

Testing ../modules/override_node_options

....

Time: 2.54 minutes, Memory: 6.00MB

OK (4 tests, 65 assertions)

docker@cli:/var/www/core\$

TDD - Test Driven Drupal

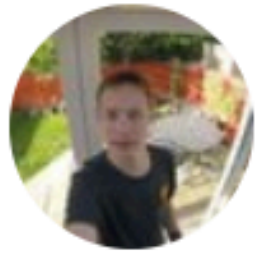
- PHP code
- Mixture of D7 and D8
- SimpleTest (D7)
- PHPUnit (D8)

- Senior Developer at Microserve
- Contrib module maintainer
- Occasional core contributor
- Sticker collector and elePHPant herder
- @opdavies
- oliverdavies.uk



I write and release contrib modules for the
community.

I write custom modules for client projects.



Tim Millwood



@timmillwood

Following



Anyone wanna become maintainer or co-maintain Override Node Options [#Drupal](#) module?

6:29 PM - 23 Feb 2012

Why Test?

- Catch bugs earlier
- Piece of mind
- Prevent regressions
- Write less code
- Documentation
- Drupal core requirement - <https://www.drupal.org/core/gates#testing>
- More important with regular D8 releases

Core Testing Gate

New features should be accompanied by automated tests.

If the feature does not have an implementation, provide a test implementation.

Bug fixes should be accompanied by changes to a test (either modifying an existing test case or adding a new one) that demonstrate the bug.

Testing in Drupal - SimpleTest

- Based on <http://www.SimpleTest.org>
- In D7 core
- *.test files
- All test classes in one file

Testing in Drupal - PHPUnit

- Used in other PHP projects (e.g. Symfony, Laravel)
- In D8 core, but not default
- *.php files
- One test class per file

The PHPUnit Initiative

- <https://www.drupal.org/node/2807237>
- D8 core tests to change to PHPUnit
- Deprecate SimpleTest, remove in D9
- "A big chunk of old tests" converted on Feb 21st

The PHPUnit Initiative

As part of the PHPUnit initiative **a considerable part of Simpletests will be converted to PHPUnit based browser tests on February 21st 2017**. A backwards compatibility layer has been implemented so that many Simpletests can be converted by just using the new `BrowserTestBase` base class and moving the test file. There is also a script to automatically convert test files in the conversion issue.

Developers are encouraged to use `BrowserTestBase` instead of `Simpletest` as of `Drupal 8.3.0`, but both test systems are fully supported during the Drupal 8 release cycle.

The timeline for the deprecation of Simpletest's `WebTestBase` is under discussion.

Types of Tests

Unit Tests

- `UnitTestCase`
- Tests PHP logic
- No database interaction
- Fast to run

Unit Tests

Pros:

- Verify individual parts
- Quickly find problems in code
- Fast execution
- No system setup for the test run

Unit Tests

Cons:

- Rewrite on every refactoring
- Complicated mocking
- No guarantee that the whole system actually works

Kernel Tests

- Kernel tests are integration tests that test on components. You can install modules.
- `KernelTestBase`

Kernel Tests

Pros:

- Verify that components actually work together
- Somewhat easy to locate bugs

Kernel Tests

Cons:

