

Bootstrap framework

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2023/2024



Bootstrap

- CSS framework - library containing a pack of useful tools that make it easier to create GUI (graphical user interface) of web sites and web applications
- Can be used to style forms, buttons, texts and more
- Designed for building responsive, mobile-first sites



Responsive web design



RWD is an approach that makes web pages render well on a variety of devices.



Web site layouts automatically adjust and adapt to any device screen size, whether it is a desktop, a laptop, a tablet, or a mobile phone.



The approach is becoming more and more important as the amount of mobile device inceases.

https://getbootstrap.com/

The screenshot shows the Bootstrap 5.1 documentation page. The browser address bar displays 'getbootstrap.com/docs/5.1/getting-started/introduction/'. The page has a purple header with navigation links: Home, Docs, Examples, Icons, Themes, and Blog. A 'Download' button is in the top right. Below the header is a search bar and a version selector set to 'Bootstrap v5.1'. The left sidebar lists the 'Getting started' section with links to Introduction, Download, Contents, Browsers & devices, JavaScript, Webpack, Parcel, Accessibility, RFS, RTL, and Contribute. The main content area features the 'Introduction' section with a 'View on GitHub' button, followed by the 'Quick start' section with a link to the downloads page, and the 'CSS' section with a code snippet for the Bootstrap CSS link. The right sidebar, titled 'On this page', lists links for Quick start, CSS, JS, Bundle, Separate, Modules, Components, Starter template, Important globals, HTML5 doctype, Responsive meta tag, Box-sizing, Reboot, and Community. The code snippet in the CSS section is: `<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">`, with a 'Copy' button next to it.

getbootstrap.com/docs/5.1/getting-started/introduction/

Home Docs Examples Icons Themes Blog

Search docs... Ctrl + /

Bootstrap v5.1

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Introduction

View on GitHub

Get started with Bootstrap, the world's most popular framework for building responsive, mobile-first sites, with jsDelivr and a template starter page.

Quick start

Looking to quickly add Bootstrap to your project? Use jsDelivr, a free open source CDN. Using a package manager or need to download the source files? [Head to the downloads page.](#)

CSS

Copy-paste the stylesheet `<link>` into your `<head>` before all other stylesheets to load our CSS.

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">
```

Copy

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- Responsive meta tag
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- Reboot
- Community

Two ways of adding Bootstrap

CSS

Copy-paste the stylesheet `<link>` into your `<head>` before all other stylesheets to load our CSS.

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">
```

Copy

- Optional – also JS library (many components require the use of JavaScript to function properly, e.g. drop-down menu)

Two ways of adding Bootstrap

- Downloading the source code from the official page and include files using their path on disc (not advisable)

Download

[View on GitHub](#)

Download Bootstrap to get the compiled CSS and JavaScript, source code, or include it with your favorite package managers like npm, RubyGems, and more.

Compiled CSS and JS



Download ready-to-use compiled code for **Bootstrap v5.1.3** to easily drop into your project, which includes:

- Compiled and minified CSS bundles (see [CSS files comparison](#))
- Compiled and minified JavaScript plugins (see [JS files comparison](#))

This doesn't include documentation, source files, or any optional JavaScript dependencies like Popper.

[Download](#)

Started template –
if we need help 😊

← → ↻ getbootstrap.com/docs/5.1/getting-started/introduction/  

Search docs... Ctrl + / Bootstrap v5.1 ▾

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Starter template

Be sure to have your pages set up with the latest design and development standards. That means using an HTML5 doctype and including a viewport meta tag for proper responsive behaviors. Put it all together and your pages should look like this:

```
<!doctype html>
<html lang="en">
  <head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">

    <!-- Bootstrap CSS -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">

    <title>Hello, world!</title>
  </head>
  <body>
    <h1>Hello, world!</h1>

    <!-- Optional JavaScript; choose one of the two! -->

    <!-- Option 1: Bootstrap Bundle with Popper -->
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js" integrity="sha384-..."></script>

    <!-- Option 2: Separate Popper and Bootstrap JS -->
    <!--
    <script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.10.2/dist/umd/popper.min.js" integrity="sha384-..."></script>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.min.js" integrity="sha384-..."></script>
    -->
  </body>
</html>
```

Copy

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- HTML5 doctype
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If the library is linked properly, we can just start creating a web site with Bootstrap styles using its build-in classes, e.g.

