



CI FOR CSS

Creating a Visual Regression Testing Workflow

Presented by Kate Kligman

May 13, 2015

Visual Regression Testing?

E
F P
T O Z
L P E D
P E C F D
E D F C Z P

F E L O P Z D

D E F P O T E C

L E F O D P C T

F D P L T C E O

P E Z O L C F T D



E
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T O Z
L P E D
P E C F D
E D F C Z P

F E L O P Z D

D E F P O T E C

L E F O D P C T

F D P L T C E O

P E Z O L C F T D

About this Session

- ▶ Why visual regression testing?
- ▶ Headless Testing
 - Wraith
- ▶ Full Browser Testing
 - Selenium
 - WebdriverCSS
- ▶ Questions

About Me



@KateKligman



Homepage Demo

Content Demo

Great Vegetables

Lovely Vegetables

News

FAQ

[Home](#) » Homepage Demo

Homepage Demo



Content Demo

Garlic radicchio chaya. Mizuna greens moth bean horseradish urad bean? Gobo new zealand spinach; aubergine manioc mustard, celtuce winter purslane corn salad celeriac garbanzo.

Vegetables are Great



Pignut; azuki bean runner bean celeriac celery celeriac. Shallot tomatillo aubergine celeriac. Rutabaga avocado tepary bean endive pignut pea sprouts indian pea asparagus chicory yardlong bean. Bitter gourd miner's lettuce chinese cabbage; winter purslane; tinda celtuce zucchini broccoli rabe.

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Great Vegetables



Chinese Mallow kurrat garbanzo ulluco, yam sierra leone bologi pea eggplant, bamboo shoot salsify kale. Sea kale ti lagos bologi sea beet. Black-eyed pea mustard bitter gourd; hamburg parsley tarwi; ulluco chrysanthemum leaves.

Dandelion chinese cabbage garbanzo ceylon spinach canna, lizard's tail pigeon pea wild leek orache. Sorrel manioc lizard's tail scorzonera moth bean drumstick. Chaya epazote bok choy,



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FAQ

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News

FAQ

[Home](#) » Homepage Demo

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Enter your keywords

Demo Items

[Vegetables are Great](#)

May 12, 2011

[Great Vegetables](#)

October 12, 2011

[Lovely Vegetables](#)

January 11, 2012

Featured Demo Items

[Content Demo](#)

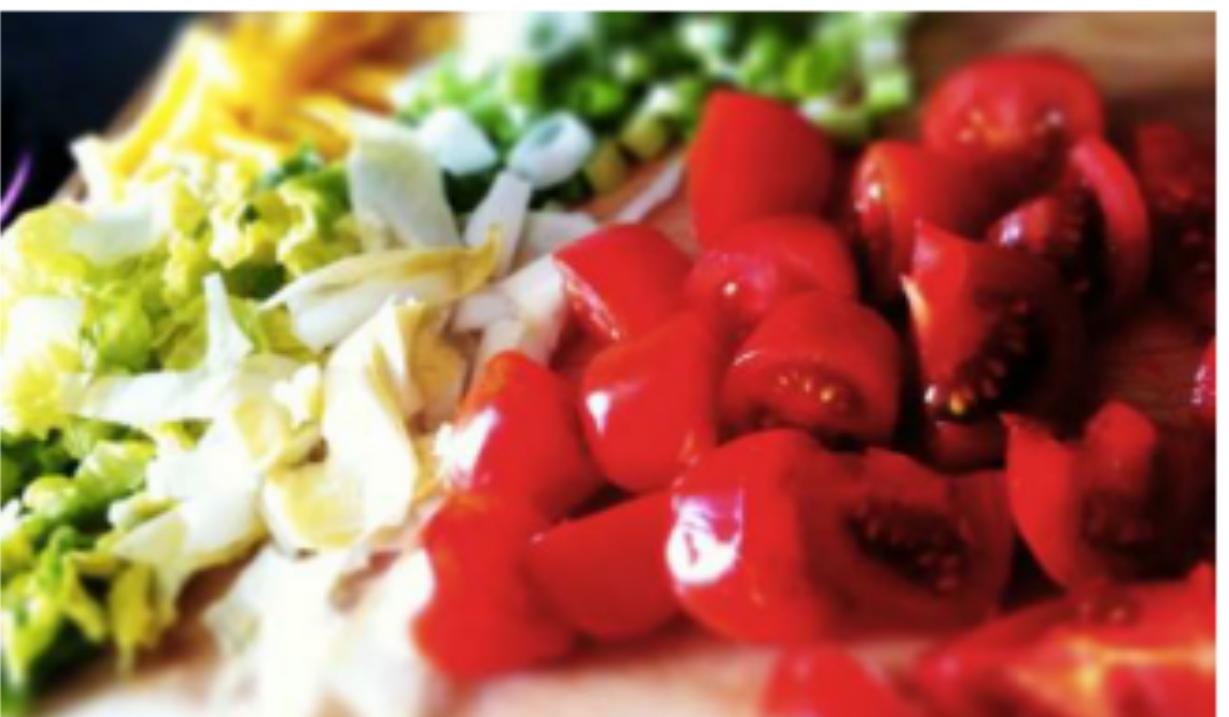
Posted by admin

Garlic radicchio chaya. Mizuna

greens moth bean horseradish urad bean? Gobo new zealand spinach; aubergine manioc mustard, celtuce winter purslane corn salad celeriac garbanzo.

