

Tips & Trick with Selenium

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Resume

- Worked with Selenium for 5 years
- Currently working at Groupon
- Blog: www.agilesoftwaretesting.com

The Groupon logo is displayed in a bold, green, sans-serif font. The word "Groupon" is in all caps, with a trademark symbol (TM) to the upper right of the letter "N". The logo is centered within a white rectangular box.

GROUPON™

Why I am here?

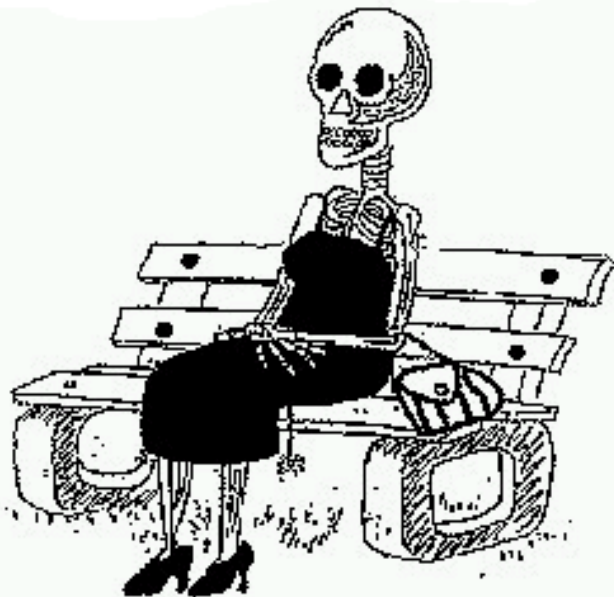
- I enjoy finding new ways to test complicated things with Selenium
- I want to share somethings I had to learn the hard way myself
- I want to start a small "Selenium Examples" project

Source Code

github.com/dimacus/SeleniumTipsAndTricks

Wait For AJAX

Waiting...



Wait For AJAX

- More web applications use AJAX to load content
- Selenium is not very smart about AJAX
- You need to add your own wait for AJAX method

Methods used

- Selenium 1
 - Ruby
 - wait_for_condition
 - Java
 - waitForCondition
- Selenium 2
 - Ruby
 - execute_script
 - Java
 - executeScript

Selenium 1

- `wait_for_condition` method waits for JS condition to be true
- To get to current window DOM
 - `selenium.browserbot.getCurrentWindow()`
- Condition example for jQuery
 - `selenium.browserbot.getCurrentWindow().jQuery.active == 0`

Selenium 2

- `execute_script` method executes JS method
- Example
 - `selenium.execute_script("return jQuery.active")`
 - Returns integer
 - 0 no longer active

Non jQuery examples to check

- jQuery
 - `jQuery.active`
- Prototype
 - `Ajax.activeRequestCount`
- Dojo
 - `dojo.io.XMLHTTPTransport.inFlight.length`

Screenshots

file:///Users/presentation/Desktop/SeleniumTipsAndTricks/Examples/Screenshot/cucumber/TEST-OUTPUT.html

Feature: Take a screenshot only on a failing test

Check the env.rb, in the After section for the code

Scenario: Take a screenshot

```
Given I am on groupon.com
And I navigatoe to google.com

And this scenario will fail on purpose
<true> expected but was
<false>. (Test::Unit::AssertionFailedError)


./features/support/support_steps.rb:19:in `~/^this scenario will fail on purpose$/'
features/take_a_screenshot_only_on_failure.feature:9:in `And this scenario will fail on purpose'

17
18 Given /^this scenario will fail on purpose$/ do
19   assert_equal(true, false)
20 end
21 # gem install syntax to get syntax highlighting
```

Screenshot

+Ви Пошук Зображення Карти Новини Gmail Документи Календар Перекладач Більше -

Увійти



Google Україна

Google Search I'm Feeling Lucky

Google.com.ua на руском

Screenshot

- Selenium allows you to take screenshots of the whole web-page
- Does not care if multiple windows are open
- Ruby
 - `save_screenshot`
- Java
 - `getScreenshotAs`

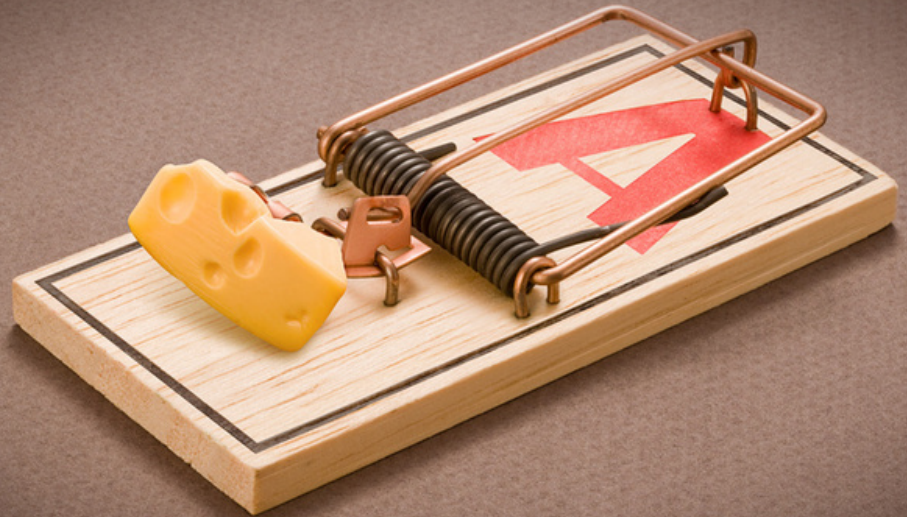
Take a screenshot on failure in Cucumber

- Cucumber has HTML reports
- You can attach screenshots into report
- Example
 - `embed("screenshot.png", "image/png")`

Video capture of tests

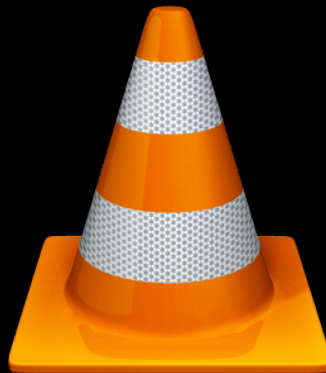


Video



Video capture of test

- Only on Linux for now
- Working on windows/mac
 - I'm looking for a good free screen capture program.
 - Possibly VLC



Video capture of test

- Record the test
- If test passes, delete the video
- If test fails, publish video into CI

Video capture of test

- Using “headless” gem
- Actual work:
 - Start XVFB
 - `xvfb :1 -screen 1280x1024x24`
 - Start ffmpeg
 - `ffmpeg -f x11grab -i :1...`
 - Write to `/tmp/video.mov`
 - Delete movie if test passes
 - Copy movie to project if fails

Video capture of parallel tests

- Use different DISPLAY
- Start XVFB for every test instance

Firefox profiles Selenium 1

- Can use existing firefox profile
- Set everything up once, and have it in the test
 - Extensions
 - SSL certificates
 - Passwords

Firefox profiles Selenium 2

- Setup profile on the fly in code
 - Settings
 - Extensions

Selenium 2 profile

```
profile = Selenium::WebDriver::Firefox::Profile.new
```

```
profile["some_setting"] = 1
```

```
selenium = Selenium::WebDriver.for :firefox, {:profile => profile}
```

In URL Basic Auth Firefox

- Selenium 1
 - Modfy
 - `network.http.phishy-userpass-length = 255`
- Selenium 2
 - Already supported in webdriver 2.14+

Auto download files



Auto download files

- `browser.helperApps.neverAsk.saveToDisk`
 - List of MIME types to always save
 - `application/pdf`
 - `application/zip`
- `browser.download.dir`
 - Default folder to save files to
 - `browser.download.lastDir`
 - Last save directory
- `browser.download.folderList`
 - Set 2, to auto save to the default folder

