Introduzione alle Applicazioni Web

CSS Bootstrap

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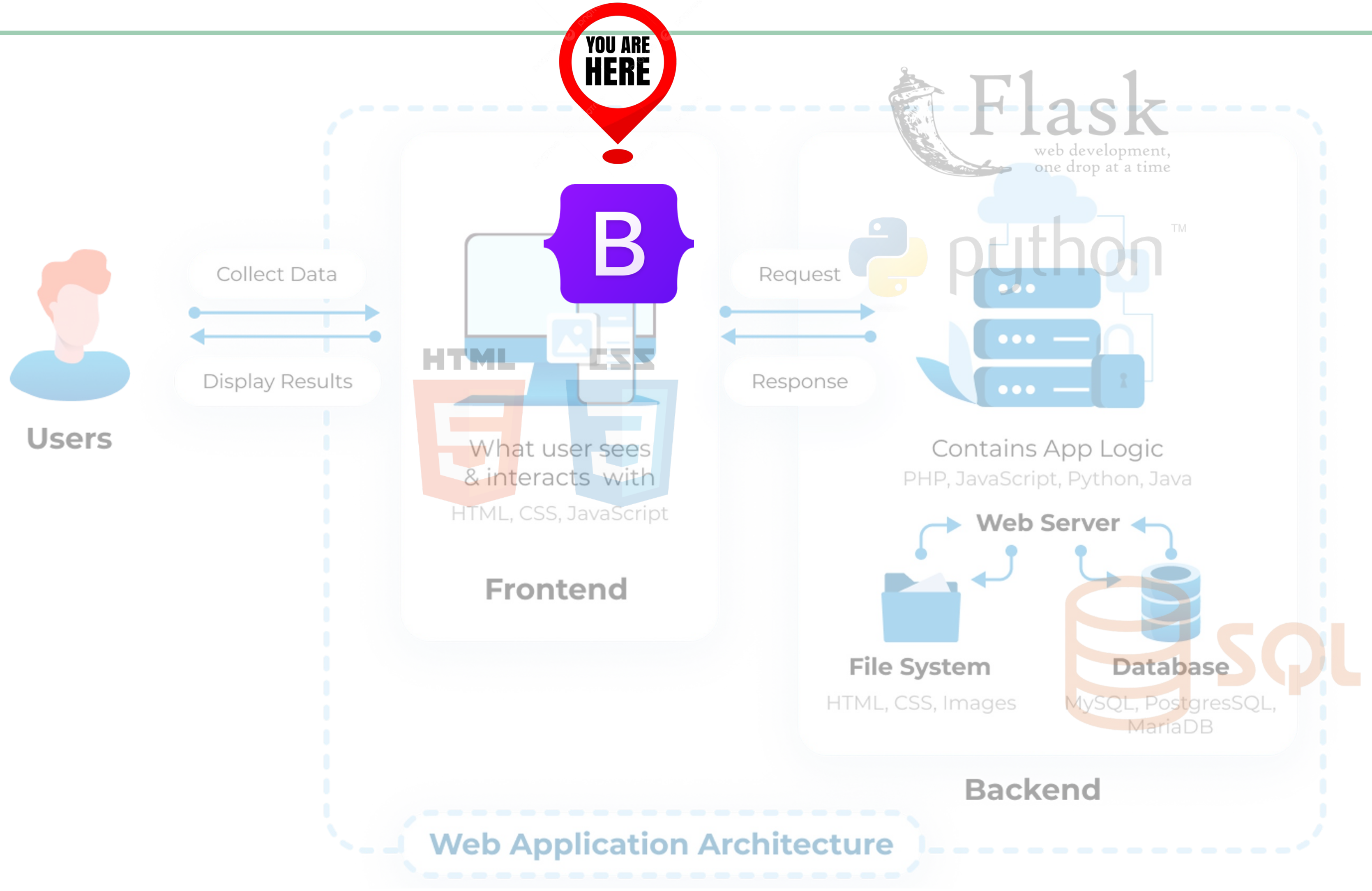
Goals

- Understand what **Bootstrap** is and why it's useful
- Explore Bootstrap’s **grid system**, **components**, and **utilities**
- Learn how to use Bootstrap for **responsive design**
- Practice using Bootstrap **classes**

📍 CSS Bootstrap: where are we?

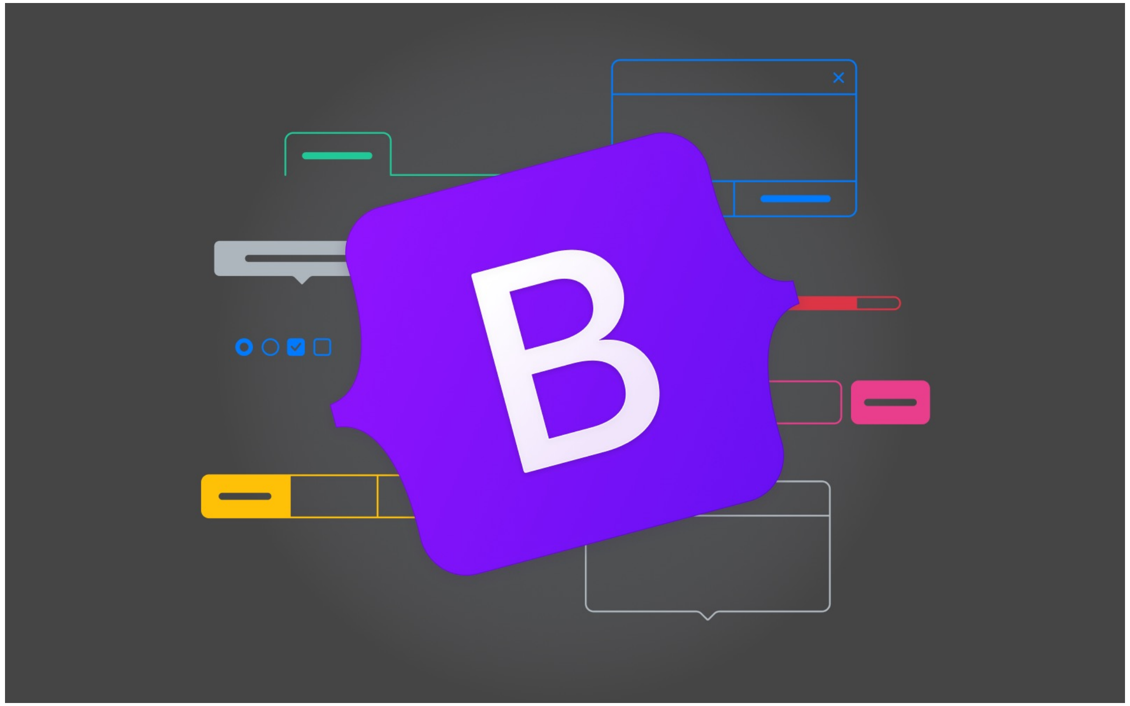


CSS Bootstrap

- A popular **front-end framework** for building responsive websites
  - A collection of **pre-styled components** and a **flexible grid system**
  - It helps create good-looking pages without writing all the CSS from scratch (**ready-to-use classes**)
- 📱Ensures **mobile-first**, consistent, and modern design
- Developed by **Twitter** in 2011 to standardize web design
  - Continues to evolve, with major updates improving flexibility and responsiveness

