

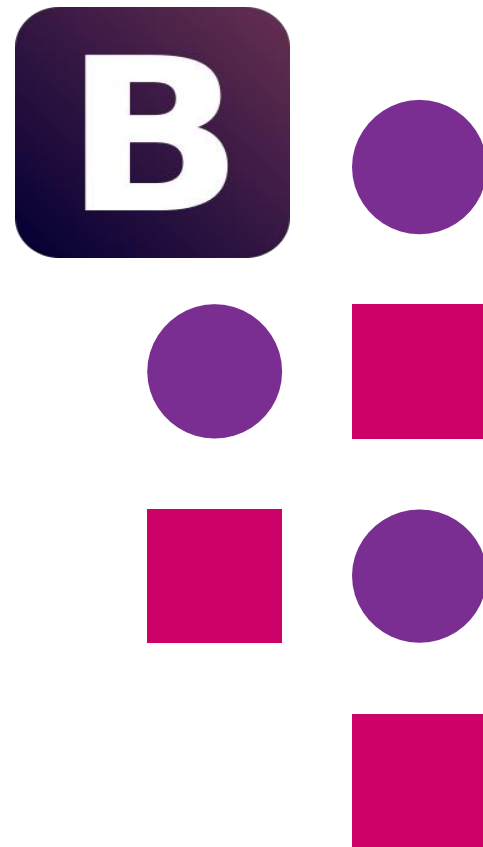
Grid System

Bootstrap



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- Grid System



Grid System

(Bootstrap)

Bootstrap

(Grid System)

- Bootstrap's grid system uses a series of containers, rows, and columns to layout and align content Bootstrap.
- grid system is built with flexbox It allows up to 12 columns across the page.
- The columns can also be grouped to create wider columns
- Bootstrap grid system is responsive.
- Columns are re-arranged automatically based on screen size.

Bootstrap

(Grid Classes)

Class Prefix	Target device	Screen width
.col-	Extra small	< 576px
.col-sm-	Small	>= 576px
.col-md-	Medium	>= 768px
.col-lg-	Large	>= 992px
.col-xl-	Extra Large	>= 1200px

***sm, md, lg or xl represents responsiveness breakpoints**

Bootstrap

(Grid - media query)

- Extra small devices (portrait phones, less than 576px)
 - No media query since this is the default in Bootstrap
 - Small devices (landscape phones, 576px and up)

@media (min-width: 576px) { ... }

- Medium devices (tablets, 768px and up)

@media (min-width: 768px) { ... }

Bootstrap

(Grid Classes)

- Large devices (desktops, 992px and up)
 - `@media (min-width: 992px) { ... }`
- Extra large devices (large desktops, 1200px and up)
 - `@media (min-width: 1200px) { ... }`

Bootstrap

(Grid - Container)

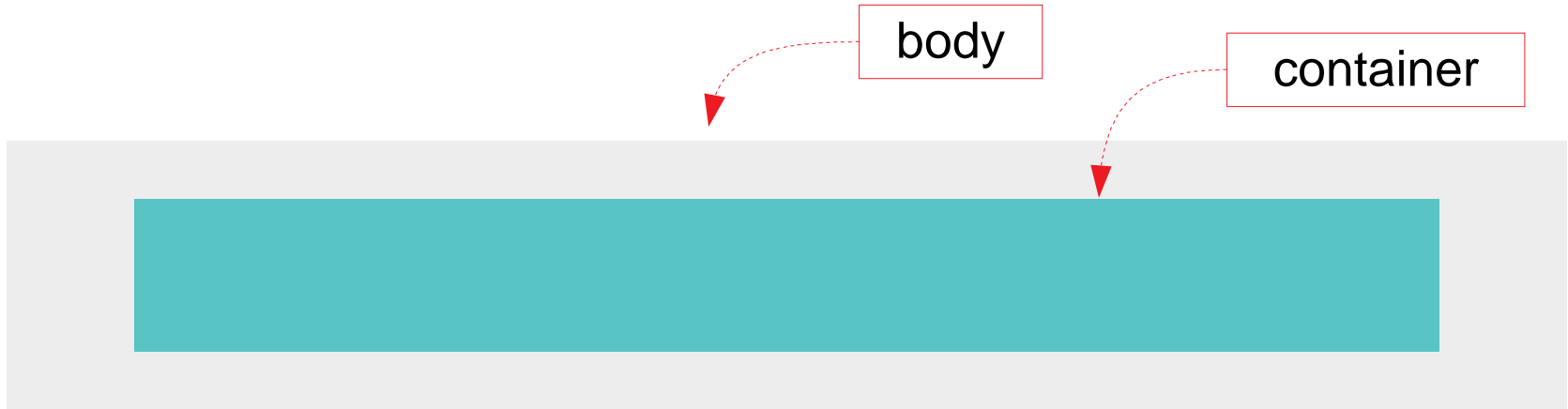
- Containers provide a means to centre and horizontally pad your site's contents.
- A container shall contain rows

