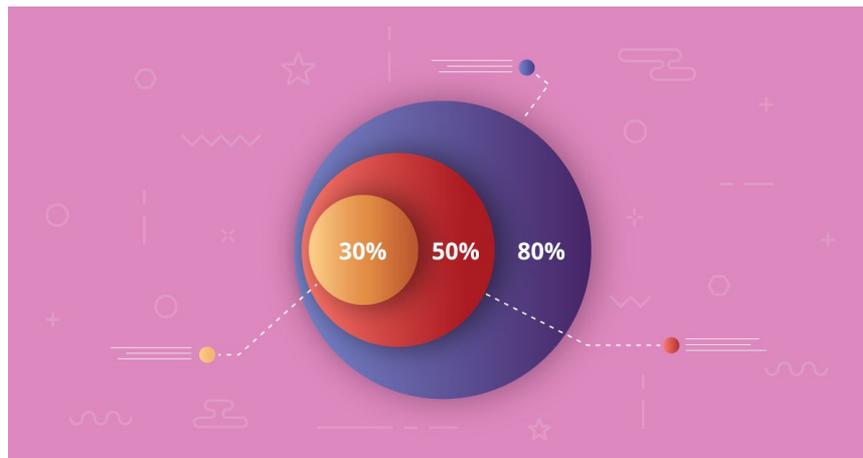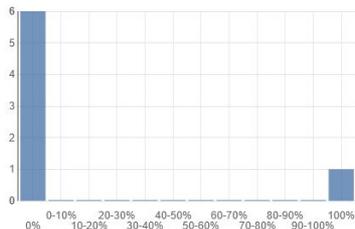
Bonnes pratiques

Unit +++++ / Kernel +++ / Functional +
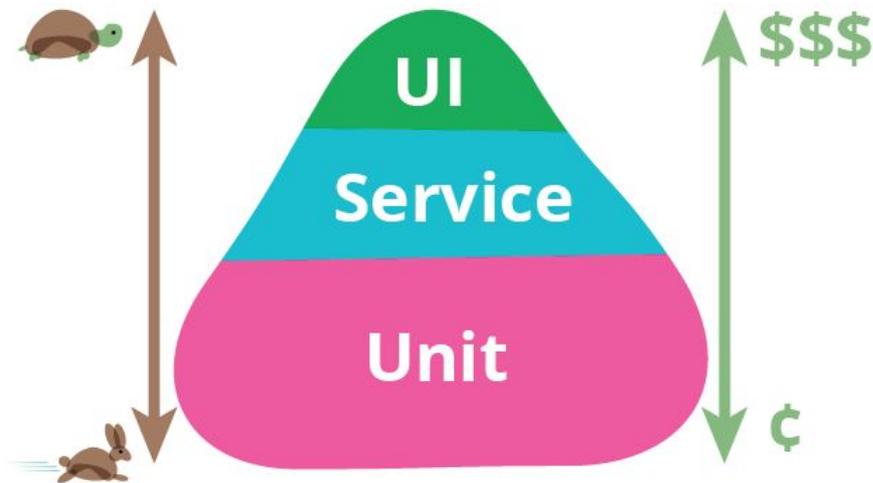
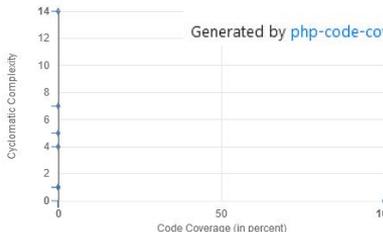# Exemple de tableau de bord de couverture

PhpUnit code coverage

	Code Coverage								
	Lines			**Functions and Methods**			**Classes and Traits**		
Total		0.00%	0 / 131		0.00%	0 / 17		0.00%	0 / 6
■ Controller		0.00%	0 / 87		0.00%	0 / 9		0.00%	0 / 4
■ Form		0.00%	0 / 34		0.00%	0 / 3		0.00%	0 / 1
■ Service		0.00%	0 / 10		0.00%	0 / 5		0.00%	0 / 1

Classes

Coverage Distribution

Complexity

Legend

Low: 0% to 50% **Medium**: 50% to 90% **High**: 90% to 100%

Generated by php-code-coverage 9.2.7 using PHP 8.0.11 and PHPUnit 9.5.9 at Fri Nov 26 21:21:44 AEDT 2021.

Insufficient Coverage

Class   **Coverage**

Project Risks

Class   **CRAP**

En résumé

Facile à utiliser

Fiable

Mais on ne peut pas tout couvrir.

Des questions ?

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Merci
pour votre écoute !