CSS Bootstrap: Features

- **Grid System**: A flexible layout structure to create responsive designs with rows and columns.
- **Predefined Components**: Ready-made UI elements like buttons, navigation bars, forms, and modals.
- **Utilities**: Small classes for common tasks like spacing, alignment, and visibility.
- **Icons**
- **Examples**: Ready-to-use templates and code snippets demonstrating the framework in action.



https://webpixels.io/blog/8-reasons-to-use-bootstrap-or-a-css-framework

CSS Bootstrap: Grid System

Uses a series of **containers**, **rows**, and **columns** to layout and align content.

It’s built with **flexbox** and is fully responsive

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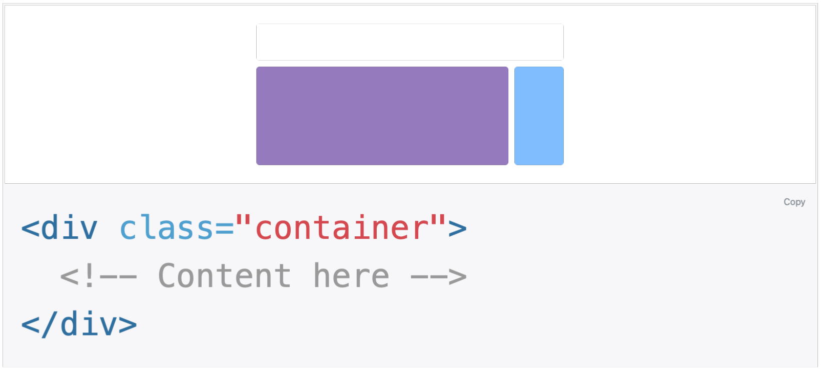
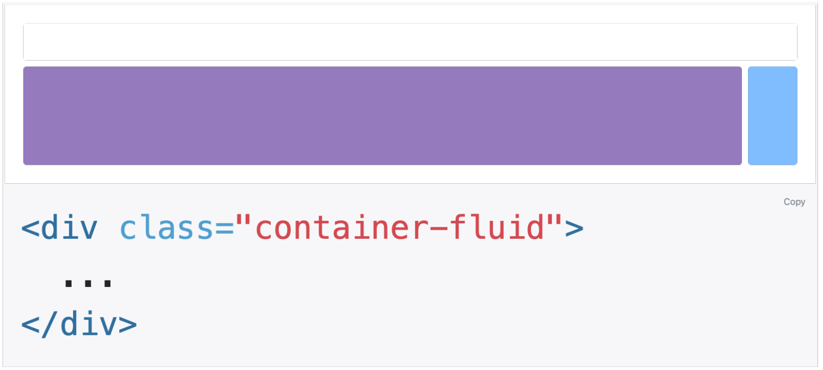
- **Containers**: the most basic layout element in Bootstrap and is **required** when using the default grid system



```
<div class="container">
  <!-- Content here -->
</div>
```

Use `.container-fluid` for a full width container, spanning the entire width of the viewport.



```
<div class="container-fluid">
  ...
</div>
```

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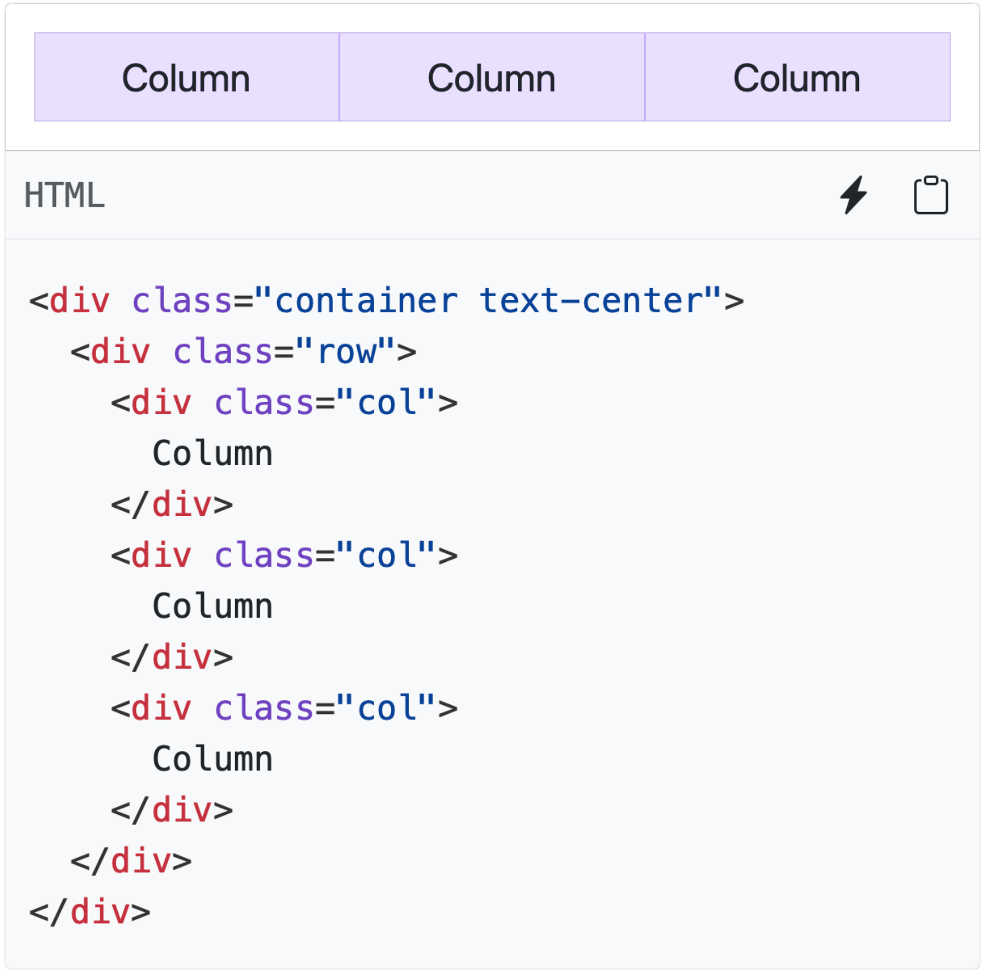
- **Rows are wrappers for columns**



```html
<div class="container text-center">
  <div class="row">
    <div class="col">
      Column
    </div>
    <div class="col">
      Column
    </div>
    <div class="col">
      Column
    </div>
  </div>
</div>
```

