

# Intro

**Дизајн на интеракција човек-компјутер**  
(Human-computer interaction)

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# What will we learn

- UX/UI design
- Designing functional user interfaces
  - Focusing on web interfaces
- Requirement analysis
- Designing a solution
- Implementation

# Technologies covered / needed

- HTML, CSS
  - <http://www.w3schools.com/html/>
  - <http://www.w3schools.com/css/>
- JQuery/JavaScript
  - <http://www.w3schools.com/js/>
  - <http://jquery.com/>
- Bootstrap
  - <http://getbootstrap.com/>
  - We will have an intro about this today
- Django
  - <https://www.djangoproject.com/>
  - Second part of the course

# What is Twitter Bootstrap

- Bootstrap is a powerful front-end framework for faster and easier web development.
- It includes HTML and CSS based design templates for common user interface components like:
  - Typography, Forms, Buttons, Tables, Navigations, Dropdowns, Alerts, Modals, Tabs, Accordion, Carousel and many other as well as optional JavaScript extensions.

# Requirements

## ■ CSS

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-GLh1TQ8iRABdZL1603oVMWSktQOp6b7In1Zl3/Jr59b6EGGoI1aFkw7cmDA6j6gD" crossorigin="anonymous">
```

## JS

```
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/js/bootstrap.bundle.min.js" integrity="sha384-w76AqPfDkMBDXo30jS1Sgez6pr3x5M1Q1ZAGC+nuZB+EYdgRZgiwxhTBtkF7CXvN" crossorigin="anonymous"></script>
```

# Why import JS?

- Alerts for dismissing
- Buttons for toggling states and checkbox/radio functionality
- Carousel for all slide behaviors, controls, and indicators
- Collapse for toggling visibility of content
- Dropdowns for displaying and positioning (also requires Popper.js)
- Modals for displaying, positioning, and scroll behavior
- Navbar for extending our Collapse plugin to implement responsive behavior
- Tooltips and popovers for displaying and positioning (also requires Popper.js)
- Scrollspy for scroll behavior and navigation updates

# Precompiled Bootstrap