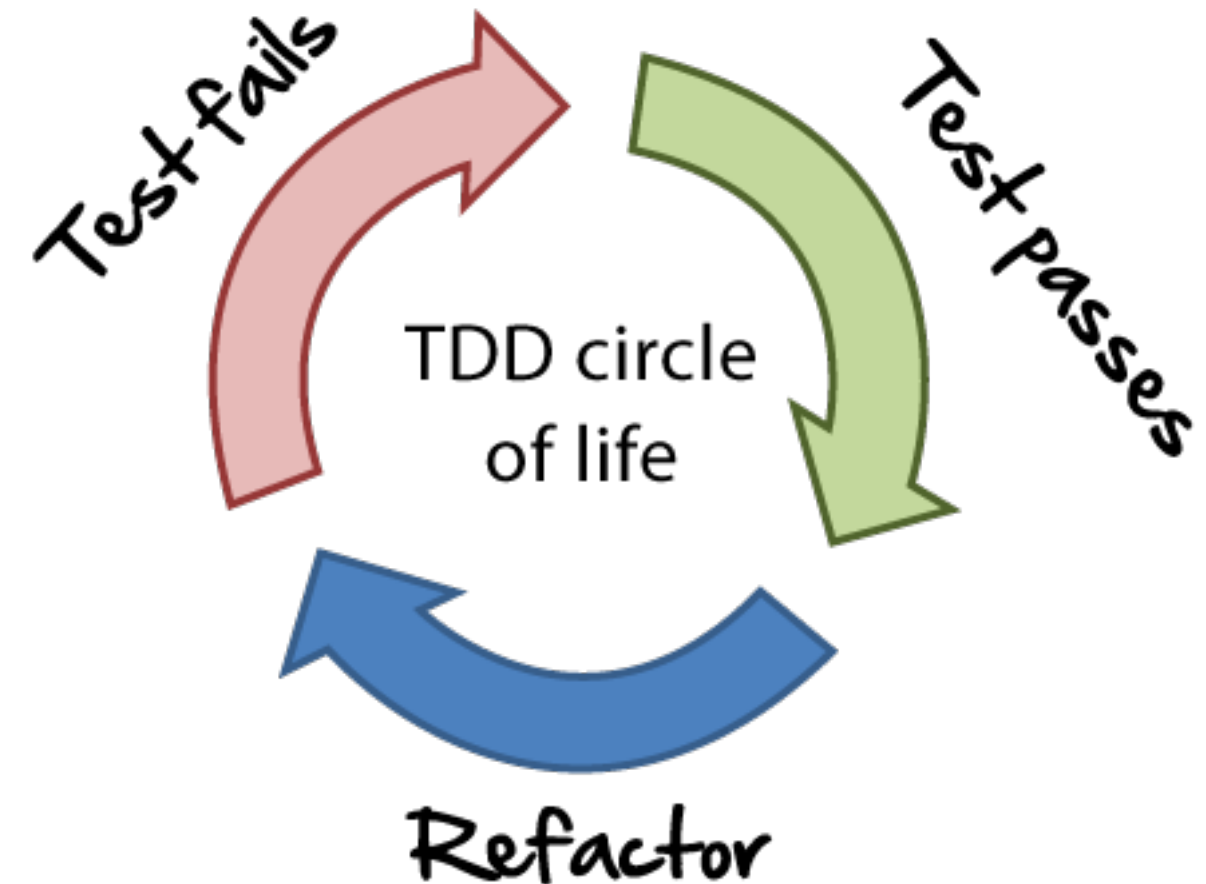
- Slower execution
- System setup required
- No guarantee that end user features actually work

UI Tests

- Web/Functional/FunctionalJavascript
- DrupalWebTestCase (D7)
- WebTestBase, BrowserTestBase, JavascriptTestBase (D8)
- Tests functionality
- Interacts with database
- Slower to run
- With/without JavaScript (D8)

Test Driven Development (TDD)

- Write a test, see it fail
- Write code until test passes
- Repeat
- Refactor when tests are green



Porting Modules to Drupal 8

- Make a new branch
`git checkout --orphan 8.x-1.x`
- Add/update the tests
- Write code to make the tests pass
- Refactor
- Repeat

Writing Tests (SimpleTest)

```
# example.info
```

```
name = Example
```

```
core = 7.x
```

```
files[] = example.test
```

```
// example.test
```

```
class ExampleTestCase extends DrupalWebTestCase {
```

```
    public static function getInfo() {
```

```
        return array(
```

```
            'name' => 'Example tests',
```

```
            'description' => 'Web tests for the example module.',
```

```
            'group' => 'Example',
```

```
        );
```

```
    }
```

```
}
```



```
class ExampleTestCase extends DrupalWebTestCase {  
  
    ...  
  
    public function testSomething {  
        $this->assertTrue(TRUE);  
    }  
  
}
```

Writing Tests (PHPUnit)

- No need to load test classes explicitly.
- Add classes into `tests/src` directory.
- Extend `BrowserTestBase`.
- No `getInfo` method.

Creating the World

```
public function setUp() {  
    // Enable any other required modules.  
    parent::setUp(['foo', 'bar']);  
  
    // Anything else we need to do.  
}
```

Creating the World

```
$this->drupalCreateUser();
```

```
$this->drupalLogin();
```

```
$this->drupalCreateNode();
```

```
$this->drupalLogout();
```

Assertions

- `assertTrue`
- `assertFalse`
- `assertNull`
- `assertNotNull`
- `assertEquals`
`assertEquals`

Assertions

- `assertRaw`
- `assertResponse`
`assertSession()->statusCodeEquals()`
- `assertField`
- `assertFieldById`
- `assertTitle`

Assertions

- `assertText`
`assertSession()->pageTextContains()`
- `assertNoText`
`assertSession()->pageTextNotContains()`

Running Tests

SimpleTest UI

Testing +

LIST

SETTINGS

TESTS

Select the test(s) or test group(s) you would like to run, and click *Run tests*.