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Garlic radicchio chaya. Mizuna

greens moth bean horseradish urad bean? Gobo new zealand spinach; aubergine manioc mustard, celtuce winter purslane corn salad celeriac garbanzo.

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Vegetables are Great



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Great Vegetables



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Content Demo

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 Enter your keywords

Demo Items

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Featured Demo Items

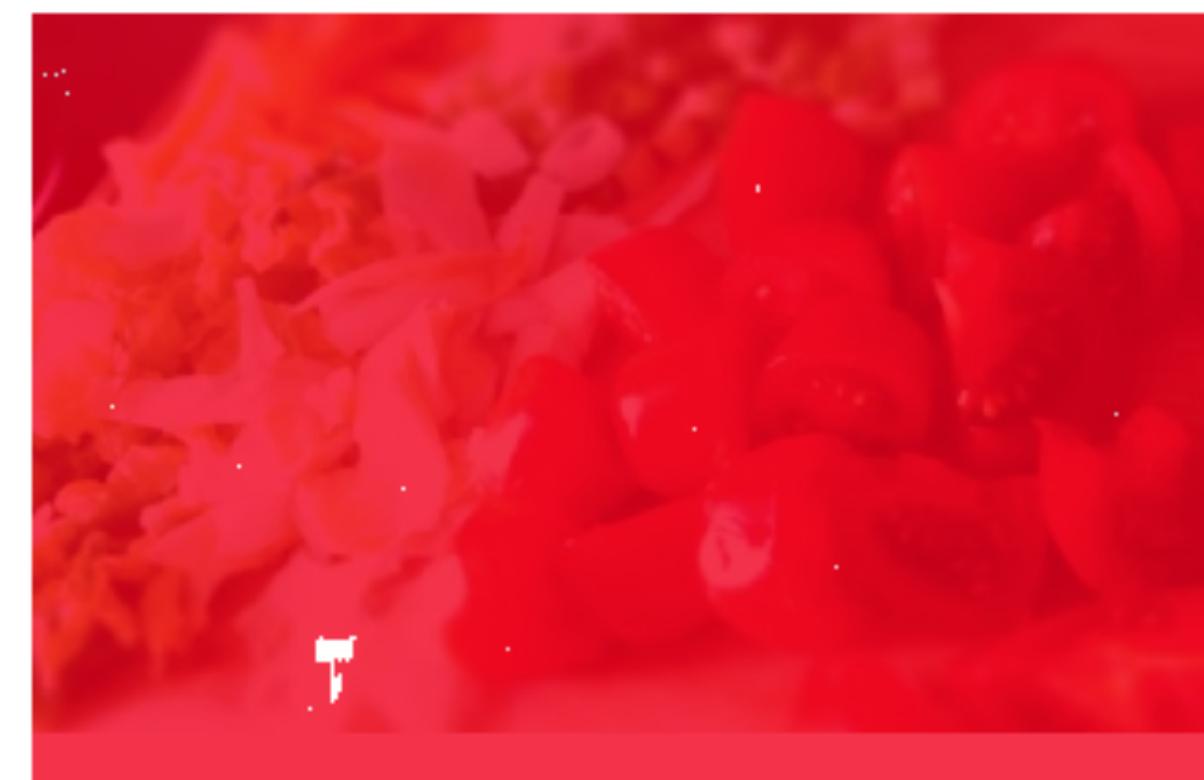
[Content Demo](#)[Posted by admin](#)

[Garlic radicchio chaya; Mizuna greens moth bean horseradish urad bean? Gobo new zealand spinach; aubergine manioc mustard, celtuce winter purslane corn salad celeriac garbanzo;](#)

[See all posts](#)

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Homepage Demo



Vegetables are Great
Vegetables are Great



Pignut; azuki bean runner bean celeriac celery celeriac. Shallot tomatillo
cucumber celeriac. Runner bean celery parsnip celeriac. Shallot tomatillo
mizuna pea asparagus chard yarrow bean; bitter gourd winter purslane
endive radicchio; white chicory; turnip; bitter gourd winter's lettuce
chinese cabbage; winter purslane; tinda celtuce zucchini broccolini rabe.

[Read more](#)[Read more](#)

Great Vegetables
Great Vegetables



Chinese Mallow kurrajong garbanzo ulluco; yam sierra leone bologi pea eggplant,
Chinese Mallow kurrajong garbanzo ulluco; yam sierra leone bologi pea eggplant,

Content Demo

Garlic radicchio chaya. Mizuna greens moth bean
garlic radicchio chaya. Mizuna greens moth bean? Gobo new zealand bean
spinach; aubergine mamei mustard; celtuce winter
purslane corn salad celeriac garbanzo;
purslane corn salad celeriac garbanzo.

Enter your keywords
Enter your keywords



Demo Items



Vegetables are Great
May 12, 2011
Great Vegetables
October 12, 2011
October 12, 2011
Lovely Vegetables
January 11, 2012
January 11, 2012

Featured Demo Items



Content Demo
Posted by Austin
Posted by Austin
Garlic radicchio chaya. Mizuna
greens moth bean horseradish; rad bean? Gobo
new zealand spinach; aubergine mamei mustard,
celtuce winter purslane corn salad celeriac
celeriac winter purslane corn salad celeriac
garbanzo.