```
bootstrap/
  -- css/
    -- bootstrap-grid.css
    -- bootstrap-grid.css.map
    -- bootstrap-grid.min.css
    -- bootstrap-grid.min.css.map
    -- bootstrap-grid.rtl.css
    -- bootstrap-grid.rtl.css.map
    -- bootstrap-grid.rtl.min.css
    -- bootstrap-grid.rtl.min.css.map
    -- bootstrap-reboot.css
    -- bootstrap-reboot.css.map
    -- bootstrap-reboot.min.css
    -- bootstrap-reboot.min.css.map
    -- bootstrap-reboot.rtl.css
    -- bootstrap-reboot.rtl.css.map
    -- bootstrap-reboot.rtl.min.css
    -- bootstrap-reboot.rtl.min.css.map
    -- bootstrap-utilities.css
    -- bootstrap-utilities.css.map
    -- bootstrap-utilities.min.css
    -- bootstrap-utilities.min.css.map
    -- bootstrap-utilities.rtl.css
    -- bootstrap-utilities.rtl.css.map
    -- bootstrap-utilities.rtl.min.css
    -- bootstrap-utilities.rtl.min.css.map
    -- bootstrap.css
    -- bootstrap.css.map
    -- bootstrap.min.css
    -- bootstrap.min.css.map
    -- bootstrap.rtl.css
    -- bootstrap.rtl.css.map
    -- bootstrap.rtl.min.css
    -- bootstrap.rtl.min.css.map
  -- js/
    -- bootstrap.bundle.js
    -- bootstrap.bundle.js.map
    -- bootstrap.bundle.min.js
    -- bootstrap.bundle.min.js.map
    -- bootstrap.esm.js
    -- bootstrap.esm.js.map
    -- bootstrap.esm.min.js
    -- bootstrap.esm.min.js.map
    -- bootstrap.js
    -- bootstrap.js.map
    -- bootstrap.min.js
    -- bootstrap.min.js.map
```

# Precompiled Bootstrap (2)

CSS files	Layout	Content	Components	Utilities
<code>bootstrap.css</code> <code>bootstrap.rtl.css</code> <code>bootstrap.min.css</code> <code>bootstrap.rtl.min.css</code>	Included	Included	Included	Included
<code>bootstrap-grid.css</code> <code>bootstrap-grid.rtl.css</code> <code>bootstrap-grid.min.css</code> <code>bootstrap-grid.rtl.min.css</code>	<a href="#">Only grid system</a>	—	—	<a href="#">Only flex utilities</a>
<code>bootstrap-utilities.css</code> <code>bootstrap-utilities.rtl.css</code> <code>bootstrap-utilities.min.css</code> <code>bootstrap-utilities.rtl.min.css</code>	—	—	—	Included
<code>bootstrap-reboot.css</code> <code>bootstrap-reboot.rtl.css</code> <code>bootstrap-reboot.min.css</code> <code>bootstrap-reboot.rtl.min.css</code>	—	<a href="#">Only Reboot</a>	—	—

# Precompiled Bootstrap (3)

JS files	Popper
<code>bootstrap.bundle.js</code>	Included
<code>bootstrap.bundle.min.js</code>	
<code>bootstrap.js</code>	—
<code>bootstrap.min.js</code>	

# Basic template

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>Bootstrap demo</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-GLhITQ8iRABdZLl6O3oVMWSktQOp6b7ln1Zl3/Jr59b6EGGoI1aFkw7cmDA6j6gD" crossorigin="anonymous">
</head>
<body>

<h1>Hello, world!</h1>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/js/bootstrap.bundle.min.js" integrity="sha384-w76AqPfDkMBDXo30jS1Sgez6pr3x5MIQ1ZAGC+nuZB+EYdgRZgiwxhTBTkF7CXvN" crossorigin="anonymous"></script>

<!--another option-->
<script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.6/dist/umd/popper.min.js" integrity="sha384-oBqDVmMz9ATKlep9tiCxS/Z9fNfEXiDAYTujMAeBAsjFuCZSmKbSSUnQlmh/jp3" crossorigin="anonymous"></script>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/js/bootstrap.min.js" integrity="sha384-mQ93GR66B00ZXjt0YO5KlohRA5SY2XofN4zfuZxLkoj1gXtW8ANNCe9d5Y3eG5eD" crossorigin="anonymous"></script>

</body>
</html>
```

# Important globals

## ■ HTML5 doctype

- Bootstrap requires the use of the HTML5 doctype

```
<!doctype html>
<html lang="en">
...
</html>
```

## ■ 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

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

## ■ Box-sizing

- For more straightforward sizing in CSS, it uses the global *box-sizing* value from content-box to border-box.
- This ensures padding does not affect the final computed width of an element, but it can cause problems with some third party software like Google Maps and Google Custom Search Engine.

# Browsers and devices

## ■ Supported browsers

- Bootstrap supports the latest versions of each major platform's default browsers. Note that proxy browsers (such as Opera Mini, Opera Mobile's Turbo mode, UC Browser Mini, Amazon Silk) are not supported.

## ■ Mobile devices

	Chrome	Firefox	Safari	Android Browser & WebView
Android	Supported	Supported	—	v6.0+
iOS	Supported	Supported	Supported	—

## ■ Desktop browsers

	Chrome	Firefox	Microsoft Edge	Opera	Safari
Mac	Supported	Supported	Supported	Supported	Supported
Windows	Supported	Supported	Supported	Supported	—

# Layout

# Breakpoints

Breakpoint	Class infix	Dimensions
X-Small	<i>None</i>	<576px
Small	<code>sm</code>	≥576px
Medium	<code>md</code>	≥768px
Large	<code>lg</code>	≥992px
Extra large	<code>xl</code>	≥1200px
Extra extra large	<code>xxl</code>	≥1400px

# Containers

- Containers are the most basic layout element in Bootstrap and are required when using the default grid system.
- Bootstrap comes with three different containers:
  - `.container`, which sets a max-width at each responsive breakpoint
  - `.container-fluid`, which is width: 100% at all breakpoints
  - `.container-{breakpoint}`, which is width: 100% until the specified breakpoint