<input type="checkbox"/>	TEST	DESCRIPTION
<input type="checkbox"/>	▶ Actions	
<input type="checkbox"/>	▶ Aggregator	
<input type="checkbox"/>	▶ AJAX	
<input type="checkbox"/>	▶ Batch API	
<input type="checkbox"/>	▶ Block	
<input type="checkbox"/>	▶ Blog	
<input type="checkbox"/>	▶ Book	
<input type="checkbox"/>	▶ Bootstrap	
<input type="checkbox"/>	▶ Cache	
<input type="checkbox"/>	▶ Collection class	
<input type="checkbox"/>	▶ Color	
<input type="checkbox"/>	▶ Comment	
<input type="checkbox"/>	▶ Comment Hide Subject	
<input type="checkbox"/>	▶ Contact	
<input type="checkbox"/>	▶ Contextual	

[Home](#)

Running tests



Processed test 5 of 11 - *Block HTML id.*

45%

Overall results: 343 passes, 0 fails, 0 exceptions, and 83 debug messages

- Block HTML id: 16 passes, 0 fails, 0 exceptions, and 5 debug messages
- Blocks not in hidden region: 15 passes, 0 fails, 0 exceptions, and 4 debug messages
- Block rehash: 81 passes, 0 fails, and 0 exceptions
- Block caching: 213 passes, 0 fails, 0 exceptions, and 68 debug messages
- Admin theme block admin accessibility: 18 passes, 0 fails, 0 exceptions, and 6 debug messages

Test result

 The test run finished in 2 min 19 sec.

ACTIONS

Filter All (11) Run tests [Return to list](#)

RESULTS

759 passes, 0 fails, 0 exceptions, and 213 debug messages

▶ ADMIN THEME BLOCK ADMIN ACCESSIBILITY

▶ BLOCK CACHING

▶ BLOCK REHASH

▶ BLOCKS NOT IN HIDDEN REGION

▶ BLOCK HTML ID

▶ BLOCKS IN INVALID REGIONS

▶ BLOCK TEMPLATE SUGGESTIONS

▶ BLOCK FUNCTIONALITY

▶ BLOCK VIEW MODULE DELTA ALTER

10 passes, 0 fails, 0 exceptions, and 0 debug messages

MESSAGE	GROUP	FILENAME	LINE	FUNCTION	STATUS
Created role of name: zu8ORfgK, id: 4	Role	block.test	470	BlockAdminThemeTestCase->testAdminTheme()	✓
Created permissions: administer blocks, administer themes	Role	block.test	470	BlockAdminThemeTestCase->testAdminTheme()	✓
User created with name <i>wLS08m2Z</i> and pass <i>mfvsNsDWQP</i>	User login	block.test	470	BlockAdminThemeTestCase->testAdminTheme()	✓
GET http://drupal7.dev/user returned 200 (7.08 KB).	Browser	block.test	471	BlockAdminThemeTestCase->testAdminTheme()	✓
Valid HTML found on "http://drupal7.dev/user"	Browser	block.test	471	BlockAdminThemeTestCase->testAdminTheme()	✓
Verbose message	Debug	block.test	471	BlockAdminThemeTestCase->testAdminTheme()	⚠
GET http://drupal7.dev/user/2 returned 200 (6.52 KB).	Browser	block.test	471	BlockAdminThemeTestCase->testAdminTheme()	✓
Valid HTML found on "http://drupal7.dev/user/2"	Browser	block.test	471	BlockAdminThemeTestCase->testAdminTheme()	✓
Verbose message	Debug	block.test	471	BlockAdminThemeTestCase->testAdminTheme()	⚠
User <i>wLS08m2Z</i> successfully logged in.	User login	block.test	471	BlockAdminThemeTestCase->testAdminTheme()	✓
GET http://drupal7.dev/admin/structure/block/list/stark returned 403 (6.17 KB).	Browser	block.test	474	BlockAdminThemeTestCase->testAdminTheme()	✓
Valid HTML found on "http://drupal7.dev/admin/structure/block/list/stark"	Browser	block.test	474	BlockAdminThemeTestCase->testAdminTheme()	✓
Verbose message	Debug	block.test	474	BlockAdminThemeTestCase->testAdminTheme()	⚠
The block admin page for a disabled theme can not be accessed	Browser	block.test	475	BlockAdminThemeTestCase->testAdminTheme()	✓
GET http://drupal7.dev/admin/appearance returned 200 (11.65 KB).	Browser	block.test	479	BlockAdminThemeTestCase->testAdminTheme()	✓
Valid HTML found on "http://drupal7.dev/admin/appearance"	Browser	block.test	479	BlockAdminThemeTestCase->testAdminTheme()	✓
Verbose message	Debug	block.test	479	BlockAdminThemeTestCase->testAdminTheme()	⚠
GET http://drupal7.dev/admin/appearance returned 200 (11.65 KB).	Browser	block.test	479	BlockAdminThemeTestCase->testAdminTheme()	✓

