

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



Semantic versioning

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

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:

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

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

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

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;
}
```

User code

```
<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;  
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```

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- $btn-bg-primary: $primary;  
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```

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

User code

Basic usage.

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



Primary button

New release

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+ @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

Customizing primary color.

```
// 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

Customizing primary color **with custom property**.

```
// 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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< 5% of users breaking

What do you do?



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< 5% of users breaking

What do you do?

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



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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?



> 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



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 version numbers really
matter?**



Do version numbers really matter?

I've been asking myself this question a lot.



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Are version numbers really that important?



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What truly matters is the *migration process*—how you move from one version to the next.



Do version numbers really matter?

I've been asking myself this question a lot.

Are version numbers really that important?

What truly matters is the *migration process*—how you move from one version to the next.

If a tool automatically migrates your code, do version numbers still matter?



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.



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- Changelog.
- GitHub release.



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



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

- Changelog.
- GitHub release.
- Migration guides in the documentation.
- Create tools to spot breaking changes.
Scripts or IDE extensions.



Our role as maintainers

Balancing innovation and stability.

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

- Changelog.
- GitHub release.
- Migration guides in the documentation.
- Create tools to spot breaking changes.
 - Scripts or IDE extensions.
- Create tools to spot **and fix** breaking changes.
 - Automated migrations (e.g., Storybook or Angular)

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.



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

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And I gave it a try.

julien-deramond/
**bootstrap-deprecated-classes-
extension**



Browser extension highlighting Bootstrap deprecated classes in websites

Buttons - Bootstrap v4.6

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

Home Documentation Examples Icons Themes Expo Blog

.mr-md-2

.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
Navbar

.btn-group-toggle Checked

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

Copy

.btn-group-toggle Active Radio Radio

```
<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>
```

Copy

Navigation

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

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;  
    background-color: rgb(189, 127, 127);  
    padding: 2px;  
    border: 2px solid black;  
    z-index: 10000;  
    content: '.badge-danger'
```



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.
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 extension is quite useful while you're migrating your project from Bootstrap 4 to 5.



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Context at Orange: Our web framework is a fork of Bootstrap → most deprecated classes are the same.



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A usage I didn't expect



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(Context at Orange: Our web framework is a fork of Bootstrap → most deprecated classes are the same.)

A usage I didn't expect

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



The extension is quite useful while you're migrating your project from Bootstrap 4 to 5.

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A usage I didn't expect

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

I can spy on Orange websites to see if they've migrated to the latest version of our framework –just by visiting them.



The extension is quite useful while you're migrating your project from Bootstrap 4 to 5.

(Context at Orange: Our web framework is a fork of Bootstrap → most deprecated classes are the same.)

A usage I didn't expect

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

I can spy on Orange websites to see if they've migrated to the latest version of our framework –just by visiting them.

No source code access needed.



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

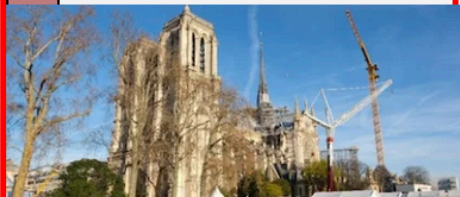
Cinéma et séries

Crise politique



Publicité

.ml-1



.ml-1





Going further

You probably don't use Bootstrap 😊 but **it's Open Source.**

Reuse the idea, the code, adapt it, and make it your own.



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- **Create an extension** for your design system library of components



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- **Add some features** like automatic issue creation, screenshots + webhook, links to the documentation



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- **Add an extension to your recommendations** and make it installed by your developers



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- **Create a generic extension** to upload a JSON file of deprecated content, whatever the framework



Going further

You probably don't use Bootstrap 🙄 but **it's Open Source**.

Reuse the idea, the code, adapt it, and make it your own.

- **Create an extension** for your design system library of components
- **Add some features** like automatic issue creation, screenshots + webhook, links to the documentation
- **Add an extension to your recommendations** and make it installed by your developers
- **Create a generic extension** to upload a JSON file of deprecated content, whatever the framework
- Do the same thing in a **Storybook addon**



Open Source is `code` , but is also *ideas, sharing and collaboration.*

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

Together, let's make the migration process easier for everyone. ♡



Thank you!

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