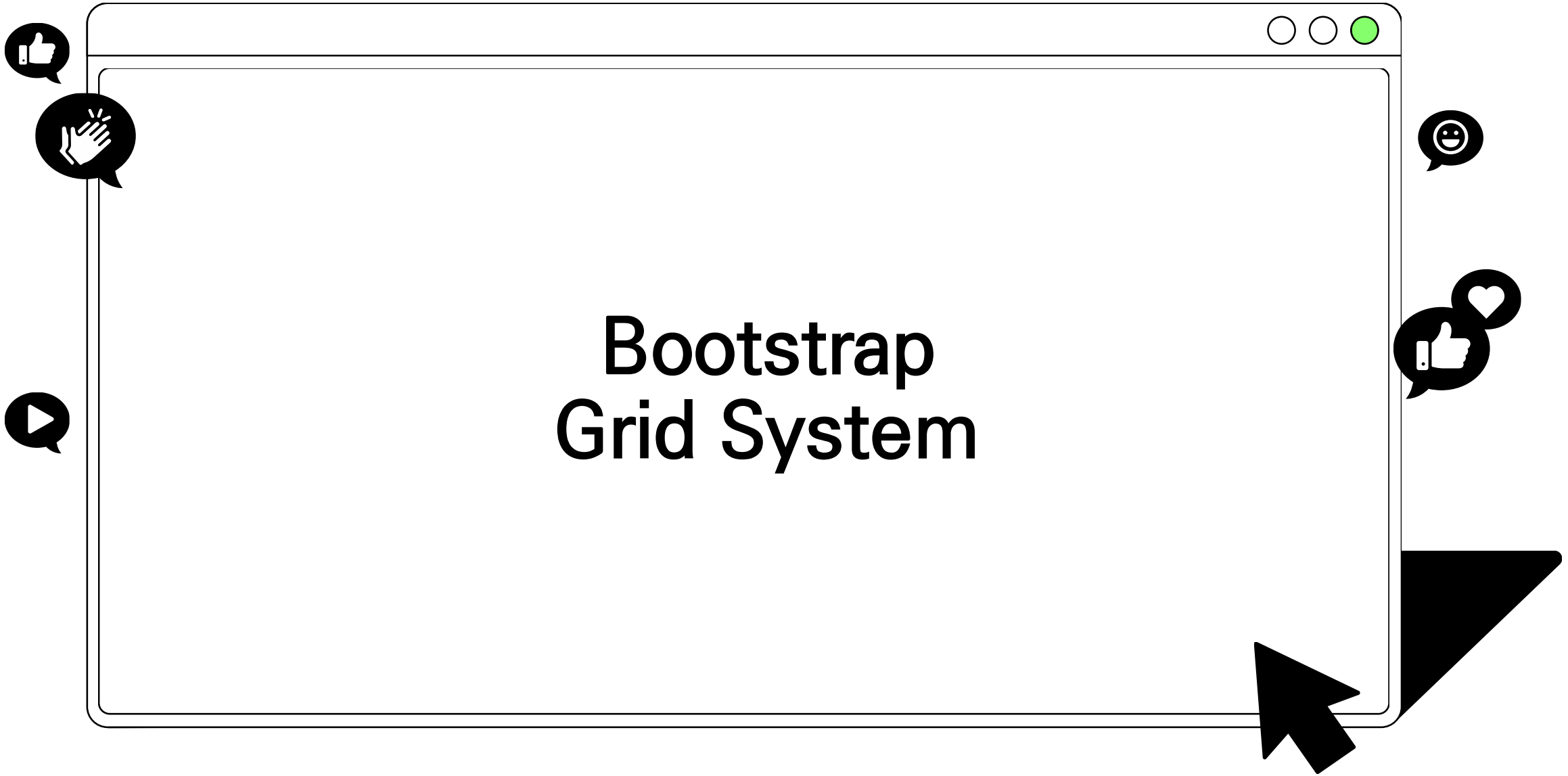
HAPPY HACKING



# Bootstrap
# Grid System

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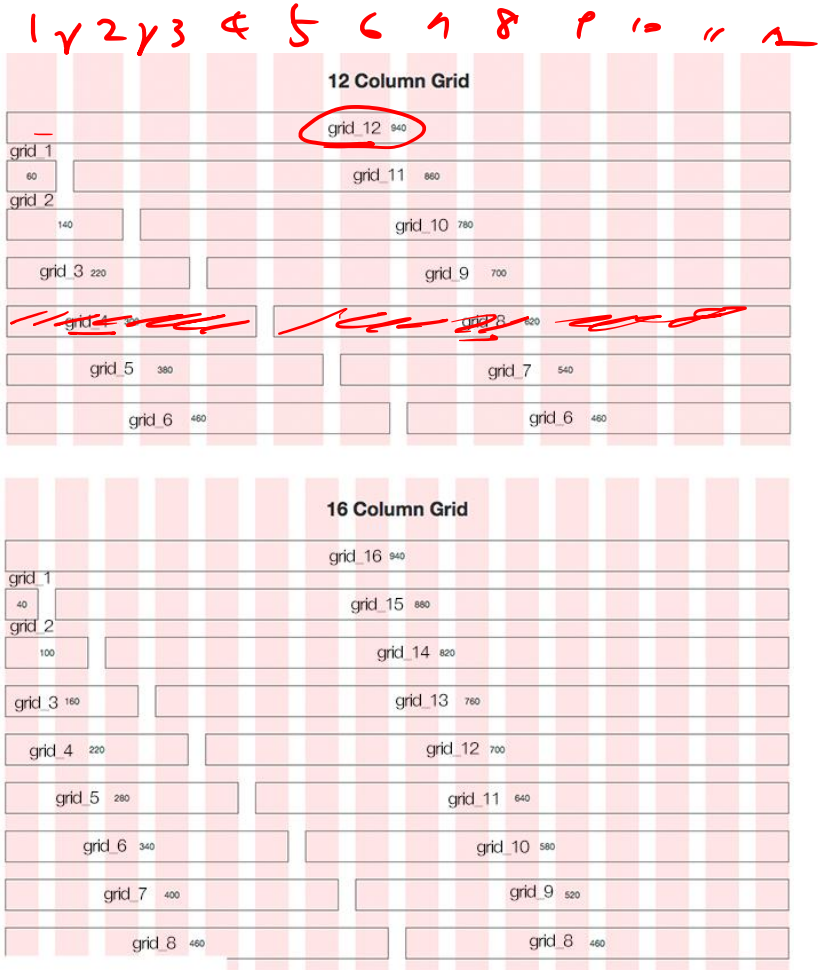
# Grid system (web design)

- 요소들의 디자인과 배치에 도움을 주는 시스템
- 기본 요소
  - Column : 실제 컨텐츠를 포함하는 부분
  - Gutter : 칼럼과 칼럼 사이의 공간 (사이 간격)
  - Container : Column들을 담고 있는 공간



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# Bootstrap grid System

- Bootstrap Grid system은 flexbox로 제작됨
- container, rows, column으로 컨텐츠를 배치하고 정렬
- 반드시 기억해야 할 2가지 !