Running SimpleTest (CLI)

```
# Drupal 7
```

```
$ php scripts/run-tests.sh
```

```
# Drupal 8
```

```
$ php core/scripts/run-tests.sh
```

Running SimpleTest (CLI)

`--color`

`--verbose`

`--all`

`--module`

`--class`

`--file`

Running PHPUnit

```
# Assumes you have a configured phpunit.xml file.
```

```
$ vendor/bin/phpunit
```

```
$ vendor/bin/phpunit [directory]
```

```
$ vendor/bin/phpunit --filter [method]
```

```
$ vendor/bin/phpunit --verbose --debug
```


Example: Collection Class

Collection Class

- http://dgo.to/collection_class
- Adds a Collection class, based on Laravel's
- Provides helper methods for array methods
- Drupal 7, uses xautoload
- All unit tests

```
$collection = collect([1, 2, 3, 4, 5]);
```

```
// Returns all items.
```

```
$collection->all();
```

```
// Counts the number of items.
```

```
$collection->count();
```

```
// Returns the array keys.
```

```
$collection->keys();
```

```
namespace Drupal\collection_class;

class Collection implements \Countable, \IteratorAggregate {
    private $items;

    public function __construct($items = array()) {
        $this->items = is_array($items) ? $items
            : $this->getArrayableItems($items);
    }

    public function __toString() {
        return $this->toJson();
    }

    ...
}
```

```
public function all() {  
    return $this->items;  
}
```

```
public function count() {  
    return count($this->items);  
}
```

```
public function isEmpty() {  
    return empty($this->items);  
}
```

```
public function first() {  
    return array_shift($this->items);  
}
```

Testing

```
public function setUp() {  
    $this->firstCollection = collect(['foo', 'bar', 'baz']);  
  
    $this->secondCollection = collect([  
        array('title' => 'Foo', 'status' => 1),  
        array('title' => 'Bar', 'status' => 0),  
        array('title' => 'Baz', 'status' => 1)  
    ]);  
  
    parent::setUp();  
}
```

Testing

```
public function testCollectFunction() {  
    $this->assertEqual(  
        get_class($this->firstCollection),  
        'Drupal\collection_class\Collection'  
    );  
}
```

Testing

```
public function testAll() {  
    $this->assertEqual(  
        array('foo', 'bar', 'baz'),  
        $this->firstCollection->all()  
    );  
}
```



Testing

```
public function testCount() {  
    $this->assertEqual(  
        3,  
        $this->firstCollection->count()  
    );  
}
```


Testing

```
public function testMerge() {  
    $first = collect(array('a', 'b', 'c'));  
    $second = collect(array('d', 'e', 'f'));  
  
    $this->assertEqual(  
        array('a', 'b', 'c', 'd', 'e', 'f'),  
        $first->merge($second)->all()  
    );  
}
```

Test result

 The test run finished in 0 sec.

ACTIONS

Filter  [Return to list](#)

RESULTS

22 passes, 0 fails, and 0 exceptions

[▶ COLLECTION CLASS UNIT TESTS](#)

