



# Bootstrap

Build responsive, mobile-first projects on the web with the world's most popular front-end component library. Bootstrap is an open source toolkit for developing with HTML, CSS, and JS.

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● JavaScript

★ 297k

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The most popular HTML, CSS, and JavaScript framework for developing responsive, mobile first projects on the web.

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👉 Vue.js is a progressive, incrementally-adoptable JavaScript framework for building UI on the web.

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# Bootstrap

Build responsive, mobile-first projects on the web with the world's **most popular front-end component library**. Bootstrap is an open source toolkit for developing with HTML, CSS, and JS.

**무엇을 만들 수 있는지 봅시다.**

# **Quick start**

# Quick start

## CDN 활용을 통해 Bootstrap에 작성된 CSS, JS를 활용하자!

### Quick start

Looking to quickly add Bootstrap to your project? Use BootstrapCDN, provided for free by the folks at StackPath. 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://stackpath.bootstrapcdn.com/bootstrap/4.2.1/css/bootstrap.min.css" integrity="sha384-GJzZqFGwb1QTTN6wy5" data-bbox="186 561 803 580"/>
```

### JS

Many of our components require the use of JavaScript to function. Specifically, they require [jQuery](#), [Popper.js](#), and our own JavaScript plugins. Place the following `<script>`s near the end of your pages, right before the closing `</body>` tag, to enable them. jQuery must come first, then Popper.js, and then our JavaScript plugins.

We use [jQuery's slim build](#), but the full version is also supported.

```
<script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-q8i/X+965Dz00rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1F" data-bbox="183 758 803 775"/>  
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.6/umd/popper.min.js" integrity="sha384-wHAiFfRlMFy6i5SRaxvf0CifBUQy1xHdJ" data-bbox="183 775 803 792"/>  
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.2.1/js/bootstrap.min.js" integrity="sha384-B0UglyR+jN6CkvvICOB2joaf5I4l3gm9GU6H" data-bbox="183 792 803 805"/>
```

Curious which components explicitly require jQuery, our JS, and Popper.js? Click the show components link below. If you're at all unsure about the general page structure, keep reading for an example page template.

Our `bootstrap.bundle.js` and `bootstrap.bundle.min.js` include [Popper](#), but not [jQuery](#). For more information about what's included

# Quick start

**CDN** 활용을 통해 Bootstrap에 작성된 CSS, JS를 활용하자!

## **Content Delivery(Distribution) Network**

컨텐츠(CSS, JS, Image, Text 등)를 효율적으로 전달하기 위해  
여러 노드에 가진 네트워크에 데이터를 제공하는 시스템.

개별 end-user의 가까운 서버를 통해 빠르게 전달 가능(지리적 이점)

외부 서버를 활용함으로써 본인 서버의 부하가 적어짐.

CDN은 보통 적절한 수준의 캐시 설정으로 빠르게 로딩할 수 있음.

시작하기 전에,



# h1. Non Bootstrap heading

h1 418 x 38.5 **h2. Non Bootstrap heading**

h3. Non Bootstrap heading

h4. Non Bootstrap heading

h5. Non Bootstrap heading

h6. Non Bootstrap heading



# h1. Bootstrap heading

h1 418 x 48 **h2. Bootstrap heading**

h3. Bootstrap heading

h4. Bootstrap heading

h5. Bootstrap heading

h6. Bootstrap heading





You can use the mark tag to highlight text.

~~This line of text is meant to be treated as deleted text.~~

~~This line of text is meant to be treated as no longer accurate.~~

This line of text is meant to be treated as an addition to the document.

This line of text will render as underlined

This line of text is meant to be treated as fine print.

**This line rendered as bold text.**

*This line rendered as italicized text.*



You can use the mark tag to highlight text.

~~This line of text is meant to be treated as deleted text.~~

~~This line of text is meant to be treated as no longer accurate.~~

This line of text is meant to be treated as an addition to the document.

This line of text will render as underlined

This line of text is meant to be treated as fine print.

**This line rendered as bold text.**

*This line rendered as italicized text.*