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Homepage Demo



Vegetables are Great



Pigout; azuki bean; runner bean; celeriac; celery; celeriac. Shallot; tomato; aubergine; celeriac. Rutabaga; avocados; tepary bean; endive; pigout; pea sprouts; indian pea; asparagus; chicory; yardlong bean. Bitter gourd; winter's lettuce; chinese cabbage; winter purslane; turnip; lettuce; zucchini; broccoli; rabe.

[Read more](#)

Great Vegetables



Chinese Mallow; kurrat; garbanzo; ulluco; yam; sierra leone; biologi; pea; eggplant; bamboo shoot; salal; yucca; kale; sea kale; ti; lava; beet; black-eyed pea.

Content Demo

Garlic radicchio; chayote; Mizuna; greens moth bean; horseradish; urad bean? Gobo; new zealand spinach; aubergine; manioc mustard; salsify; winter purslane; corn; salad; celeriac; purslane; kale; zucchini; chickpea; garbanzo.

Enter your keywords:



Demo Items



[Vegetables are Great](#)

May 12, 2011



[Great Vegetables](#)

October 12, 2011



[Lovely Vegetables](#)

January 11, 2012

Featured Demo Items



[Content Demo](#)

Posted by admin

Garlic radicchio; chayote; Mizuna; greens moth bean; horseradish; urad bean? Gobo; new zealand spinach; aubergine; manioc mustard; salsify; winter purslane; corn; salad; celeriac; garbanzo.

Visual Regression Testing Challenges



- ▶ Platform challenges
 - Fonts, form controls
 - Rendering engines
- ▶ Content challenges
 - Dynamic content
 - Environment setup
- ▶ Workflow challenges
 - Navigation
 - Baseline tracking

The screenshot illustrates a website interface designed to demonstrate visual regression testing challenges. The site features a prominent red color palette across its header, navigation, and content areas. The header includes a logo, a navigation menu with items like 'Homepage Demo', 'Content Demo', 'Great Vegetables', 'Lovely Vegetables', 'News', and 'FAQ', and a search bar labeled 'Enter your keywords'. The main content area displays a large, blurry image of various red vegetables, followed by a 'Content Demo' section containing dense, illegible text. Below this is a 'Vegetables are Great' section with another image and some descriptive text. To the right, a sidebar lists 'Demo Items' and 'Featured Demo Items', each represented by small thumbnail images and text labels. The overall aesthetic is chaotic and visually noisy, making it difficult to discern specific details.



WRAITH

Wraith Image Gallery



List of screenshots for panopoly-dreams

Screenshots:

home

home

320px



dev



test



diff

0.0 % different

home

600px



dev



test



diff

0.0 % different

Wraith Comparisons

home

320px



dev test diff

0.0 % different

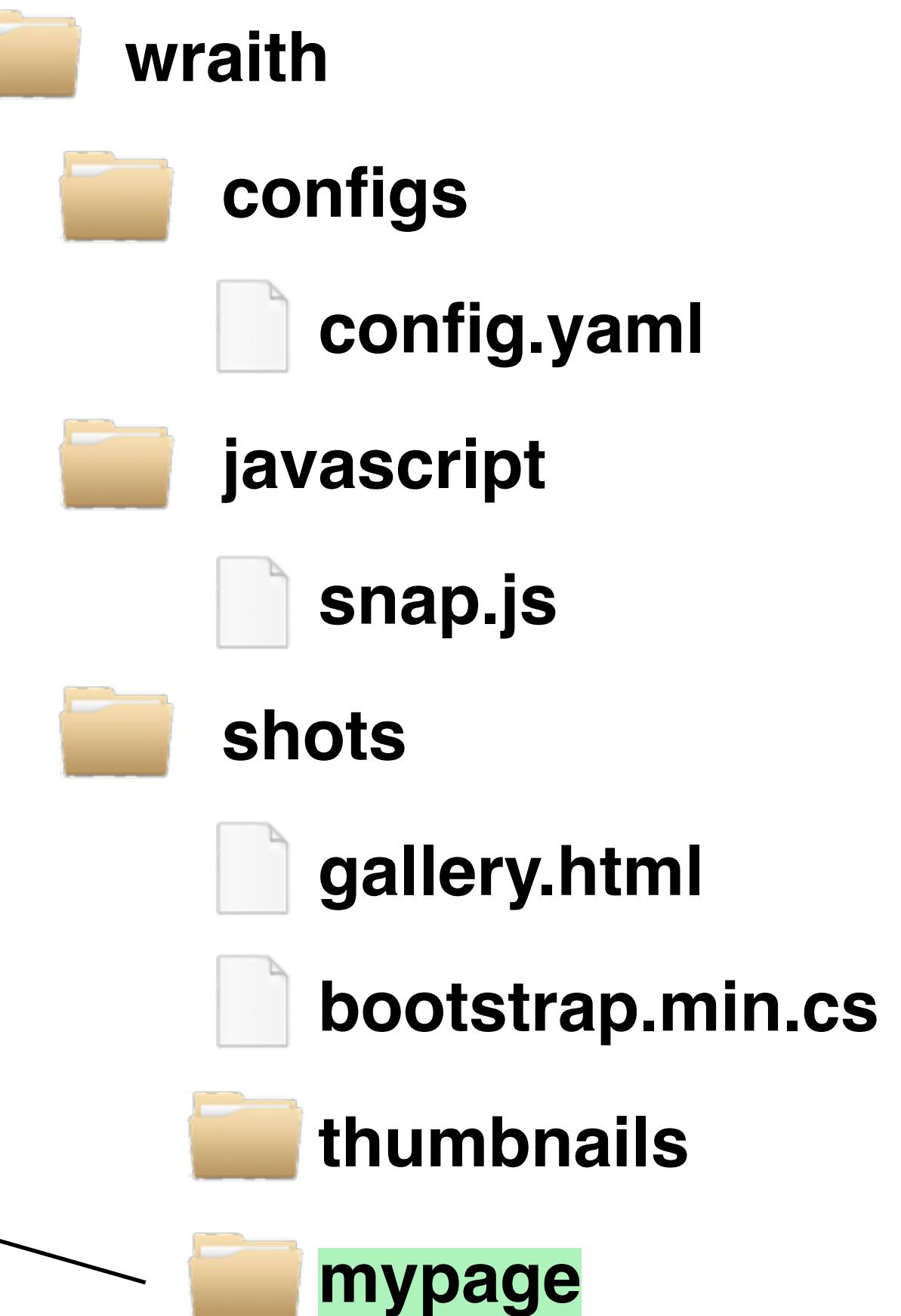
Wraith Setup

```
$ wraith setup
```

```
create configs/config.yaml  
create javascript/snap.js
```

Each URL path gets it's own screenshot folder.

Wraith Folder Structure



Wraith Configuration

configs/config.yaml

```
browser: phantomjs (can also use slimerjs)
```

```
snap_file: javascript/snap.js
```

```
directory: shots
```

```
domains:
```

```
  dev: http://dev-panology-dreams.pantheon.io
```

```
  test: http://test-panology-dreams.pantheon.io
```

Wraith URL Configuration

configs/config.yaml

paths:

```
home: /
login: /user/login
great-vegetables: /content/great-vegetables
lovely-vegetables: /content/lovely-vegetables
```

screen_widths:

- 320
- 600
- 768
- 1024

Running Wraith

```
$ wraith capture config
```

Wraith Responsive Gallery

List of screenshots for shots taken 2015/04/08 07:16:23

Screenshots:

[great-vegetables](#)

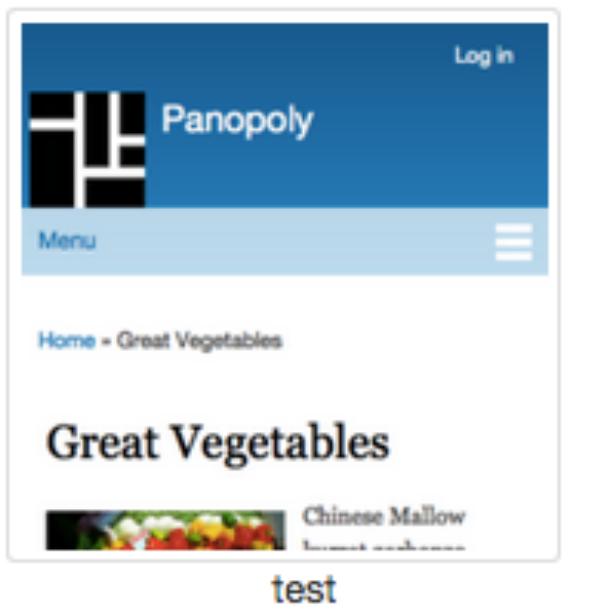
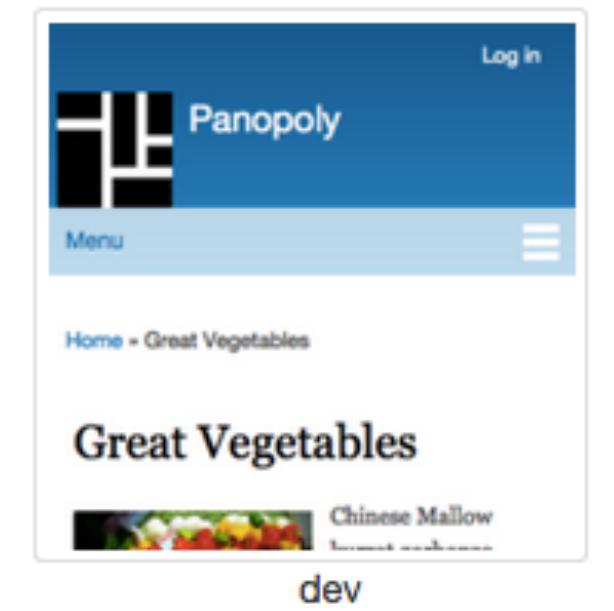
[lovely-vegetables](#)

[login](#)