22 passes, 0 fails, and 0 exceptions

MESSAGE	GROUP	FILENAME	LINE	FUNCTION	STATUS
Value 'Collection' is equal to value 'Collection'.	Other	collection_class.test	33	CollectionClassUnitTest->testCollectFunction()	✓
Value array (0 => 'foo', 1 => 'bar', 2 => 'baz',) is equal to value array (0 => 'foo', 1 => 'bar', 2 => 'baz',).	Other	collection_class.test	37	CollectionClassUnitTest->testAll()	✓
Value false is FALSE.	Other	collection_class.test	41	CollectionClassUnitTest->testIsEmpty()	✓
Value true is TRUE.	Other	collection_class.test	43	CollectionClassUnitTest->testIsEmpty()	✓
Value array (0 => 0, 1 => 1, 2 => 2,) is equal to value array (0 => 0, 1 => 1, 2 => 2,).	Other	collection_class.test	47	CollectionClassUnitTest->testKeys()	✓
Value 3 is equal to value 3.	Other	collection_class.test	51	CollectionClassUnitTest->testCount()	✓
Value 'foo' is equal to value 'foo'.	Other	collection_class.test	55	CollectionClassUnitTest->testFirst()	✓
Value 'baz' is equal to value 'baz'.	Other	collection_class.test	59	CollectionClassUnitTest->testLast()	✓
Value ['foo','bar','baz'] is equal to value ['foo','bar','baz'].	Other	collection_class.test	63	CollectionClassUnitTest->testToJson()	✓
Value 'Foo' is equal to value 'Foo'.	Other	collection_class.test	70	CollectionClassUnitTest->{closure}()	✓
Value 'Bar' is equal to value 'Bar'.	Other	collection_class.test	74	CollectionClassUnitTest->{closure}()	✓
Value 'Baz' is equal to value 'Baz'.	Other	collection_class.test	78	CollectionClassUnitTest->{closure}()	✓
Value 2 is equal to value 2.	Other	collection_class.test	80	CollectionClassUnitTest->{closure}()	✓

Example: Toggle Optional Fields

Toggle Optional Fields

- http://dgo.to/toggle_optional_fields
- Adds a button to toggle optional fields on node forms using form alters
- Possible to override using an custom alter hook
- Uses unit and web tests

Edit Article test ⚙

Show optional fields

Title *

test

```
// Looping through available form elements...

// Only affect fields.
if (!toggle_optional_fields_element_is_field($element_name)) {
    return;
}

$element = &$form[$element_name];

if (isset($overridden_fields[$element_name])) {
    return $element['#access'] = $overridden_fields[$element_name];
}

// If the field is not required, disallow access to hide it.
if (isset($element[LANGUAGE_NONE][0]['#required'])) {
    return $element['#access'] = !empty($element[LANGUAGE_NONE][0]['#required']);
}
```

What to Test?

- **Functional:** Are the correct fields shown and hidden?
- **Unit:** Is the field name check returning correct results?

Unit Tests

```
// Returns TRUE or FALSE to indicate if this is a field.
```

```
function toggle_optional_fields_element_is_field($name) {  
    if (in_array($name, array('body', 'language'))) {  
        return TRUE;  
    }  
  
    return substr($name, 0, 6) == 'field_';  
}
```

Unit Tests

```
public function testElementNameIsField() {  
    ...  
  
    $this->assertTrue(  
        toggle_optional_fields_element_is_field('field_tags')  
    );  
  
    $this->assertTrue(  
        toggle_optional_fields_element_is_field('body')  
    );  
  
    $this->assertFalse(  
        toggle_optional_fields_element_is_field('title')  
    );  
}
```

Unit Tests


```
public function testElementNameIsField() {
    ...

    foreach ($this->elementNameDataProvider() as $data) {
        list($element_name, $expected_result) = $data;

        $this->assertEquals(
            $expected_result,
            toggle_optional_fields_element_is_field($element_name)
        );
    }
}

private function elementNameDataProvider() {
    return array(
        array('body', TRUE),
        array('field_tags', TRUE),
        array('title', FALSE),
    );
}
```

Test result

 The test run finished in 0 sec.

ACTIONS

Filter All (1) Run tests [Return to list](#)




RESULTS

3 passes, 0 fails, and 0 exceptions

▼ TOGGLE OPTIONAL FIELDS UNIT TESTS

Test the showing and hiding of optional fields on node forms.

3 passes, 0 fails, and 0 exceptions

MESSAGE	GROUP	FILENAME	LINE	FUNCTION	STATUS
Value true is TRUE.	Other	toggle_optional_fields.test	131	ToggleOptionalFieldsUnitTest->testElementNamelsField()	
Value false is FALSE.	Other	toggle_optional_fields.test	132	ToggleOptionalFieldsUnitTest->testElementNamelsField()	
Value true is TRUE.	Other	toggle_optional_fields.test	135	ToggleOptionalFieldsUnitTest->testElementNamelsField()	

Web Tests

```
public function setUp() {
    parent::setUp();

    $this->drupalLogin(
        $this->drupalCreateUser(array(
            'create article content',
            'create page content'
        )));
};

// Enable toggling on article node forms.
variable_set('toggle_optional_fields_node_types', array('article'));

$this->refreshVariables();
}
```

Custom Assertions

```
private function assertTagsFieldNotHidden() {  
    $this->assertFieldByName(  
        'field_tags[und]',  
        NULL,  
        t('Tags field visible.')  
    );  
}
```