```
<p>You can use the mark tag to <mark>highlight</mark> text.</p>
<p><del>This line of text is meant to be treated as deleted text.</del></p>
<p><s>This line of text is meant to be treated as no longer accurate.</s></p>
<p><ins>This line of text is meant to be treated as an addition to the document.</ins></p>
<p><u>This line of text will render as underlined</u></p>
<p><small>This line of text is meant to be treated as fine print.</small></p>
<p><strong>This line rendered as bold text.</strong></p>
<p><em>This line rendered as italicized text.</em></p>
```

**같은 듯 다른 Bootstrap!**

# 1. Utilities

어제 CSS짜느라 고생한 우리, 편하게 클래스로 적용시켜보자!

# 1.1 Spacing

편-안하게 공간 확보하자.

# 1-1. Spacing

**.m-0?**

# 1-1. Spacing

```
.m-0 {  
  margin: 0 !important;  
}
```

**m**argin: **0**!

# 1-1. Spacing

**.mr-0?**

# 1-1. Spacing

```
.mr-0 {  
  margin-right: 0 !important;  
}
```

**margin-right: 0!**



# 1-1. Spacing

**.mx-0?**

# 1-1. Spacing

```
.mr-0,  
.mx-0 {  
  margin-right: 0 !important;  
}
```

```
.ml-0,  
.mx-0 {  
  margin-left: 0 !important;  
}
```

**margin-left: 0!**  
**margin-right: 0!**

# 1-1. Spacing

**.py-0?**

# 1-1. Spacing

**p**adding-**t**op: **0**!  
**p**adding-**b**ottom: **0**!

```
.pt-0,  
.py-0 {  
  padding-top: 0 !important;  
}  
  
.pr-0,  
.px-0 {  
  padding-right: 0 !important;  
}  
  
.pb-0,  
.py-0 {  
  padding-bottom: 0 !important;  
}
```

# 1-1. Spacing

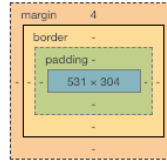
**.mt-1?**

# 1-1. Spacing

```
.mt-1,  
.my-1 {  
  margin-top: 0.25rem !important;  
}
```

**margin-top: 0.25rem?**

# 1-1. Spacing



|                               |  |
|-------------------------------|--|
| Filter                        | <input type="checkbox"/> Show all                    |
| ▶ box-sizing                  | border-box   |
| ▶ color                       | ■ rgb(33, 37, 41)                                    |
| ▶ display                     | block  |
| ▶ font-family                 | -apple-system, system-ui, "Segoe UI", Roboto, "He... |
| ▶ font-size                   | 16px   |
| ▶ font-weight                 | 400  |
| height                        | 304px  |
| ▶ line-height                 | 24px   |
| ▶ margin-top                  | 4px  |
| ▶ text-align                  | left   |
| ▶ text-size-adjust            | 100%   |
| width                         | 531px  |
| ▶ -webkit-tap-highlight-color | □ rgba(0, 0, 0, 0)                                   |

## margin-top: 4px!

$\text{spacer}(1\text{rem}) * 0.25$

$16\text{px} * 0.25$

**4px!**

\*브라우저 기본 rem은 16px

# 1-1. Spacing

**mt-2?**

**mt-3?**

**mt-4?**

**mt-5?**



## 1-1. Spacing

|              |      |              |
|--------------|------|--------------|
| <b>mt-2?</b> | 0.5? | <b>8px!</b>  |
| <b>mt-3?</b> | 1?   | <b>16px!</b> |
| <b>mt-4?</b> | 1.5? | <b>24px!</b> |
| <b>mt-5?</b> | 3?   | <b>48px!</b> |

# 1-1. Spacing

## 정리해보자.

**.py-0**

|   |         |   |             |   |      |      |
|---|---------|---|-------------|---|------|------|
| m | margin  | t | top         | 0 | 0    | 0px  |
|   |         | b | bottom      | 1 | 0.25 | 4px  |
| p | padding | l | left        | 2 | 0.5  | 8px  |
|   |         | r | right       | 3 | 1    | 16px |
|   |         | x | left, right | 4 | 1.5  | 24px |
|   |         | y | top, bottom | 5 | 3    | 48px |

# 1-1. Spacing

## 음수도 가능합니다!

**.my-n0**

|          |        |          |                |           |       |       |
|----------|--------|----------|----------------|-----------|-------|-------|
| <b>m</b> | margin | <b>t</b> | top            | <b>0</b>  | 0     | 0px   |
|          |        | <b>b</b> | bottom         | <b>n1</b> | -0.25 | -4px  |
|          |        | <b>l</b> | left           | <b>n2</b> | -0.5  | -8px  |
|          |        | <b>r</b> | right          | <b>n3</b> | -1    | -16px |
|          |        | <b>x</b> | left, right    | <b>n4</b> | -1.5  | -24px |
|          |        | <b>y</b> | top,<br>bottom | <b>n5</b> | -3    | -48px |

## 1-1. Spacing

**.mx-auto**

까지 포함해서 활용하러 고고!

## **1.2. Color**

더이상 눈 아픈 파란색은 Never

# 1-2. Color

파란색



노란색



빨간색



초록색



# 1-2. Color



# 1-2. Color