    1. 12개의 column
    2. 6개의 grid breakpoints

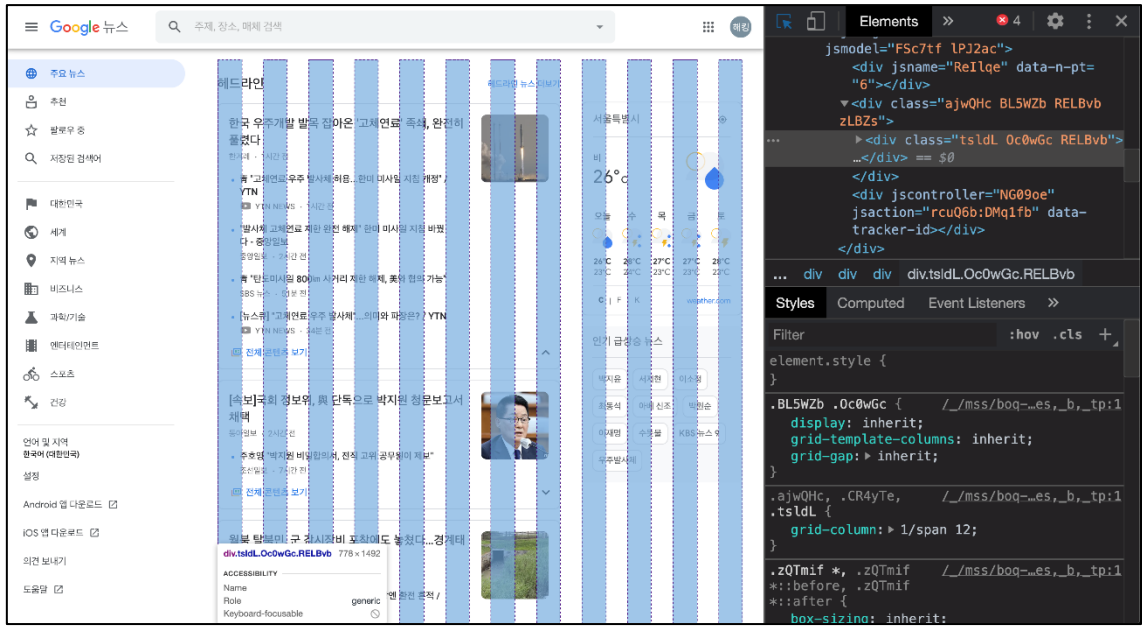
HAPPY HACKING

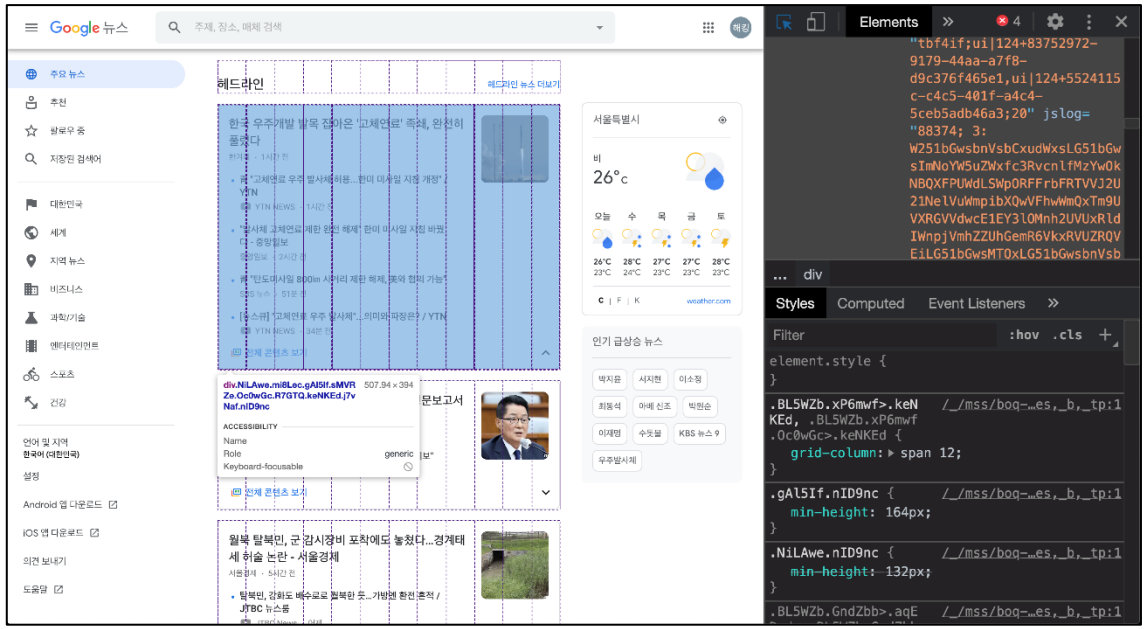
# Grid system

```
<div class="container">
  <div class="row">
    <div class="col"></div>
    <div class="col"></div>
    <div class="col"></div>
  </div>
</div>
```