Testing Hidden Fields

```
public function testFieldsHiddenByDefault() {  
    variable_set('toggle_optional_fields_hide_by_default', TRUE);  
  
    $this->refreshVariables();  
  
    $this->drupalGet('node/add/article');  
  
    $this->assertShowOptionalFieldsButtonFound();  
    $this->assertHideOptionalFieldsButtonNotFound();  
    $this->assertTagsFieldHidden();  
  
    ...  
}
```


Testing Hidden Fields

...

```
$this->drupalPost(  
    'node/add/article',  
    array(),  
    t('Show optional fields')  
);
```

```
$this->assertHideOptionalFieldsButtonFound();  
$this->assertShowOptionalFieldsButtonNotFound();  
$this->assertTagsFieldNotHidden();
```

```
}
```


 The test run finished in 24 sec.

ACTIONS








Filter All (1) Run tests [Return to list](#)

RESULTS

68 passes, 0 fails, 0 exceptions, and 16 debug messages

TOGGLE OPTIONAL FIELDS

Test the showing and hiding of optional fields on node forms.
68 passes, 0 fails, 0 exceptions, and 16 debug messages

MESSAGE	GROUP	FILENAME	LINE	FUNCTION	STATUS
Enabled modules: <i>toggle_optional_fields</i> , <i>toggle_optional_fields_tests</i>	Other	toggle_optional_fields.test	20	ToggleOptionalFieldsTest->setUp()	
Created role of name: nHQ9fFZS, id: 4	Role	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	
Created permissions: create article content, create page content	Role	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	
User created with name <i>wSuPLKWT</i> and pass <i>o7qYRL986b</i>	User login	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	
GET http://drupal7.dev/user returned 200 (7.08 KB).	Browser	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	
Valid HTML found on "http://drupal7.dev/user"	Browser	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	
Verbose message	Debug	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	

MESSAGE	GROUP	FILENAME	LINE	FUNCTION	STATUS
Created permissions: create article content, create page content	Role	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	✓
User created with name <i>zBqGcqp</i> and pass <i>hyKBZ6unTj</i>	User login	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	✓
GET http://drupal7.dev/user returned 200 (7.08 KB).	Browser	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	✓
Valid HTML found on "http://drupal7.dev/user"	Browser	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	✓
Verbose message	Debug	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	⚠
GET http://drupal7.dev/user/2 returned 200 (6.97 KB).	Browser	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	✓
Valid HTML found on "http://drupal7.dev/user/2"	Browser	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	✓
Verbose message	Debug	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	⚠
User <i>zBqGcqp</i> successfully logged in.	User login	toggle_optional_fields.test	24	ToggleOptionalFieldsTest->setUp()	✓
Toggling is not enabled for the <i>page</i> content type.	Other	toggle_optional_fields.test	78	ToggleOptionalFieldsTest->testDisabledContentType()	✓
GET http://drupal7.dev/node/add/page returned 200 (11.44 KB).	Browser	toggle_optional_fields.test	81	ToggleOptionalFieldsTest->testDisabledContentType()	✓
Valid HTML found on "http://drupal7.dev/node/add/page"	Browser	toggle_optional_fields.test	81	ToggleOptionalFieldsTest->testDisabledContentType()	✓
Verbose message	Debug	toggle_optional_fields.test	81	ToggleOptionalFieldsTest->testDisabledContentType()	⚠
Hide optional fields button not found.	Other	toggle_optional_fields.test	84	ToggleOptionalFieldsTest->testDisabledContentType()	✓
Show optional fields button not found.	Other	toggle_optional_fields.test	85	ToggleOptionalFieldsTest->testDisabledContentType()	✓

Building a new Drupal 8 Module with TDD

As a site visitor

I want to see a list of all published pages at /pages

Ordered alphabetically by title.

```
# tdd_dublin.info.yml
```

```
name: DrupalCamp Dublin test
```

```
core: 8.x
```

```
type: module
```

```
// tests/src/Functional/ListingPageTest.php

class ListingPageTest extends BrowserTestBase {

    protected static $modules = ['tdd_dublin'];

    public function testListingPageExists() {
        $this->drupalGet('pages');

        $this->assertSession()->statusCodeEquals(200);
    }
}
```

```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests/
E
```

```
Time: 25.94 seconds, Memory: 6.00MB
```

```
There was 1 error:
```

```
1) PageListTest::testListingPage
```

```
Behat\Mink\Exception\ExpectationException: Current response status code is 404,
but 200 expected.
```

```
/var/www/vendor/behat/mink/src/WebAssert.php:770
```

```
/var/www/vendor/behat/mink/src/WebAssert.php:130
```

```
/var/www/modules/tdd_dublin/tests/src/PageListTest.php:11
```