```
primary: #007bff;  
secondary: #6c757d;  
success: #28a745;  
info: #17a2b8;  
warning: #ffc107;  
danger: #dc3545;  
light: #f8f9fa;  
dark: #343a40;
```



## 1-2. Color

background-color: primary

느낌으로 맞춰보자!

# 1-2. Color

.bg-primary

.bg-secondary

.bg-success

.bg-danger

.bg-warning

.bg-info

.bg-light

.bg-dark

.bg-white

.bg-transparent

## 1-2. Color

활용법

**.bg-primary**

## 1-2. Color

color: success

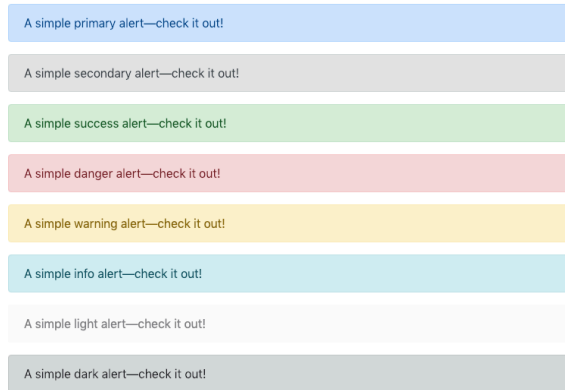
느낌으로 맞춰보자!

## 1-2. Color

활용법

**.text-success**

# 1-2. Color



활용법

**.alert-warning**

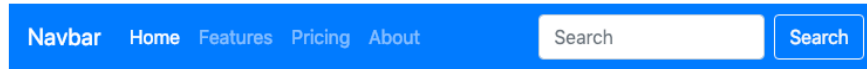
# 1-2. Color



활용법

**.btn-secondary**

## 1-2. Color



활용법

**.navbar-dark .bg-primary**



## 1-2. Color

여기저기에서 써보자!

## **1.3. border**

Spacing을 활용하면 Box model 설정이 끝-

# 1-3. Border

```
.border {  
  border: 1px solid #dee2e6 !important;  
}  
  
.border-top {  
  border-top: 1px solid #dee2e6 !important;  
}  
  
.border-right {  
  border-right: 1px solid #dee2e6 !important;  
}  
  
.border-bottom {  
  border-bottom: 1px solid #dee2e6 !important;  
}  
  
.border-left {  
  border-left: 1px solid #dee2e6 !important;  
}
```

**.border**

## 1-3. Border

border-color: success

느낌으로 맞춰보자!

## 1-3. Border

색상과 조합도 가능합니다!

**.border .border-primary**

## 1-3. Border

남은게 뭐지?

# 1-3. Border

radius!

```
.rounded {  
  border-radius: 0.25rem !important;  
}  
  
.rounded-top {  
  border-top-left-radius: 0.25rem !important;  
  border-top-right-radius: 0.25rem !important;  
}  
  
.rounded-right {  
  border-top-right-radius: 0.25rem !important;  
  border-bottom-right-radius: 0.25rem !important;  
}  
  
.rounded-bottom {  
  border-bottom-right-radius: 0.25rem !important;  
  border-bottom-left-radius: 0.25rem !important;  
}  
  
.rounded-left {  
  border-top-left-radius: 0.25rem !important;  
  border-bottom-left-radius: 0.25rem !important;  
}
```

**.rounded-**

## 1-3. Border

rounded-circle  
rounded-pill



## **1.4. display**

Box model...display까지?

## 1-4. Display

**display: block**

**느낌으로 맞춰보자!**

## 1-4. Display

**.d-block**

## 1-4. Display

**.d-inline**

## 1-4. Display

**.d-none**

# 1-4. Display