> Getting started

> Customize

> Layout

> Content

> Forms

✓ Components

Accordion

Alerts

Badge

Breadcrumb

Buttons

Button group

Card

Carousel

Close button

Collapse

Dropdowns

List group

Modal

Buttons

[View on GitHub](#)

Use Bootstrap's custom button styles for actions in forms, dialogs, and more with support for multiple sizes, states, and more.

Examples

Bootstrap includes several predefined button styles, each serving its own semantic purpose, with a few extras thrown in for more control.



```
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-secondary">Secondary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-light">Light</button>
<button type="button" class="btn btn-dark">Dark</button>

<button type="button" class="btn btn-link">Link</button>
```

Copy

Advantages and disadvantages of using Bootstrap

PROS

- We can create websites quickly
- Easy to use because it's a pack of build-in classes
- It decreases the cost of creating applications
- Popularity = a lot of people use it -> easy to get technical support and large number of study materials

CONS

- A lot of sites has similar layout.
- Code redundancy – we include the whole library with every single class, even if we don't use it.
- It requires knowledge of HTML and CSS. You won't be able to use it as a beginner.

Responsive meta tag

Bootstrap is developed *mobile first*, a strategy in which we optimize code for mobile devices first and then scale up components as necessary using CSS media queries. To ensure proper rendering and touch zooming for all devices, **add the responsive viewport meta tag** to your `<head>`.

```
<meta name="viewport" content="width=device-width, initial-scale=1">
```

[Copy](#)

Responsive meta tag

← → ↻

getbootstrap.com/docs/5.1/getting-started/introduction/

🔍 ☆

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Bootstrap v5.1 ▾

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    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="styl

    <title>Hello, world!</title>
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  <body>
    <h1>Hello, world!</h1>