- Add the view.
- Copy the config into the module's `config/install`.


```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests/
E
```

```
Time: 19.07 seconds, Memory: 6.00MB
```

```
There was 1 error:
```

```
1) PageListTest::testListingPage
```

```
Drupal\Core\Config\UnmetDependenciesException:
```

```
Configuration objects provided by <em class="placeholder">tdd_dublin</em>
```

```
have unmet dependencies:
```

```
<em class="placeholder">node.type.page (node),
```

```
views.view.pages (node, views)</em>
```

name: DrupalCamp Dublin tests

core: 8.x

type: module

dependencies:

- drupal:node
- drupal:views

```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
```

```
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests/
```

```
.
```

```
Time: 29.58 seconds, Memory: 6.00MB
```

```
OK (1 test, 1 assertion)
```

```
public function testOnlyPublishedPagesAreShown() {  
    // Given I have a mixture of published and unpublished pages,  
    // as well as other types of content.  
  
    // When I view the pages list.  
  
    // I should only see the published pages.  
}
```

```
public function testOnlyPublishedPagesAreShown() {
    $this->drupalCreateContentType(['type' => 'article']);

    $nodeA = $this->drupalCreateNode(['type' => 'page', 'status' => TRUE]);
    $nodeB = $this->drupalCreateNode(['type' => 'article']);
    $nodeC = $this->drupalCreateNode(['type' => 'page', 'status' => FALSE]);

    // When I view the pages list.

    // I should only see the published pages.
}
```

```
public function testOnlyPublishedPagesAreShown() {  
    ...  
  
    $this->drupalGet('/pages');  
  
    $this->assertSession()->statusCodeEquals(200);  
  
    $this->assertSession()->pageTextContains($nodeA->label());  
  
    $this->assertSession()->pageTextNotContains($nodeB->label());  
    $this->assertSession()->pageTextNotContains($nodeC->label());  
}
```

```
public function testOnlyPublishedPagesAreShown() {
    $this->drupalCreateContentType(['type' => 'article']);

    $this->drupalCreateNode(['type' => 'page', 'status' => TRUE]);
    $this->drupalCreateNode(['type' => 'article']);
    $this->drupalCreateNode(['type' => 'page', 'status' => FALSE]);

    $results = views_get_view_result('pages');

    $nids = array_column($results, 'nid'); // [1, 3]

    // I should only see the published pages.
}
```

```
public function testOnlyPublishedPagesAreShown() {
    $this->drupalCreateContentType(['type' => 'article']);

    $this->drupalCreateNode(['type' => 'page', 'status' => TRUE]);
    $this->drupalCreateNode(['type' => 'article']);
    $this->drupalCreateNode(['type' => 'page', 'status' => FALSE]);

    $results = views_get_view_result('pages');

    $nids = array_column($results, 'nid'); // [1, 3]

    $this->assertEquals([1], $nids);
}
```



```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
--filter=testOnlyPublishedPagesAreShown
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests
```

```
F
```

```
Time: 26.4 seconds, Memory: 6.00MB
```

```
There was 1 failure:
```

1) PageListTest::testOnlyPublishedPagesAreShown

Failed asserting that two arrays are equal.

--- Expected

+++ Actual

@@ @@

```
Array (  
-   0 => 1  
+   0 => '1'  
+   1 => '3'  
)
```

/var/www/tests/Drupal/Tests/BrowserTestBase.php:1240

/var/www/modules/tdd_dublin/tests/src/PageListTest.php:25

FAILURES!

Tests: 1, Assertions: 3, Failures: 1.

- Edit the view
- Add the status filter
- Update the module config

```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
--filter=testOnlyPublishedPagesAreShown
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests
```

```
.
```

```
Time: 26.53 seconds, Memory: 6.00MB
```

```
OK (1 test, 3 assertions)
```

```
public function testPagesAreOrderedAlphabetically() {  
    // Given I have multiple pages with different titles.  
  
    // When I view the pages list.  
  
    // I see the pages in the correct order.  
}
```

```
public function testPagesAreOrderedAlphabetically() {  
    $this->drupalCreateNode(['title' => 'Page A']);  
    $this->drupalCreateNode(['title' => 'Page D']);  
    $this->drupalCreateNode(['title' => 'Page B']);  
    $this->drupalCreateNode(['title' => 'Page C']);  
  
    $results = views_get_view_result('pages');  
  
    $nids = array_column($results, 'nid');  
  
    $this->assertEquals([1, 3, 4, 2], $nids);  
}
```

```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
-filter=testPagesAreOrderedAlphabetically
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests
```

```
F
```

```
Time: 28.03 seconds, Memory: 6.00MB
```

```
There was 1 failure:
```

1) PageListTest::testPagesAreOrderedAlphabetically

Failed asserting that two arrays are equal.

