

Test Your Drupal Site The Easy Way: Use Cypress

Alex Finnarn

Whatever-end Pragmatist

[@alexfinnarn](#)

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<https://civicactions.com/careers/>

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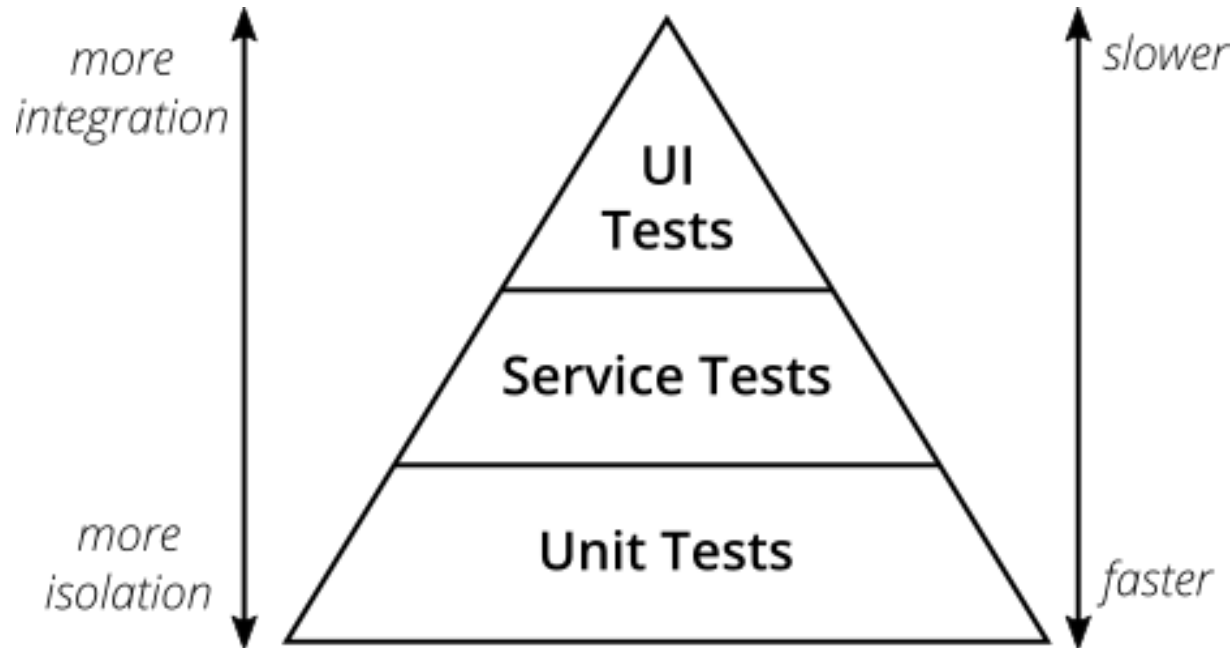
Test Your Drupal Site The Easy Way: Use Cypress

"A procedure for critical evaluation; a means of determining the **presence**, **quality**, or **truth** of something; **a trial.**" -

[Wordnik definition](#)

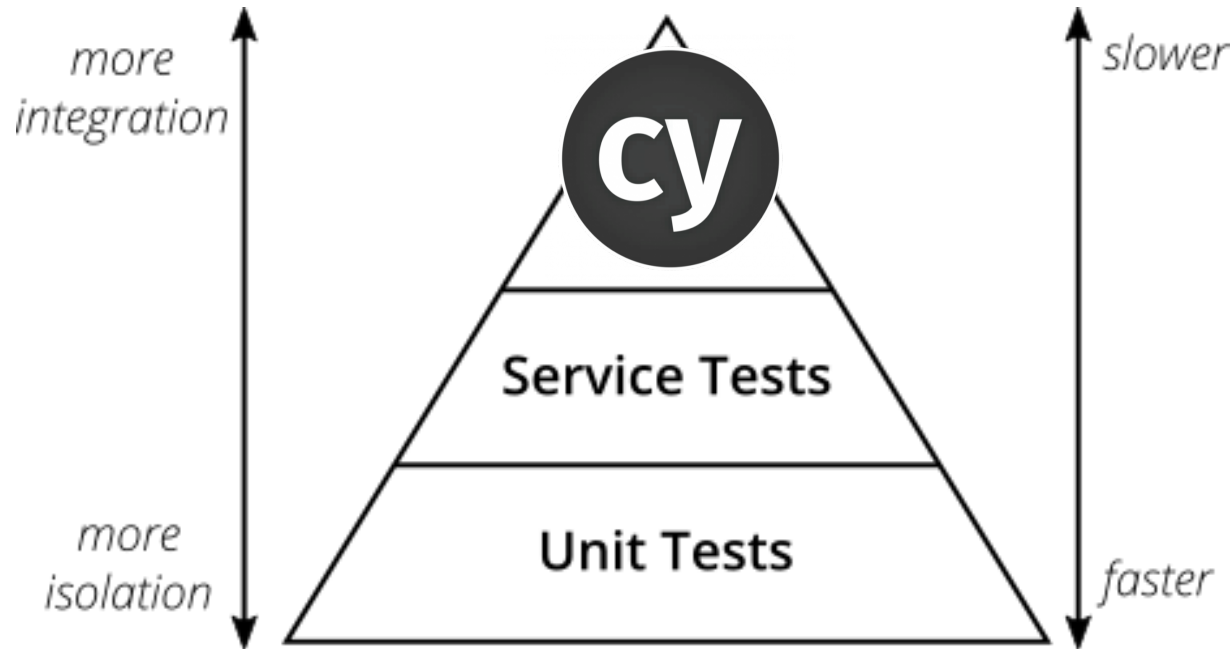
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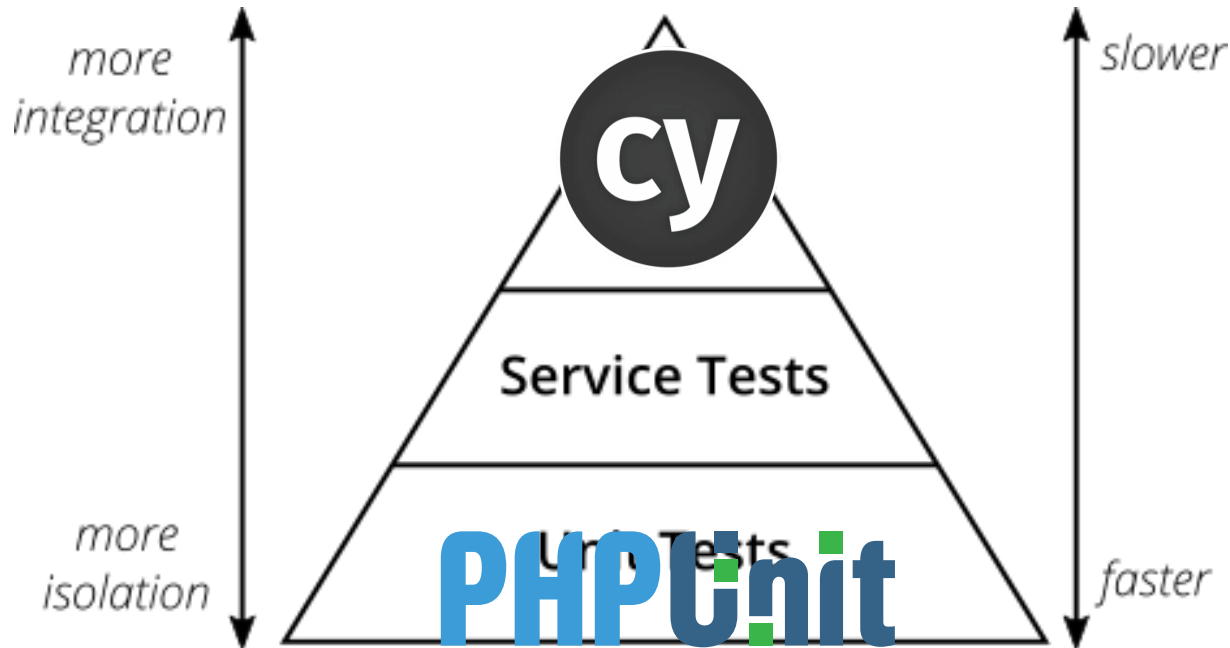
[The Practical Test Pyramid](#) - Martin Fowler
Succeeding with Agile - Mike Cohn

