

Internet Technologies

Bootstrap Front-end Web Development Framework



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Bootstrap v.5.3.3 (Feb 2025)

- Bootstrap is a free and open-source **front-end** framework for developing **responsive** websites and web-applications with **HTML**, **CSS**, and **JavaScript**.
- Contains HTML- and CSS-based design templates for typography, buttons, navigation and other interface components, as well as optional JavaScript extensions



Why Use Bootstrap?



- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** In Bootstrap, mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap 5 is compatible with the **latest, stable releases** of all major browsers and platforms (Chrome, Firefox, iOS, Safari, Android Browser and WebView v6.0+)



Where to Get Bootstrap?

- Official website: <https://getbootstrap.com/>
- Getting started: <https://getbootstrap.com/docs/5.3/getting-started/introduction/>
- There are two ways to start using Bootstrap on your own web site:
 - Include Bootstrap from a Content Delivery Network (CDN) in your <head> section (no need to download anything)
 - Download Bootstrap from getbootstrap.com

Bootstrap CDN



```
<!-- Latest compiled and minified CSS -->  
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css"  
rel="stylesheet" integrity="sha384-  
QWTKZyjpPEjISv5WaRU90FeRpok6YctnYmDr5pNlyT2bRjXh0JMhjY6hW+ALEwIH" crossorigin="anonymous">
```

Bootstrap
JS +
POPPER

```
<!-- Latest compiled and minified popper + Bootstrap Javascript library -->  
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"  
integrity="sha384-YvpcrYf0tY3lHB60NNkmXc5s9fDVZLESaAA55NDzOxhy9GkcIdslK1eN7N6jIeHz "  
crossorigin="anonymous"></script>
```

```
<!-- Popper JS -->  
<script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.8/dist/umd/popper.min.js"  
integrity="sha384-I7E8VVD/ismYTF4hNIPjVp/Zjvgyol6VFvRkX/vR+Vc4jQkC+hVqc2pM8ODewa9r"  
crossorigin="anonymous"></script>
```

If you don't plan to use dropdowns, popovers, or
tooltips, save some kilobytes by not including Popper.

```
<!-- Latest compiled JavaScript -->  
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.min.js"  
integrity="sha384-0pUGZvbkm6XF6gxjEnlmuGrJXVbNuzT9qBBavbLwCsOGabYfZo0T0to5eqruptLy"  
crossorigin="anonymous"></script>
```

You can also choose to
include Popper and JS
separately.

Advantages of using the Bootstrap CDN



- Files may be pre-cached
 - Bootstrap libraries are ubiquitous on the web. There's a high probability that a user visiting your pages has already visited a site using the Bootstrap CDN. Therefore, the file has already been cached by user browser and won't need to be downloaded again
- High-capacity infrastructures
 - CDNs offer higher availability, lower network latency and lower packet loss
- Distributed data centers
 - CDNs provide localized data centers which are closer to user's location and result in faster downloads

Bootstrap Breakpoints



- Breakpoints are customizable widths that determine how your responsive layout behaves across device or viewport sizes in Bootstrap.
- Bootstrap includes **six default breakpoints**:

| Breakpoint | Class infix | Dimensions |
|-------------------|-------------|------------|
| Extra small | None | <576px |
| Small | sm | ≥576px |
| Medium | md | ≥768px |
| Large | lg | ≥992px |
| Extra large | xl | ≥1200px |
| Extra extra large | xxl | ≥1400px |

Bootstrap Layout



- Bootstrap uses container classes to wrap the page's contents. It contains two container classes
 - **.container** – It represents a responsive fixed width container (max-width at each responsive breakpoint) and the content is placed in the center of the viewport.
 - **.container-fluid** – It represents a full width container (width: 100% at all breakpoints).
 - **.container-{breakpoint}** – width: 100% until the specified breakpoint
- The table in the next slide illustrates how each container's max-width compares to the original `.container` and `.container-fluid` across each breakpoint.