HAPPY HACKING

# Grid system



# Grid system breakpoints

## 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<br><576px | sm<br>≥576px | md<br>≥768px | lg<br>≥992px | xl<br>≥1200px | xxl<br>≥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 | | | | | |

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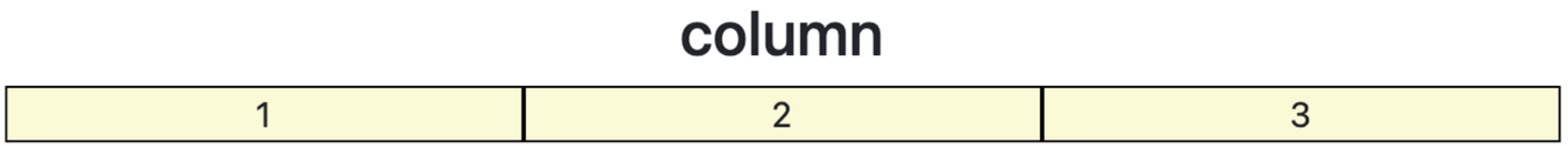
# Grid system breakpoints 연습하기

```
<div class="container">
  <h2 class="text-center">column</h2>
  <div class="row">
    <div class="col">1</div>
    <div class="col">2</div>
    <div class="col">3</div>
  </div>
</div>
```

HAPPY HACKING

# Grid system breakpoints 연습하기



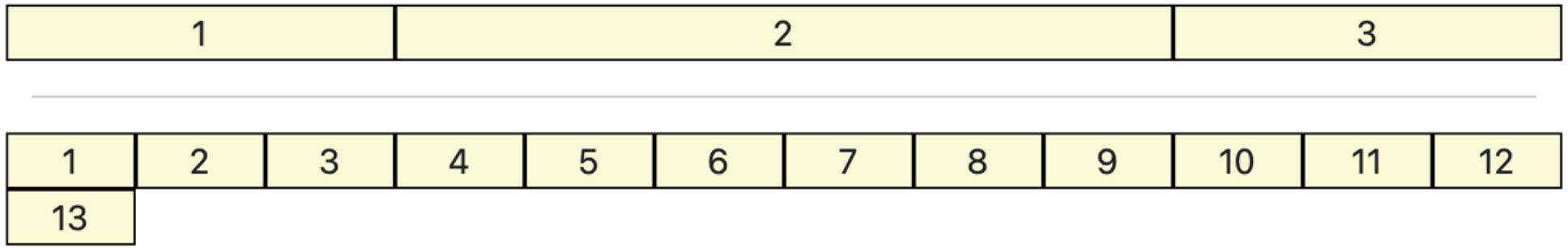
# Grid system breakpoints 연습하기

```
<!-- 계속해서 container 안에 작성합니다. -->
<div class="row">
  <div class="box col-3">1</div>
  <div class="box col-6">2</div>
  <div class="box col-3">3</div>
</div>
<hr>

<div class="row">
  <div class="box col-1">1</div>
  <div class="box col-1">2</div>
  <div class="box col-1">3</div>
  <div class="box col-1">4</div>
  <div class="box col-1">5</div>
  <div class="box col-1">6</div>
  <div class="box col-1">7</div>
  <div class="box col-1">8</div>
  <div class="box col-1">9</div>
  <div class="box col-1">10</div>
  <div class="box col-1">11</div>
  <div class="box col-1">12</div>
  <div class="box col-1">13</div>
</div>
```