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    <!--
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    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.min.js" integrity=
    -->
  </body>
</html>
```

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On this page

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Important globals

HTML5 doctype

Responsive meta tag

Box-sizing

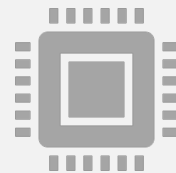
Reboot

Community

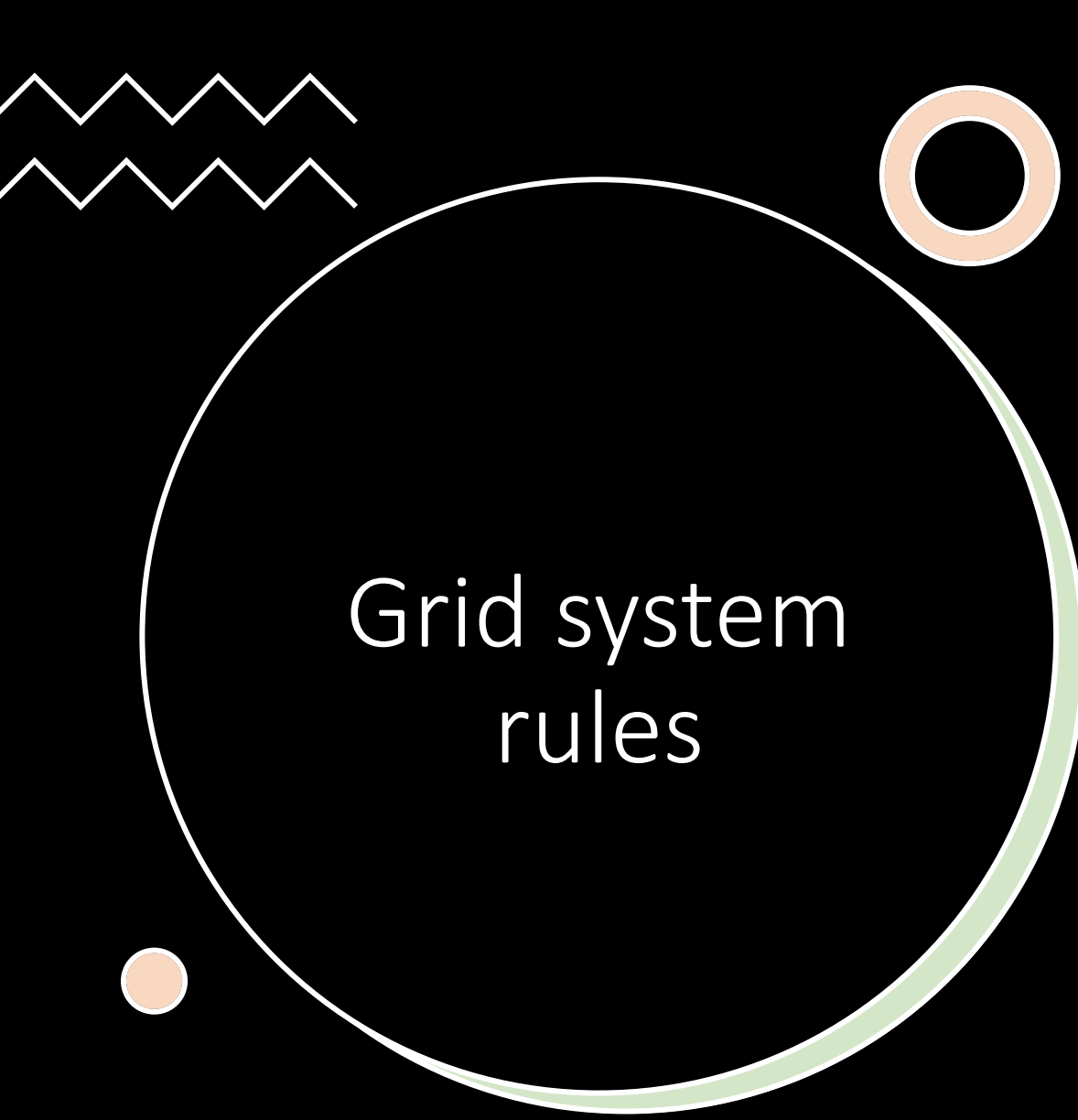
Grid system



Basic knowledge required to start using Bootstrap



Twelve column system with six default responsive breakpoints that help adjust layout to the size of device



Grid system rules

- Layout consists of containers with rows and columns
- Every row consists of 12 columns
- Column class `col` indicates the number of columns used by an element in a row
- Widths are set in percentages so you always have the same relative sizing whichever device you use



Grid system

- We don't have to use 12 columns individually - columns can be grouped together to create wider columns
- The grid system is responsive and the columns will re-arrange automatically depending on the screen size
- Make sure that the sum adds up to 12 or fewer (it is not required that you use all 12 available columns)

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1
span 4				span 4				span 4			
span 4				span 8							
span 6						span 6					
span 12											

Containers and rows

- Bootstrap requires a containing element to wrap site contents.
- There are two container classes available:
 - .container – class provides responsive pixel width, add margins on both side, content is centered
 - .container-fluid - class provides a full width container, usefull e.g. while creating a nav bar or header
- Rows are wrappers for columns and consists of up to 12 columns.

Containers, rows and columns