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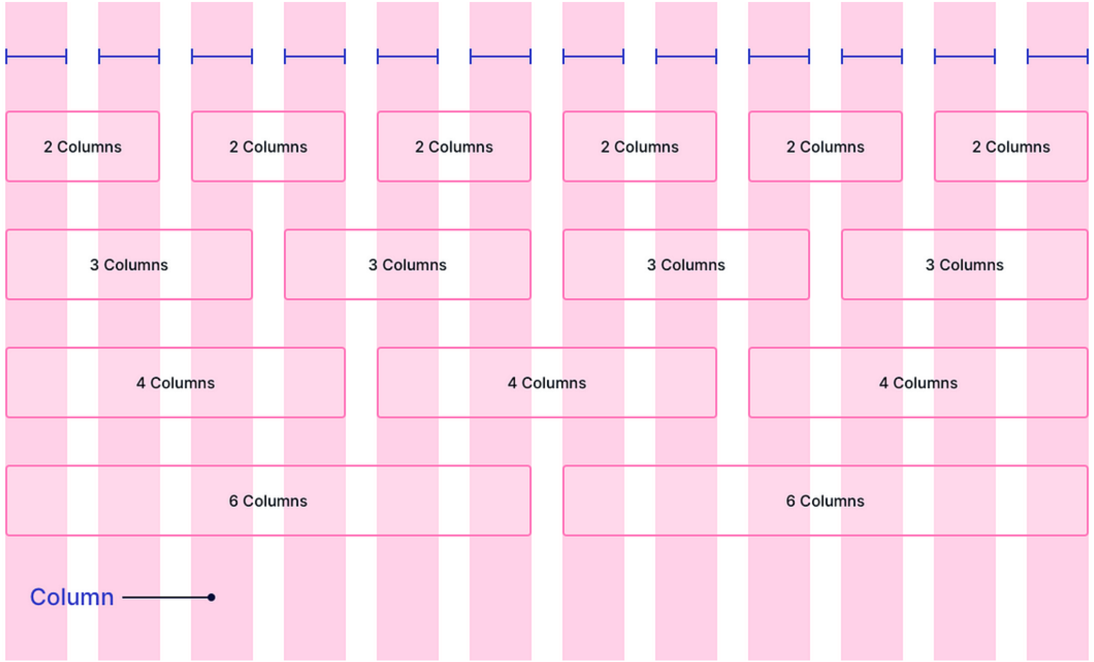
- **Rows are wrappers for columns**
- There are **12 template columns** available **per row**



https://miro.medium.com/v2/resize:fit:1200/1*hw8EKWA-DNytrtbzgZ_dEw.png

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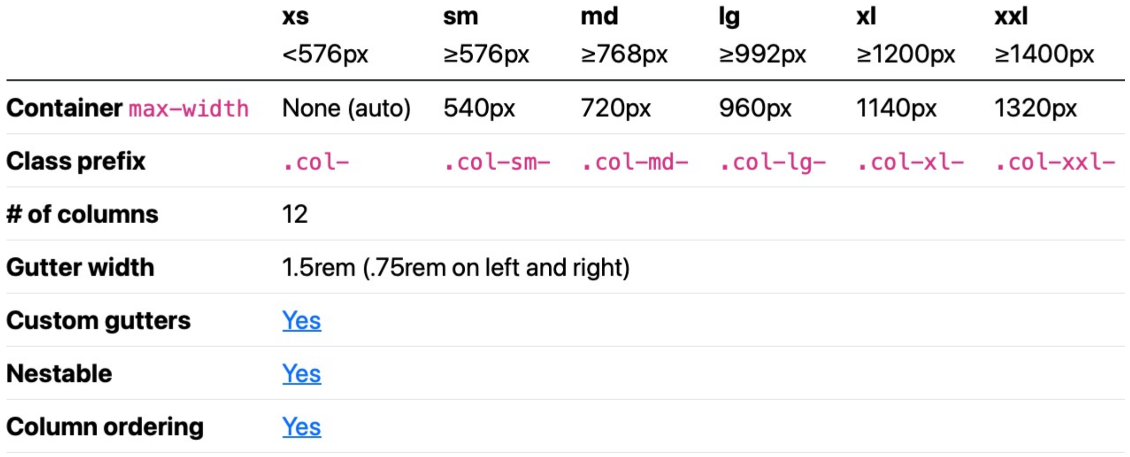
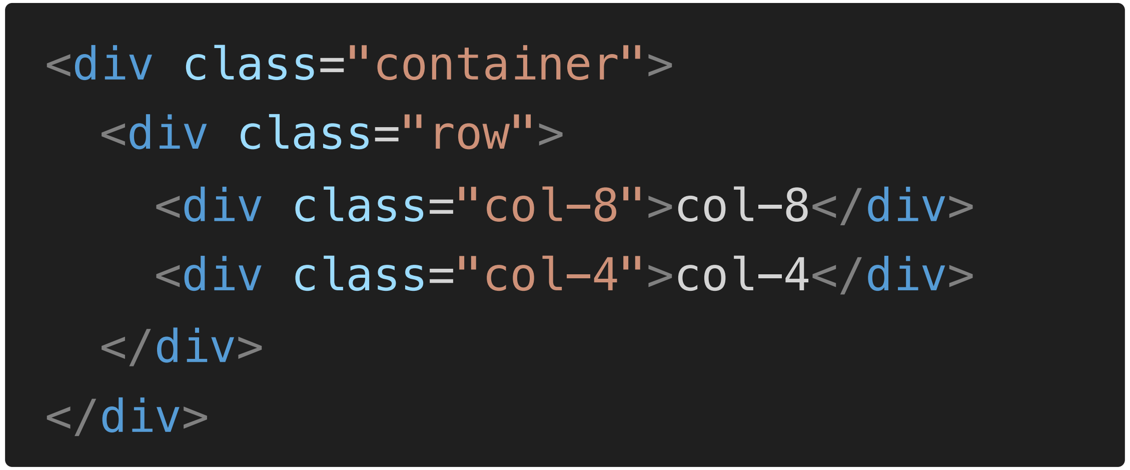