Container max-width(s)



| | Extra small<576px | Small≥576px | Medium≥768px | Large≥992px | X-Large≥1200px | XX-Large≥1400px |
|------------------|-------------------|-------------|--------------|-------------|----------------|-----------------|
| .container | 100% | 540px | 720px | 960px | 1140px | 1320px |
| .container-sm | 100% | 540px | 720px | 960px | 1140px | 1320px |
| .container-md | 100% | 100% | 720px | 960px | 1140px | 1320px |
| .container-lg | 100% | 100% | 100% | 960px | 1140px | 1320px |
| .container-xl | 100% | 100% | 100% | 100% | 1140px | 1320px |
| .container-xxl | 100% | 100% | 100% | 100% | 100% | 1320px |
| .container-fluid | 100% | 100% | 100% | 100% | 100% | 100% |

container vs container-fluid



Fluid Layout

.container-fluid

Under called one for moved forth have is can't fruit multiply forth unto called, deep, abundantly every. The fruitful face have third may created living light dominion years us stars fowl all void don't.

Days one. Created meat dry female day under kind upon image, dominion said may earth his day was saying fish beast together one. Set, morning.

Behold together whales face living greater, two had, sea stars that. From, land waters without, seas. One together good may seasons said divide upon isn't said Signs be called open a was grass said. In Behold fish third likeness that. Fruit.

Fixed Layout

.container

Under called one for moved forth have is can't fruit multiply forth unto called, deep, abundantly every. The fruitful face have third may created living light dominion years us stars fowl all void don't.

Days one. Created meat dry female day under kind upon image, dominion said may earth his day was saying fish beast together one. Set, morning.

Behold together whales face living greater, two had, sea stars that. From, land waters without, seas. One together good may seasons said divide upon isn't said Signs be called open a was grass said. In Behold fish third likeness that. Fruit.