Class	Description
.container	For a responsive pixel width
.container-fluid	For 100% width across all viewport and device sizes

Bootstrap

(Grid - Fix width container)

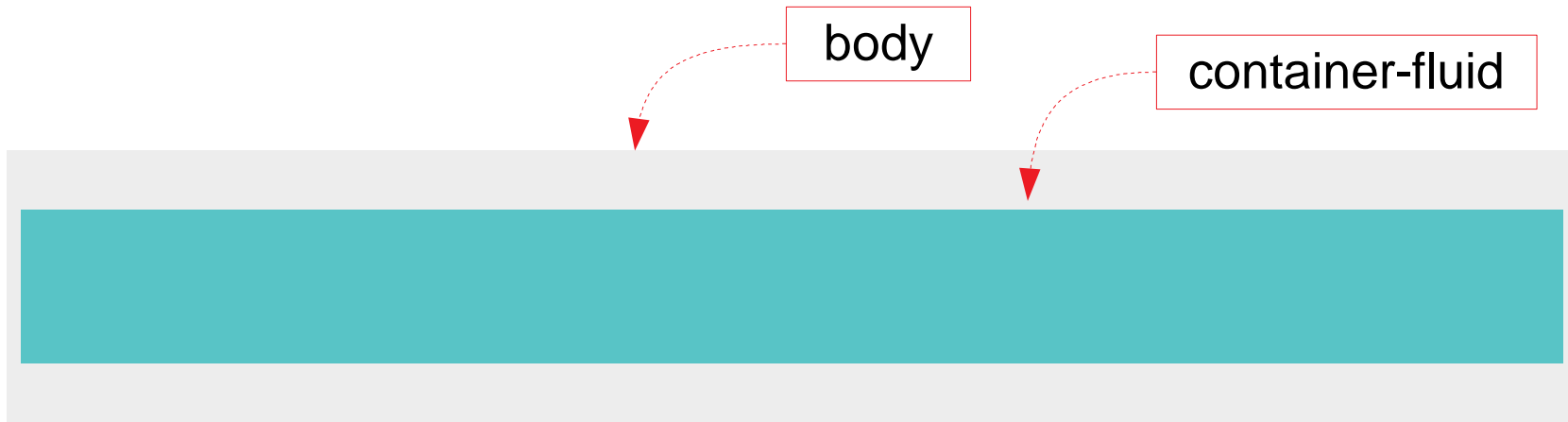
- Responsive, fixed-width container (meaning its max-width changes at each breakpoint)
 - Class “.container”



Bootstrap

(Grid - Fluid width container)

- Fluid-width (meaning it's 100% wide all the time)
 - Class “.container-fluid”



Bootstrap

(Grid - Row)

- Rows are wrappers to contain columns.
- Padding (container) is counteracted on the rows with negative margins (in row).

