





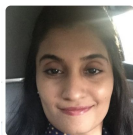
Build a Living Style Guide in CSS

Fluent Conference 2017

+Archana Sankaranarayanan
@archana_june

The Story

-  Problems plaguing our CSS
-  Style guides to the rescue
-  Deep dive into the UI components of a style guide
-  Sustaining the style guide



Archana Sankara'*narayanan*

Currently



UI Engineering
Developer Productivity



Coursera
Style Guide



styleguide-starter
-kit

☰ Part 1 – Big CSS Problems

- High specificity in selectors

```
.header .banner .imageContainer button {  
  font-size: 16px; ...  
}
```

- Redundancy
- Inconsistency in design and user experience
- Complexity



**Style guide is a pattern library of all the
common reusable UI elements.**



Part 2 – Building Blocks



Pattern library
cataloging all the
UI components in
the product



Pattern library
written in CSS



Style guide
generator + style
guide template

Part 3 – Style Guide Sustainability

- Monitoring tools
- Linting



Best of Cooking in Tokyo

Sign up now

Eat the best food. Learn to cook. Enjoy!



Hot Now!

See the best of food right now recommended by your BFFs



Learn the art

Learn to cook from the best of locals tried and tested by BFFs.



Make the most of your trip

Find the best places to stay and things to do.

Recently Viewed

See More >>




Part 1 – Big CSS Problems




Part 2 – Building a Style guide




Part 3 – Style guide Sustainability


 Audits


RESULTS


 https://best-food-friends-


▼ Accessibility


▶  [Warning] Images should have a text alternative or presentational role (9)

▶  [Warning] Meaningful images should not be used in element backgrounds (4)


▶  [Warning] Text elements should have a reasonable contrast ratio (20)

▶  [Warning] The purpose of each link should be clear from the link text (6)


▶  Not applicable tests (14)

▶  Passing tests (6)

▼ Network Utilization

▶  Specify image dimensions (1)

▼ Web Page Performance

▼  Remove unused CSS rules (1415)

1415 rules (94%) of CSS not used by the current page.

▶ [main.32848f5a.css](#): 94% is not used by the current page.

CSS Problems >> Accessibility

Text contrast ratio against the background

About Best Food Friends

About us

Press

Careers

Investors

1.9:1

4.5:1 Recommended

CSS Problems >> Performance

Unused CSS

▼ 🟡 Remove unused CSS rules (1415)

1415 rules (94%) of CSS not used by the current page.

▶ [main.32848f5a.css](#): 94% is not used by the current page.

BFF Best Food Friends - Travel and cook easy

168 KB

1,551

Rules

1,942

Selectors

4,149

Declarations

159

Properties

Total Declarations

Font Size

140

Float

8

Width

226

Height

159

Color

211

Background Color

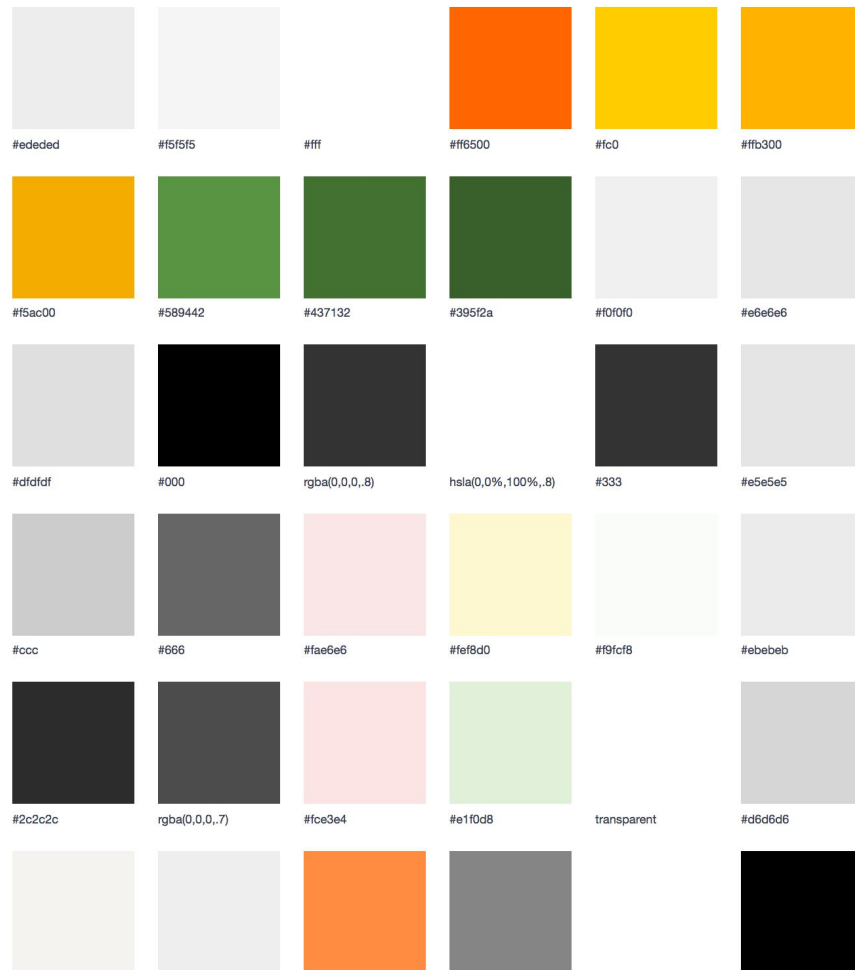
117

52 Unique Colors

Aa #4a4a4a	#fff	Aa #000000	Aa #006699	#ffffff	Aa #2c2c2c
Aa #565656	Aa #000	Aa #2c2c2c	Aa #535353	Aa #069	Aa #d6d6d6
Aa #656565	Aa #e46715	Aa #589442	transparent	Aa #B4C5AE	Aa #609
Aa #6F6F6F	Aa #ccc	Aa #686868	Aa #BBB	Aa #666	Aa #FFF
Aa inherit	Aa #d80007	Aa #333	Aa #b7b7b7	Aa #999	Aa #9b0000
Aa #4d7834	white	Aa #9a9a9a	Aa #bababa	Aa #DCEACA	Aa #91b056
Aa #e60	Aa #CEFBBD	Aa #888	Aa #217148	Aa #8d8d8d	Aa #c60
Aa #444	Aa #f0f0f0	Aa #787878	Aa black	Aa #C60	Aa #599442
Aa #cce6c3	Aa #9e9a89	Aa #6a685e	Aa #a19f96		

<http://cssstats.com/>

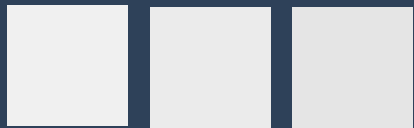
39 Unique Background Colors



<http://cssstats.com/>

CSS Problems >> Performance

Color collisions leading to complexity during browser paint



CSS Problems >> Inconsistency

Potential inconsistency in styling

26 Unique Font Sizes

Font Size "Styleguide_Regular_Regular"

Font Size 42px

Font Size 36px

Font Size 32px

Font Size 28px

Font Size 26px

Font Size 24px

Font Size 23px

Font Size 22px

Font Size 21px

Font Size 20px

Font Size 18px

Font Size 1.0835em

Font Size 1.083em

Font Size 1rem

Font Size inherit

Font Size medium

Font Size 16px

Font Size 100%

Font Size 92.5%

Font Size 14px

Font Size 13px

Font Size 12px

Font Size 11px

Font Size 10px

Font Size 9px

8 Unique Font Families

Source Sans Pro,sans-serif

Open Sans,sans-serif

icomoon

Arial,Tahoma,Bitstream Vera Sans,sans-serif

inherit

Styleguide_Regular_Regular

sans-serif

"Styleguide_Regular_Regular"

<http://cssstats.com/>

19 Unique Z Indices

-1

1

2

10

11

204

205

250

300

500

900

10000

10001

10002

10003

10004

10500

11000

20000



<http://cssstats.com/>

CSS Problems >> Performance

- CSS redundancy / bloat
- CSS complexity

d

PROPERTIES

SELECTORS

SELECTORS: 1638

SPECIFICITY ▾ LENGTH ▾

DIV.ppr_rup.ppr_priv_dual_search_dust .scopedSearchDisplay .displayItem:first-child.short_cell .leftIcon	0	7	1	8
DIV.ppr_rup.ppr_priv_dual_search_dust .scopedSearchDisplay .displayItem:not(:first-child).short_cell .primaryText	0	7	1	8
DIV.ppr_rup.ppr_priv_dual_search_dust .scopedSearchDisplay .displayItem.simpleChild.child .ui_icon	0	7	1	8
DIV.ppr_rup.ppr_priv_dual_search_dust .scopedSearchDisplay .displayItem.simpleChild.child .primaryText	0	7	1	8
DIV.ppr_rup.ppr_priv_dual_search_dust .scopedSearchDisplay .short_cell:first-child .leftIcon.search	0	7	1	8
DIV.ppr_rup.ppr_priv_global_nav .global-nav-actions>div: hover .ui_icon.unhover	0	6	2	8
DIV.ppr_rup.ppr_priv_global_nav .global-nav-actions>div: hover .ui_icon.hover	0	6	2	8
DIV.ppr_rup.ppr_priv_global_nav_geopill .global-nav-geopill .ui_flyout .ui_text input: focus	0	6	2	8
DIV.ppr_rup.ppr_priv_global_nav_geopill .global-nav-geopill .ui_flyout .ui_flyout_results div span	0	5	3	8
DIV.ppr_rup.ppr_priv_global_nav_geopill .global-nav-geopill .ui_flyout .ui_flyout_results_empty div span	0	5	3	8
DIV.ppr_rup.ppr_priv_global_nav_geopill .global-nav-geopill .ui_flyout .ui_flyout_results div: hover	0	6	2	8

COMBINED CSS: 12961 LINES

```

DIV.ppr_rup.ppr_priv_global_nav_geopill .global-nav-geopill .ui_flyout .ui_
DIV.ppr_rup.ppr_priv_global_nav_geopill .global-nav-geopill .ui_flyout .ui_
  cursor: pointer;
  color: #000;
  background-color: #f5f5f5;
  padding-left: 26px;
  -webkit-transition: all .2s linear;
  -moz-transition: all .2s linear;
  -o-transition: all .2s linear;
  -ms-transition: all .2s linear;
  transition: all .2s linear;
}

```

<http://cssdig.com/>

Consistency

Accessibility

Performance

 Part 1 – Big CSS Problems

 **Part 2 – Building a Style Guide**

 Part 3 – Style Guide Sustainability

Building Blocks



Pattern library
cataloging all the
UI components in
the product



Pattern library
written in CSS



Style guide
generator + style
guide template

Color Palette

Typography

Buttons

Cards

Layouts

Tabs

Input Controls

Spinners

Layers

Business Cards

Color Palette



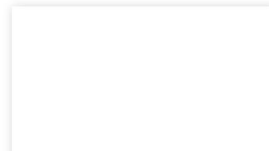
color-primary



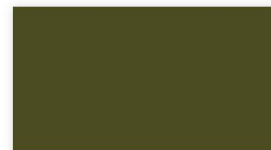
color-text-primary



color-text-link



color-text-on-dark



color-accent-green



color-accent-blue

Color Palette

Typography

Buttons

Cards

Layouts

Tabs

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Spinners

Layers

Business Cards

PRIMARY ACTION

```
<button class="primary">Primary Action</button>
```

PASSIVE

```
<button class="passive">passive</button>
```

LINK

```
<button class="link">Link</button>
```

LARGE PRIMARY

```
<button class="primary large">Large Primary</button>
```

MEDIUM PRIMARY

```
<button class="primary medium">Medium Primary</button>
```

Atoms

- Colors
- Typography
- Buttons



Roboto Thin

Roboto Light

Roboto Regular

Roboto Medium

Roboto Bold

Roboto Black

Molecules

- Cards
- Navigational Tabs
- Modals
- Search Bar
- Dropdowns
- Lists
- Tables
- Headers/Footers
- ...

- Phasellus consetetuer vestibulum elit.
- Phasellus leo dolor
- Tempus non, auctor et, hendrerit quis, nisi.
- Vivamus elementum semper nisi.

Located at
345 Plymouth Street, Pittsburgh
412-555-1200

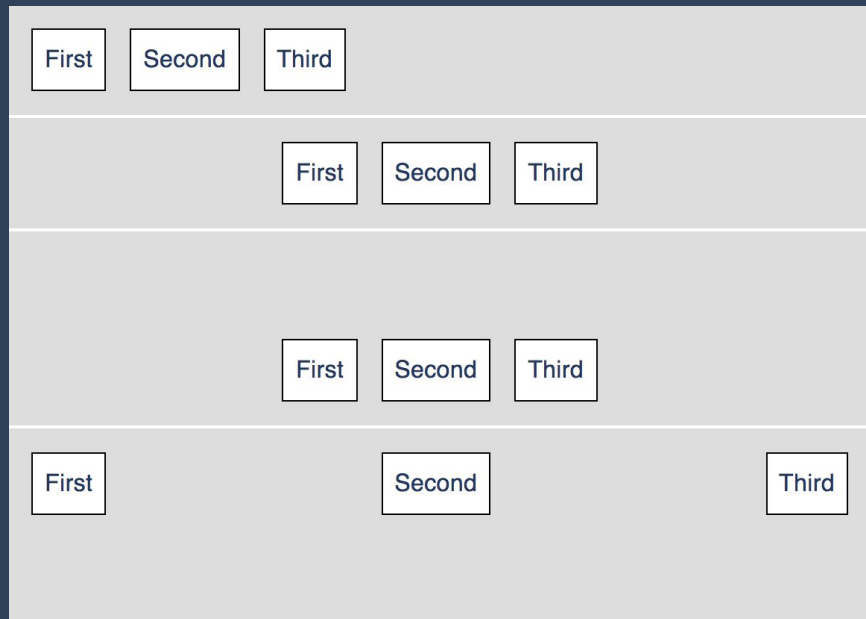
Feedback

Let us know what you think

SUBMIT

Infrastructure

- Layouts
- Grids
- Layers



Building Blocks



Pattern library
cataloging all the
UI components in
the product



Pattern library
written in CSS



Style guide
generator + style
guide template

Structuring Style Guide CSS

- Separating structure and skin
- Using intent to name the components

Atomic

Molecular

Infrastructure



Primary Color



#ba5203

Danger color



#ce1616

Success color



#068909


```
:root {  
  --color-primary: #87642c;  
  --color-danger: #ce1616;  
  --color-success: #068909;  
}
```

✓ Consistency

Atomic

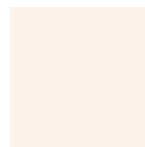
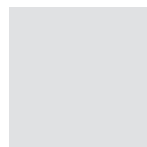
Molecular

Infrastructure

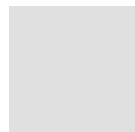
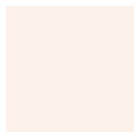
Divider Colors



Themes



Gradients



```
:root {  
  --color-divider: rgba(0, 0, 0, 0.5);  
  --color-divider-light: rgba(0, 0, 0, 0.35);  
  
  --color-primary-g1: #F4F3EE;  
  --color-white-g1: #FFFFFF;  
  --color-white-g2: #F4F3EE;  
  --color-white-g3: #CCBA9A;  
  
  --theme-light: var(--color-white-g2);  
  --theme-white: var(--color-white-g1);  
}
```



Atomic

Molecular

Infrastructure

Accent colors



```
:root {  
  --color-accent-hotel: #4B4C22;  
  --color-accent-cooking: #40545D;  
}
```



Consistency

Why name with intent?