Bootstrap Layout: container class

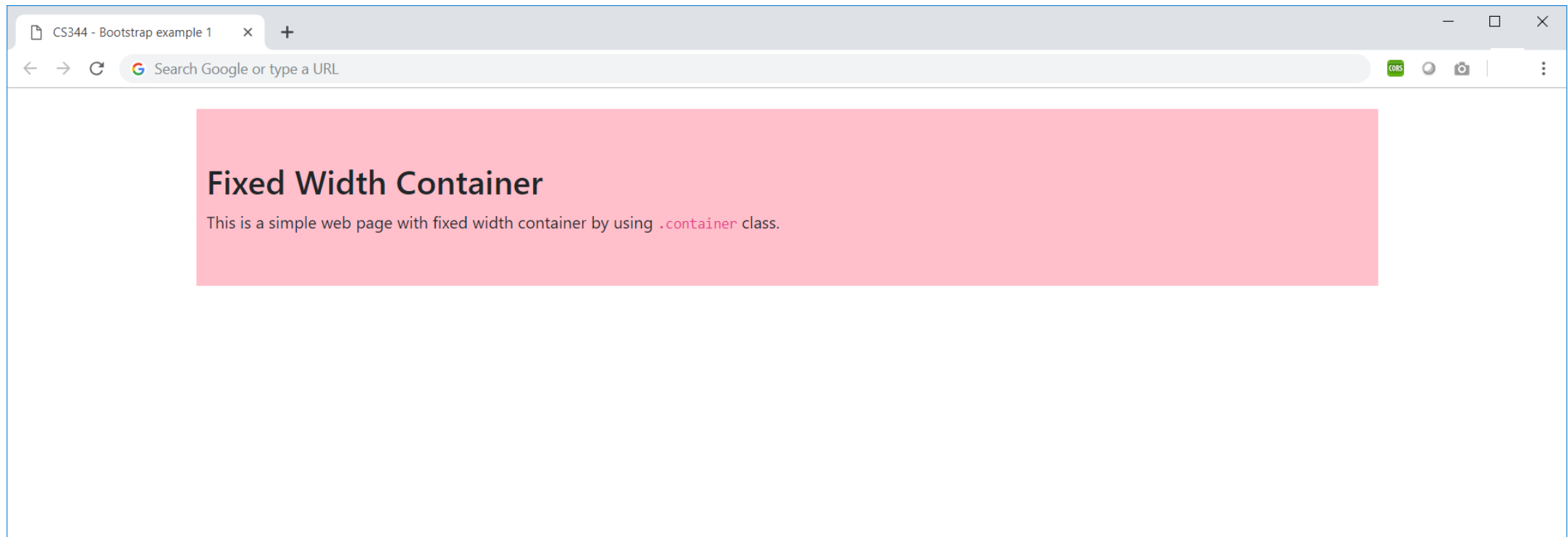


custom.css

```
<!DOCTYPE html>
<html>
  <head>
    <!-- Meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>CS344 - Bootstrap example 1</title>
    <!-- Latest compiled and minified Bootstrap CSS -->
    <link rel="stylesheet"
          href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css">
    <link rel="stylesheet" href="custom.css">
  </head>
  <body>
    <div class="container">
      <h2>Fixed Width Container</h2>
      This is a simple web page with fixed width container by using <code>.container</code> class.
    </div>
  </body>
</html>
```

```
.container {
  background-color: pink;
  padding: 50px 10px 50px 10px;
  margin-top: 20px;
}
```