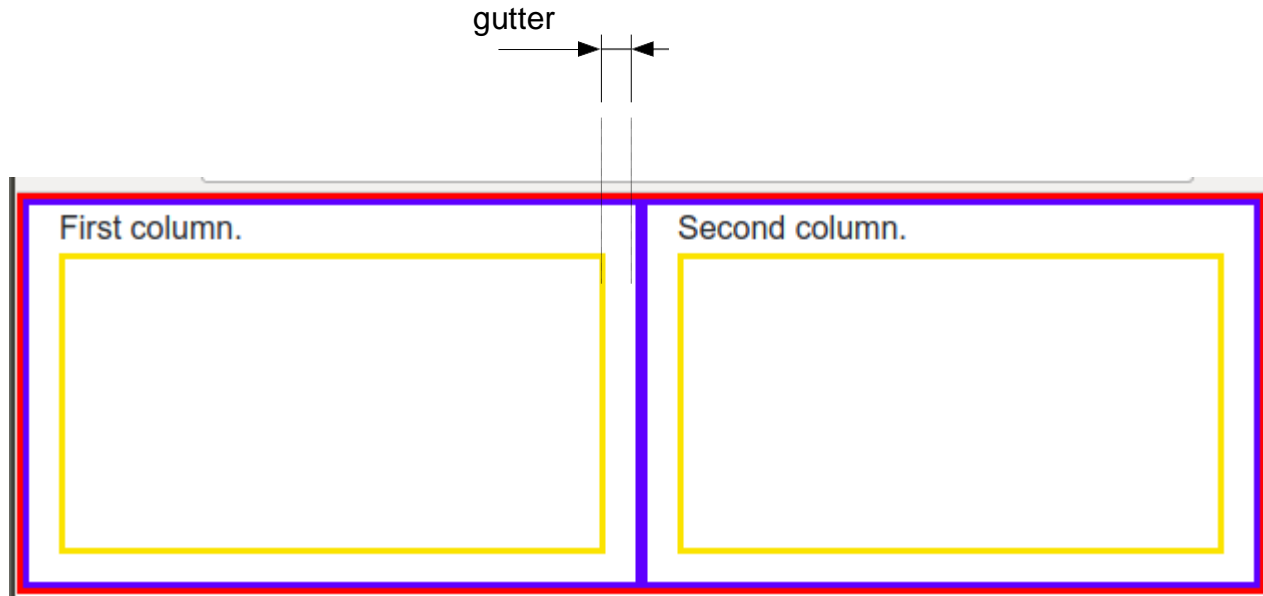
Bootstrap

(Grid - Column)

- Column widths are set in percentages, so they're always fluid and sized relative to their parent element.
- Each column has horizontal padding (called a gutter) for controlling the space between them.
- This way, all the content in columns is visually aligned down the left side.
- You can remove the margin from rows and padding from columns with `.no-gutters` on row

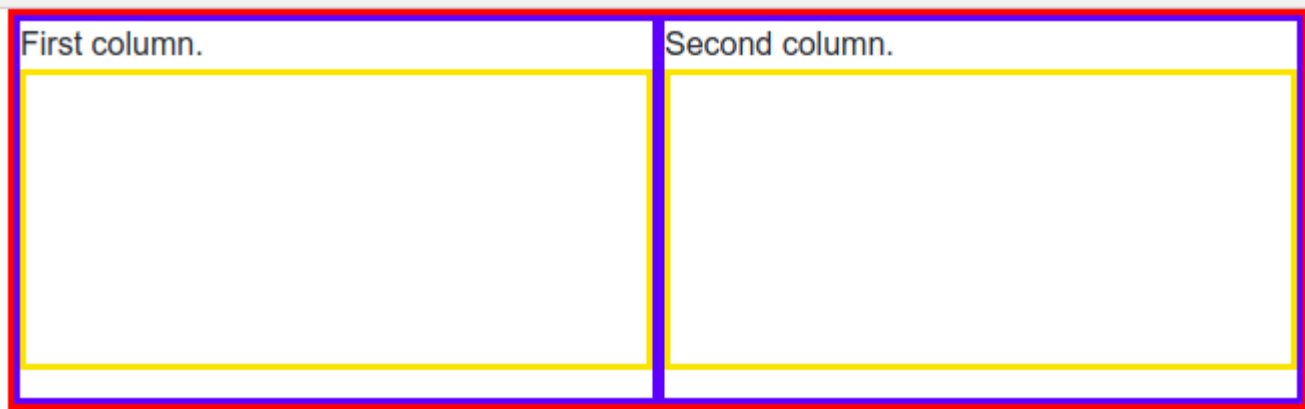
Bootstrap

(Grid – Column with gutter)