```
<body>
<div class="container" style="background-color: yellowgreen">
  <div class="row">
    <div class="col-8">Content using 8 columns</div>
    <div class="col-4">Content using 4 columns</div>
  </div>
</div>
<div class="container">
  <div class="row">
    <div class="col-3">Content using 3 columns</div>
    <div class="col-3">Content using 3 columns</div>
    <div class="col-3">Content using 3 columns</div>
  </div>
</div>
<div class="container-fluid" style="background-color: yellowgreen">
  <div class="row">
    <div class="col-6">Content using 6 columns</div>
    <div class="col-6">Content using 6 columns</div>
  </div>
</div>
```

Content using 8 columns

Content using 4 columns

Content using 3 columns

Content using 3 columns

Content using 3 columns

Content using 6 columns

Content using 6 columns

Adjust the size depending on device

Grid options

Bootstrap's grid system can adapt across all six default breakpoints, and any breakpoints you customize. The six default grid tiers are as follow:

- Extra small (xs)
- Small (sm)
- Medium (md)
- Large (lg)
- Extra large (xl)
- Extra extra large (xxl)

As noted above, each of these breakpoints have their own container, unique class prefix, and modifiers. Here's how the grid changes across these breakpoints:

	xs <576px	sm ≥576px	md ≥768px	lg ≥992px	xl ≥1200px	xxl ≥1400px
Container <i>max-width</i>	None (auto)	540px	720px	960px	1140px	1320px
Class prefix	<i>.col-</i>	<i>.col-sm-</i>	<i>.col-md-</i>	<i>.col-lg-</i>	<i>.col-xl-</i>	<i>.col-xxl-</i>

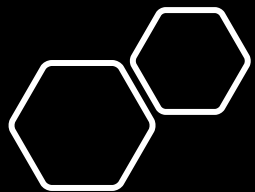
Example of creating a grid layout – source code

```
<div class="container">
  <div class="row">
    <div class="col-sm-6 col-md-3">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3">
      <picture>
        
      </picture>
    </div>
  </div>
</div>
```

Example of creating a grid layout – medium screen device and above

- Note that there is a padding between columns (called gutters). By default padding-left and padding-right = 15px (giving 30px padding total).

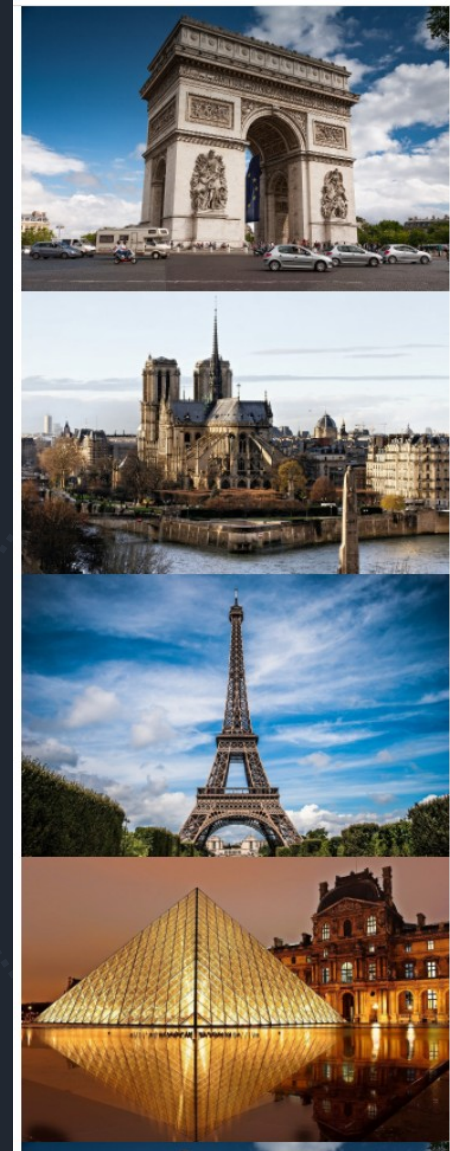




Example of creating a
grid layout – small
screen device



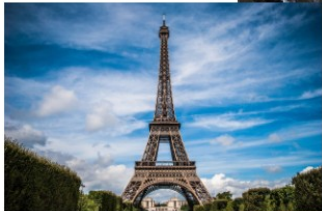
Extra small grid layout (always col size = 1)



Offsetting columns – source code