HAPPY HACKING

# Grid system breakpoints 연습하기



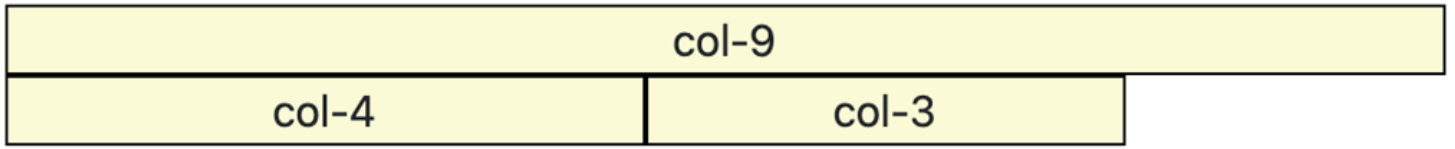
HAPPY HACKING

# Grid system breakpoints 연습하기

```
<!-- 계속해서 container 안에 작성합니다. -->
<div class="row">
  <div class="box col-9">col-9</div>
  <div class="box col-4">col-4</div>
  <div class="box col-3">col-3</div>
</div>
<hr>
```

HAPPY HACKING

# Grid system breakpoints 연습하기



# Grid system breakpoints 연습하기

```
<!-- 계속해서 container 안에 작성합니다. -->
<h2 class="text-center">Grid breakpoints</h2>
<div class="row">
  <div class="box col-sm-8 col-md-4 col-lg-5">1</div>
  <div class="box col-8 col-sm-2 col-md-4 col-lg-2">2</div>
  <div class="box col-2 col-sm-2 col-md-4 col-lg-5">3</div>
</div>
<hr>

<h2 class="text-center">nesting</h2>
<div class="row">
  <div class="box col-6">
    <div class="row">
      <div class="box col-3">1</div>
      <div class="box col-3">2</div>
      <div class="box col-3">3</div>
      <div class="box col-3">4</div>
    </div>
  </div>
  <div class="box col-6">1</div>
  <div class="box col-6">2</div>
  <div class="box col-6">3</div>
</div>
<hr>

<h2 class="text-center">offset</h2>
<div class="row">
  <div class="box col-md-4 offset-4">.col-md-4 .offset-4</div>
  <div class="box col-md-4 offset-md-4 offset-lg-2">.col-md-4 .offset-md-4 .offset-lg-2</div>
</div>
<hr>
```

