

Automated Testing



Types of Automated Tests

- **Functional Tests**

- Automated tests, typically managed by the maintainer of a Contrib project
- Installs a fresh, empty, instance of Drupal on a web server to test for expected behavior of the Core base code and other Drupal Contrib modules (also known as plugins)
- Example: Testing that Drupal 8 installs and that content can be created, edited, and deleted on Deb's shiny new Drupal 8 server.

- **Unit Tests**

- Very low-level tests to check for expected functionality of a simple operation
- Example: If I have a function that converts Fahrenheit temperatures to Celsius, I might write a unit test that verifies that 32 degrees F converts to 0 degrees C.

- **Feature Tests**

- This is Eric's focus!
- Testing a new project or feature on a working site, populated with content
- Verifies that a new feature for one part of our site does not have unintended consequences elsewhere on our site.

Behavior Driven Development

- **BDD** emphasizes use of automated tests written in plain English
- **Gherkin** language: A common syntax for writing BDD feature tests
- **Behat**: A Drupal-friendly framework used to interpret feature tests written in the Gherkin language

Feature: Some terse yet descriptive text of what is desired
In order to realize a named business value
As an explicit system actor
I want to gain some beneficial outcome which furthers the goal

Scenario: Some determinable business situation
Given some precondition
 And some other precondition
When some action by the actor
 And some other action
 And yet another action
Then some testable outcome is achieved
 And something else we can check happens too

Generic example of a feature test

Feature: Serve coffee

In order to earn money
Customers should be able to
buy coffee at all times

Scenario: Buy last coffee

Given there are 1 coffees left in the machine
And I have deposited 1 dollar
When I press the coffee button
Then I should be served a coffee

Behat feature tests for spine-health.com!

- Basic content tests that don't require a graphical web browser:

Feature: Test DrupalContext

In order to prove the Drupal context using the blackbox driver is working properly
As a developer

I need to use the step definitions of this context

Scenario: Test the ability to find a heading in a region

Given I am on the homepage

When I click "**Conditions**"

Then I should see the heading "**Pain Conditions Health Center**" in the "**title**" region

And take a screenshot

Scenario: Clicking content in a region

Given I am at "**treatment**"

When I click "**Alternative Care**" in the "**content**" region

Then I should see "**Alternative Care Topics**" in the "**left sidebar**"

And I should see the link "**Acupuncture**" in the "**left sidebar**" region



Blackbox: a non-graphical web browser

- Used for checking text content and basic html elements
- Does not support browsing our site as a mobile device
- “Screenshot” from Blackbox’s non-graphical web browser:



Graphical feature tests for spine-health.com

- Many feature tests require the use of a graphical web browser, such as:

@javascript

Feature: VH Homepage Ads

In order to prove ads on the site display as intended

As an anonymous user

I need to verify common advertisement entities.

@desktop

Scenario: Assert ad on desktops is in "right sidebar" region with width=300

Given I am on the homepage

And I wait 2 seconds

Then I should see 1 advertisement of width "300" in the "right sidebar"

And the "#block-vh-dfp-dfp-ad-r1" element should contain "advertisement"

And take a screenshot

@mobile

Scenario: Assert ad on mobile is in "right sidebar" region with width=300

Given I am on the homepage

And I wait 2 seconds

Then I should see 1 advertisement of width "300" in the "right sidebar"

And the "#block-vh-dfp-dfp-ad-r1m" element should contain "advertisement"

And take a screenshot



Driving Google Chrome with Behat

- Essential for checking graphical functionality
- Supports browsing as either a desktop or mobile device
- Screenshots from Google Chrome as taken with Behat:



SPINE-health
— Knowledge from Veritas —

Lumbar Herniated Disc: What You Should Know

A herniated disc in the lower back can cause low back pain and/or leg pain...

CONDITIONS
When Is a Stiff Neck Serious?

CONDITIONS
Piriformis Syndrome Treatment

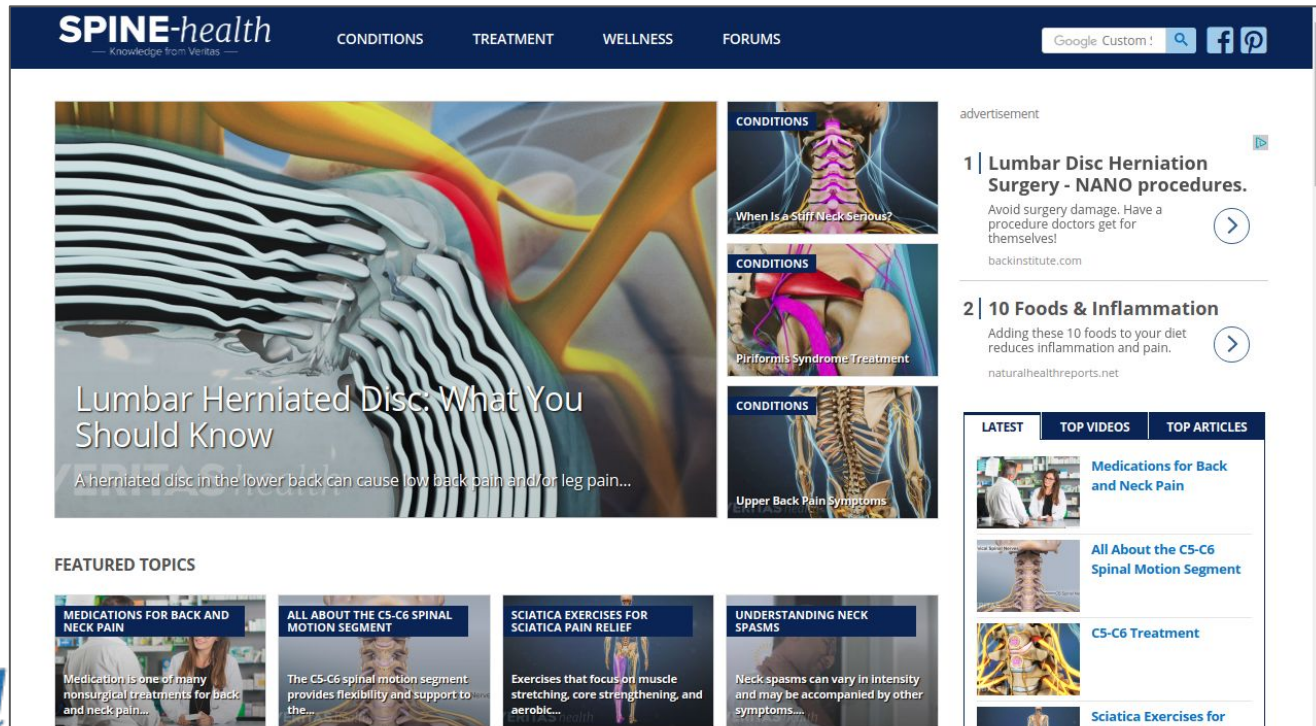
CONDITIONS
Upper Back Pain Symptoms

CONDITIONS
When Is a Stiff Neck Serious?

CONDITIONS
Piriformis Syndrome Treatment

CONDITIONS
Upper Back Pain Symptoms

FEATURED TOPICS



SPINE-health
— Knowledge from Veritas —

CONDITIONS TREATMENT WELLNESS FORUMS

Google Custom: [Search] [Facebook] [Pinterest]

Lumbar Herniated Disc: What You Should Know

A herniated disc in the lower back can cause low back pain and/or leg pain...

CONDITIONS
When Is a Stiff Neck Serious?

CONDITIONS
Piriformis Syndrome Treatment

CONDITIONS
Upper Back Pain Symptoms

1 | Lumbar Disc Herniation Surgery - NANO procedures.
Avoid surgery damage. Have a procedure doctors get for themselves!
backinstitute.com

2 | 10 Foods & Inflammation
Adding these 10 foods to your diet reduces inflammation and pain.
naturalhealthreports.net

FEATURED TOPICS

MEDICATIONS FOR BACK AND NECK PAIN
Medication is one of many nonsurgical treatments for back and neck pain...

ALL ABOUT THE C5-C6 SPINAL MOTION SEGMENT
The C5-C6 spinal motion segment provides flexibility and support to the...

SCIATICA EXERCISES FOR SCIATICA PAIN RELIEF
Exercises that focus on muscle stretching, core strengthening, and aerobic...

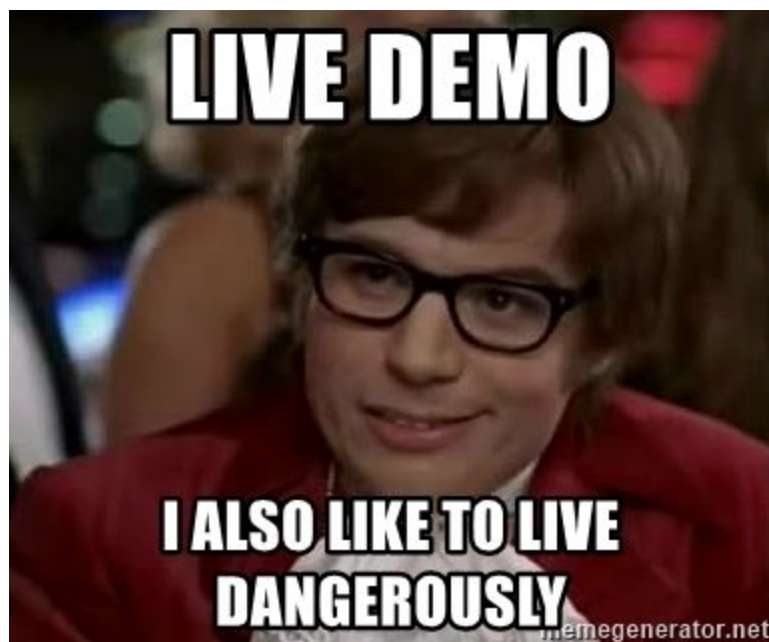
UNDERSTANDING NECK SPASMS
Neck spasms can vary in intensity and may be accompanied by other symptoms...

C5-C6 Treatment

Medications for Back and Neck Pain

All About the C5-C6 Spinal Motion Segment

Sciatica Exercises for Sciatica Pain Relief



Automated Testing - Wrapping up

- Gherkin language is simple to read, but:
 - The Behat code that interprets Gherkin for driving a browser is complex
 - Expanding Behat's functionality is complex
 - Limited documentation online for expanding graphical web browser functionality.
- Lots of in-house custom Behat code to do things like:
 - Browse site as a mobile device
 - Hover over a pop-up menu and click a sub-menu link
 - Check for video and advertisement properties
- To do:
 - Write more tests!
 - Currently: 13 Features containing 60 Scenarios
 - Nearly all existing Scenarios are for spine-health.com
 - Expand automated testing to other health sites
 - Organize feature tests in a logical way
 - Create a cloud-based service to routinely run Behat tests, similar to Are-You-Okay

BRACE YOURSELF

**AUTOMATED TESTING IS
COMING**