# Containers

	<b>Extra small</b> <code>&lt;576px</code>	<b>Small</b> <code>≥576px</code>	<b>Medium</b> <code>≥768px</code>	<b>Large</b> <code>≥992px</code>	<b>X-Large</b> <code>≥1200px</code>	<b>XX-Large</b> <code>≥1400px</code>
<code>.container</code>	100%	540px	720px	960px	1140px	1320px
<code>.container-sm</code>	100%	540px	720px	960px	1140px	1320px
<code>.container-md</code>	100%	100%	720px	960px	1140px	1320px
<code>.container-lg</code>	100%	100%	100%	960px	1140px	1320px
<code>.container-xl</code>	100%	100%	100%	100%	1140px	1320px
<code>.container-xxl</code>	100%	100%	100%	100%	100%	1320px
<code>.container-fluid</code>	100%	100%	100%	100%	100%	100%

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

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

# Grid System

- Bootstrap includes a responsive, mobile first fluid grid system with a twelve column system, six default responsive tiers, Sass variables and mixins, and dozens of predefined classes.
- It includes predefined classes for easy layout options, as well as powerful mixins for generating more semantic layouts.

# Grid system (2)

Column

Column

Column

```
<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>
```

# Grid System (3)

- The above example creates three equal-width columns on small, medium, large, and extra large devices using our predefined grid classes. Those columns are centered in the page with the parent `.container`.
- How it works:
  - Containers provide a means to center and horizontally pad your site's contents. Use `.container` for a responsive pixel width or `.container-fluid` for width: 100% across all viewport and device sizes
  - Rows are wrappers for columns. Each column has horizontal padding (called a gutter) for controlling the space between them. This padding is then counteracted on the rows with negative margins. This way, all the content in your columns is visually aligned down the left side.

# Grid System (4)

- In a grid layout, content must be placed within columns and only columns may be immediate children of rows.
- Thanks to flexbox, grid columns without a specified width will automatically layout as equal width columns. For example, four instances of .col-sm will each automatically be 25% wide from the small breakpoint and up.
- Column classes indicate the number of columns you'd like to use out of the possible 12 per row. So, if you want three equal-width columns across, you can use .col-4
- Column widths are set in percentages, so they're always fluid and sized relative to their parent element.
- Columns have horizontal padding to create the gutters between individual columns, however, you can remove the margin from rows and padding from columns with .no-gutters on the .row

# Grid System (5)

- To make the grid responsive, there are five grid breakpoints, one for each responsive breakpoint: all breakpoints (extra small), small, medium, large, and extra large.
- Grid breakpoints are based on minimum width media queries, meaning they apply to that one breakpoint and all those above it (e.g., .col-sm-4 applies to small, medium, large, and extra large devices, but not the first xs breakpoint)
- You can use predefined grid classes (like .col-4) or Sass mixins for more semantic markup

# Grid options

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

# Auto-layout columns

## ■ Equal-width

1 of 2

2 of 2

1 of 3

2 of 3

3 of 3

```
<div class="container">
  <div class="row">
    <div class="col">
      1 of 2
    </div>
    <div class="col">
      2 of 2
    </div>
  </div>
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col">
      2 of 3
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
</div>
```

# Auto-layout columns (2)

## ■ Setting one column width

```
<div class="container">
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-6">
      2 of 3 (wider)
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-5">
      2 of 3 (wider)
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
</div>
```

1 of 3	2 of 3 (wider)	3 of 3
--------	----------------	--------

1 of 3	2 of 3 (wider)	3 of 3
--------	----------------	--------

# Auto-layout columns (3)

## ■ Variable width content

```
<div class="container">
  <div class="row justify-content-md-center">
    <div class="col col-lg-2">
      1 of 3
    </div>
    <div class="col-md-auto">
      Variable width content
    </div>
    <div class="col col-lg-2">
      3 of 3
    </div>
  </div>
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-md-auto">
      Variable width content
    </div>
    <div class="col col-lg-2">
      3 of 3
    </div>
  </div>
</div>
```