	xs <576px	sm ≥576px	md ≥768px	lg ≥992px	xl ≥1200px	xxl ≥1400px
Container `max-width`	None (auto)	540px	720px	960px	1140px	1320px
Class prefix	`.col-`	`.col-sm-`	`.col-md-`	`.col-lg-`	`.col-xl-`	`.col-xxl-`
# of columns	12					
Gutter width	1.5rem (.75rem on left and right)					
Custom gutters	Yes					
Nestable	Yes					
Column ordering	Yes					



```
<div class="container">
  <div class="row">
    <div class="col-8">col-8</div>
    <div class="col-4">col-4</div>
  </div>
</div>
```

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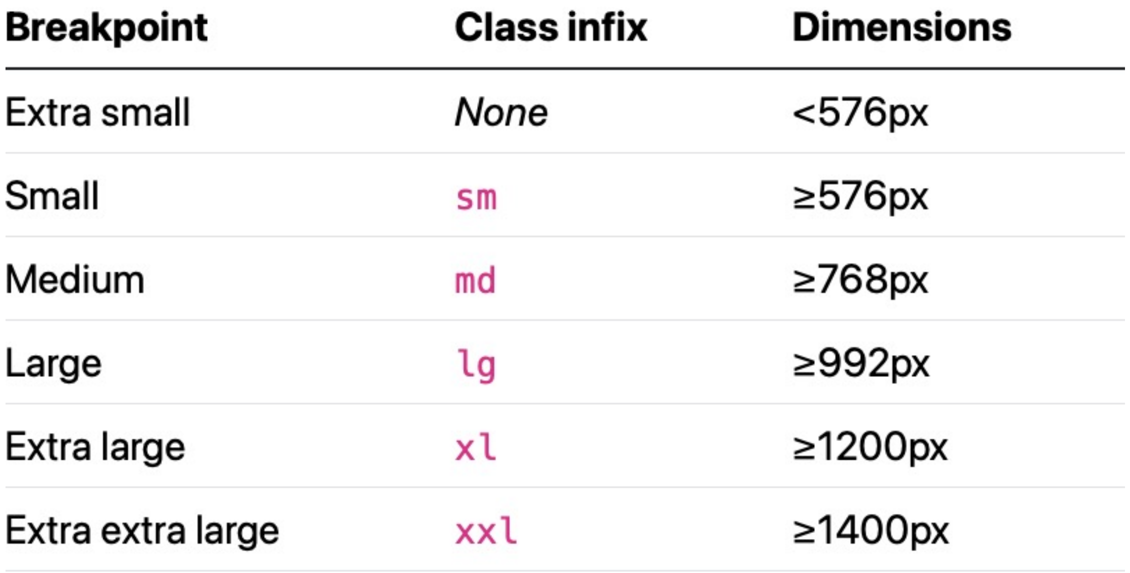
- Includes **six default breakpoints** for building responsively



Breakpoint	Class infix	Dimensions
Extra small	*None*	<576px
Small	`sm`	≥576px
Medium	`md`	≥768px
Large	`lg`	≥992px
Extra large	`xl`	≥1200px
Extra extra large	`xxl`	≥1400px

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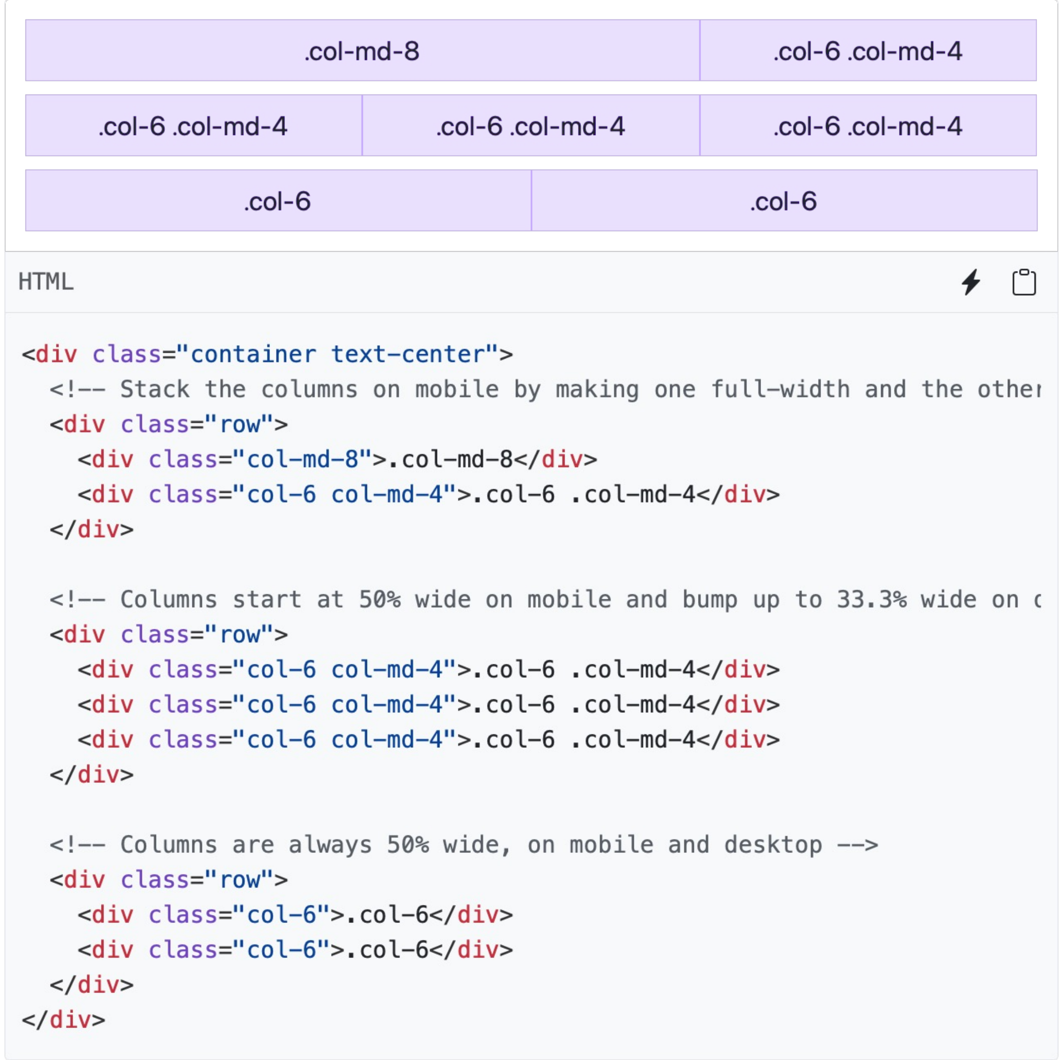