```
.d-none {  
| display: none !important;  
}  
  
.d-inline {  
| display: inline !important;  
}  
  
.d-inline-block {  
| display: inline-block !important;  
}  
  
.d-block {  
| display: block !important;  
}  
  
.d-table {  
| display: table !important;  
}
```

## 1-4. Display

반응형 맛보기?!

**.d-sm-none**

# 1-4. Display

|                     | Extra small<br><576px | Small<br>≥576px | Medium<br>≥768px | Large<br>≥992px | Extra large<br>≥1200px |
|---------------------|-----------------------|-----------------|------------------|-----------------|------------------------|
| Max container width | None (auto)           | 540px           | 720px            | 960px           | 1140px                 |
| Class prefix        |                       | sm              | md               | lg              | xl                     |

\* break point들은 앞으로 여기저기서 사용될 겁니다!

| Screen Size        | Class                          |
|--------------------|--------------------------------|
| Hidden on all      | .d-none                        |
| Hidden only on xs  | .d-none .d-sm-block            |
| Hidden only on sm  | .d-sm-none .d-md-block         |
| Hidden only on md  | .d-md-none .d-lg-block         |
| Hidden only on lg  | .d-lg-none .d-xl-block         |
| Hidden only on xl  | .d-xl-none                     |
| Visible on all     | .d-block                       |
| Visible only on xs | .d-block .d-sm-none            |
| Visible only on sm | .d-none .d-sm-block .d-md-none |
| Visible only on md | .d-none .d-md-block .d-lg-none |
| Visible only on lg | .d-none .d-lg-block .d-xl-none |
| Visible only on xl | .d-none .d-xl-block            |



## **1.5. position**

Box model...위치까지?

## 1-5. Position

position: static

느낌으로 맞춰보자!

# 1-5. Position

**.position-static**

# 1-5. Position

```
.position-static {  
|   position: static !important;  
|}  
  
.position-relative {  
|   position: relative !important;  
|}  
  
.position-absolute {  
|   position: absolute !important;  
|}  
  
.position-fixed {  
|   position: fixed !important;  
|}
```

# 1-5. Position



```
.fixed-top {  
  position: fixed;  
  top: 0;  
  right: 0;  
  left: 0;  
  z-index: 1030;  
}  
  
.fixed-bottom {  
  position: fixed;  
  right: 0;  
  bottom: 0;  
  left: 0;  
  z-index: 1030;  
}
```

**직접 적용하러 고고!**

## **1.6. Text**

글자변경도 자유롭게!

## 1-6. Text

`text-align: center`

느낌으로 맞춰보자!



# 1-6. Text

```
.text-left {  
| text-align: left !important;  
}  
  
.text-right {  
| text-align: right !important;  
}  
  
.text-center {  
| text-align: center !important;  
}
```

**.text-center**

## 1-6. Text

font-weight: bold

느낌으로 맞춰보자!

# 1-6. Text