1 of 3

Variable width content

3 of 3

# Auto-layout columns (4)

- Setting column number on a row level

Column	Column
Column	Column

```
<div class="container text-center">
  <div class="row row-cols-2">
    <div class="col">Column</div>
    <div class="col">Column</div>
    <div class="col">Column</div>
    <div class="col">Column</div>
  </div>
</div>
```

# Auto-layout columns (5)

## ■ All breakpoints

col	col	col	col
col-8			col-4

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

# Auto-layout columns (6)

## ■ Stacked-to-horizontal

col-sm-8	col-sm-4	
col-sm	col-sm	col-sm

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

Using a single set of `.col-sm-*` classes, you can create a basic grid system that starts out stacked before becoming horizontal with at the small breakpoint (`sm`).

# Auto-layout columns (7)

## ■ Mix and match

.col-12 .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

```
<!-- Stack the columns on mobile by making one full-width and the other half-width -->
<div class="row">
  <div class="col-12 col-md-8">.col-12 .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 desktop -->
<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>
```

# Vertical alignment

One of three columns

# Vertical alignment (2)

```
<div class="container">
  <div class="row">
    <div class="col align-self-start">
      One of three columns
    </div>
    <div class="col align-self-center">
      One of three columns
    </div>
    <div class="col align-self-end">
      One of three columns
    </div>
  </div>
</div>
```

```
<div class="container">
  <div class="row align-items-start">
    <div class="col">
      One of three columns
    </div>
    <div class="col">
      One of three columns
    </div>
    <div class="col">
      One of three columns
    </div>
  </div>
  <div class="row align-items-center">
    <div class="col">
      One of three columns
    </div>
    <div class="col">
      One of three columns
    </div>
    <div class="col">
      One of three columns
    </div>
  </div>
  <div class="row align-items-end">
    <div class="col">
      One of three columns
    </div>
    <div class="col">
      One of three columns
    </div>
    <div class="col">
      One of three columns
    </div>
  </div>
</div>
```

# Vertical alignment (3)

One of three columns

One of three columns

One of three columns

# Ordering

First, but unordered

Third, but first

Second, but last



```
<div class="container">
  <div class="row">
    <div class="col">
      First, but unordered
    </div>
    <div class="col order-12">
      Second, but last
    </div>
    <div class="col order-1">
      Third, but first
    </div>
  </div>
</div>
```

```
<div class="container">
  <div class="row">
    <div class="col order-last">
      First, but last
    </div>
    <div class="col">
      Second, but unordered
    </div>
    <div class="col order-first">
      Third, but first
    </div>
  </div>
</div>
```



Third, but first

Second, but unordered

First, but last

# Typography



# Display headings

Display 1

---

Display 2

---

Display 3

---

Display 4

```
<h1 class="display-1">Display 1</h1>
<h1 class="display-2">Display 2</h1>
<h1 class="display-3">Display 3</h1>
<h1 class="display-4">Display 4</h1>
```

# Elements

An abbreviation of the word attribute is attr.

```
<abbr title="attribute">attr</abbr>
```

**Twitter, Inc.**  
795 Folsom Ave, Suite 600  
San Francisco, CA 94107  
P: (123) 456-7890

**Full Name**  
[first.last@example.com](mailto:first.last@example.com)

```
<address>
  <strong>Twitter, Inc.</strong><br>
  795 Folsom Ave, Suite 600<br>
  San Francisco, CA 94107<br>
  <abbr title="Phone">P:</abbr> (123) 456-7890
</address>

<address>
  <strong>Full Name</strong><br>
  <a href="mailto:#">first.last@example.com</a>
</address>
```

Loreum ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere erat a ante.

```
<blockquote>
  <p>Loreum ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere erat a ante.</p>
</blockquote>
```

# Elements

An abbreviation of the word attribute is attr.

```
<abbr title="attribute">attr</abbr>
```