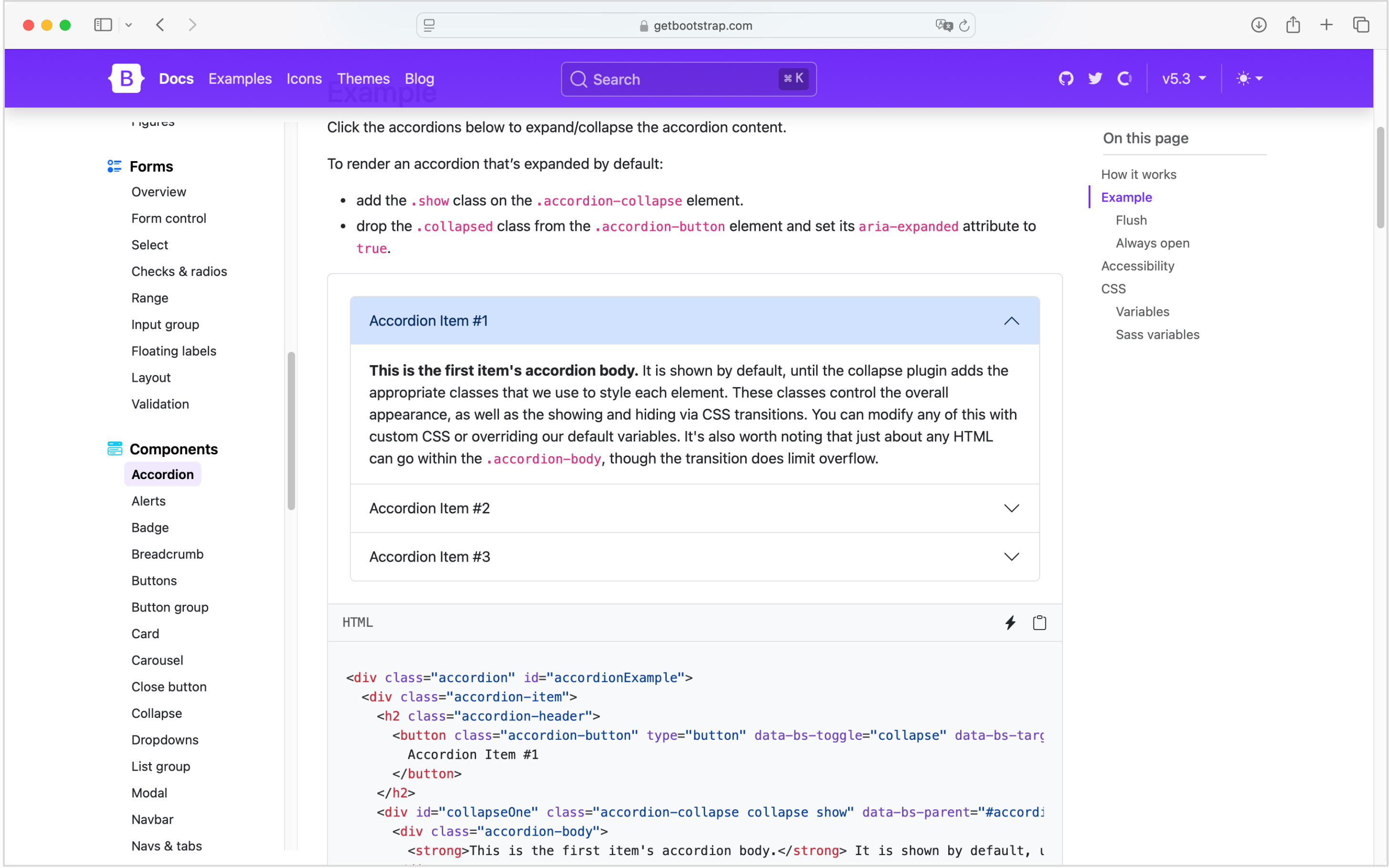
.col-md-8		.col-6 .col-md-4
.col-6 .col-md-4	.col-6 .col-md-4	.col-6 .col-md-4
.col-6	.col-6	

```
<div class="container text-center">
  <!-- Stack the columns on mobile by making one full-width and the other
  <div class="row">
    <div class="col-md-8">.col-md-8</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  </div>

  <!-- Columns start at 50% wide on mobile and bump up to 33.3% wide on
  <div class="row">
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  </div>

  <!-- Columns are always 50% wide, on mobile and desktop -->
  <div class="row">
    <div class="col-6">.col-6</div>
    <div class="col-6">.col-6</div>
  </div>
</div>
```

CSS Bootstrap: Predefined Components

Ready-made UI elements like buttons, navigation bars, forms, and modals

- https://getbootstrap.com/docs/5.3



Example

Click the accordions below to expand/collapse the accordion content.

To render an accordion that's expanded by default:

- add the `.show` class on the `.accordion-collapse` element.
- drop the `.collapsed` class from the `.accordion-button` element and set its `aria-expanded` attribute to `true`.

Accordion Item #1

This is the first item's accordion body. It is shown by default, until the collapse plugin adds the appropriate classes that we use to style each element. These classes control the overall appearance, as well as the showing and hiding via CSS transitions. You can modify any of this with custom CSS or overriding our default variables. It's also worth noting that just about any HTML can go within the `.accordion-body`, though the transition does limit overflow.