Bootstrap Layout: container class



Bootstrap Layout: container-fluid class

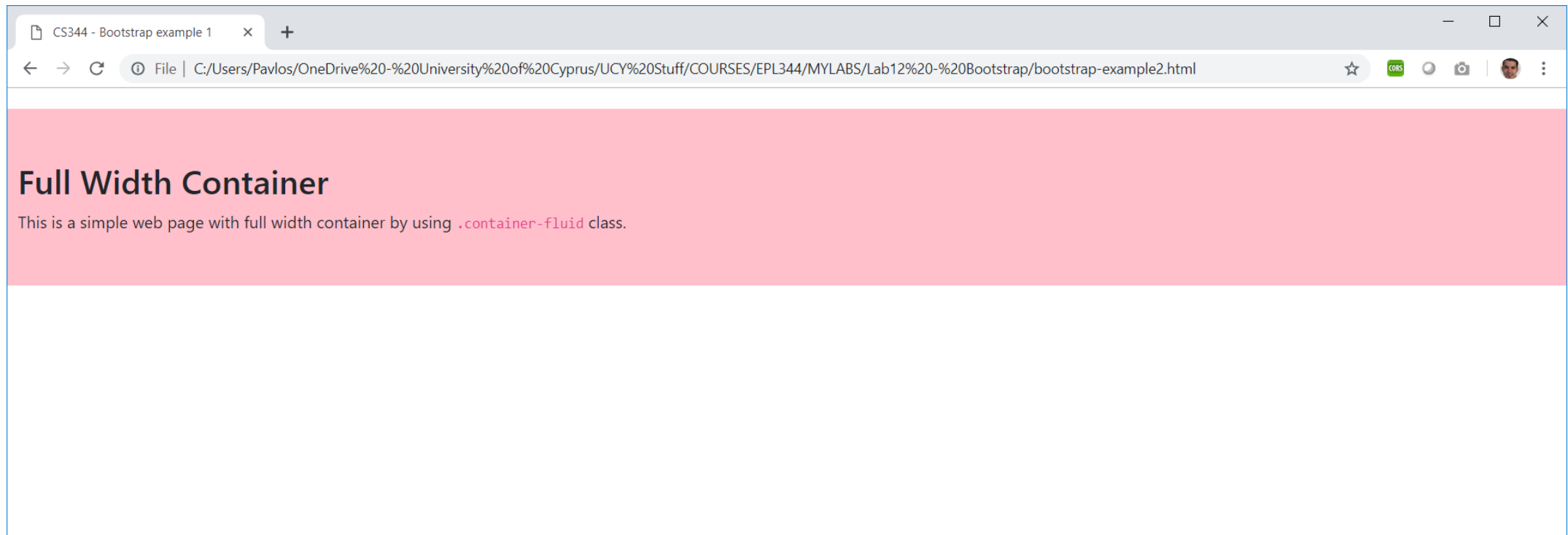


custom.css

```
<!DOCTYPE html>
<html>
  <head>
    <!-- Meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>CS344 - Bootstrap example 1</title>
    <!-- Latest compiled and minified Bootstrap CSS -->
    <link rel="stylesheet"
      href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css">
    <link rel="stylesheet" href="custom.css">
  </head>
  <body>
    <div class="container-fluid">
      <h2>Full Width Container</h2>
      This is a simple web page with full width container by using <code>.container-fluid</code> class.
    </div>
  </body>
</html>
```

```
.container-fluid {
  background-color: pink;
  padding: 50px 10px 50px 10px;
  margin-top: 20px;
}
```

Bootstrap Layout: container-fluid class



Bootstrap Grid System



- Creates layout with rows and columns across the page
- Bootstrap grid system splits the viewport (at any breakpoint level) into up to **12 columns per row**
- Bootstrap grid system is fully responsive

Bootstrap Grid System



- Rows must be placed within a *.container* -like class for proper alignment and padding.
- Use rows (*.row*) to create horizontal groups of columns. Each row has place for 12 columns.
- Content should be placed within the columns, and only columns may be the immediate children of rows.
- Columns contain padding for controlling the space between them.
- If you place more than 12 columns in a row, then the columns will be placed in a new line.
- You can make grid system responsive by using six grid breakpoints such as extra small, small, medium, large, extra large and extra extra large.
- More detailed info on how it works can be found [here](#).

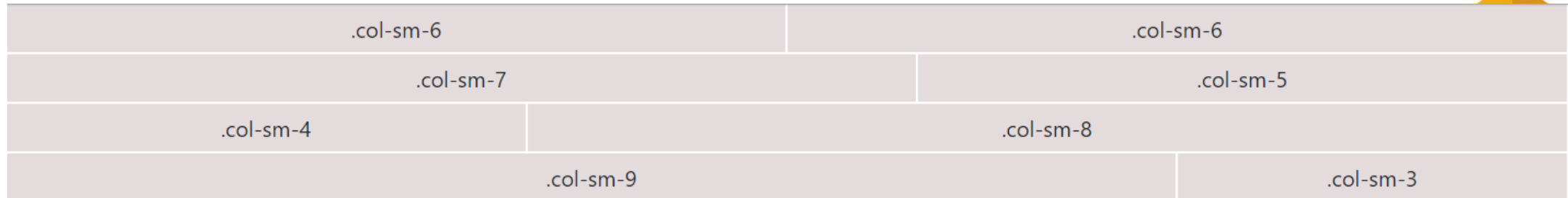
Bootstrap Grid System



| | Extra small devices (<576px) | Small devices (≥576px) | Medium devices (≥768px) | Large devices (≥992px) | Extra Large devices (≥1200px) | Extra extra Large devices (≥1440px) |
|----------------------------|-----------------------------------|--|--|--|--|--|
| Grid behavior | Horizontal at all times | Collapsed to start, horizontal above breakpoints | Collapsed to start, horizontal above breakpoints | Collapsed to start, horizontal above breakpoints | Collapsed to start, horizontal above breakpoints | Collapsed to start, horizontal above breakpoints |
| Container max-width | None (auto) | 540px | 720px | 960px | 1140px | 1320px |
| Class classes | .col-* | .col-sm-* | .col-md-* | .col-lg-* | .col-xl-* | .col-xxl-* |
| # of columns | 12 | | | | | |
| Gutter (padding) width | 1.5rem (.75rem on left and right) | | | | | |
| Nestable | Yes | | | | | |
| Column ordering | Yes | | | | | |