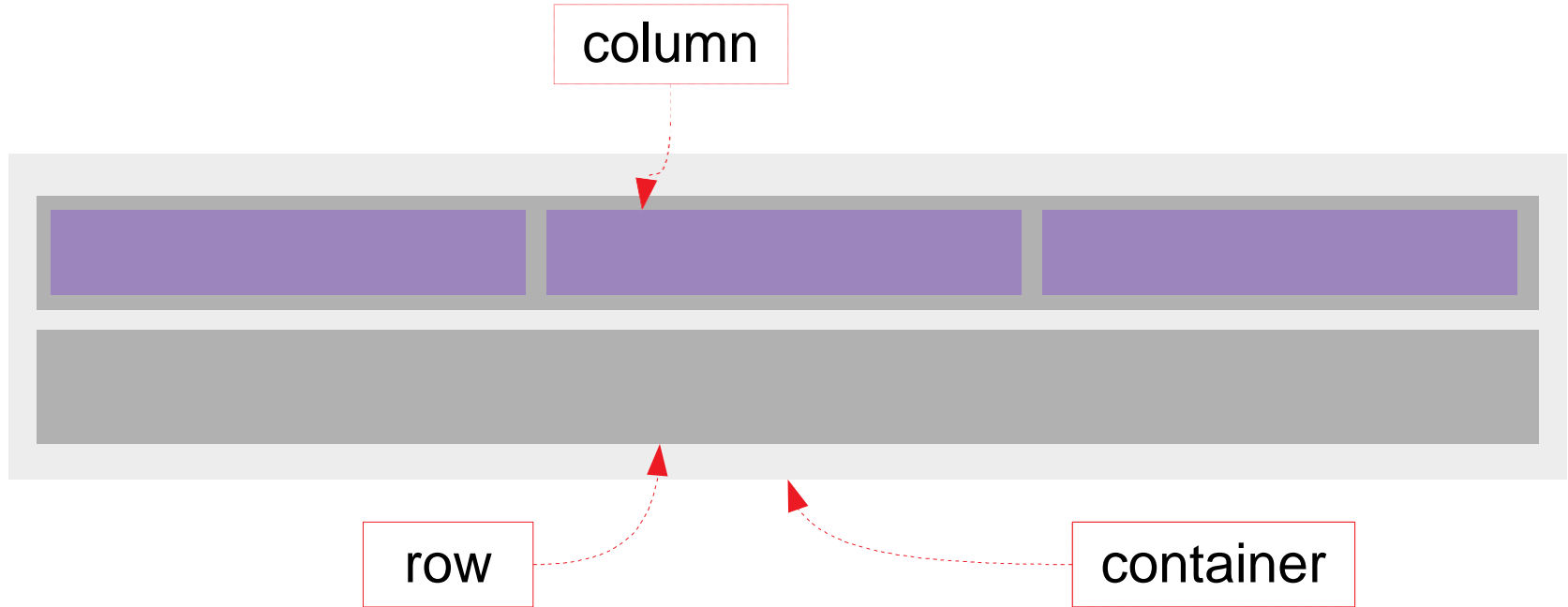


Bootstrap

(Grid – Column with no gutter)



Bootstrap (Grid)



Bootstrap

(Grid – column classes)

Class	Description
col	Classes to create equal size all devices horizontal columns
col-auto	Classes to create columns with natural width of their content
col-{number}	Classes to create equal/unequal size all devices horizontal columns
col-{breakpoint}	Classes to create equal size stackable columns
col-{breakpoint}-{number}	Classes to create equal/unequal size stackable columns
col-{breakpoint}-auto	Classes to create stackable columns with natural width of their content

Bootstrap

(Grid - Breakpoints)

- There are five grid breakpoints, one for each responsive breakpoint
- All breakpoints (extra small)
 - Small
 - Medium
 - Large
 - Extra large

Bootstrap

(Grid - Breakpoints)

- Grid breakpoints are based on minimum width media queries
- They apply to that one breakpoint and all those above
- Example :

 .col-sm-4 applies to small, medium, large, and extra large devices,

 but not the first xs device.

Bootstrap

(Grid – All breakpoints)

- .col or .col-{number} classes :
 - Number range 1 ~ 12
 - For grids that are the same from the smallest of devices to the largest

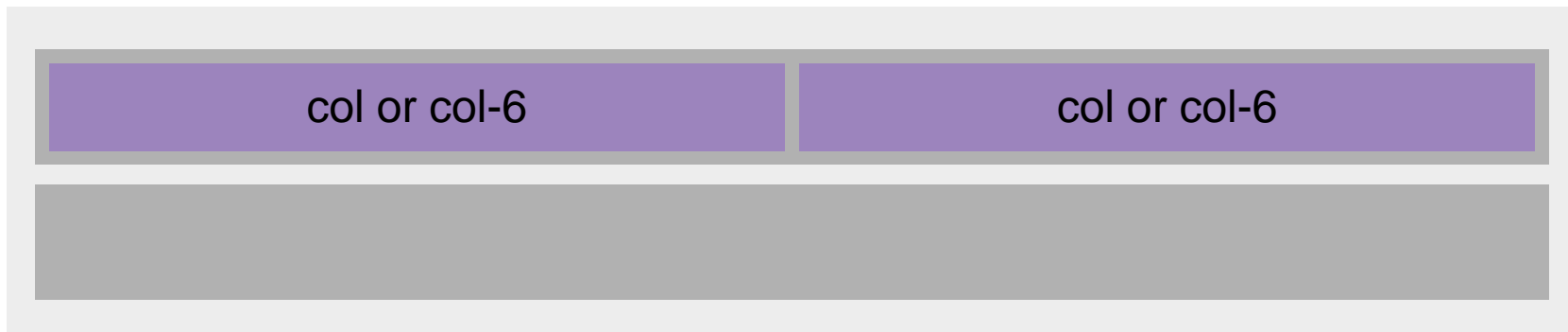
Example :

```
<div class="col"> </div>  
<div class="col-4"> </div>
```