```
.font-weight-light {  
  font-weight: 300 !important;  
}  
  
.font-weight-lighter {  
  font-weight: lighter !important;  
}  
  
.font-weight-normal {  
  font-weight: 400 !important;  
}  
  
.font-weight-bold {  
  font-weight: 700 !important;  
}  
  
.font-weight-bolder {  
  font-weight: bolder !important;  
}  
  
.font-italic {  
  font-style: italic !important;  
}
```

**.font-weight-bold**

# 컴포넌트는 공식문서로 확인

앞으로도 많이 활용할 것이고, 직접 들어가서 코드를 찾아야하기 때문!

색깔이랑 breakpoint는 component에서도 많이 쓰일 예정이니 다시 확인해보자!

|                     | Extra small<br><576px | Small<br>≥576px | Medium<br>≥768px | Large<br>≥992px | Extra large<br>≥1200px |
|---------------------|-----------------------|-----------------|------------------|-----------------|------------------------|
| Max container width | None (auto)           | 540px           | 720px            | 960px           | 1140px                 |
| Class prefix        |                       | sm              | md               | lg              | xl                     |

.bg-primary

.bg-secondary

.bg-success

.bg-danger

.bg-warning

.bg-info

.bg-light

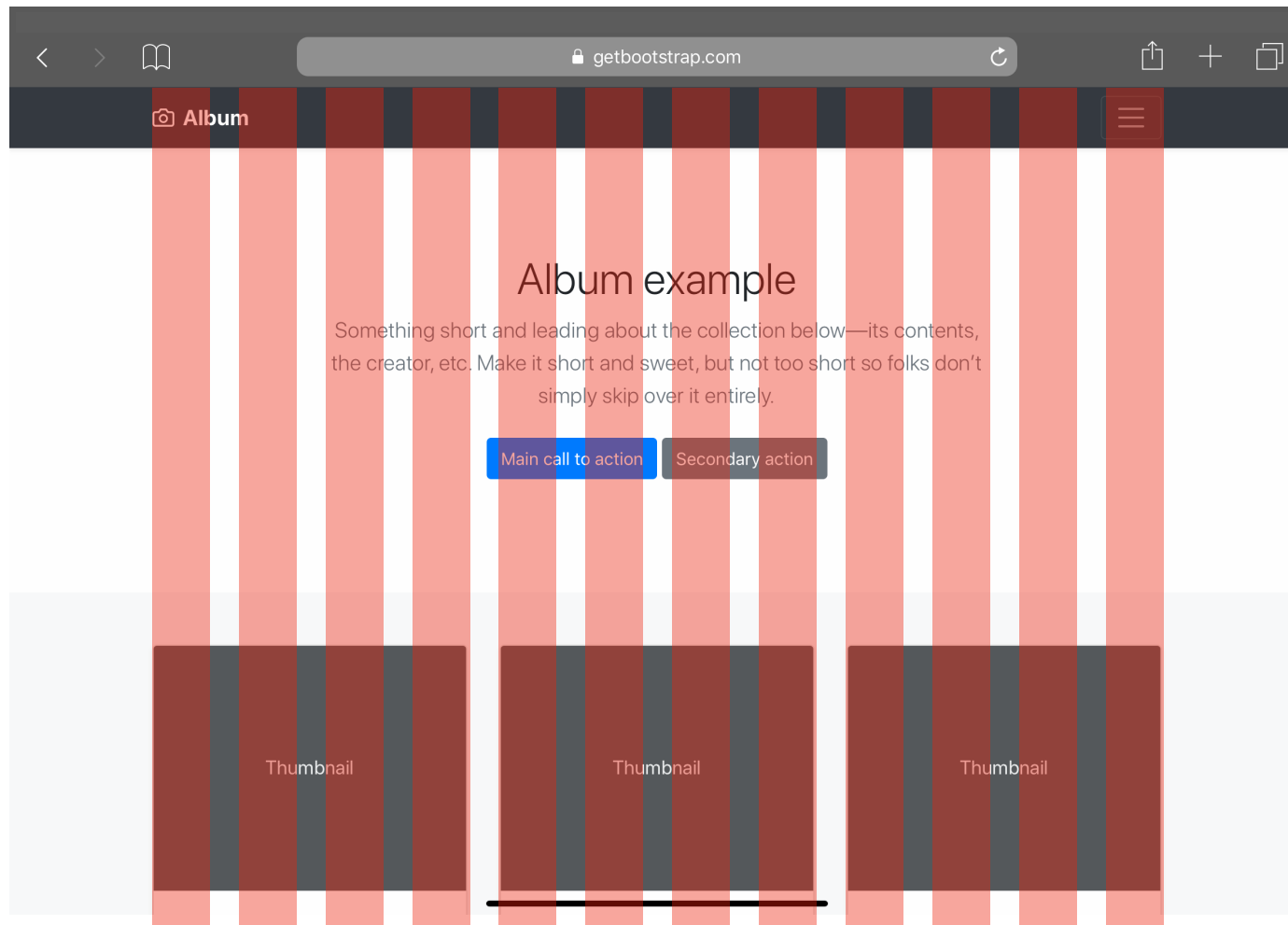
.bg-dark

.bg-white

.bg-transparent

## **2. Grid System**

**12 Columns**



```
<div class="container">
  <div class="row">
    <div class="col-4">
      One of three columns
    </div>
    <div class="col-4">
      One of three columns
    </div>
    <div class="col-4">
      One of three columns
    </div>
  </div>
</div>
```



|                     | Extra small<br><576px                | Small<br>≥576px | Medium<br>≥768px | Large<br>≥992px | Extra large<br>≥1200px |
|---------------------|--------------------------------------|-----------------|------------------|-----------------|------------------------|
| Max container width | None (auto)                          | 540px           | 720px            | 960px           | 1140px                 |
| Class prefix        | .col-                                | .col-sm-        | .col-md-         | .col-lg-        | .col-xl-               |
| # of columns        | 12                                   |                 |                  |                 |                        |
| Gutter width        | 30px (15px on each side of a column) |                 |                  |                 |                        |
| Nestable            | Yes                                  |                 |                  |                 |                        |
| Column ordering     | Yes                                  |                 |                  |                 |                        |