**Twitter, Inc.**  
795 Folsom Ave, Suite 600  
San Francisco, CA 94107  
P: (123) 456-7890

**Full Name**  
[first.last@example.com](mailto:first.last@example.com)

```
<address>
  <strong>Twitter, Inc.</strong><br>
  795 Folsom Ave, Suite 600<br>
  San Francisco, CA 94107<br>
  <abbr title="Phone">P:</abbr> (123) 456-7890
</address>

<address>
  <strong>Full Name</strong><br>
  <a href="mailto:#">first.last@example.com</a>
</address>
```

Loreum ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere erat a ante.

```
<blockquote>
  <p>Loreum ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere erat a ante.</p>
</blockquote>
```

# Elements (2)

- Lorem ipsum dolor sit amet
- Consectetur adipiscing elit
- Integer molestie lorem at massa
- Facilisis in pretium nisl aliquet
- Nulla volutpat aliquam velit
  - Phasellus iaculis neque
  - Purus sodales ultricies
  - Vestibulum laoreet porttitor sem
  - Ac tristique libero volutpat at
- Faucibus porta lacus fringilla vel
- Aenean sit amet erat nunc
- Eget porttitor lorem

1. Lorem ipsum dolor sit amet
2. Consectetur adipiscing elit
3. Integer molestie lorem at massa
4. Facilisis in pretium nisl aliquet
5. Nulla volutpat aliquam velit
6. Faucibus porta lacus fringilla vel
7. Aenean sit amet erat nunc
8. Eget porttitor lorem

- Lorem ipsum dolor sit amet
- Consectetur adipiscing elit
- Integer molestie lorem at massa
- Facilisis in pretium nisl aliquet
- Nulla volutpat aliquam velit
  - Phasellus iaculis neque
  - Purus sodales ultricies
  - Vestibulum laoreet porttitor sem
  - Ac tristique libero volutpat at
- Faucibus porta lacus fringilla vel
- Aenean sit amet erat nunc
- Eget porttitor lorem

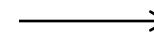
```
<ul>
  <li>...</li>
</ul>
```

```
<ol>
  <li>...</li>
</ol>
```

```
<ul class="list-unstyled">
  <li>...</li>
</ul>
```

# Elements (3)

  Lorem ipsum Phasellus iaculis Nulla volutpat



```
<ul class="list-inline">
  <li class="list-inline-item">Lorem ipsum</li>
  <li class="list-inline-item">Phasellus iaculis</li>
  <li class="list-inline-item">Nulla volutpat</li>
</ul>
```

## Description lists

A description list is perfect for defining terms.

### Euismod

Vestibulum id ligula porta felis euismod semper eget lacinia odio sem nec elit.

Donec id elit non mi porta gravida at eget metus.

### Malesuada porta

Etiam porta sem malesuada magna mollis euismod.



```
<dl>
  <dt>...</dt>
  <dd>...</dd>
</dl>
```

# Elements (4)

## Description lists

A description list is perfect for defining terms.

## Euismod

Vestibulum id ligula porta felis euismod semper eget lacinia odio sem nec elit.

Donec id elit non mi porta gravida at eget metus.

## Malesuada porta

Etiam porta sem malesuada magna mollis euismod.

## Truncated term is truncated

Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus.

## Nesting

### Nested definition list

Aenean posuere, tortor sed cursus feugiat, nunc augue blandit nunc.



```
<dl class="row">
  <dt class="col-sm-3">Description lists</dt>
  <dd class="col-sm-9">A description list is perfect for defining terms.</dd>

  <dt class="col-sm-3">Euismod</dt>
  <dd class="col-sm-9">
    <p>Vestibulum id ligula porta felis euismod semper eget lacinia odio sem nec elit.</p>
    <p>Donec id elit non mi porta gravida at eget metus.</p>
  </dd>

  <dt class="col-sm-3">Malesuada porta</dt>
  <dd class="col-sm-9">Etiam porta sem malesuada magna mollis euismod.</dd>

  <dt class="col-sm-3 text-truncate">Truncated term is truncated</dt>
  <dd class="col-sm-9">Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus.</dd>

  <dt class="col-sm-3">Nesting</dt>
  <dd class="col-sm-9">
    <dl class="row">
      <dt class="col-sm-4">Nested definition list</dt>
      <dd class="col-sm-8">Aenean posuere, tortor sed cursus feugiat, nunc augue blandit nunc.</dd>
    </dl>
  </dd>
</dl>
```

# Text properties

Start aligned text on all viewport sizes.