Parsing PDF

- Ruby
 - pdf-reader gem
- Java
 - **Apache PDFBox**

Headless Tests



Headless Tests

- HTMLUnit
 - Built into Selenium2 stand alone jar
 - Runs 2x faster for simple page loads
 - Emulates browsers
 - IE
 - Firefox
 - etc..
- capybara-webkit gem
 - Uses Nokia's QT framework
 - <https://github.com/thoughtbot/capybara-webkit>

Tests in parallel



Tests in parallel

- Using fork in linux based systems
- Windows does not have fork support 😞
- Ruby
 - parallel_tests gem
 - or parallel gem
 - or Unix fork

Parallel Tips

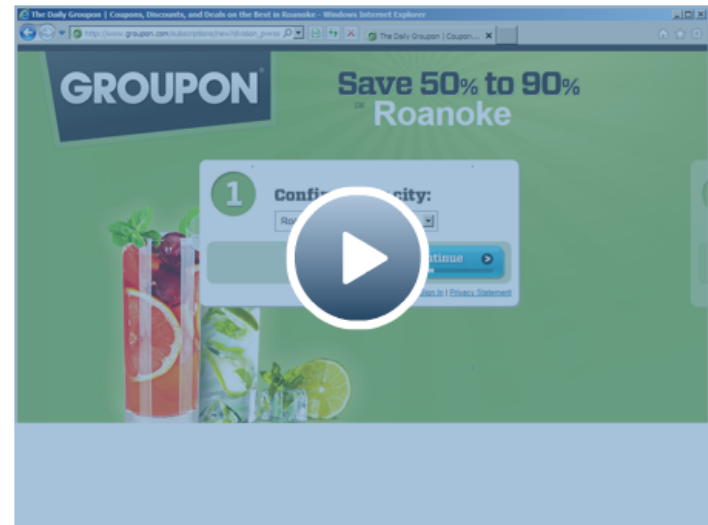
- Use separate databases for each test run
- Tests SHOULD NOT depend on each other
- Run in separate DISPLAYs on linux boxes




Sauce

- Run selenium on
 - Multiple browsers
 - Operating systems
 - In parallel
 - EC2 cloud
- Selenium 1 & 2 support
- Screenshots of every step
- Movie of every test
- www.saucelabs.com

SauceLabs

Test ID: 0277d35ed39456ebac0757ba4fb0aaab
Platform: Windows 2008 iexplore 9.
Created: Wed Feb 22 2012 00:46:24 GMT+0200 (EET)
Started: Wed Feb 22 2012 00:46:26 GMT+0200 (EET)
Ended: Wed Feb 22 2012 00:47:38 GMT+0200 (EET)
Duration: 72 seconds
Wait Time: 2 seconds
Visibility: Private [make public]
Build: ? [fix this]
Tags: None [add some]
Custom Data: None [add some]
Pass/Fail: ? [fix this]
Status: Completed
Downloads: Video , Raw Log



	POST url url: http://groupon.com/subscriptions/new?division_p=roanoke [3.44s] 00:06
	POST element using:xpath value://option[@value='chicago'] ELEMENT:0 [0.12s] 00:11
	POST element/0/click [0.25s] 00:12
	POST element using:link text value:Continue ELEMENT:1 [0.06s] 00:13
	POST element/1/click [0.39s] 00:13
	POST element using:id value:subscription_email_address

Sauce connect

- Small Java application
- Sets up SSH tunnel between local computer and EC2
- Allows Selenium tests to run against internal “Staging” servers

Selenium & iPhone



iPhone

- Use iPhone Simulator's Safari Browser
- Need Xcode, developer account to compile app for simulator
- No parallel support ☹
- JS alert support is not always good ☹

iPhone application testing

- Not selenium per se...
- You can test applications using Frank project
 - <http://www.testingwithfrank.com/>
 - <http://vimeo.com/21860134>