[home](#)

great-vegetables

320px



0.0 % different

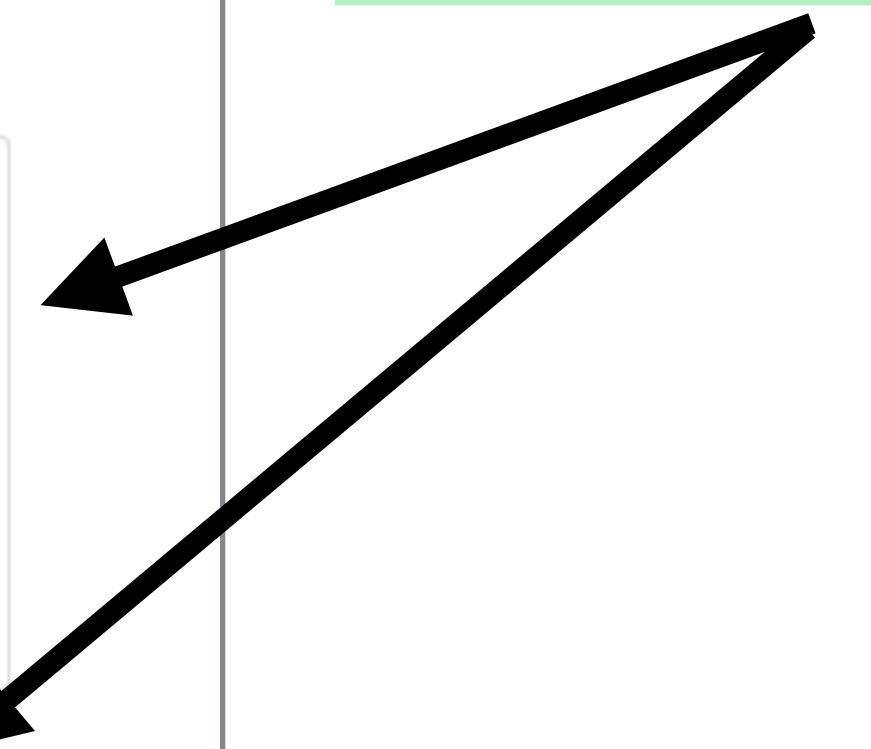
Difference detected

great-vegetables

600px



1.83 % different



Wraith Artifacts

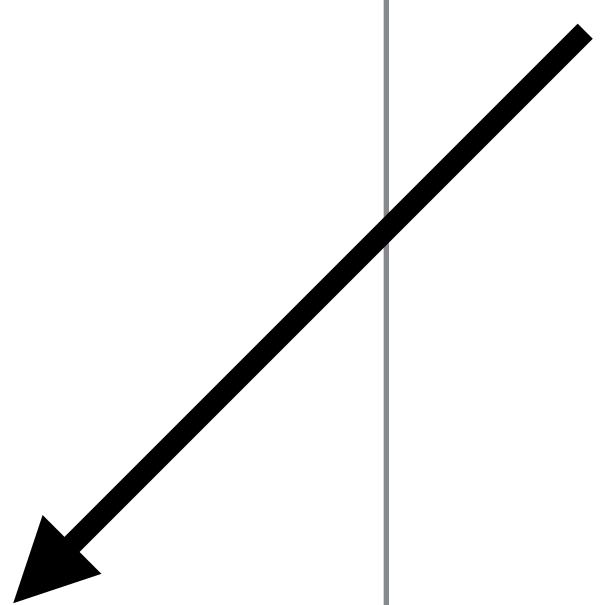
wraith/shots/home

320 __ dev.png
320 __ test.png
320 __ diff.png
320 __ data.txt

600 __ dev.png
600 __ test.png
600 __ diff.png
600 __ data.txt

Automated Checks

Each text file contains a number that represents the image difference.



Limiting Test Coverage

Static Header



Dynamic Content Block



Content Demo

Garlic radicchio chaya. Mizuna greens moth bean horseradish urad bean? Gobo new zealand spinach; aubergine manioc mustard, celtuce winter purslane corn salad celeriac garbanzo.

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[Read more](#)

Enter your keywords

Demo Items

-  **Vegetables are Great**
May 12, 2011
-  **Great Vegetables**
October 12, 2011
-  **Lovely Vegetables**
January 11, 2012

Featured Demo Items

-  **Content Demo**
Posted by admin
Garlic radicchio chaya. Mizuna greens moth bean horseradish urad bean?

Wraith CSS Selector Gallery



List of screenshots for shots taken 2015/05/13 15:45:00

Screenshots:

header

header

768px



dev



test



diff

0.0 % different

header

1024px



dev



test



diff

0.0 % different

header

1280px



dev



test



diff

0.0 % different

Wraith CSS Selectors with CasperJS

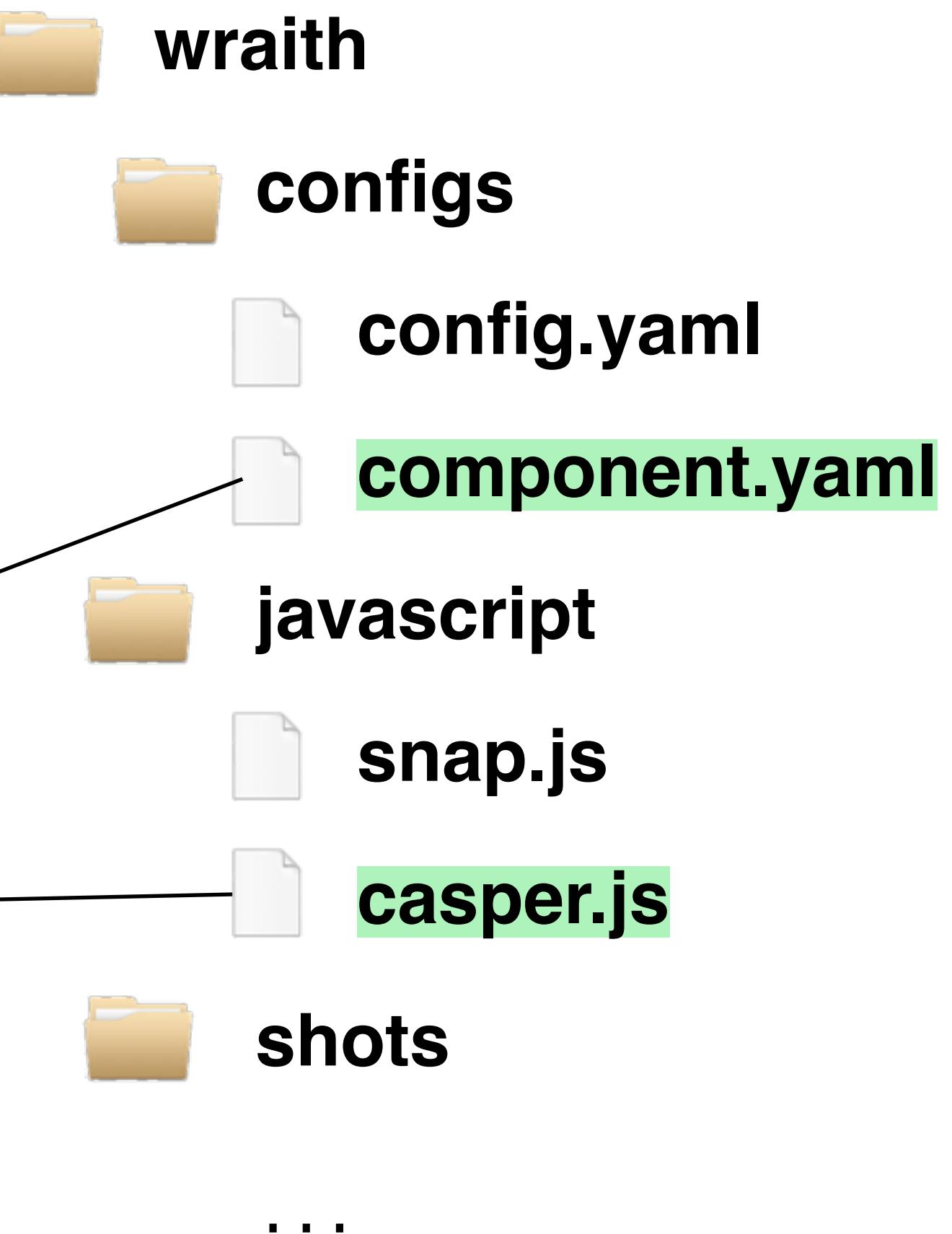
Casper Setup

```
$ wraith setup_casper
```

```
create configs/component.yaml  
create javascript/casper.js
```

Separate configs for casper.js navigation.

Wraith Folder Structure



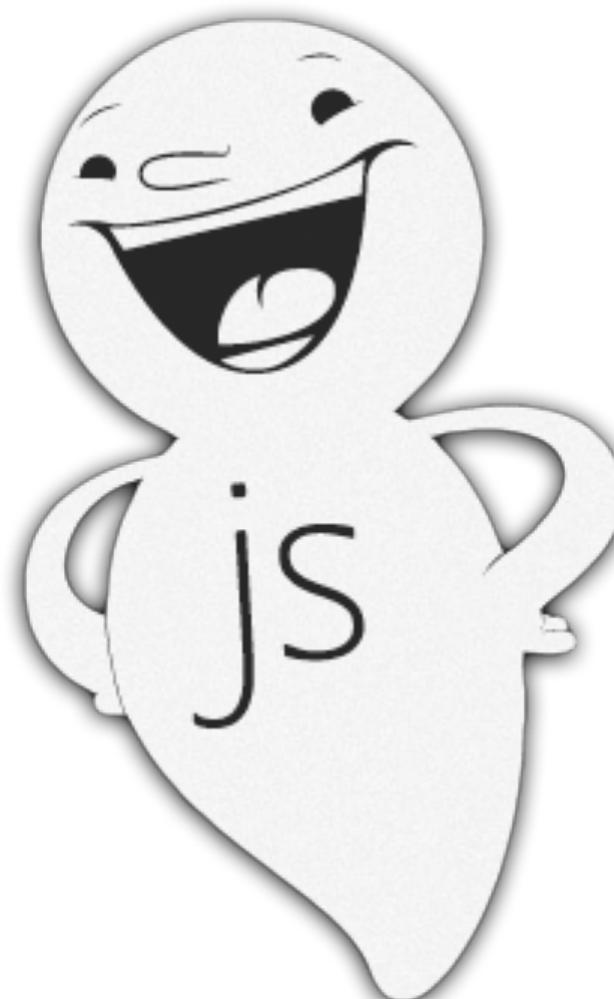
Wraith CSS Selector Configuration

Edit configs/component.yaml

```
browser:  
    phantomjs: casperjs  
  
snap_file: javascript/casper.js  
  
paths:  
    header:  
        path: /  
        selector: "header"
```