Accordion Item #2

Accordion Item #3

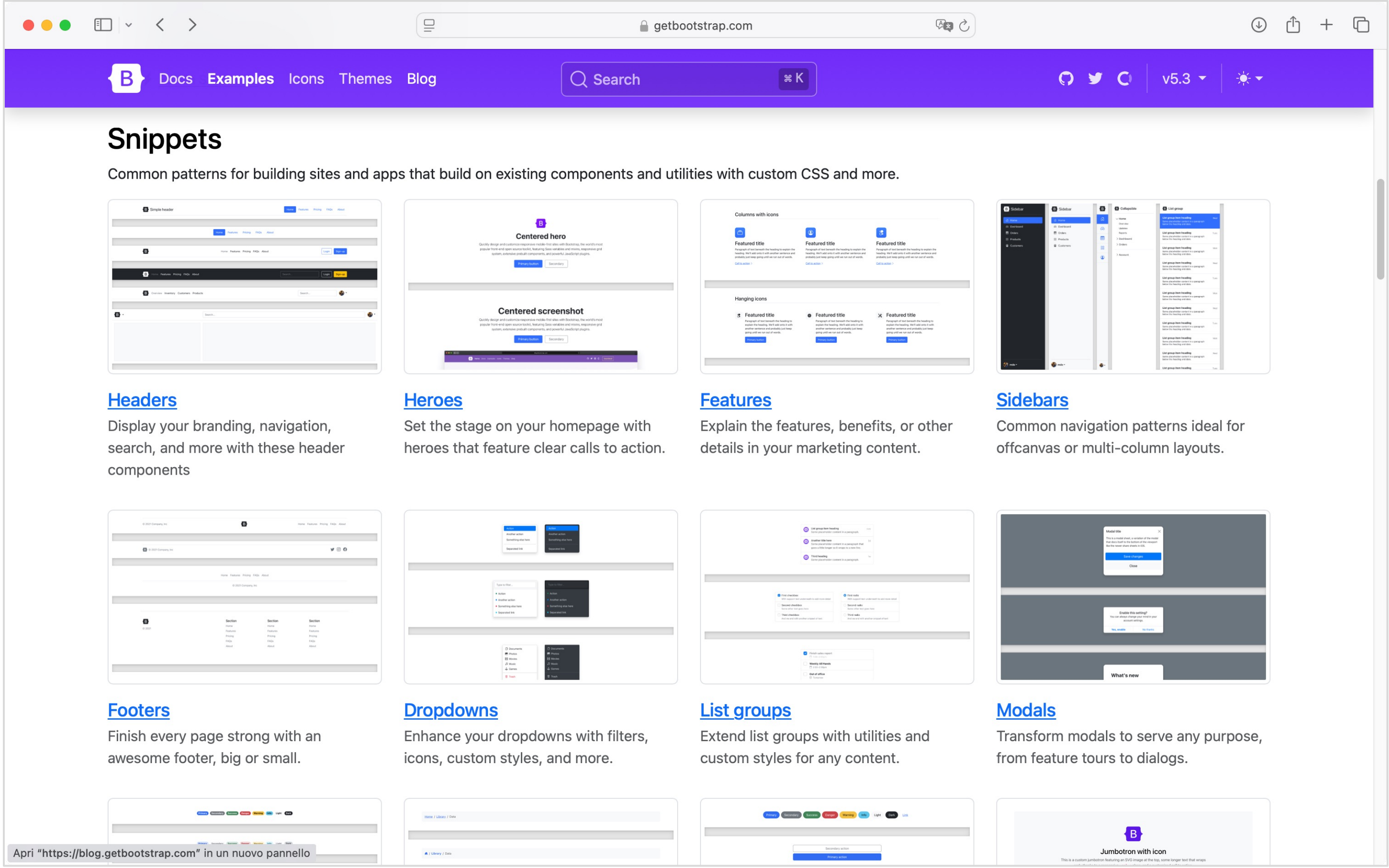
HTML

```html
<div class="accordion" id="accordionExample">
  <div class="accordion-item">
    <h2 class="accordion-header">
      <button class="accordion-button" type="button" data-bs-toggle="collapse" data-bs-targ
        Accordion Item #1
      </button>
    </h2>
    <div id="collapseOne" class="accordion-collapse collapse show" data-bs-parent="#accordi
      <div class="accordion-body">
        <strong>This is the first item's accordion body.</strong> It is shown by default, u
```

CSS Bootstrap: Examples

Ready-made UI elements like buttons, navigation bars, forms, and modals

- https://getbootstrap.com/docs/5.3/examples/



Snippets

Common patterns for building sites and apps that build on existing components and utilities with custom CSS and more.

Headers
Display your branding, navigation, search, and more with these header components

Heroes
Set the stage on your homepage with heroes that feature clear calls to action.

Features
Explain the features, benefits, or other details in your marketing content.

Sidebars
Common navigation patterns ideal for offcanvas or multi-column layouts.

Footers
Finish every page strong with an awesome footer, big or small.

Dropdowns
Enhance your dropdowns with filters, icons, custom styles, and more.

List groups
Extend list groups with utilities and custom styles for any content.