HAPPY HACKING

# Grid system breakpoints 연습하기

## Grid breakpoints

| 1 | 2 | 3 |
|---|---|---|

## nesting

| 1 | 2 | 3 | 4 | 1 |
|---|---|---|---|---|
| 2 | | | | 3 |

## offset

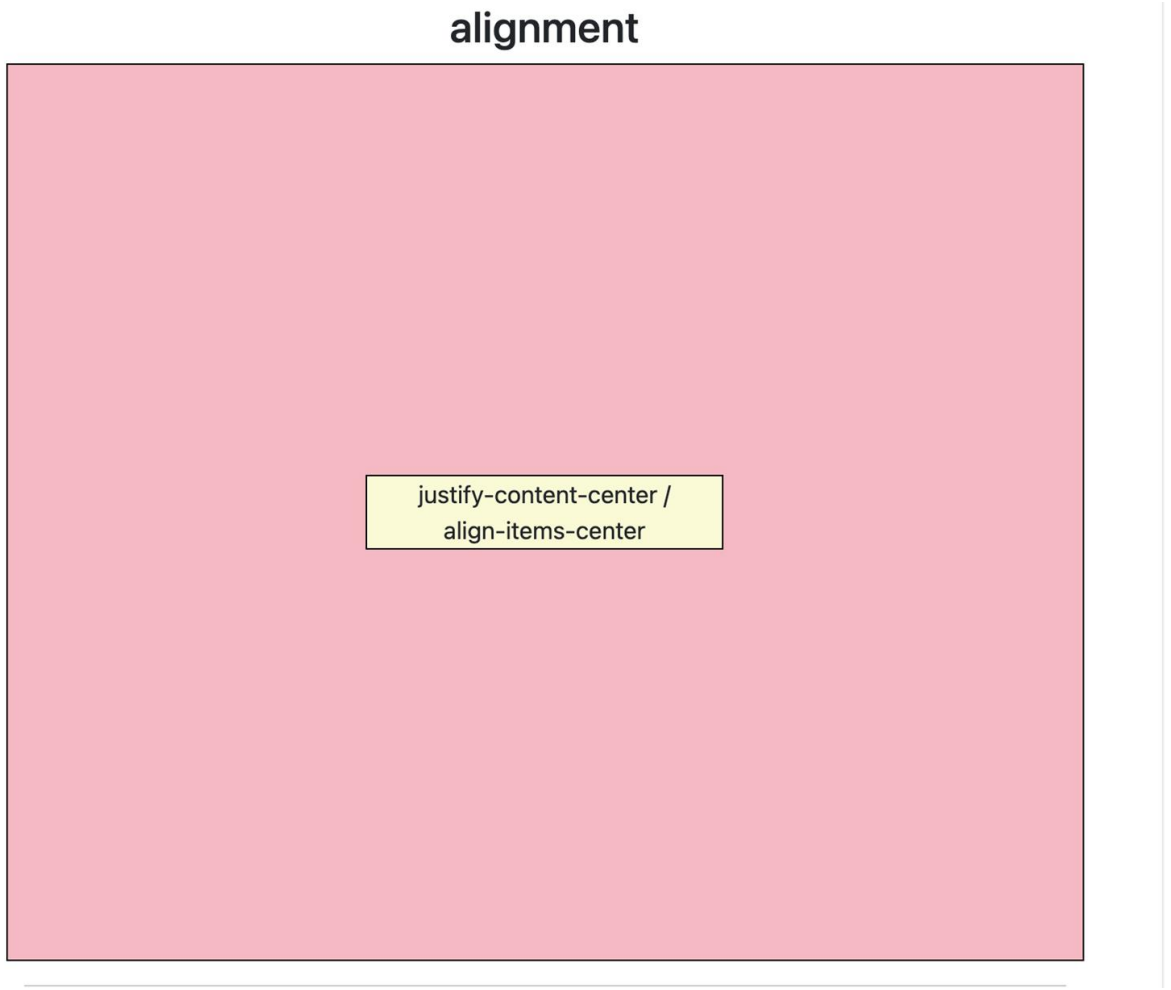
| .col-md-4 .offset-4 |
|---|
| .col-md-4 .offset-md-4 .offset-lg-2 |

# Grid system breakpoints 연습하기

```
<!-- 계속해서 container 안에 작성합니다. -->
<h2 class="text-center">alignment</h2>
<div class="row parent justify-content-center align-items-center">
  <div class="box col-4">justify-content-center / align-items-center</div>
</div>
<hr>
```