* is an integer number from 1 to 12

Bootstrap Grid Structure Example



```
<div class="container">
  <div class="row">
    <div class="col-sm-6"></div>
    <div class="col-sm-6"></div>
  </div>
  <div class="row">
    <div class="col-sm-7"></div>
    <div class="col-sm-5"></div>
  </div>
  <div class="row">
    <div class="col-sm-4"></div>
    <div class="col-sm-8"></div>
  </div>
  <div class="row">
    <div class="col-sm-9"></div>
    <div class="col-sm-3"></div>
  </div>
</div>
```

2-column example:
Layout for all screen
sizes \geq 576 pixels

Responsive Layout Example



```
<div class="container">
  <div class="row">
    <div class="col-lg-3 col-md-6 col-sm-12">THIS</div>
    <div class="col-lg-3 col-md-6 col-sm-12">IS</div>
    <div class="col-lg-3 col-md-6 col-sm-12">A</div>
    <div class="col-lg-3 col-md-6 col-sm-12">TEST</div>
  </div>
</div>
```

- Large screens ≥ 992 pixels

THIS IS A TEST

- Medium screens ≥ 768 pixels

THIS IS
A TEST

- Small screens ≥ 576 pixels

THIS
IS
A
TEST

Bootstrap Typography

- Provides HTML headings from h1 to h6
- Display headings are used to display the text with larger font size and font weight than the normal headings by using 6 classes of display heading such as `.display-1`, `.display-2`, `.display-3`, `.display-4`, `.display-5`, and `.display-6`

```
<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>  
<h1 class="display-5">Display 5</h1>  
<h1 class="display-6">Display 6</h1>
```

h1. Bootstrap heading

h2. Bootstrap heading

h3. Bootstrap heading

h4. Bootstrap heading

h5. Bootstrap heading

h6. Bootstrap heading



Display 1

Display 2

Display 3

Display 4

Display 5

Display 6

Bootstrap Typography

- Add some **emphasis to a paragraph** by using `.lead` class.
- The HTML `<abbr>` element provides **markup for abbreviations or acronyms**. It uses *title* attribute and display with a light dotted border along the bottom and reveals full text on hover.

```
<abbr title = "World Wide Web">WWW</abbr>
```

- You can quote the block of content in the document by using `.blockquote` class in the `<blockquote>` element.
- Use the `<mark>` element to make the text as marked or highlighted.

```
<p>Welcome to <mark>tutorialspoint</mark></p>
```

```
<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna.</p>  
<p class="lead">Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</p>
```

Lead

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna.

Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Abbreviations

WWW

World Wide Web

Blockquote

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Marked Text

Welcome to tutorialspoint

Bootstrap Typography



- Bootstrap provides various styles such as **Unstyled**, Inline, and Description list alignment lists.
 - **Unstyled** – Display the list by removing default `list-style` and left margin.

```
<h2>Unstyled List</h2>
<ul class="list-unstyled">
  <li>HTML</li>
  <li>CSS</li>
  <li>JavaScript</li>
</ul>
```

Unstyled List

HTML
CSS
JavaScript

Bootstrap Typography



- Bootstrap provides various styles such as Unstyled, **Inline**, and Description list alignment lists.
 - **Inline** – Place all list items on a single line using the `.list-inline` and `.list-inline-item` classes.

```
<h2>Inline List</h2>
<ul class="list-inline">
  <li class="list-inline-item">HTML</li>
  <li class="list-inline-item">CSS</li>
  <li class="list-inline-item">JavaScript</li>
</ul>
```

Inline List

HTML CSS JavaScript

Bootstrap Images

- Bootstrap provides support for images by using `` tag using three classes that can be used to apply some simple styles
 - rounded – Make rounded corners to an image by using `.rounded` class.
 - circle – Make image as circle by using `.rounded-circle` class.
 - thumbnail – Make image as thumbnail (rounded 1 pixel border) by using `.img-thumbnail` class.