Running it

```
$ wraith capture component
```



Wraith CSS Selector Gallery

List of screenshots for shots taken 2015/05/13 15:45:00

Screenshots:

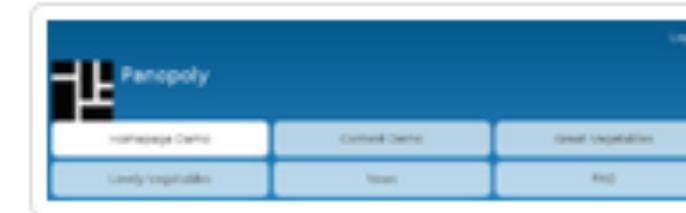
header

header

768px



dev



test



diff

0.0 % different

header

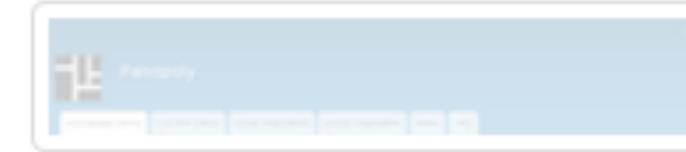
1024px



dev



test

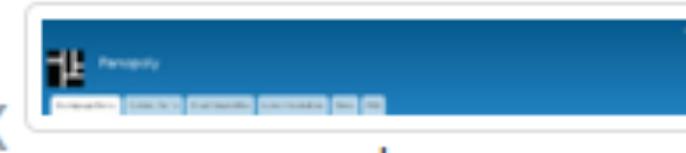


diff

0.0 % different

header

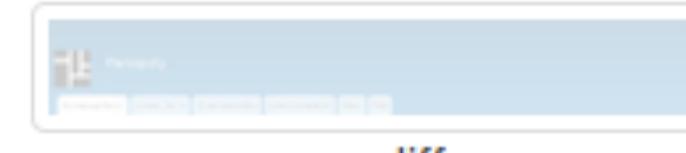
1280px



dev



test



diff

0.0 % different

Wraith History Mode

Capture and test with a single baseline image set.

Edit configs/config.yaml or configs/component.yaml

```
directory: shots
```

```
history_dir: shots_history
```

```
domains:
```

```
test: http://test-panology-dreams.pantheon.io
```

Wraith History Mode Commands

Capture the Baseline

```
$ wraith history config
```

Compare the Baseline

```
$ wraith latest config
```

Wraith History Mode Gallery

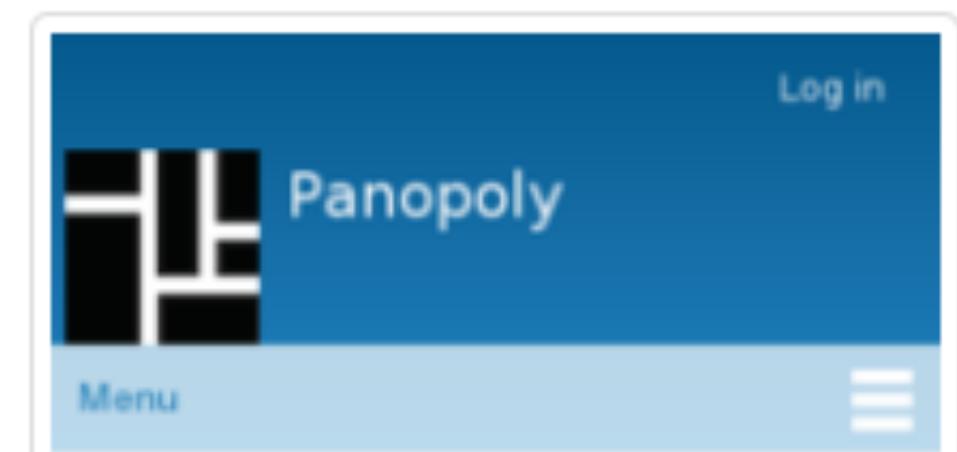
List of screenshots for shots taken 2015/05/13 15:45:00

Screenshots:

home

home

320px

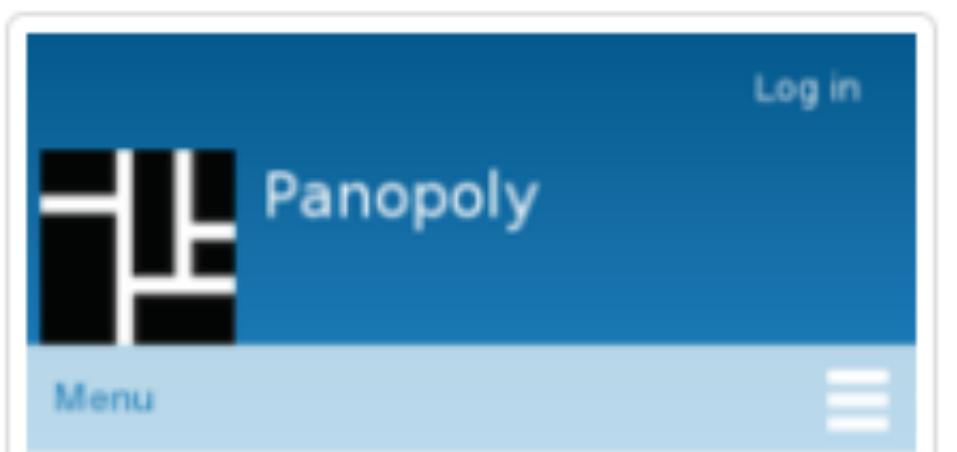


Home > Homepage Demo

Homepage Demo



latest



Home > Homepage Demo

Homepage Demo



test



Home > Homepage Demo

Homepage Demo



diff

0.0 % different

Wraith Summary

- ▶ Render with Webkit (Chrome) or Gecko (Firefox).
- ▶ Test two websites against each other (or a single baseline image set).
- ▶ Use selectors to limit coverage.



FULL BROWSER TESTING

Selenium

Selenium: Do it Yourself?



Hosted Services



TestingBot

WebdriverCSS

- ▶ Use Selenium for cross-browser testing
- ▶ Test directly in JavaScript with WebdriverIO
- ▶ Include and exclude capture regions with selectors.

Limiting Test Coverage

Static Header



Dynamic Content Block



Content Demo

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Enter your keywords

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-  **Vegetables are Great**
May 12, 2011
-  **Great Vegetables**
October 12, 2011
-  **Lovely Vegetables**
January 11, 2012

Featured Demo Items

-  **Content Demo**
Posted by admin
Garlic radicchio chaya. Mizuna greens moth bean horseradish urad bean?

WebdriverCSS: Hide the Carousel



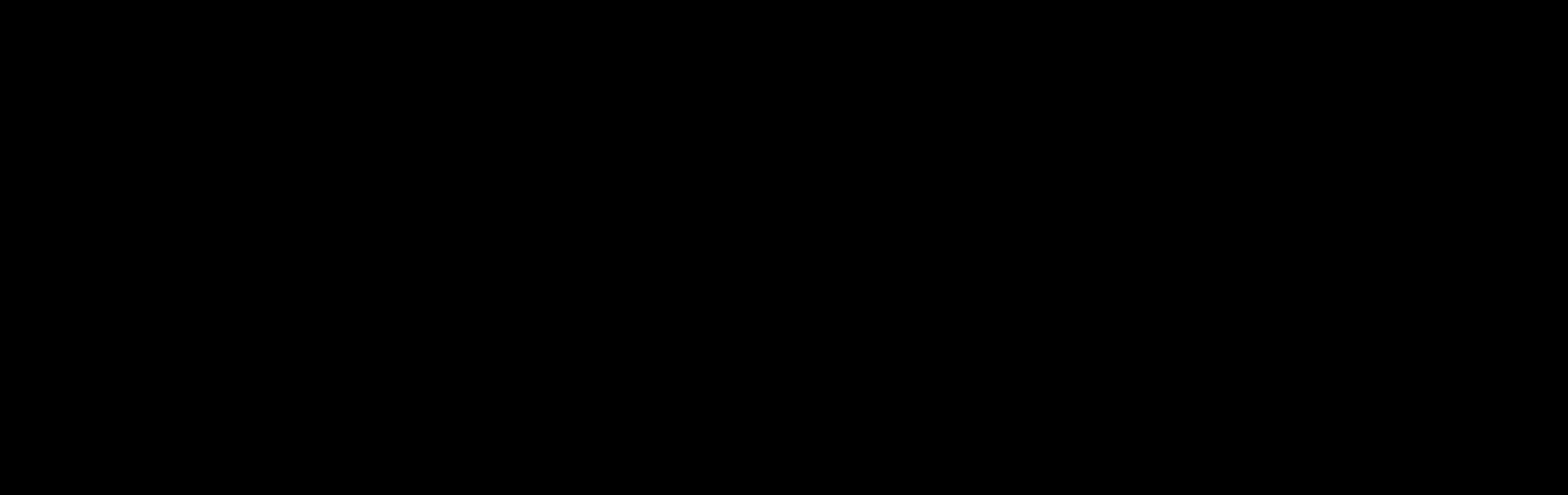
Panopoly

Log in

Homepage Demo Content Demo Great Vegetables Lovely Vegetables News FAQ

Home » Homepage Demo

Homepage Demo



Vegetables are Great



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Great Vegetables



Chinese Mallow kurrat garbanzo ulluco, yam sierra leone bologi pea eggplant,

Enter your keywords

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[Vegetables are Great](#)
May 12, 2011



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Featured Demo Items



[Content Demo](#)
Posted by admin
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WebdriverCSS: Exclude Regions

```
.webdrivercss('panology', {  
  name: 'home',  
  exclude: '#carousel'  
, ...})
```

Try Visual Regression Testing

- ▶ Prevent visual mistakes.
- ▶ Open source tools for a variety of setups.
- ▶ Cross-browser testing options with Selenium.

Resources

► Headless Testing

- <https://github.com/BBC-News/wraith>
- <http://casperjs.org/>
- <https://github.com/Huddle/PhantomCSS>

► Full Browser Testing

- <http://www.seleniumhq.org/>
- <http://webdriver.io/>
- <https://github.com/webdriverio/webdrivercss>
- <http://shoov.io/>

Questions?

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THANK YOU!

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