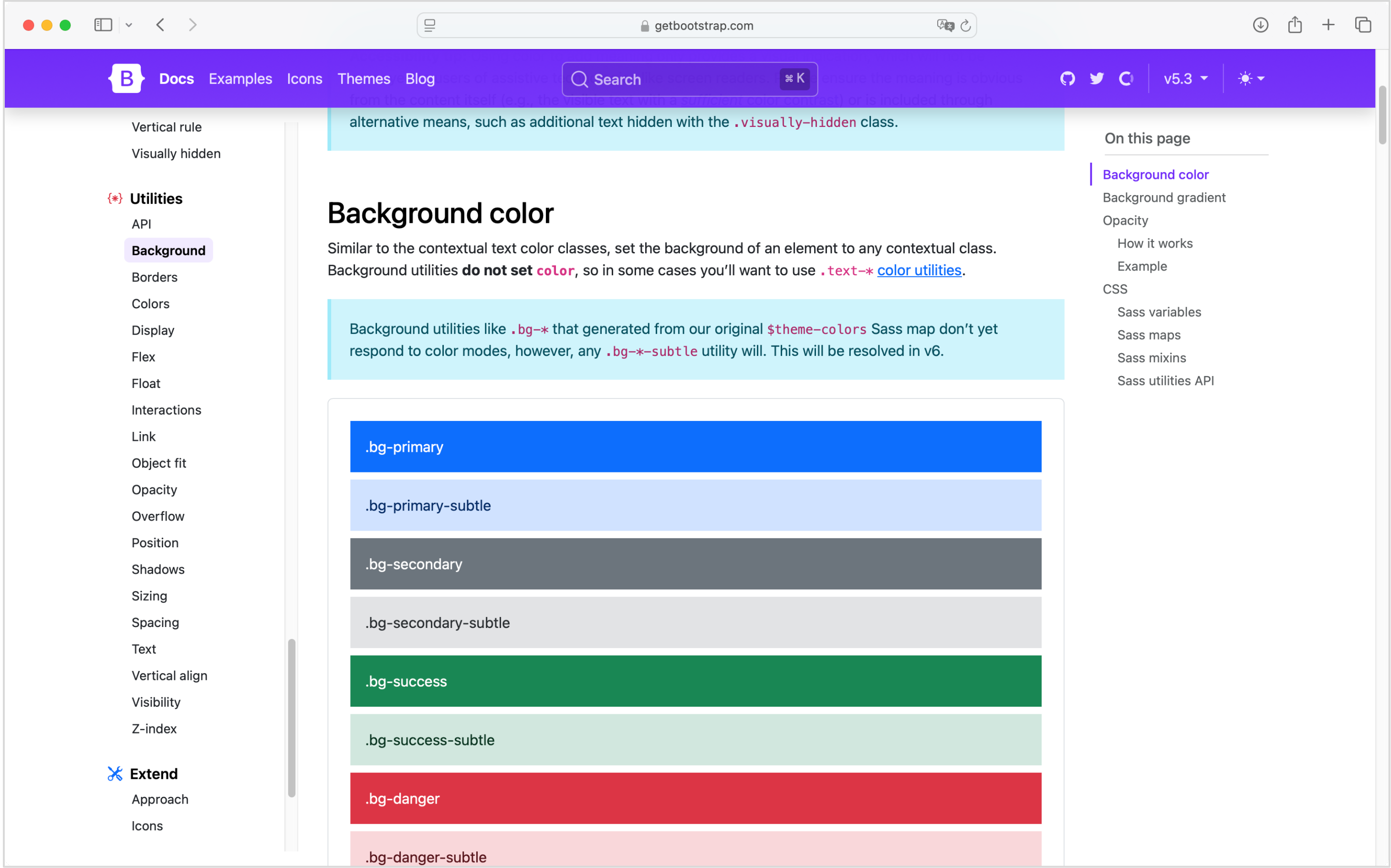
Modals
Transform modals to serve any purpose, from feature tours to dialogs.

Apri “https://blog.getbootstrap.com” in un nuovo pannello

CSS Bootstrap: Utilities

Small classes for **common tasks** like spacing, alignment, and visibility

- https://getbootstrap.com/docs/5.3



alternative means, such as additional text hidden with the `.visually-hidden` class.

Background color

Similar to the contextual text color classes, set the background of an element to any contextual class. Background utilities **do not set** `color`, so in some cases you'll want to use `.text-*` color utilities.

Background utilities like `.bg-*` that generated from our original `$theme-colors` Sass map don't yet respond to color modes, however, any `.bg-*-subtle` utility will. This will be resolved in v6.

.bg-primary

.bg-primary-subtle

.bg-secondary

.bg-secondary-subtle

.bg-success

.bg-success-subtle

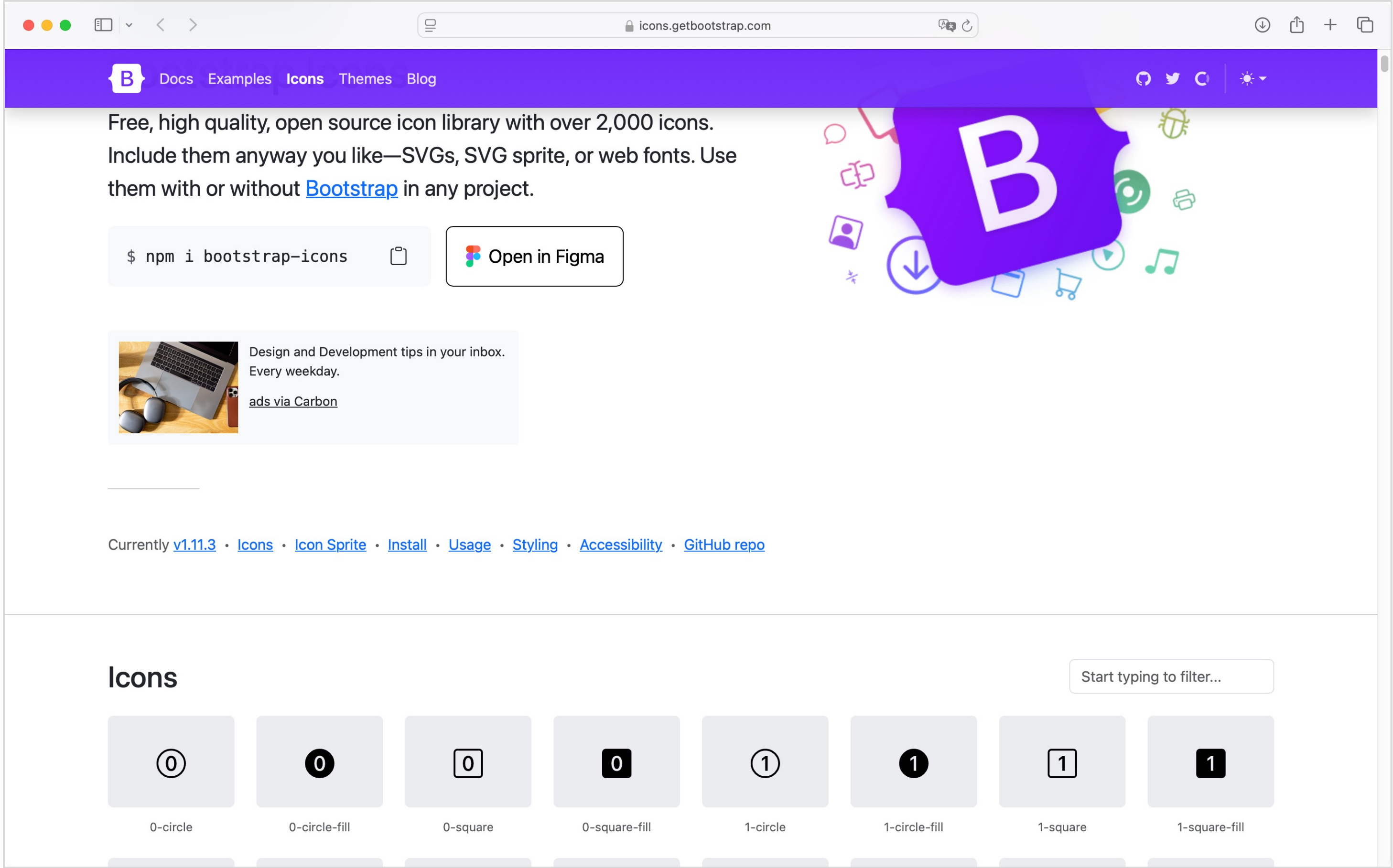
.bg-danger

.bg-danger-subtle

CSS Bootstrap: Icons

Free, high-quality, open-source **icon library**

- https://icons.getbootstrap.com



Free, high quality, open source icon library with over 2,000 icons. Include them anyway you like—SVGs, SVG sprite, or web fonts. Use them with or without Bootstrap in any project.

```
$ npm i bootstrap-icons
```