```
<div class="container">
  <div class="row">
    <div class="col-sm-6 col-md-3 offset-sm-1 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-5 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-1 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-5 offset-md-0">
      <picture>
        
      </picture>
    </div>
  </div>
</div>
```

Offsetting columns – small screen



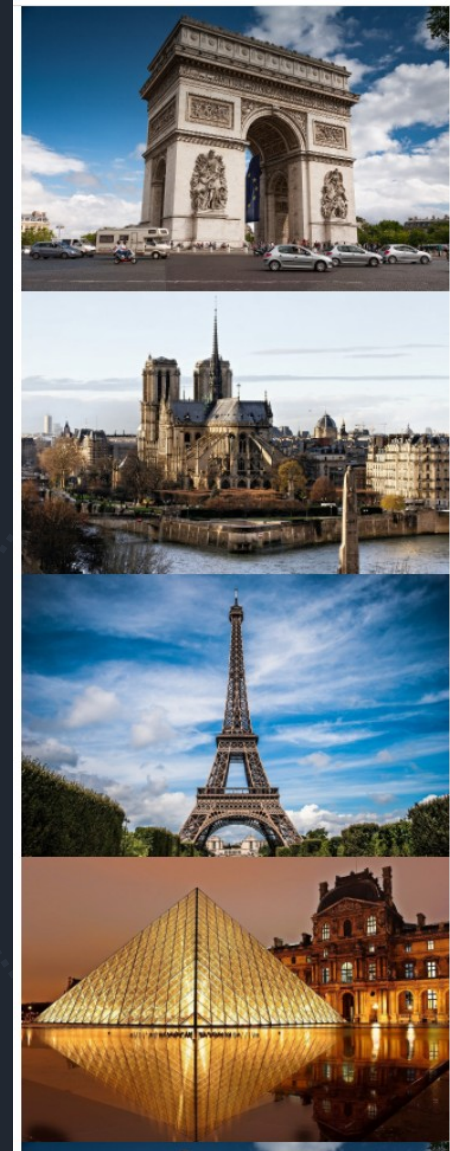
```
<div class="container">
  <div class="row">
    <div class="col-sm-6 col-md-3 offset-sm-1 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-5 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-1 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-5 offset-md-0">
      <picture>
        
      </picture>
    </div>
  </div>
</div>
```

Offsetting columns – large screen and above



```
<div class="container">
  <div class="row">
    <div class="col-sm-6 col-md-3 offset-sm-1 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-5 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-1 offset-md-0">
      <picture>
        
      </picture>
    </div>
    <div class="col-sm-6 col-md-3 offset-sm-5 offset-md-0">
      <picture>
        
      </picture>
    </div>
  </div>
</div>
```


Offsetting columns – extra small screen



Example of web site using Bootstrap

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Ameryka Północna ▾

Ameryka Południowa ▾

Afryka ▾

Przewodniki ▾

Miejsca na świecie warte zobaczenia

Places around the world worth seeing



Egipt

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Więcej



Grecja

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Więcej

Zarezerwuj miejsce w jednym z naszych ośrodków

Odpocznij w apartamentach o wysokim standardzie

Śpij nie przejmując się śniadaniem - nasi kucharze przygotowują je dla Ciebie



Wybierz ośrodek:

Polska - Warszawa

Zameldowanie:

dd.mm.rrrr

Wymeldowanie:

dd.mm.rrrr

Liczba osób:

1

Imię:

Imię

Nazwisko:

Nazwisko

Adres email:

email@example.com

Telefon:

XXX-XXX-XXX

Example of site using Bootstrap

Official website

<https://getbootstrap.com/>



Zadanie 1

- Utwórz nowy pusty projekt, a następnie dodaj do niego plik html ze startowym szablonem posiadającym Bootstrap
- Przetestuj korzystanie z klas container, col oraz row, a także tworzenie strony przy użyciu Bootstrap grid, odtwarzając przedstawione w prezentacji przykłady użycia



Zadanie 2

- Dodaj sekcję zawierającą tekst Lorem ipsum, według schematu poniżej:

