Hunt down deprecated classes from your browser

by Julien Déramond

Storybook Paris #3 - What's your status
December 12th, 2024

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Upgrading frameworks and libraries is never as simple as it looks.

Semantic Versioning

1 . 2 . 3

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Major version   Breaking changes

Semantic Versioning

1 . 2 . 3

Major version	Breaking changes
Minor version	New features (non-breaking)

Semantic Versioning

1 . 2 . 3

Major version	Breaking changes
Minor version	New features (non-breaking)
Minor version	Fixes, docs typos (non-breaking)

It's not always that simple.

Let's dive into one Bootstrap example.

Framework Code

Simplified version of Bootstrap's code:

```scss
// Semantic token
$primary: blue;

// Component token
$btn-bg-primary: $primary;

// Component style
.btn-primary {
  background-color: $btn-bg-primary;
}
```

Framework Code

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// Semantic token
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.btn-primary {
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```

User Code

```html
<button class="btn-primary">Primary button</button>
```

Primary button

New release

Framework Code

Not a real change but let's say we need to add and use a `change-opacity` function for whatever reason.

```scss
+ @function change-opacity($color, $opacity: 1) {
+   @return rgba($color, $opacity);
+ }

$primary: blue;
- $btn-bg-primary: $primary;
+ $btn-bg-primary: change-opacity($primary);

.btn-primary {
  background-color: $btn-bg-primary;
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```

User Code

Basic user with the CDN version of Bootstrap.

```html
<button class="btn-primary">Primary button</button>
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Primary button

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.btn-primary {
  background-color: $btn-bg-primary;
}
```

User Code

Basic Sass user customizing a color to red.

```scss
// Overriding the semantic token
$primary: red;

<button class="btn-primary">Primary button</button>
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Primary button

New release

Framework Code

Not a real change but let's say we need to add and use a `change-opacity` function for whatever reason.

```
+ @function change-opacity($color, $opacity: 1) {
+   @return rgba($color, $opacity);
+ }

$primary: blue;
- $btn-bg-primary: $primary;
+ $btn-bg-primary: change-opacity($primary);

.btn-primary {
  background-color: $btn-bg-primary;
}
```

User Code

Advanced Sass user customizing a color to red with custom properties.

```
// Defining a custom property for the primary color
:root {
  --ds-primary: red;
}

// Overriding the semantic token
$primary: var(--ds-primary);

<button class="btn-primary">Primary button</button>
```

Primary button   ⚠ Breaking

?

> 95% of users   non-breaking

< 5% of users   breaking

(?)

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What do you do?

(?)

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What do you do?

- Is it a major, minor, or patch version?

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What do you do?

- Is it a major, minor, or patch version?
- What if all your modifications are like that?

(?)

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< 5% of users   breaking

What do you do?

- Is it a major, minor, or patch version?
- What if all your modifications are like that?
- Do we stay with a minor version 0 forever?

HUGO **hugo** `Public`

Releases `303`

🏷️ **v0.139.3** `Latest`
last week

+ 302 releases
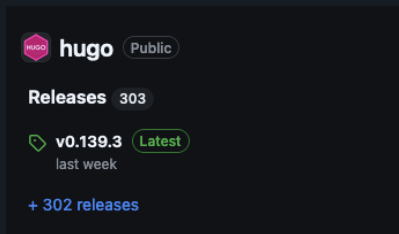
The maintainer's nightmare

Imagine maintaining a library with thousands or millions of users where every change is a potential landmine.

- Some users want rapid innovation.

- Others demand absolute stability.

- And everyone uses your library differently.

?

Do versions numbers really matter?

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I've been asking myself this question a lot.

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Maybe version numbers aren't as important as we think.
What truly matters is the migration process—
how you move from one version to the next.

(?)

Do versions numbers really matter?

I've been asking myself this question a lot.

Maybe version numbers aren't as important as we think.
What truly matters is the migration process—how you move from one version to the next.

If a tool migrates your code, version numbers might lose their significance.
Unless you need to track when new features arrive, they might not be worth worrying about at all.

Our role as maintainers

Balancing innovation and stability.

Beyond that, how can we make sure migrations are smooth for everyone?

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- Migration guides in the documentation.

  Nobody *Reads The Fabulous Manual*.

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- Create tools to spot breaking changes.

    Scripts or IDE extensions.

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- Changelog.
- GitHub release.
- Migration guides in the documentation.

  Nobody *Reads The Fabulous Manual*.

- Create tools to spot breaking changes.

  Scripts or IDE extensions.

- Create tools to spot and fix your code.

  Automated migrations by tools like Storybook

However, automated migrations tools:

- are not always perfect,

- can be costly to create, and maintain,

- and are hard to craft.