--- Expected

+++ Actual

@@ @@

Array (

- 0 => 1

- 1 => 3

- 2 => 4

- 3 => 2

+ 0 => '1'

+ 1 => '2'

+ 2 => '3'

+ 3 => '4'

)

/var/www/tests/Drupal/Tests/BrowserTestBase.php:1240

/var/www/modules/tdd_dublin/tests/src/PageListTest.php:36

- Edit the view
- Remove the default sort criteria (created on)
- Add new sort criteria
- Update the module config

```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
--filter=testPagesAreOrderedAlphabetically
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests
```

```
.
```

```
Time: 27.67 seconds, Memory: 6.00MB
```

```
OK (1 test, 2 assertions)
```

```
docker@cli:/var/www$ vendor/bin/phpunit -c core modules/tdd_dublin/tests
```

```
PHPUnit 4.8.36 by Sebastian Bergmann and contributors.
```

```
Testing modules/tdd_dublin/tests
```

```
...
```

```
Time: 1.17 minutes, Memory: 6.00MB
```

```
OK (3 tests, 6 assertions)
```

Downgrading to Kernel Tests

```
// tests/src/Kernel/PageListTest.php

namespace Drupal\Tests\tdd_dublin\Kernel;

use Drupal\KernelTests\KernelTestBase;

class PageListTest extends KernelTestBase {
}
```

```
public function testOnlyPublishedPagesAreShown() {  
    $nids = array_column(views_get_view_result('pages'), 'nid');  
  
    $this->assertEquals([1], $nids);  
}
```

```
protected static $modules = [  
    'node',  
    'system',  
    'tdd_dublin',  
    'user',  
    'views'  
];  
  
protected function setUp() {  
    parent::setUp();  
  
    $this->installConfig(['tdd_dublin']);  
  
    $this->installEntitySchema('node');  
    $this->installEntitySchema('user');  
}
```

```
use Drupal\node\Entity\node;
use Drupal\node\Entity\nodeType;

public function testOnlyPublishedPagesAreShown() {
    nodeType::create(['type' => 'article', 'name' => t('Article')]);

    node::create($this->getValidParams(['status' => TRUE]))->save();
    node::create($this->getValidParams(['type' => 'article']))->save();
    node::create($this->getValidParams(['status' => FALSE]))->save();

    $nids = array_column(views_get_view_result('pages'), 'nid');

    $this->assertEquals([1], $nids);
}

private function getValidParams(array $overrides = []) {
    return array_merge([
        'status' => TRUE,
        'title' => $this->randomString(),
        'type' => 'page',
    ], $overrides);
}
```


Testing modules/custom/tdd_dublin/tests/src/Kernel

.

Time: 8.9 seconds, Memory: 6.00MB

OK (1 test, 4 assertions)



Oliver Davies

@opdavies



Changed my example TDD Drupal module bit.ly/2AhZHLs from functional tests to kernel tests. Run time dropped from 1.5 minutes to 17 seconds. [#Drupal](#) [#Drupal8](#)



opdavies/tdd_dublin

tdd_dublin - A demo module for DrupalCamp Dublin to show test driven module development.

github.com

Demo

- Testing has made me a better developer
- Testing can produce better quality code
- Use the right type of test for the right situation
- Writing tests is an investment
- OK to start small, introduce tests gradually
- Easier to refactor
- Tests can pass, but things can still be broken. Tests only report on what they cover.

- https://github.com/opdavies/tdd_dublin
- <https://www.oliverdavies.uk/blog/2017/11/07/writing-drupal-module-test-driven-development-tdd>
- <https://www.oliverdavies.uk/blog/tdd-drupal-part-2-kernel-tests>
- <https://knpuniversity.com/screencast/phpunit>
- <https://adamwathan.me/test-driven-laravel>
- <https://laracasts.com>
- <https://drupalize.me/series/testing-drupal-7-simpletest>
- <https://www.lullabot.com/articles/an-overview-of-testing-in-drupal-8>
- <https://www.youtube.com/watch?v=jcdEp3YGa94>

Questions?