Wraith

A Responsive Screenshot Comparison Tool

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Introduction : as a Visual regression tool

1. Wraith is a screenshot comparison tool, created by **developers at BBC News.**
2. In a slight departure from the standard image-diff process, Wraith compares two websites when testing. Normally, images are rendered and saved as 'reference cases' so that the testing tool tests a single target against the known layout. This tool generates the reference case live from one of the supplied sites then compares the other site to it.
3. This technique minimises the impact of dynamic content changes on the rendered images by making it possible to pull in the same live content into both sites.

Requirements

1. Ruby
2. ImageMagick
3. At least one of: **PhantomJS** - any version, **CasperJS** - use v1.1.0-beta4 alongside PhantomJS 2.1.1, or v1.0 alongside PhantomJS 1.9.*, **SlimerJS** - limited support.
4. It's up to you to decide which browser engine you want to run it against. PhantomJS and SlimerJS are the browsers that capture the screenshots, CasperJS is a layer on top of these to aid in target selectors for capturing a particular component.
5. PhantomJS is built on top of Webkit and JavascriptCore (like Safari). SlimerJS is built on top of Gecko and SpiderMonkey (like Firefox).

Download Links

Ruby - https://www.ruby-lang.org/en/
ImageMagick - http://www.imagemagick.org/script/binary-releases.php
RubyInstaller For Windows Users - http://rubyinstaller.org/
Phantom JS -
https://bitbucket.org/ariya/phantomjs/downloads/phantomjs-1.9.7-windows.zip
Wraith - https://github.com/BBC-News/wraith/archive/master.zip
Casper JS - http://casperjs.org/
Slimer JS - https://slimerjs.org/

Elements of a Wraith Script

1. **Headless browser :** This is typically PhantomJS or CasperJS - a browser that doesn't have a user interface; it runs in the background.
2. **Diff Mode :** How you would like the gallery to be presented, you can set ordering and for the unchanged images to be removed.
3. **Threshold :** This is the minimal level of change you that want to present a failure. The metric is percentage change of the page and set globally for a Wraith run.
4. **Fuzz :** Use this option to match colors that are close to the target color in RGB space, this number helps with anti-aliasing.
5. **verbose** : (optional: boolean) As of Wraith 3.1.0, you can run Wraith in verbose mode, which lists helpful debug information. Default: false
6. **snap_file** : (optional: string) Before Wraith 3.0.0, you were required to specify a path to a snap JavaScript file responsible for taking the command line arguments from Wraith and loading up Phantom/Casper to take screenshots. As of 3.0.0, this functionality has been abstracted away, so you should no longer specify a snap file. However, you are still able to specify a snap file if you wish.

How A wraith Script Looks Like (.yaml)

before _capture hooks (Important)

Using Casper Mode allows you to hook into a 'before_capture' event so that you can run arbitrary JavaScript before taking the screenshot. This allows you to regression test interactive content. (Note: the before_capture hook is currently only supported in Casper Mode).

```
module.exports = function (casper, ready)
{
    // make Wraith wait a bit longer before taking the screenshot
    casper.wait(2000, ready); // you MUST call the ready() callback for Wraith to continue
}
```

Wraith commands and their functions

wraith capture [config_name]   # A full Wraith job
wraith compare_images [config_name]   # compares images to generate diffs
wraith crop_images [config_name]   # crops images to the same height
wraith generate_gallery [config_name]   # create page for viewing images
wraith generate_thumbnails [config_name]   # create thumbnails for gallery
wraith history [config_name]   # Setup a baseline set of shots
wraith latest [config_name]   # Capture new shots to compare with baseline
wraith multi_capture [filelist]   # A Batch of Wraith Jobs
wraith reset_shots [config_name]   # removes all the files in the shots folder
wraith save_images [config_name]   # captures screenshots
wraith setup   # creates config folder and default config
wraith setup_casper   # creates config folder and default config for casper

Let us Implement Wraith