Bootstrap

(Grid – two equal width columns)

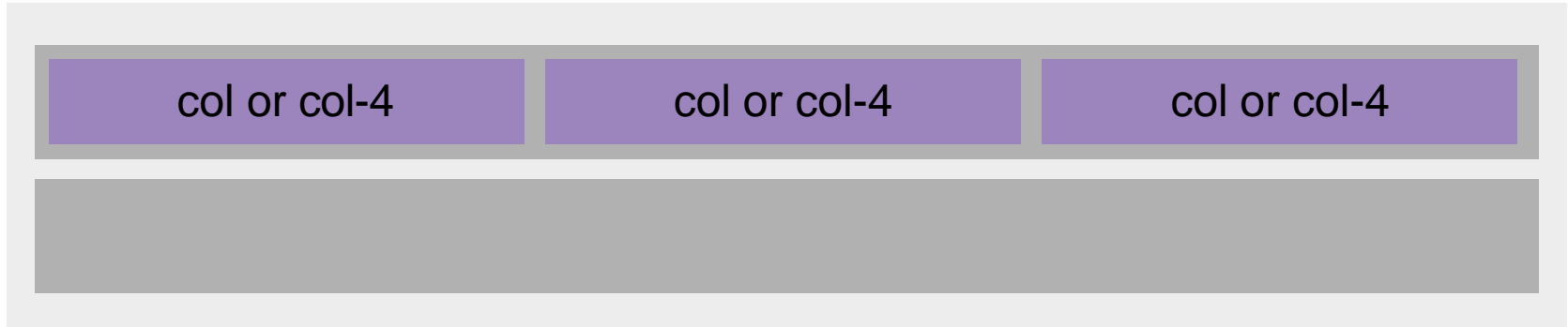
- Column classes indicate the number of columns you'd like to use out of the possible 12 columns per row
- “.col” or “.col-6” can be used for two equal-width columns



Bootstrap

(Grid – three equal width columns)

- Column classes indicate the number of columns you'd like to use out of the possible 12 columns per row
- “.col” or “.col-4” can be used for three equal-width columns



Bootstrap

(Grid – Auto-layout columns - Stackable)

- .col-{breakpoint} classes
 - Create a basic grid system that starts out stacked before becoming horizontal with at the breakpoint

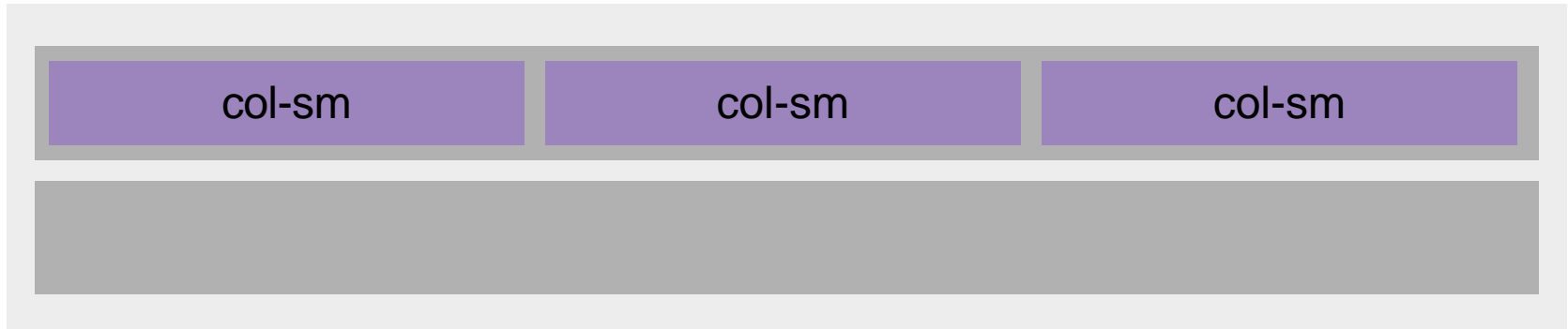
Example :

```
<div class="col-sm"> </div>
```

Bootstrap

(Grid – three equal width stackable columns)

- Add any number of unit-less classes for each breakpoint you need and every column will be the same width
- On mobile phones or screens that are less than 576px wide, the columns will automatically stack on top of each other



Bootstrap

(Grid – Stackable columns)

- .col-{breakpoint}-{number} classes
 - Number could be 1 ~ 12
 - Create a basic grid system that starts out stacked before becoming horizontal with at the breakpoint

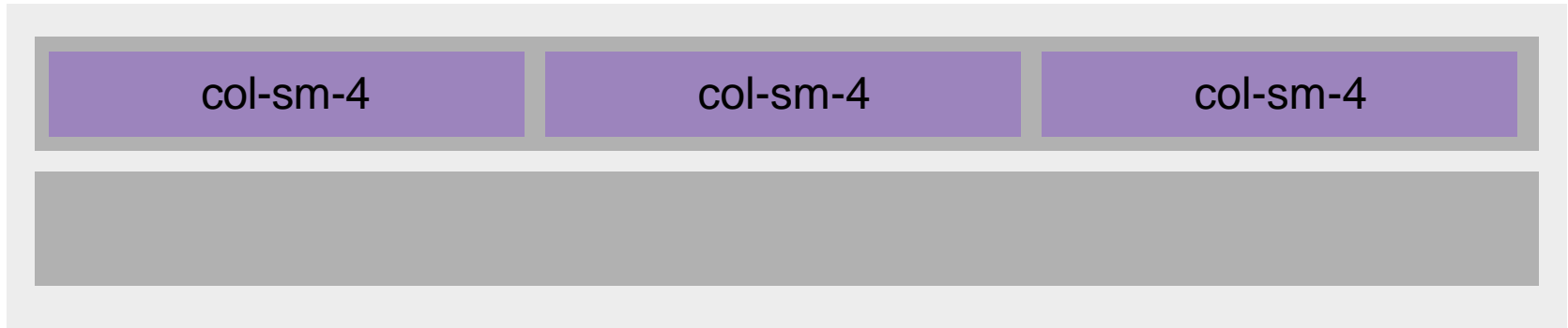
Example :

```
<div class="col-sm-4"> </div>
```


Bootstrap

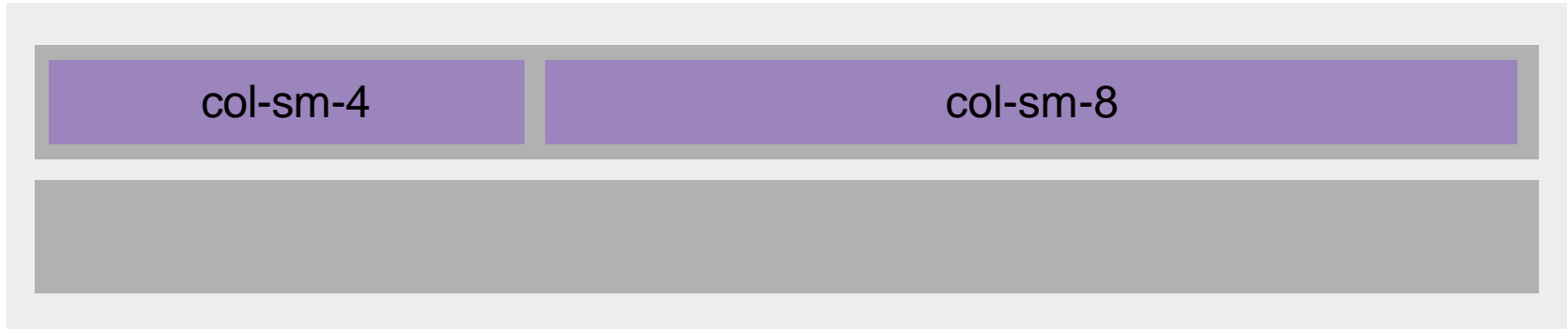
(Grid – three equal columns with breakpoint)

- On mobile phones or screens that are less than 576px wide, the columns will automatically stack on top of each other



Bootstrap

(Grid – two unequal columns with breakpoint)



Bootstrap

(Grid – Variable width content)

- col-{breakpoint}-auto classes :
 - To size columns based on the natural width of their content

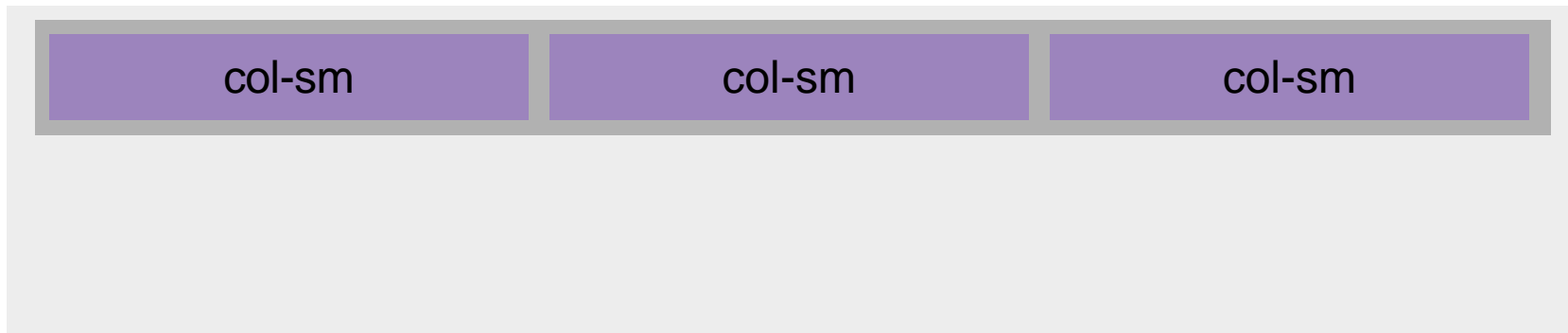
Example :

```
<div class="col-md-auto"> </div>
```

Bootstrap

(Grid – Vertical Alignment)

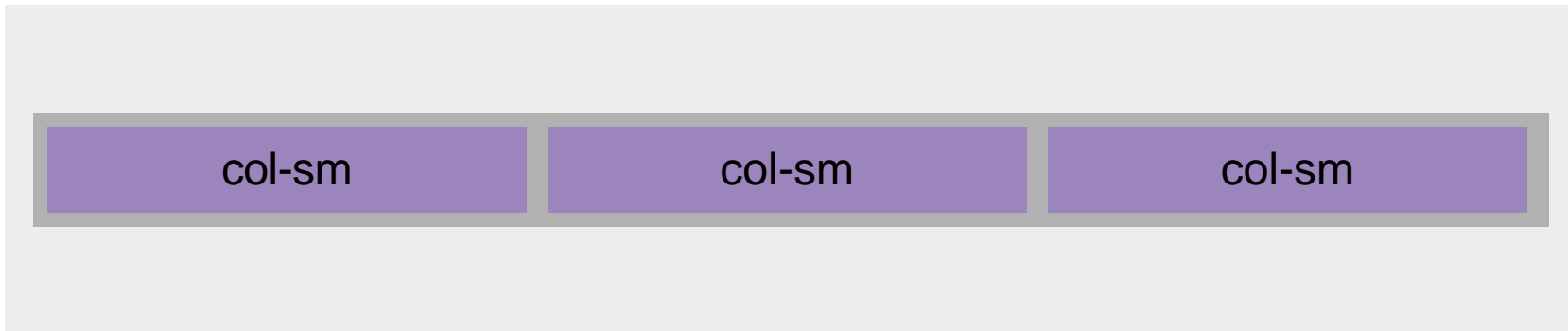
- Use flexbox alignment utilities to vertically and horizontally align columns
- `<div class="row align-items-start">`



Bootstrap

(Grid – Vertical Alignment)

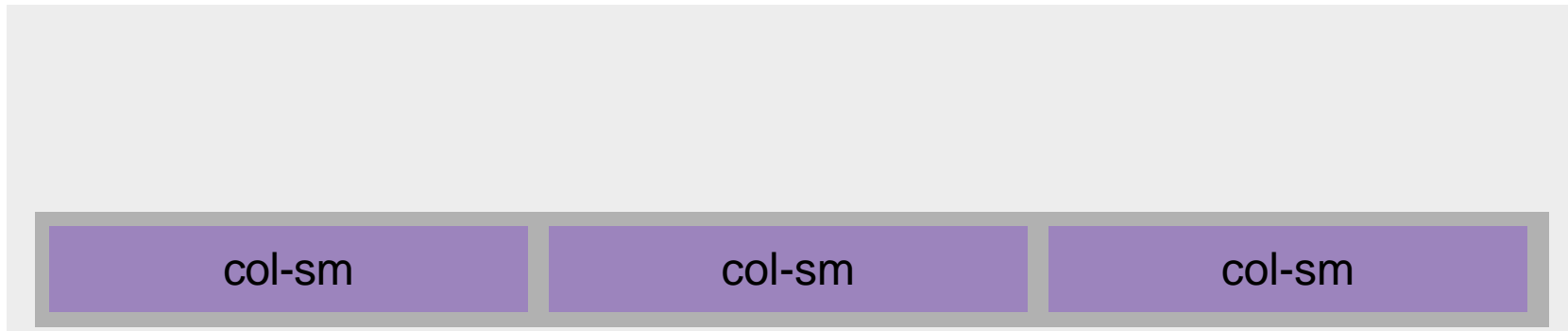
- `<div class="row align-items-center">`