- Themes
- Rebranding
- Progressive Web App for different devices (Android, iOS, Web)

✓ Performance

Atomic

Molecular

Infrastructure



Primary Text



Secondary Text



Caption



Links



Variants in darker themes

```
:root {  
  --color-text-primary: #233766;  
  --color-text-secondary: #393939;  
  --color-text-caption: #6D6D6D;  
  --color-text-link: #3F51B5;  
  --color-text-on-dark: #FFFFFF;  
}
```

✓ Consistency

✓ Accessibility

Color Contrast Checker



The screenshot shows the Color Contrast Checker tool interface. It features a white background on the left and a blue background on the right. At the top left, there is an orange banner that says "Fork me on GitHub". In the top right corner, there is a "Tweet" button. The main interface has a "contrast ratio" label at the top. Below it, there are input fields for "Background:" (set to "white") and "Text color:" (set to "#3F51B5"). A green circle in the center displays the contrast ratio "6.9". Below the input fields, there is a "Set as background color" button. The "How to use" section explains that the contrast ratio will update as you type and that semi-transparent colors have an error margin. It also includes a hint about using keyboard arrows to navigate the interface. At the bottom, it credits "Lea Verou • WCAG 2.0 on contrast ratio".

contrast ratio

Background: white 6.9 #3F51B5 Text color:

Set as background color

How to use

As you type, the contrast ratio indicated will update.
Hover over the circle to get more detailed information.

When semi-transparent colors are involved as backgrounds, the contrast ratio will have an error margin, to account for the different colors they may be over.

This sample text attempts to visually demonstrate how readable this color combination is, for normal or **bold** text of various sizes and font styles.

Hint: Press the up and down keyboard arrows while over a number inside a functional color notation. Watch it increment/decrement. Try with the Shift or Alt key too!

By Lea Verou • WCAG 2.0 on contrast ratio

<http://leaverou.github.io/contrast-ratio>

Atomic

Molecular

Infrastructure

Display 4

Display 3

Display 2

Display 1

HEADLINE

TITLE

Subheading

Body 2

Body 1

CAPTION

Label

.display-4

.display-3

.display-2

.display-1

.headline

.title

.body-2

.caption

.label

✓ Consistency

✓ Accessibility

Atomic

Molecular

Infrastructure

PRIMARY ACTION

PASSIVE

BOOK HOTEL

ENROLL IN COOKING

Atomic

Molecular

Infrastructure

LARGE PRIMARY

```
button {  
  font-family: 'Open Sans', sans-serif;  
  letter-spacing: 0.08em;  
  font-size: var(--button-font-size);  
  ...  
}  
  
button.primary {  
  background-color: var(--color-primary);  
}  
  
button.passive {  
  ...  
}
```

✓ Consistency

✓ Accessibility

```
<a href="www.gosomewhere.com">  
  <button>View Details</button>  
</a>
```

```
dosomething(evt) {  
  evt.preventDefault();  
  doSomethingElse();  
}
```

```
<a onClick="dosomething">  
  Show a Modal  
</a>
```