HAPPY HACKING

# Grid system breakpoints 연습하기



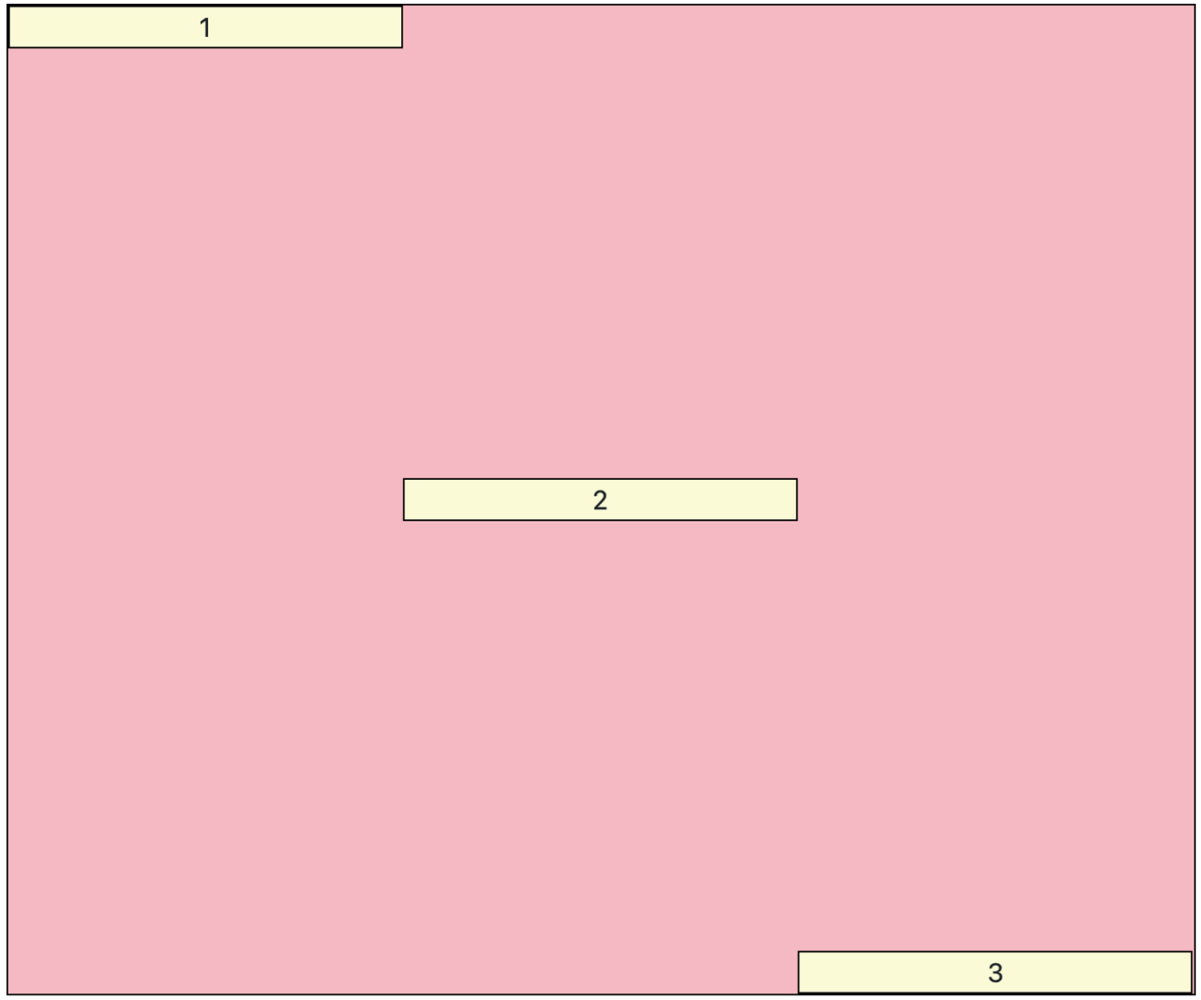
HAPPY HACKING

# Grid system breakpoints 연습하기

```
<!-- 계속해서 container 안에 작성합니다. -->
<div class="row parent">
  <div class="box col-4 align-self-start">1</div>
  <div class="box col-4 align-self-center">2</div>
  <div class="box col-4 align-self-end">3</div>
</div>
```

HAPPY HACKING

# Grid system breakpoints 연습하기



# Grid system breakpoints

```
@media (min-width: 576px) {
.container-sm, .container {
  max-width: 540px;
  }
}
@media (min-width: 768px) {
  .container-md, .container-sm, .container {
    max-width: 720px;
  }
}
@media (min-width: 992px) {
  .container-lg, .container-md, .container-sm, .container {
    max-width: 960px;
  }
}
@media (min-width: 1200px) {
  .container-xl, .container-lg, .container-md, .container-sm, .container {
    max-width: 1140px;
  }
}
@media (min-width: 1400px) {
  .container-xxl, .container-xl, .container-lg, .container-md, .container-sm, .container {
    max-width: 1320px;
  }
}
```