

# Hunt down deprecated classes from your browser

by Julien Déramond



Storybook Paris #3 - What's your status

December 12th, 2024



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Bootstrap core team member



Open {re}Source and Advent of Open Source creator



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# Who had to deal with complex migrations of major versions?

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



# Semantic Versioning

**1 . 2 . 3**



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**1** . **2** . **3**

Major version

Breaking changes



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Minor version

New features (non-breaking)



# Semantic Versioning

1 . 2 . 3

Major version

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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:

```
// 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
$primary: blue;

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

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

# User Code

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

A rectangular button with a solid blue background and a thin white border. The text "Primary button" is centered on the button in a white, sans-serif font.

# 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: $btn-bg-primary;  
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$primary: blue;  
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+ $btn-bg-primary: change-opacity($primary);
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```
.btn-primary {  
  background-color: $btn-bg-primary;  
}
```

## User Code

Basic user with the CDN version of Bootstrap.

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



Primary button

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

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

## User Code

Basic Sass user customizing a color to red.

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

```
<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.

```
+ @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!*

②

*> 95% of users*

non-breaking

*< 5% of users*

breaking



*> 95% of users*

non-breaking

*< 5% of users*

breaking

# What do you do?





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non-breaking

*< 5% of users*

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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?



*> 95% of users*

non-breaking

*< 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** 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?**



# **Do versions numbers really matter?**

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.



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

*Nobody Reads The Fabulous Manual.*



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

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

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- Create tools to spot breaking changes.

Scripts or IDE extensions.



## Our role as maintainers

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

- 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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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



- 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

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>
```

On this page

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



# 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

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

## Bootstrap 5

```
{  
  "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.

```
{
  "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.

```
.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;  
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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.
5. Each time we click on a checkbox, we inject the

`.bootstrap-browser-extension-bs-  
{number} class in page's <body> .`

```
<!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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## 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!**

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.



Rechercher sur Orange...

News

Aide et contact



☐ Bootstrap 3

☒ Bootstrap 4

☐ Bootstrap 5  
(removed in Bootstrap 6)

Reset

Téléphones et forfaits

Internet

Internet + Mobile

TV, Musique et Jeux

Cybersécurité et Télésurveillance

SaferPhone

.no-gutters

**Vous rêvez  
d'un nouveau mobile ?**  
C'est par là



**.mr-2News**

Actu

Sports

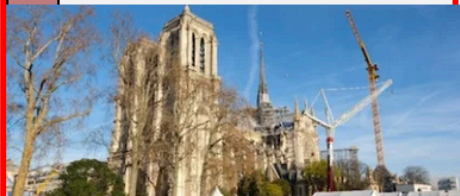
Cinéma et séries

Crise politique



Publicité

.ml-1



.ml-1







## 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  
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- Create a generic extension to upload a  
JSON file with classes



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- Create an extension for your design system library of components
- Add some features
  - 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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