Center aligned text on all viewport sizes.

End aligned text on all viewport sizes.

Start aligned text on viewports sized SM (small) or wider.

Start aligned text on viewports sized MD (medium) or wider.

Start aligned text on viewports sized LG (large) or wider.

Start aligned text on viewports sized XL (extra-large) or wider.



```
<p class="text-start">Start aligned text on all viewport sizes.</p>
<p class="text-center">Center aligned text on all viewport sizes.</p>
<p class="text-end">End aligned text on all viewport sizes.</p>

<p class="text-sm-start">Start aligned text on viewports sized SM (small) or wider.</p>
<p class="text-md-start">Start aligned text on viewports sized MD (medium) or wider.</p>
<p class="text-lg-start">Start aligned text on viewports sized LG (large) or wider.</p>
<p class="text-xl-start">Start aligned text on viewports sized XL (extra-large) or wider.</p>
```

# Text properties (2)

This text should overflow the parent.



```
<div class="text-nnowrap" style="width: 8rem;">  
    This text should overflow the parent.  
</div>
```

For longer content, you can add a `.text-truncate` class to truncate the text with an ellipsis. Requires `display: inline-block` or `display: block`.

Praeterea iter est quasda...  
Praeterea iter est q...



```
<!-- Block level -->  
<div class="row">  
    <div class="col-2 text-truncate">  
        Praeterea iter est quasdam res quas ex communi.  
    </div>  
</div>  
  
<!-- Inline level -->  
<span class="d-inline-block text-truncate" style="max-width: 150px;">  
    Praeterea iter est quasdam res quas ex communi.  
</span>
```

**Bold text.**

**Bolder weight text (relative to the parent element).**

Normal weight text.

Light weight text.

Lighter weight text (relative to the parent element).

*Italic text.*

Text with normal font style



```
<p class="fw-bold">Bold text.</p>  
<p class="fw-bolder">Bolder weight text (relative to the parent element).</p>  
<p class="fw-normal">Normal weight text.</p>  
<p class="fw-light">Light weight text.</p>  
<p class="fw-lighter">Lighter weight text (relative to the parent element).</p>  
<p class="fst-italic">Italic text.</p>  
<p class="fst-normal">Text with normal font style</p>
```

# Color properties

.text-primary

.text-secondary

.text-success

.text-danger

.text-warning

.text-info

.text-light

.text-dark

.text-muted

.text-white



```
<p class="text-primary">.text-primary</p>
<p class="text-secondary">.text-secondary</p>
<p class="text-success">.text-success</p>
<p class="text-danger">.text-danger</p>
<p class="text-warning">.text-warning</p>
<p class="text-info">.text-info</p>
<p class="text-light bg-dark">.text-light</p>
<p class="text-dark">.text-dark</p>
<p class="text-muted">.text-muted</p>
<p class="text-white bg-dark">.text-white</p>
```

# Color properties (2)

.bg-primary

.bg-secondary

.bg-success

.bg-danger

.bg-warning

.bg-info

.bg-light

.bg-dark

.bg-white



```
<div class="p-3 mb-2 bg-primary text-white">.bg-primary</div>
<div class="p-3 mb-2 bg-secondary text-white">.bg-secondary</div>
<div class="p-3 mb-2 bg-success text-white">.bg-success</div>
<div class="p-3 mb-2 bg-danger text-white">.bg-danger</div>
<div class="p-3 mb-2 bg-warning text-dark">.bg-warning</div>
<div class="p-3 mb-2 bg-info text-white">.bg-info</div>
<div class="p-3 mb-2 bg-light text-dark">.bg-light</div>
<div class="p-3 mb-2 bg-dark text-white">.bg-dark</div>
<div class="p-3 mb-2 bg-white text-dark">.bg-white</div>
```

# Code

# Code

For example, `<section>` should be wrapped as inline.

For example, `<code>&lt;section&gt;</code>` should be wrapped as inline.