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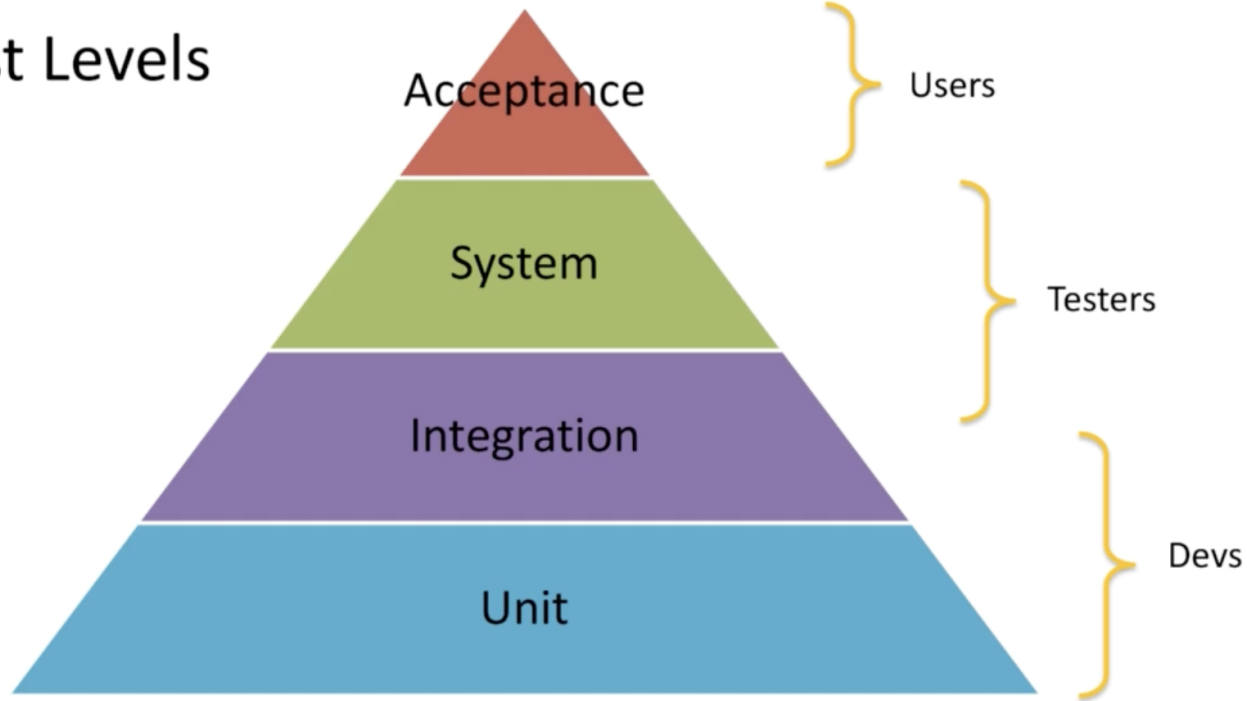
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The Practical Test Pyramid - Martin Fowler
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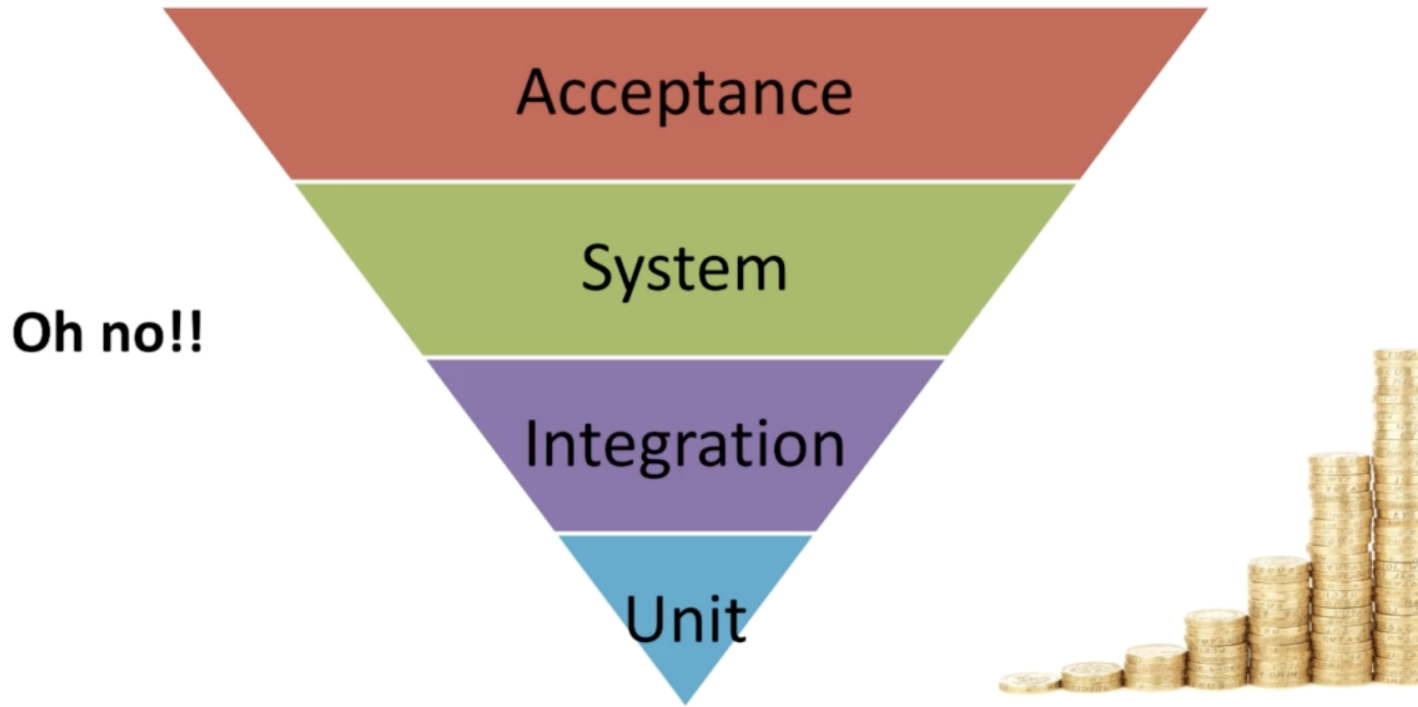
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Test Levels



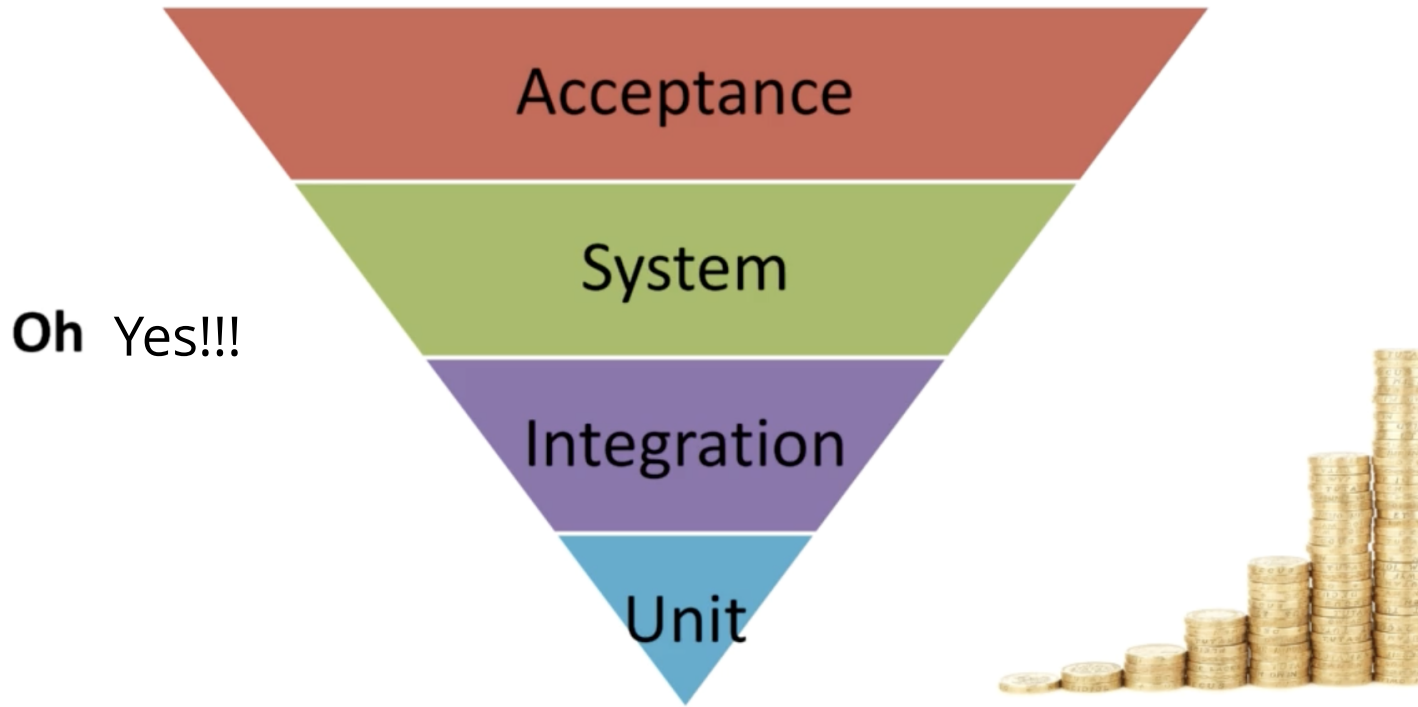
AT*SQA Course

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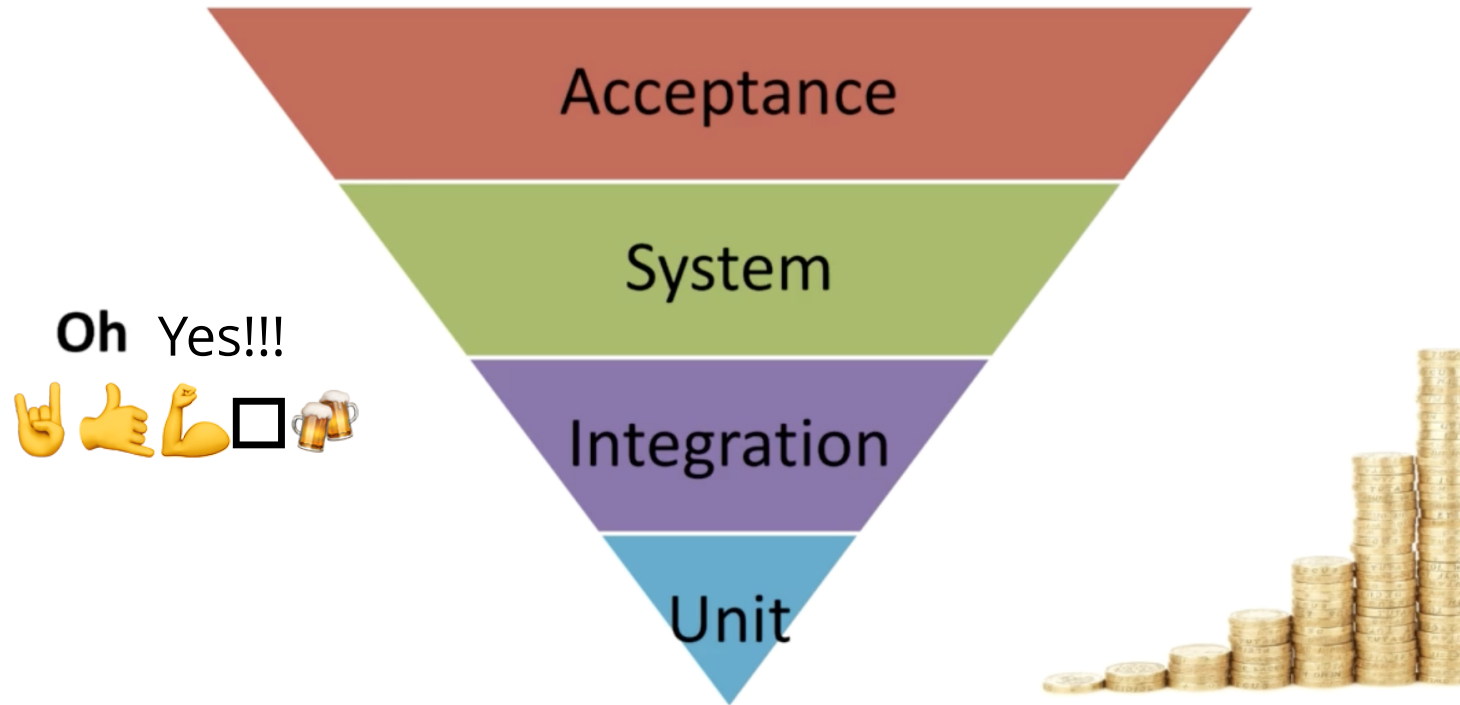
AT*SQA Course

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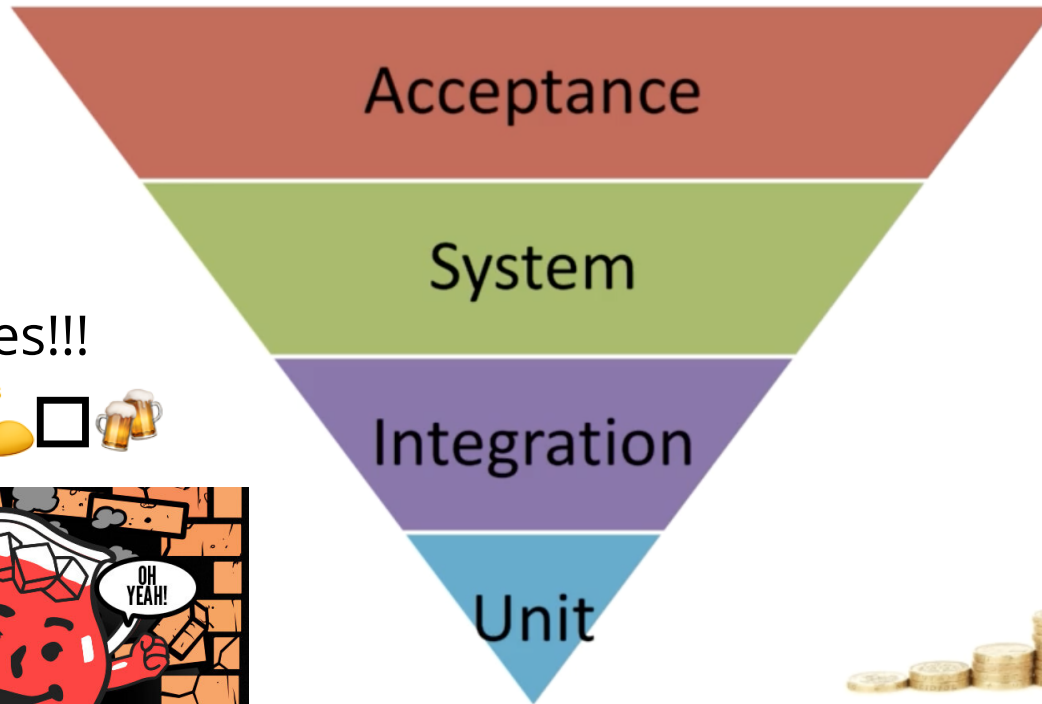
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AT*SQA Course

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Oh Yes!!!



AT*SQA Course

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Given: I am logged in as a Content Editor

When: I navigate to `"/admin/configuration"`

Then: I should see an "Access Denied" message.

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Arrange: I am logged in as a Content Editor

Act: I navigate to `"/admin/configuration"`

Assert: I should see an "Access Denied" message.

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Come for the ~~code~~ (software), stay for the
community!

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Drupal is for Mid-Market - [2012](#)

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Drupal is for Mid-Market - 2012



Drupal is for ambitious digital experiences
- 2017

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Users

Log in

Username *

Enter your Drush Site-Install username.

Password *







Enter the password that accompanies your username.

Log in

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WYSIWYG & More

Body ([Edit summary](#))

B	<i>I</i>			 ▾			Paragraph	▾	<>	 Source
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Text format ▾

Tags



Enter a comma-separated list. For example: Amsterdam, Mexico City, "Cleveland, Ohio"

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iframes

Order Summary

Description

Staff and Faculty Emergency Fund
(0126033)

Invoice Number

130249

Total

\$

50.00

Credit Card

Bank Account (USA Only)



Card Number *



Exp. Date *

Card Code *

Pay

Back to previous step

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JSON:API

```
▼ {
  ▼ "jsonapi": {
    "version": "1.0",
    ▼ "meta": {
      ▼ "links": {
        ▼ "self": {
          "href": "http://jsonapi.org/format/1.0/"
        }
      }
    }
  },
  ▼ "data": [
    ▼ {
      "type": "node--article",
      "id": "3c088491-5506-4b7f-bdd8-3f8f4b6f45f7",
      ▼ "links": {
        ▼ "self": {
          "href": "https://deets.ddev.site/jsonapi/node/article/3c08849"
        }
      },
      ▼ "attributes": {
```

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Drupal Tests

```
1 $ drush gen
2 test:
3   test:browser (browser-test)      Generates a browser based test
4   test:kernel (kernel-test)       Generates a kernel based test
5   test:nightwatch (nightwatch-test) Generates a nightwatch test
6   test:unit (unit-test)            Generates a unit test
7   test:webdriver (webdriver-test)  Generates a test that supports JavaScript
```

<https://www.drupal.org/docs/automated-testing/types-of-tests>

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Drupal CI

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Drupal CI

- Still on drupal.org but [moving to GitLab CI](#)

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"/web/core/scripts/run-tests.sh"

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- Drupal Test Traits -
<https://gitlab.com/weitzman/drupal-test-traits>

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"In the struggle between yourself
and the world, second the world."
- Franz Kafka

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<https://www.drupal.org/project/drupalexension>

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```
1 {
2   "require": {
3     "behat/behat": "~3.0",
4     "behat/mink": "~1.5",
5     "behat/mink-extension": "~2.0",
6     "behat/mink-goutte-driver": "~1.0",
7     "behat/mink-selenium2-driver": "~1.1",
8     "behat/mink-browserkit-driver": "~1.1",
9     "drupal/drupal-extension": "~3.0"
10  },
11  "config": {
12    "bin-dir": "bin/"
13  }
14 }
```







Test Your Drupal Site The Easy Way: Use Cypress

```
1 {
2   "require": {
3     "behat/mink-extension": "~2.3",
4     "behat/mink-goutte-driver": "~1.2",
5     "behat/mink-selenium2-driver": "~1.3"
6   },
7   "minimum-stability": "dev",
8   "prefer-stable": true,
9   "config": {
10    "bin-dir": "bin/"
11  }
12 }
```


Test Your Drupal Site The Easy Way: Use Cypress

```
1  sauce:
2    sauce_labs:
3      # Browser defaults to Firefox if left out.
4      browser: "chrome"
5      #browser: "internet explorer"
6      capabilities:
7        # Need to add this fake data or else Sauce Labs fails.
8        # Problem in the behat/mink-extension project.
9        # Located in vendor/behat/mink-extension/src/Behat/MinkEx
10     custom-data:
11       foo: "bar"
12       baz: "biz"
13     # OS to test against.
14     platform: "macOS 10.13"
15     #platform: "Windows 10"
16     # Version of browser to use.
17     #version: "63.0"
```

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 README.md	Update with info about changing address of mink
 behat.bundle.yml	Issue CuBoulder#3035 : Run tests at different port that accepts proxies (
 behat.local.yml	Feature/1110 Merge dev in.
 behat.travis.yml	Issue CuBoulder#3035 : Run tests at different port that accepts proxies (
 composer.json	rewrite behat tests
 composer.lock	up composer dependencies (CuBoulder#3039)

Test Your Drupal Site The Easy Way: Use Cypress

```
1  /**
2   * Wait for AJAX to finish.
3   *
4   * @Given I wait for AJAX
5   */
6  public function iWaitForAjax() {
7      $this->getSession()->wait(2000,
8          'typeof jQuery !== "undefined"
9          && jQuery.active === 0
10         && document.readyState === "complete"');
11  }
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1  /**
2   * @When /^I click the "(?P<element>(?:[^\"]|\\\"))*" element$/
3   *
4   * @param $element
5   */
6  public function iClickTheElement($element) {
7      $page_element = $this->getSession()
8          ->getPage()
9          ->find("css", $element)
10         ->click();
11  }
```

Locailty of Behavior

Test Your Drupal Site The Easy Way: Use Cypress

```
1 @layout
2 Scenario Outline: The layout settings form should
3   be available for certain roles.
4
5   Given I am logged in as a user with the <role> role
6   When I am on "admin/config/content/express-layout"
7   Then I should not see <message>
8
9   Examples:
10    | role           | message           |
11    | edit_only      | "the message..."
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1 # 2) TEST THAT A SIMPLE BLOCK CAN BE CREATED AND REVISED
2 Scenario: Block Functionality - A very simple Slider can be created
3   Given I am logged in as a user with the "site_owner" role
4     And I am on "block/add/slider"
5     And fill in "edit-label" with "Slider Label"
6     And fill in "edit-title" with "My Slider Title"
7     And I fill in "edit-field-slider-slide-und-0-field-slider-image-und-0-alt" with
8     And I attach the file "behatBanner1.jpg" to "edit-field-slider-slide-und-0-fie
9     When I press "edit-submit"
10    Then I should be on "block/slider-label/view"
11    And I should see "My Slider Title"
12
13    And CU - I should...cry :(
```

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Test Your Drupal Site The Easy Way: Use Cypress

"Cypress is a next generation front end testing tool built for the modern web. We **address the key pain points** developers and QA engineers face when testing modern applications."

<https://docs.cypress.io/guides/overview/why-cypress>

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```
~/S/p/deets >>> yarn cy:open
```

```
yarn run v1.22.19
```

```
$ cypress open --e2e --browser electron
```

```
It looks like this is your first time using Cypress: 12.7.0
```

```
✓ Verified Cypress! /Users/alexfinnarn/Library/Caches/Cypress/12.7.0/Cypress.app
```

```
Opening Cypress...
```

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Welcome to Cypress!

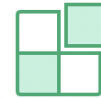
[Review the differences between each testing type →](#)



E2E Testing

Build and test the entire experience of your application from end-to-end to ensure each flow matches your expectations.

Configured



Component Testing

Build and test your components from your design system in isolation in order to ensure each state matches your expectations.

Not Configured

Twig component testing

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Choose a browser

Choose your preferred browser for E2E testing.

 Chrome v111	 Electron v106	 Firefox v109
--	---	---

 Start E2E Testing in Electron

← Switch testing type

Cypress Docker with browsers

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```
1 describe('Authentication tests', () => {
2
3   it('logs in without custom command', function () {
4     cy.visit('/user/login');
5     cy.get('#edit-name').type('admin');
6     cy.get('#edit-pass').type('1234!');
7     cy.get('input[value="Log in"]').click();
8
9     cy.visit('/admin/content');
10    cy.get('h1.page-title')
11      .should('be.visible')
12      .contains('Content');
13  });
14 });
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1 Cypress.Commands.add('login', (user, password) => {
2   return cy.session(user, () => {
3     cy.request({
4       method: 'POST',
5       url: '/user/login',
6       form: true,
7       body: {
8         name: user,
9         pass: password,
10        form_id: 'user_login_form'
11      }
12    });
13  },
14  {
15    cacheAcrossSpecs: true,
16  });
17 });
18
19 cy.login('admin', '1234!');
```

Cypress custom commands + cy.session()

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```
1 // Upload an image.
2 cy.get('#edit-field-image-0-upload')
3   .selectFile('cypress/images/bee-hat-drupalicon-small.png');
4 cy.get('input[name="field_image[0][alt]"]')
5   .type('Beehat Druplicon');
6
7 // Fill out the body field.
8 cy.get('div[aria-label="Editor editing area: main"]').click();
9 cy.realType('Bob{enter}McDougle{enter}');
10 cy.get('button[data-cke-tooltip-text="Bulleted List"]').realClick();
11 cy.realType('Milk{enter}Eggs{enter}Bread{enter}{enter}');
12 cy.get('button[data-cke-tooltip-text="Block quote"]').realClick();
13 cy.realType('It\'s today, not yesterday!');
14
15 // Add tags to the article.
16 cy.get('#edit-field-tags-target-id').type('foo,bar{enter}');
17
18 // Save the article node.
19 cy.get('#edit-submit').click();
```

[cypress-real-events](#)

Test Your Drupal Site The Easy Way: Use Cypress

```
1 <button
2   data-cy="submit"
3   id="the-button"
4   class="btn btn-large"
5 >
6   Submit
7 </button>
8
9 <script>
10  // Brittle.
11  cy.get('button.btn').click()
12  // Safer.
13  cy.get('[data-cy="submit"]').click()
14 </script>
```

Selecting Elements

Test Your Drupal Site The Easy Way: Use Cypress

```
1 // Confirm the article was created with the right title, body, image, and tags.
2 cy.get('.title').contains( 'New Article' );
3
4 cy.get('img[alt="Beehat Druplicon"]').should('be.visible');
5
6 cy.get('.text-content.field--name-body').should('have.html',
7   `<p>Bob</p><p>McDoogle</p><ul><li>Milk</li><li>Eggs</li><li>Bread</li>`
8 + `</ul><blockquote><p>It's today, not yesterday!</p></blockquote>`);
9
10 cy.get('.field--name-field-tags a').eq(0).contains('foo');
11 cy.get('.field--name-field-tags a').eq(1).contains('bar');
12
13 expect({ name: 'Jane' }).to.deep.equal({ name: 'Jane' })
```

Chai assertions

Test Your Drupal Site The Easy Way: Use Cypress

```
1 // Without an alias.
2 beforeEach(() => {
3   cy.get('button').then($btn => {
4     const text = $btn.text()
5   })
6 })
7 it('does not have access to text', () => {
8   // how do we get access to text ???
9 })
10
11 // With an alias.
12 beforeEach(() => {
13   // alias the $btn.text() as 'text'
14   cy.get('button').invoke('text').as('text')
15 })
16 it('has access to text', function () {
17   this.text // is now available
18
19   cy.get('@text').should('equal', 'The Button')
20 })
```

Cypress Aliases

Test Your Drupal Site The Easy Way: Use Cypress

```
1 // Stub two requests and don't assert until loaded...
2 cy.intercept('GET', '/api/users', {fixture: 'users-list.json'}).as('getUsers')
3 cy.intercept('GET', '/api/users/*').as('getUsersData')
4 cy.visit('/users-list-page');
5 cy.wait(['@getUsers', '@getUsersData']);
6 cy.get('ul[data-testid="users-list"] li').first().should('have.text', 'John Doe')
7
8 // Add a language header to a response.
9 cy.intercept('/es/*', (req) => {
10   req.on('before:response', (res) => {
11     res.headers['x-language-origin'] = 'es-us'
12   })
13 })
14
15 // Track GET and POST of the media browser URL.
16 cy.intercept(
17   '/media/browser?render=media-popup&id=media_wysiwyg&plugins='
18 ).as('mediaBrowserURL')
19 cy.wait('@mediaBrowserURL').get('iframe#mediaBrowser').iframe()
20   .then((iframes) => {})
```

[Cypress Network Requests Guide](#)

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Test Your Drupal Site The Easy Way: **Use Cypress**

Feature

Test Your Drupal Site The Easy Way: **Use Cypress**

Feature

Bug

Test Your Drupal Site The Easy Way: **Use Cypress**

Feature

Bug

/e2e

Test Your Drupal Site The Easy Way: Use Cypress

Feature

Bug

/e2e

/regressions

/editor

/content_admin

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Feature

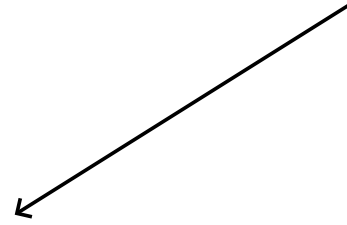
Bug

/e2e

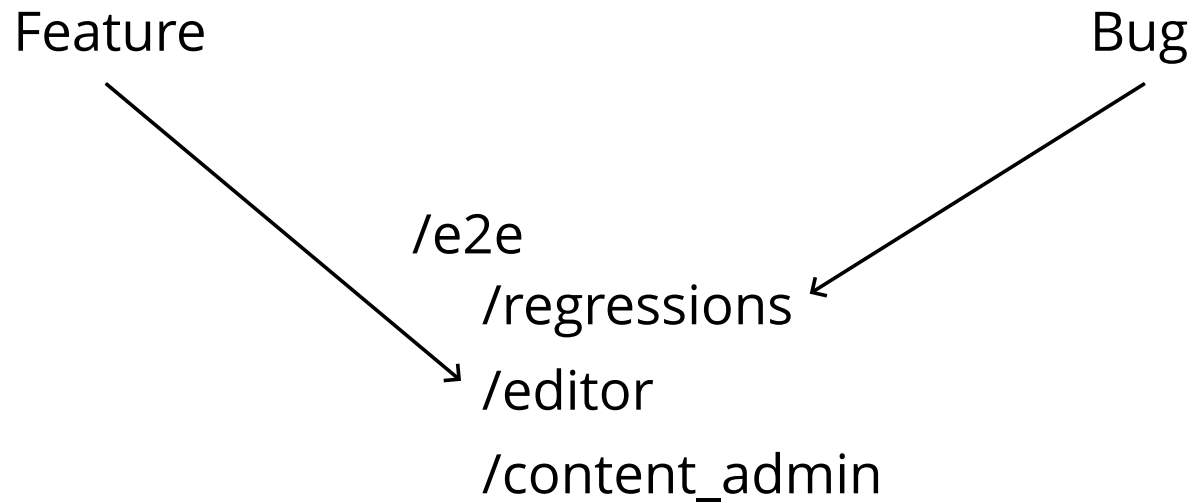
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/editor

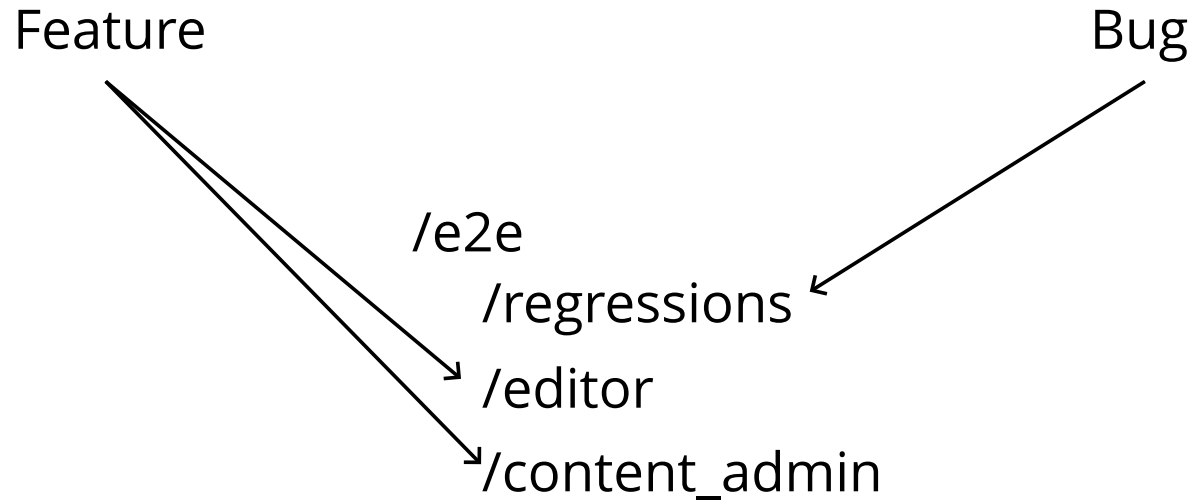
/content_admin



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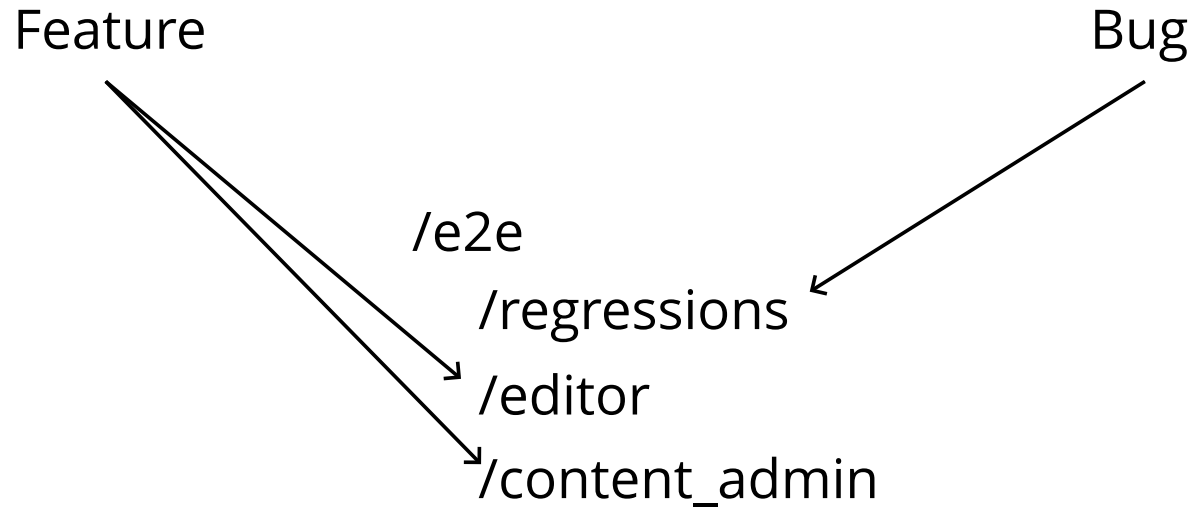


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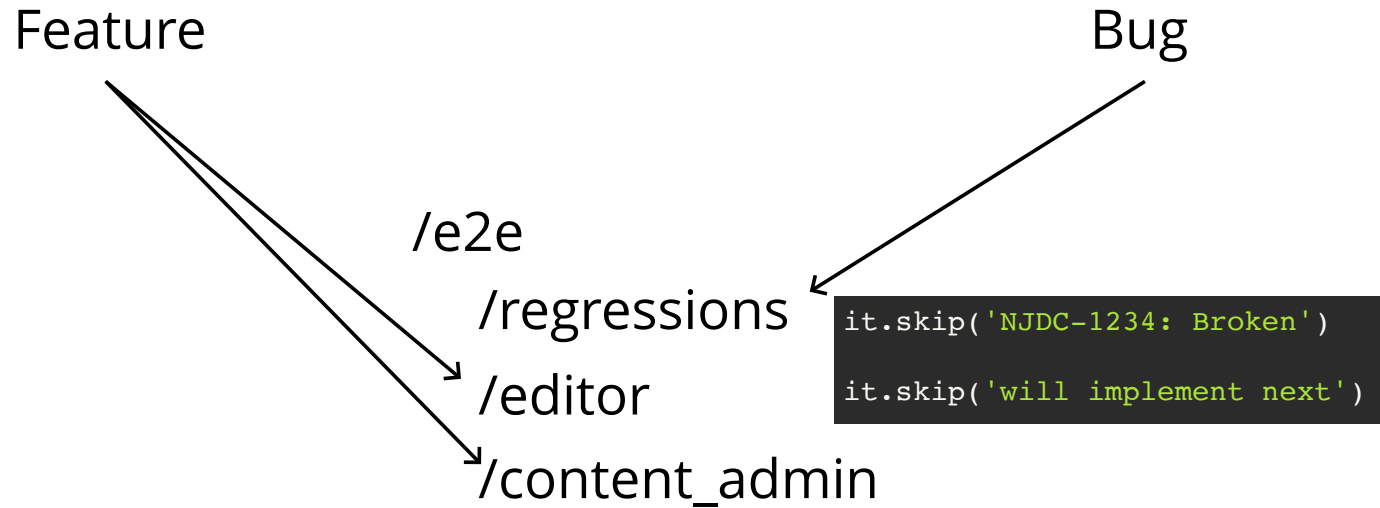


...