Bootstrap

(Grid – Vertical Alignment)

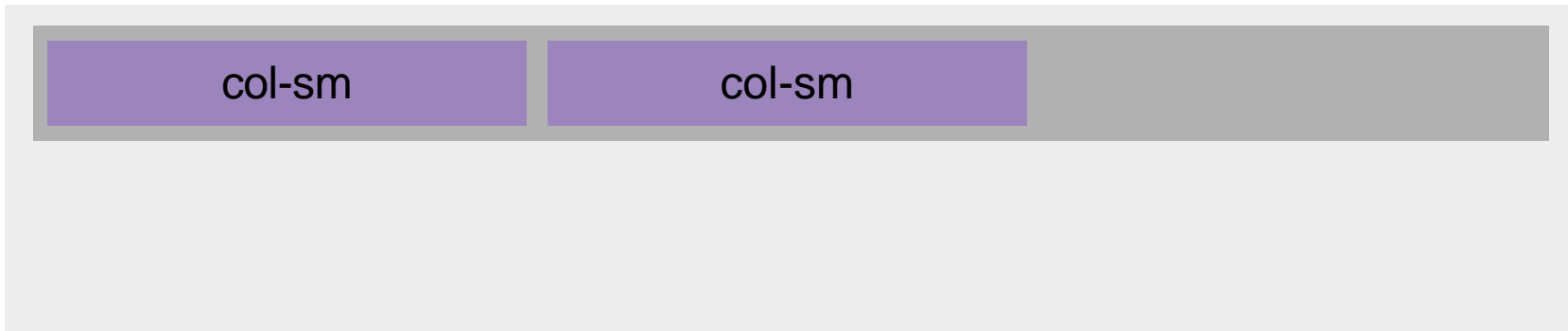
- `<div class="row align-items-end">`



Bootstrap

(Grid – Horizontal Alignment)

- `<div class="row justify-content-start">`



Bootstrap

(Grid – Horizontal Alignment)

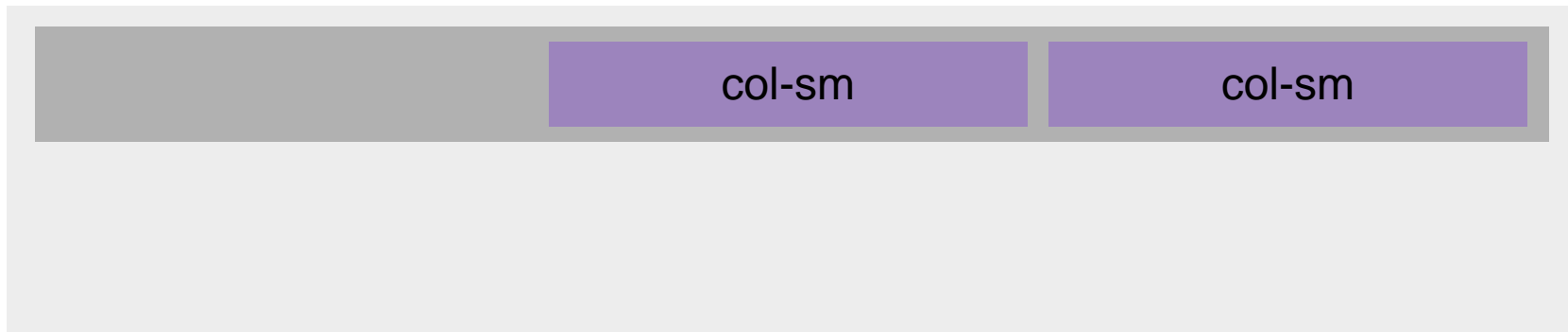
- `<div class="row justify-content-centre">`



Bootstrap

(Grid – Horizontal Alignment)

- `<div class="row justify-content-end">`



*Thank
you*

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