Especially when your core team is small and working on the project in their spare time.

Experimentation

Sometimes, as maintainers, we need to explore, experiment, and *have fun with new ideas.*

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And I gave it a try.

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I stumbled upon a Bootstrap GitHub discussion mentioning an idea about a browser extension highlighting deprecated classes in websites.

And I gave it a try.

julien-deramond/
bootstrap-deprecated-classes-extension

Browser extension highlighting Bootstrap deprecated classes in websites

https://getbootstrap.com/docs/4.6/components/buttons/

.mr-md-2

B

Home **Documentation** Examples Icons Themes Expo Blog

.ml-md-auto

.mr-md-2 v4.6

.pr-1

.my-n2

.my-n2

Bootstrap 3

☑ Bootstrap 4

Bootstrap 5
(removed in Bootstrap 6)

Reset

Button tags

Outline buttons

Sizes

Active state

Disabled state

Link functionality
caveat

Button plugin

Toggle states

Checkbox and radio
buttons

Methods

Getting started

Layout

Content

Components

Alerts

Badge

Breadcrumb

Buttons

Button group

Card

Carousel

Collapse

Dropdowns

Forms

Input group

Jumbotron

List group

Media object

Modal

Navs

.btn-group-toggle Checked

Copy

```html
<div class="btn-group-toggle" data-toggle="buttons">
  <label class="btn btn-secondary active">
    <input type="checkbox" checked> Checked
  </label>
</div>
```

.btn-group-toggle Active Radio Radio

Copy

```html
<div class="btn-group btn-group-toggle" data-toggle="buttons">
  <label class="btn btn-secondary active">
    <input type="radio" name="options" id="option1" checked> Active
  </label>
  <label class="btn btn-secondary">
    <input type="radio" name="options" id="option2"> Radio
  </label>
  <label class="btn btn-secondary">
    <input type="radio" name="options" id="option3"> Radio
  </label>
</div>
```

B Docs Examples Icons Themes Blog

Search ⌘K

v5.3

☐ Bootstrap 3
☐ Bootstrap 4
☑ Bootstrap 5
(removed in Bootstrap 6)

Reset

Spinners
Toasts
Tooltips

✨ **Helpers**
Clearfix
Color & background
Colored links
Focus ring
Icon link
Position
Ratio
Stacks
Stretched link
Text truncation
Vertical rule
Visually hidden

⊙ **Utilities**
API
Background
Borders
Colors
Display
Flex
Float
Interactions
Link
Object fit
Opacity

.text-body

.text-body-emphasis

.text-body-secondary

.text-body-tertiary

.text-black

.text-white

.text-black-50 .text-black-50

.text-white-50 .text-white-50

On this page

Colors
Opacity
How it works
Example
Specificity
CSS
Sass variables
Sass maps
Sass utilities API

HTML ⚡ 📋

```html
<p class="text-primary">.text-primary</p>
<p class="text-primary-emphasis">.text-primary-emphasis</p>
<p class="text-secondary">.text-secondary</p>
<p class="text-secondary-emphasis">.text-secondary-emphasis</p>
<p class="text-success">.text-success</p>
<p class="text-success-emphasis">.text-success-emphasis</p>
<p class="text-danger">.text-danger</p>
<p class="text-danger-emphasis">.text-danger-emphasis</p>
<p class="text-warning bg-dark">.text-warning</p>
<p class="text-warning-emphasis">.text-warning-emphasis</p>
<p class="text-info bg-dark">.text-info</p>
<p class="text-info-emphasis">.text-info-emphasis</p>
<p class="text-light bg-dark">.text-light</p>
<p class="text-light-emphasis">.text-light-emphasis</p>
<p class="text-dark bg-white">.text-dark</p>
<p class="text-dark-emphasis">.text-dark-emphasis</p>

<p class="text-body">.text-body</p>
<p class="text-body-emphasis">.text-body-emphasis</p>
<p class="text-body-secondary">.text-body-secondary</p>
```

Technical Breakdown

Here's how the extension works.

1. Fetch the latest Bootstrap CDN versions of Bootstrap 4 and 5 CSS files.

Bootstrap 4

```
/*!
 * Bootstrap v4.6.2 (https://getbootstrap.com/)
 * Copyright 2011-2022 The Bootstrap Authors
 * Copyright 2011-2022 Twitter, Inc.
 * Licensed under MIT (https://github.com/twbs/bootstrap/
 */
:root {
  --blue: #007bff;
  --indigo: #6610f2;
```

Bootstrap 5

```
@charset "UTF-8";
/*!
 * Bootstrap  v5.3.3 (https://getbootstrap.com/)
 * Copyright 2011-2024 The Bootstrap Authors
 * Licensed under MIT (https://github.com/twbs/bootstrap/
 */
:root,
[data-bs-theme=light] {
  --bs-blue: #0d6efd;
  --bs-indigo: #6610f2;
```

Technical Breakdown

Here's how the extension works.