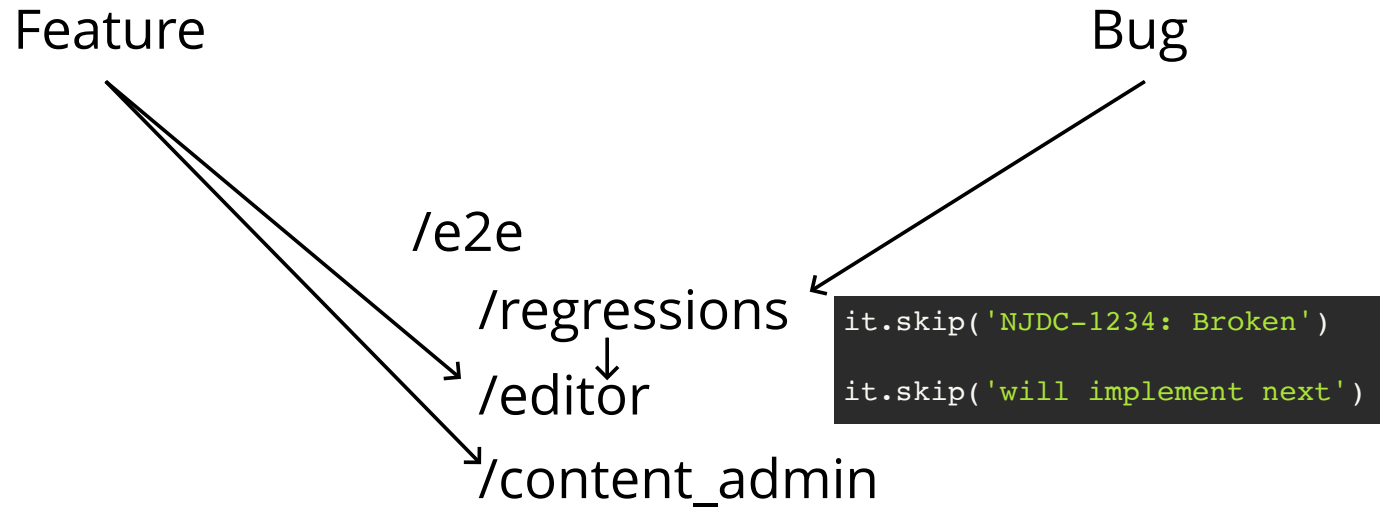
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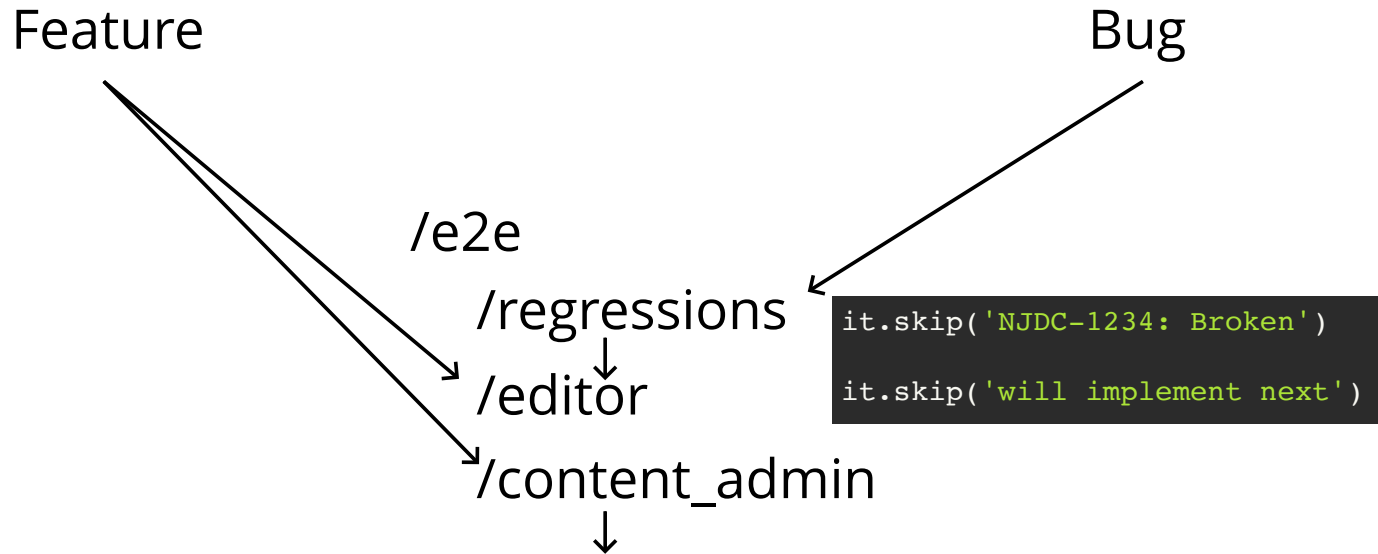
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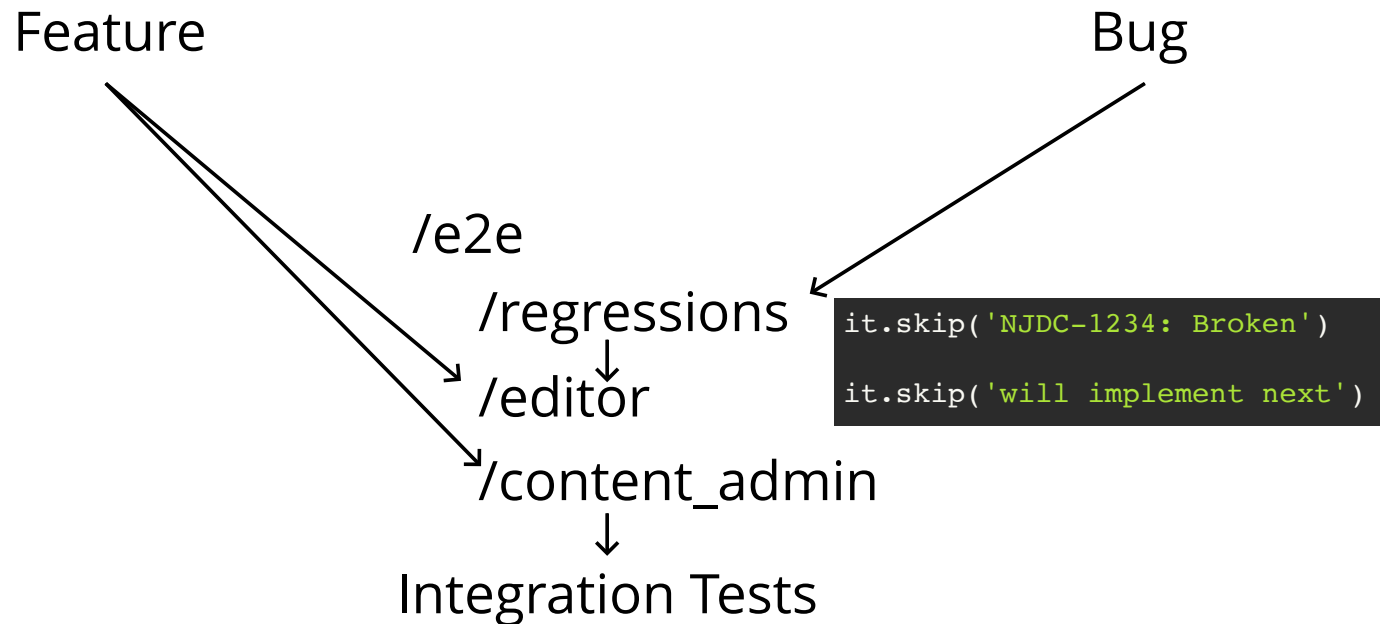
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Test Your Drupal Site The Easy Way: Use Cypress

```
1
2 // @see https://jira.hell/NJDRC-1234 for more details.
3 it('can correctly preview a node', () => {
4   cy.login('administrator');
5   cy.visit('/node/add/page');
6
7   cy.get('#edit-title-0-value')
8     .type('Test page for preview');
9
10  cy.get('#edit-grpselections')
11    .select(1);
12
13  cy.get('#edit-preview')
14    .click();
15
16  cy.get('.node-preview-container')
17    .should('be.visible');
18 });
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1 describe('Verify some CSS and stuff...', () => {
2   before(() => {
3     cy.visit('/the-page');
4   })
5
6   it('Verify heading has correct CSS and title', () => {
7     cy.get('h1')
8       .should('have.css', 'font-family', '"Open Sans", helvetica, sans-serif')
9       .should('contain', 'The title I want to see')
10    cy.visit('/about');
11  })
12
13  it('Verify the special field does not exist', () => {
14    cy.get('h1 > span.field--name-special').should('not.exist')
15  })
16
17  it('Verify the trademark has correct CSS', () => {
18    cy.get('.field__item span.trademark-entity')
19      .should('have.css', 'font-family', '"Open Sans", helvetica, sans-serif')
20      .should('contain', '™')
21  })
22 })
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1 describe('Tests and stuff', () => {
2
3   it('Verify some CSS and stuff...', () => {
4     cy.visit('/the-page');
5
6     cy.get('h1')
7       .should('have.css', 'font-family', '"Open Sans", helvetica, sans-serif')
8       .should('contain', 'The title I want to see')
9
10    cy.visit('/about');
11
12    cy.get('h1 > span.field--name-special').should('not.exist')
13
14    cy.get('.field__item span.trademark-entity')
15      .should('have.css', 'font-family', '"Open Sans", helvetica, sans-serif')
16      .should('contain', '™')
17    })
18  })
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1 describe('FAQs tests', function () {
2   it('should load the FAQs list and navigate to answer sections', function () {})
3   it('should load individual FAQ pages', function () {})
4 })
5
6 describe('Credit card Donation-related tests', function() {
7   it('Makes a single, plain donation via credit card' +
8     'and tests default form validation', function () {})
9 })
10
11 describe("Giving Form Query Parameters Modifications", () => {
12   it('defaults without query parameters', function() {})
13   it('suggested amount with the fund\'s suggested_amount field', function() {})
14   it('suggested amount with `amount` from `defaultGivingOptions`', function() {})
15   it('suggested amount with `amount` from `other-amount`', function() {})
16   it('show recurring schedule with annually', function() {})
17 })
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1 describe('Authentication tests - using a matrix', () => {
2   const testUsers = [
3     {name: 'da_boss', one: 'Content', two: 'Basic site settings'},
4     {name: 'editor', one: 'Content', two: 'Access denied'},
5     {name: 'a-failure', one: 'Access denied', two: 'Access denied'}
6   ];
7   testUsers.forEach(user => {
8     it(`Logs in as ${user.name}`, () => {
9       // Log in as the user.
10      cy.login(user.name, user.name);
11
12      // Go visit a page that requires authentication.
13      cy.visit('/admin/content', {failOnStatusCode: false});
14
15      // Confirm the user sees the right message.
16      cy.get('h1.page-title').contains(user.one);
17
18      // Go visit a page that requires more authentication.
19      cy.visit('/admin/config/system/site-information', {failOnStatusCode: false});
20
21      // Confirm the user sees the right message.
22      cy.get('h1.page-title').contains(user.two);
23    })
24  })
25 })
```

Test Your Drupal Site The Easy Way: Use Cypress

```
1 class UserAdminTest extends BrowserTestBase {
2
3   public function testRateManagerAccess() {
4     // Anonymous users should have no access at all.
5     $this->drupalGet('/admin/ratemanager');
6     $this->assertSession()->statusCodeEquals(403);
7
8     // Create a user with role.
9     $low_user = $this->createUser();
10    $low_user->addRole('editor_offer_only');
11    $low_user->save();
12
13    // Log in a privileged user with no supplier.
14    $this->drupalLogin($low_user);
15    $this->drupalGet('/admin/ratemanager');
16    $this->assertSession()->statusCodeEquals(200);
17  }
```

Test Your Drupal Site The Easy Way: **Use Cypress**

Cypress Downsides:

Test Your Drupal Site The Easy Way: Use Cypress

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- Still [no iframe support](#)

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Test Your Drupal Site The Easy Way: Use Cypress

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- Still **no iframe support**
- Can't handle **keycloaks, iframes, multiple Tabs, multiple windows**
- Limited to JS/TS - could be an advantage but not as much with Drupal
- Playwright **has a lot of advantages over Cypress**

Images

- Kool-aid man
- Dragon breathing fire

CivicActions