Atomic

Molecular

Infrastructure

LINK BUTTON

```
<button class="link">Link Button</button>
```



BUTTON LINK

```
<a class="button primary">Button Link</a>
```

Atomic

Molecular

Infrastructure

Your Page

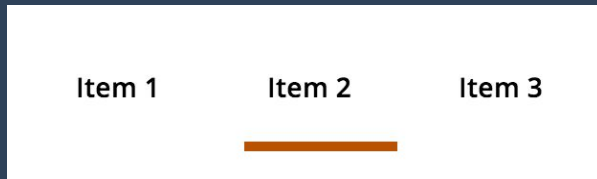
Restaurants

Cooking Classes


```
ul.tabs {  
  display: flex;  
  background-color: inherit;  
  font-family: 'Open Sans', sans-serif;  
}
```

...

```
@media only screen  
and (min-device-width: 320px)  
and (max-device-width: 480px) {  
  ul.tabs {  
    flex-direction: column;  
    width: 120px;
```



```
<nav role="navigation" aria-label="Main Menu">
  <ul class="tabs">
    <li>
      <a>Item 1</a>
    </li>
    <li class="selected">
      <a>Item 2</a>
    </li>
    <li>
      <a>Item 3</a>
    </li>
  </ul>
</nav>
```

✓ Consistency

✓ Accessibility



STYLE GUIDE

0 Overview

1 Forms

2 General

3 Media

4 Navigation

4.1 Breadcrumbs

4.2 Basic Navbar

4.3 Navbar Mobile Icon

4.4 Pagination

5 Structure

6 Resources



Option #3: No list styling with ARIA labelledby

[Home](#)[About Us](#)[More Information](#)[Contact Us](#)

```
<section class="navbar-section">
  <h3>Option #1: List styling with visuallyhidden class</h3>
  <nav class="navbar" role="navigation">
    <h2 class="visuallyhidden">Main Menu</h2>
    <ul class="nav navbar-nav">
      <li class="nav-item">
        <a class="nav-link" href="#">Home</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">About Us</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">More Information</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">Contact Us</a>
      </li>
    </ul>
  </nav>
</div>
<div class="break"></div>
```

<http://a11y-style-guide.com/style-guide/>

Atomic

Molecular

Infrastructure

First

Second

Third

First

Second

Third

First

Second

Third

Fourth

Atomic

Molecular

Infrastructure

`.horizontal`

`.horizontal .right .bottom`

`.vertical .stretch`

`.vertical .space-between`

`.vertical .bottom .left`

✓ Performance

Atomic

Molecular

Infrastructure

```
.layer-critical { z-index: 10000; }
```

```
.layer-high { z-index: 9000; }
```

```
.layer-medium { z-index: 8000; }
```

```
.layer-low { z-index: 7000; }
```

```
.layer-backdrop { z-index: 6000; }
```

✓ Performance

Building Blocks



Pattern library
cataloging all the
UI components in
the product



Pattern library
written in CSS



Style guide
generator + style
guide template



PostCSS

postcss-style-guide


```
$ npm install postcss-style-guide
```

```
// Script
```

```
var postcss = require('postcss');
```

```
var styleguide = require('postcss-style-guide');
```

```
postcss([
```

```
  styleguide
```

```
]).process(input)
```

```
.then(function (result) {
```

```
  var output = fs.readFileSync('styleGuide/index.html', 'utf8');
```

```
  console.log('output:', output);
```

```
});
```

```
/*  
@styleguide  
@title Button  
Use the button classes on and ``, ``, `` elements.  
  
<button class="primary">Primary Button</button>  
    <button class="primary">Primary Button</button>  
<button class="passive">Passive Button</button>  
    <button class="passive">Passive Button</button>  
*/
```



[Color Palette](#)

[Typography](#)

[Buttons](#)

[Links](#)

[Cards](#)

[Layouts](#)

[Tabs](#)

[Input Controls](#)

[Spinners](#)

[Layers](#)

[Business Cards](#)

BestFoodFriends

Color Palette



color-primary



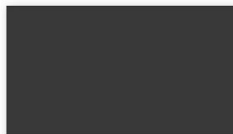
color-success



color-danger



color-text-primary



color-text-secondary



color-text-caption



[Color Palette](#)