1. Fetch the latest Bootstrap CDN versions of Bootstrap 4 and 5 CSS files.
2. Parse, find, and order classes alphabetically in a JSON file.

Bootstrap 4

```json
{
  "classes": [
    ".accordion",
    ".active",
    ".alert",
    ".alert-danger",
    ".alert-dark",
    ".alert-dismissible",
    ".alert-heading",
```

Bootstrap 5

```json
{
  "classes": [
    ".accordion",
    ".accordion-body",
    ".accordion-button",
    ".accordion-collapse",
    ".accordion-flush",
    ".accordion-header",
    ".accordion-item",
```

Technical Breakdown

Here's how the extension works.

1. Fetch the latest Bootstrap CDN versions of Bootstrap 4 and 5 CSS files.
2. Parse, find, and order classes alphabetically in a JSON file.
3. Remove common classes. Generate a JSON file listing removed classes for Bootstrap 4.

```json
{
  "removed": [
    ".arrow",
    ".badge-danger",
    ".badge-dark",
    ".badge-info",
    ".badge-light",
    ".badge-pill",
    ".badge-primary",
    ".badge-secondary",
    //  ...
  ],
  "added": [
    ".accordion-body",
    ".accordion-button",
    ".accordion-collapse",
    ".accordion-flush",
    ".accordion-header",
    ".accordion-item",
    ".align-content-xxl-around",
    ".align-content-xxl-between",
    //  ...
  ]
}
```

Technical Breakdown

Here's how the extension works.

1. Fetch the latest Bootstrap CDN versions of Bootstrap 4 and 5 CSS files.
2. Parse, find, and order classes alphabetically in a JSON file.
3. Remove common classes. Generate a JSON file listing removed classes for Bootstrap 4.
4. Loop over the arrays of classes, and create a stylesheet to highlight removed classes in red.

```css
.bootstrap-browser-extension-bs-4 {
  .arrow {
    border: 5px solid red;
    border-radius: 0;

    &::before {
      color: #000;
      background-color: rgb(189, 127, 127);
      padding: 2px;
      border: 2px solid black;
      z-index: 10000;
      content: '.arrow'
    }
  }
}

.badge-danger {
  border: 5px solid red;
  border-radius: 0;

  &::before {
    color: #000;
    background-color: rgb(189, 127, 127);
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    border: 2px solid black;
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4. Loop over the arrays of classes, and create a stylesheet to highlight removed classes in red.
5. Each time we click on a checkbox, we inject the `.bootstrap-browser-extension-bs-{number}` class in page's `<body>`.

```html
<!DOCTYPE html>
<html lang="en">
  <head></head>
  <body
    class="bg-body bootstrap-browser-extension-bs-4"
  >
  </body>
</html>
```

The tool is rather handy while you're migrating from one version to another.

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Beyond Just Migration

Context at Orange our web framework is a fork of Bootstrap. So removed and deprecated classes are almost the same.

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This extension is a **design system audit tool**!

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This extension is a **design system audit tool**!

I can spy whether Orange websites have migrated to the latest version of Boosted just by visiting them.

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Beyond Just Migration

Context at Orange our web framework is a fork of Bootstrap. So removed and deprecated classes are almost the same.

A usage I didn't expect

This extension is a **design system audit tool**!

I can spy whether Orange websites have migrated to the latest version of Boosted just by visiting them.

And without any source code access.
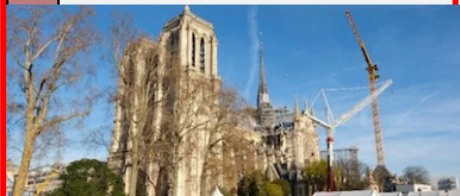
Going further

You probably don't use Bootstrap, but reuse the idea, the code, adapt it, and make it your own. It's Open Source under the MIT license.

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- Add some features
  Automatic issue creation, screenshots + webhook, links to the documentation

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- Create an extension for your design system library of components
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  Automatic issue creation, screenshots + webhook, links to the documentation
- Make it install by your developers
- Create a generic extension to upload a JSON file with classes
- Do the same thing in a Storybook addon

Closing: An Invitation

Open Source is about sharing and collaboration.

Hope it inspires you to create your own tools with other ideas for your library, your design system, or your favorite framework.

Let's make the migration process easier for everyone. ♡

Thank you!

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