To switch directories, type `cd` followed by the name of the directory.

To edit settings, press `ctrl + ,`

To switch directories, type `<kbd>cd</kbd>` followed by the name of the directory.  
To edit settings, press `<kbd><kbd>ctrl</kbd> + <kbd>,</kbd></kbd>`

`<p>Sample text here...</p>`

`<pre>&lt;p&gt;Sample text here...&lt;/p&gt;</pre>`

# Code (2)

## Variables

```
<var>y</var> = <var>m</var><var>x</var> + <var>b</var>
```

$$y = mx + b$$

## Sample output

```
<samp>This text is meant to be treated as sample output from a computer program.</samp>
```

This text is meant to be treated as sample output from a computer program.

# Tables

# Basic example

For basic styling—light padding and only horizontal dividers—add the base class `.table` to any `<table>`.

#	First Name	Last Name	Username
1	Mark	Otto	@mdo
2	Jacob	Thornton	@fat
3	Larry	the Bird	@twitter

```
<table class="table">
  ...
</table>
```

You can invert the colors by adding the class `.table-dark` as well.

# Striped rows

#	First	Last	Handle
1	Mark	Otto	@mdo
2	Jacob	Thornton	@fat
3	Larry	the Bird	@twitter

```
<table class="table table-striped">
  ...
</table>
```

# Bordered table

#	First	Last	Handle
1	Mark	Otto	@mdo
2	Jacob	Thornton	@fat
3	Larry the Bird		@twitter

```
<table class="table table-bordered">
  ...
</table>
```

# Hover rows (on mouse hover)

Add `.table-hover` to enable a hover state on table rows within a `<tbody>`.

#	First	Last	Handle
1	Mark	Otto	@mdo
2	Jacob	Thornton	@fat
3	Larry the Bird		@twitter

```
<table class="table table-hover">
  ...
</table>
```

# Small table

#	First	Last	Handle
1	Mark	Otto	@mdo
2	Jacob	Thornton	@fat
3	Larry the Bird		@twitter

```
<table class="table table-sm">
  <thead>
    <tr>
```



# Contextual classes

Class	Heading	Heading
Active	Cell	Cell
Default	Cell	Cell
Primary	Cell	Cell
Secondary	Cell	Cell
Success	Cell	Cell
Danger	Cell	Cell
Warning	Cell	Cell
Info	Cell	Cell
Light	Cell	Cell
Dark	Cell	Cell

# Contextual classes (2)

```
<!-- On rows -->
<tr class="table-active">...</tr>

<tr class="table-primary">...</tr>
<tr class="table-secondary">...</tr>
<tr class="table-success">...</tr>
<tr class="table-danger">...</tr>
<tr class="table-warning">...</tr>
<tr class="table-info">...</tr>
<tr class="table-light">...</tr>
<tr class="table-dark">...</tr>

<!-- On cells (`td` or `th`) -->
<tr>
    <td class="table-active">...</td>

    <td class="table-primary">...</td>
    <td class="table-secondary">...</td>
    <td class="table-success">...</td>
    <td class="table-danger">...</td>
    <td class="table-warning">...</td>
    <td class="table-info">...</td>
    <td class="table-light">...</td>
    <td class="table-dark">...</td>
</tr>
```

# Contextual classes (3)

#	Heading	Heading
1	Cell	Cell
2	Cell	Cell
3	Cell	Cell
4	Cell	Cell
5	Cell	Cell
6	Cell	Cell
7	Cell	Cell
8	Cell	Cell
9	Cell	Cell

# Contextual classes (4)

```
<!-- On rows -->
<tr class="bg-primary">...</tr>
<tr class="bg-success">...</tr>
<tr class="bg-warning">...</tr>
<tr class="bg-danger">...</tr>
<tr class="bg-info">...</tr>

<!-- On cells (`td` or `th`) -->
<tr>
  <td class="bg-primary">...</td>
  <td class="bg-success">...</td>
  <td class="bg-warning">...</td>
  <td class="bg-danger">...</td>
  <td class="bg-info">...</td>
</tr>
```

# Questions?