[Typography](#)

[Buttons](#)

[Links](#)

[Cards](#)

[Layouts](#)

[Tabs](#)

[Input Controls](#)

[Spinners](#)

[Layers](#)

[Business Cards](#)

Tabs

Tabs/Navigation Bar

Default tabs

Item 1 Item 2 Item 3

```
<nav role="navigation" aria-label="Main Menu">
  <ul class="tabs">
    <li>
      <a>Item 1</a>
    </li>
    <li class="selected">
      <a>Item 2</a>
    </li>
    <li>
      <a>Item 3</a>
    </li>
  </ul>
</nav>
```

Input Controls

Default styles for text, textarea, search box, radio groups and checkboxes.
Add other variants as fit.

Sample text

styleguide-starter-kit

- Boilerplate for atomic, molecular and infrastructural elements
- postcss-style-guide + template

styleguide-starter-kit

```
$ npm install -g styleguide-starter-kit
```

```
$ create-styleguide
```

▲ STYLEGUIDE-STARTER-KIT

- ▶ node_modules

- ▲ styleguide

- ▶ public

- ▶ styleguide-template

- ▶ styles

- JS gulpfile.js

- JS index.js

- { } package.json

 Part 1 – Big CSS Problems

 Part 2 – Building a Style Guide

 **Part 3 – Style Guide Sustainability**

Style Guide Maintenance >> CSSStats CLI

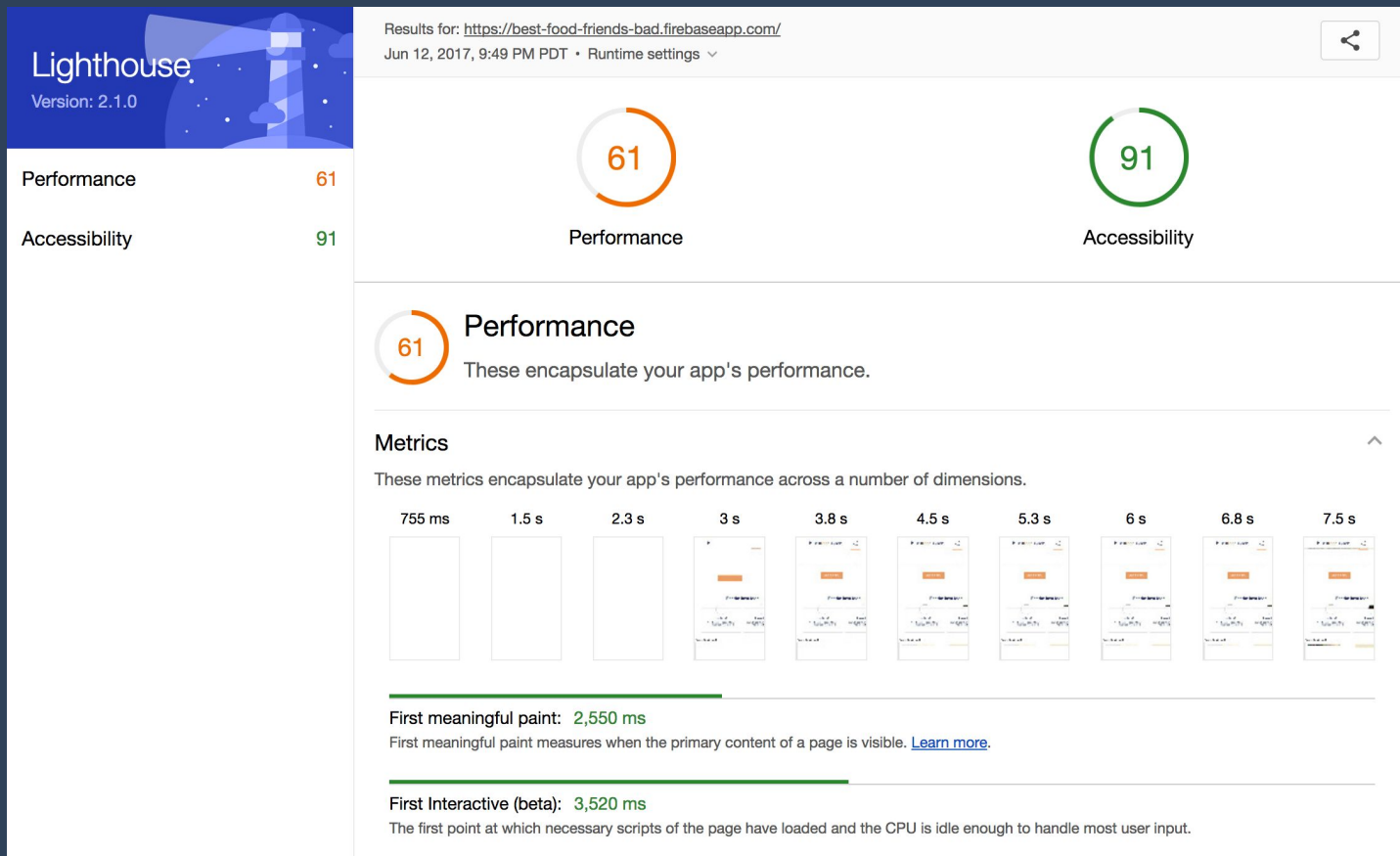
```
"background": [  
  "#fff",  
  "#e5e5e5",  
  "#589442",  
  ...  
],
```

```
"font-size": [  
  "20px",  
  "10px",  
  "20px",  
  "10px",  
  "14px",  
  "28px"  
  ...  
],
```

```
"background-color": [  
  "#fff",  
  "#f4f3ee",  
  "#cacadb",  
  "#40545d",  
  "#4b4c22",  
  "#3a3a17",  
  "#87642c",  
  ...  
],
```

```
"font-size": [  
  "16px",  
  "14px",  
  "80px",  
  "72px",  
  ...  
],
```