Currently v1.11.3 • Icons • Icon Sprite • Install • Usage • Styling • Accessibility • GitHub repo

Icons

Start typing to filter...

0-circle	0-circle-fill	0-square	0-square-fill	1-circle	1-circle-fill	1-square	1-square-fill

Getting Started with Bootstrap

Step 1:

Add the **Bootstrap CSS** and **JavaScript links** to the HTML <head> section

Just as we have done with our local CSS file

The **links** are available at:

- https://getbootstrap.com

```
<head>
  <meta charset="utf-8">
  <title>Bootstrap demo</title>
  <link href="styles.css" rel="stylesheet">
  <link
href="https://cdn.jsdelivr.net/npm/bootstra
p@5.3.3/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
QWTKZyjpPEjISv5WaRU9OFeRpok6YctnYmDr5pNlyT2
bRjXh0JMhjY6hW+ALEwIH"
crossorigin="anonymous">
</head>
```

Getting Started with Bootstrap

Step 2:

Add the responsive **viewport** meta tag to the <head> section

- **`width=device-width`**:

  Sets the width of the viewport to match the device's screen width (so it adapts to any screen size)

- **`initial-scale=1`**:

  Ensures that the page is displayed at a normal scale (not zoomed in or out) when first loaded

```html
<head>
  <meta charset="utf-8">
  <meta name="viewport"
content="width=device-width,
initial-scale=1">
  <title>Bootstrap demo</title>
</head>
```

Getting Started with Bootstrap

Step 3:

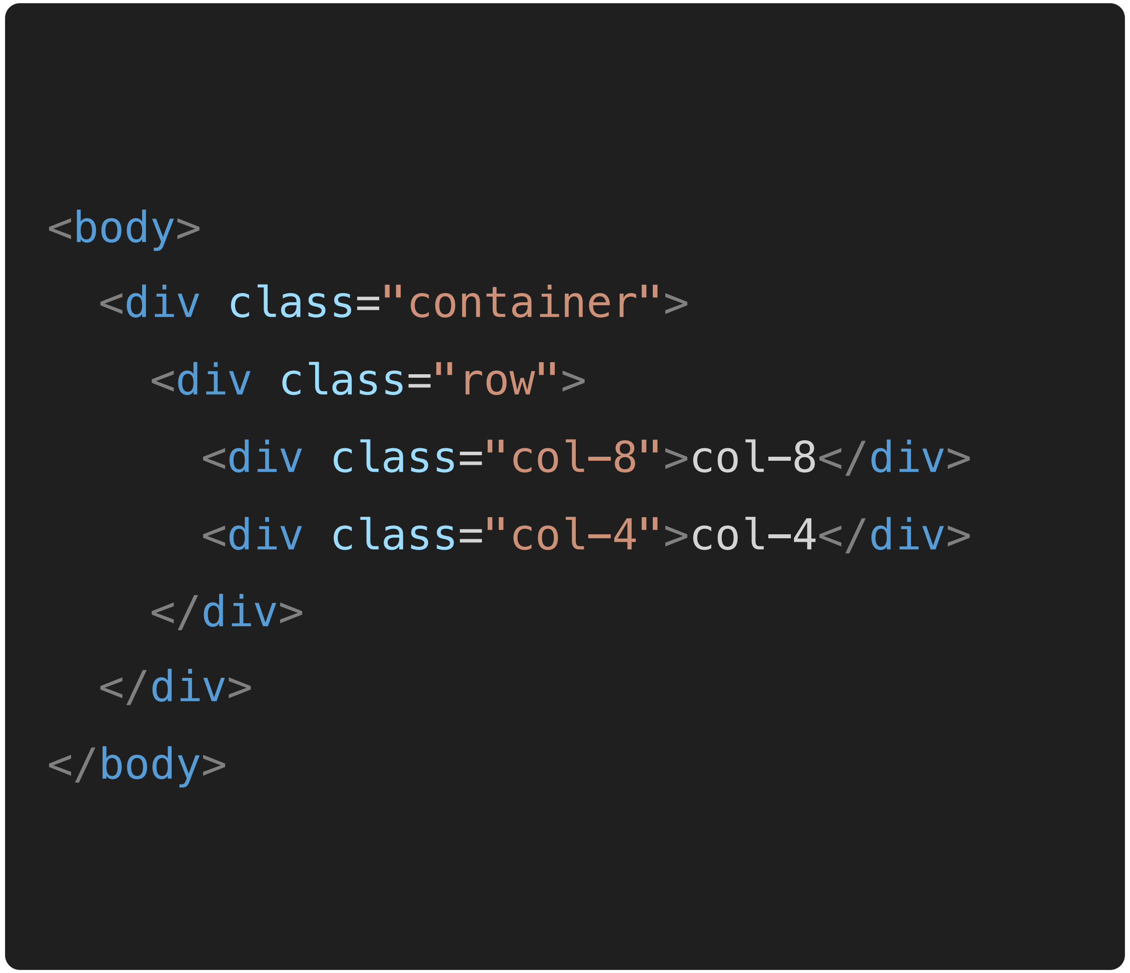
⚠️ Start with a **`<div class="container">`** to use the grid system

Step 4:

Use Bootstrap classes (https://getbootstrap.com/docs/5.3)

Add predefined classes for styling and layout

🎨 It can be **fully customized** by adding our own CSS styles, allowing you to **override** or **extend** its default design



```
<body>
  <div class="container">
    <div class="row">
      <div class="col-8">col-8</div>
      <div class="col-4">col-4</div>
    </div>
  </div>
</body>
```

Let's see it in practice

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