Style Guide Maintenance >> LightHouse



Style Guide Maintenance >> WAVE



<https://best-food-friends-bad.firebaseio.c>

Styles No Styles Contrast

Summary

WAVE has detected the following:

12 Errors

6 Alerts

0 Features

25 Structural Elements

2 HTML5 and ARIA

20 Contrast Errors

Panel Options

DETAILS: A listing of all the WAVE icons in your page.

DOCUMENTATION: Explanation of the WAVE icons and how you can make your page more accessible.

OUTLINE: The heading structure of the web page.

h2 Cooking Classes



h4 Fiery Ramen

2346 reviews
Tokyo, Japan



h4 Fiery Ramen

2346 reviews
Tokyo, Japan



h4 Fiery Ramen

2346 reviews
Tokyo, Japan

See More >>

h2 Local Recommendations



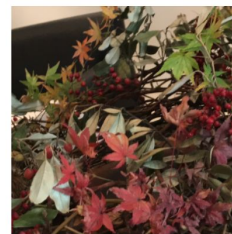
h4 Fiery Ramen

2346 reviews
Tokyo, Japan



h4 Fiery Ramen

2346 reviews
Tokyo, Japan



h4 Fiery Ramen

2346 reviews
Tokyo, Japan

See More >>

Summary



Identify Consistency, Accessibility and Performance problems in CSS



Build a pattern library with best practices baked in. Color contrast checking, semantic HTML, infrastructural UI elements



Use Analysis tools like CSS Stats and Lighthouse to periodically monitor the health of your product

Resources List

Chrome DevTools Audits

CSSStats

CSS Dig

Lighthouse

WAVE

Contrast checker

A11y styleguide

Color guard

styleguide-starter-kit



asankar@netflix.com



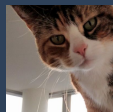
@archana_june

Many Thanks!!

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Q & A

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