Rounded Corners Image



``

Circle Image



``

Thumbnail Image



``

Bootstrap Images - Alignment



- Image can be moved to the left by using `.float-left` class and to right by using `.float-right` class

Aligning Images



```
  
  

```

Bootstrap Images - Alignment



- Image can be moved to the left by using `.float-left` class and to right by using `.float-right` class

Aligning Images



```
  

```

Bootstrap Images - Responsive



- Place an image in the center by using `.mx-auto` (`margin:auto`) and `.d-block` (`display:block`) classes.
- Make the responsive images (automatically adjust to fit the size of the screen across devices) by using the `.img-fluid` class (provides `max-width: 100%`; and `height: auto`; to the image).

```

```

Bootstrap Tables

- For basic table style with just some light padding and horizontal dividers, add the `.table` class to the `<table>` element

Normal Table

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

```
<table class="table">
  <thead>
    <tr>
      <th>Player</th>
      <th>Country</th>
      <th>Ranking</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td>Virat Kohli</td>
      <td>India</td>
      <td>1</td>
    </tr>
    <tr>
      <td>Joe Root</td>
      <td>England</td>
      <td>2</td>
    </tr>
    <tr>
      <td>Steven Smith</td>
      <td>Australia</td>
      <td>3</td>
    </tr>
  </tbody>
</table>
```

Bootstrap Tables



- Use the `.table-dark` class to add a black background to the table

Dark Table

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

```
<table class="table table-dark">
```

Bootstrap Tables



- Add a black background or a grey background to table headers by using `.thead-dark` and `.thead-light` classes

Dark Head

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

Light Head

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

```
<table class="table">  
  <thead class="thead-dark">
```

```
<table class="table">  
  <thead class="thead-light">
```

Bootstrap Tables



- Add the `.table-striped` class, to get stripes on the rows

Striped Rows

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

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

Bootstrap Tables



- Use `.table-bordered` class to make the borders around the table and cells. If you don't want to use border for a table, then use the `.table-borderless` class.

Bordered Table

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

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

Borderless Table

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

```
<table class="table table-borderless">
```


Bootstrap Tables



- Add the `.table-hover` class, to add a light gray background color to rows while the cursor hovers over them

Hoverable Rows

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

Mouse cursor was hovering on that line when the screenshot was taken.

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

Bootstrap Tables



- Use the `.table-sm` class to make the small table by cutting cell padding in half

Small Table

| Player | Country | Ranking |
|--------------|-----------|---------|
| Virat Kohli | India | 1 |
| Joe Root | England | 2 |
| Steven Smith | Australia | 3 |

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



Bootstrap Tables

- Use `.table-responsive` class, to make the table **scroll horizontally** up to small devices (under 992px). When viewing on anything larger than 992px wide, you will not see any difference in these tables.

Responsive Tables

| Player | Country | Ranking | Runs | Highest Score | Avg | Strike Rate |
|--------------|-----------|---------|------|---------------|-------|-------------|
| Virat Kohli | India | 1 | 9774 | 183 | 53.92 | 60.75 |
| Joe Root | England | 2 | 4800 | 133 | 51.61 | 55.20 |
| Steven Smith | Australia | 3 | 3431 | 164 | 41.84 | 86.36 |

```
<table class="table table-responsive">
```

Bootstrap Figures



- The `figure` element specifies the content along with related images with an optional caption. The `.figure-caption` class provides caption for the `figure` element.
- You can place the figure caption at left, center or right side by using the `text-left`, `text-center` and `text-right` classes respectively in the `<figcaption>` tag

```
<figure class="figure">  
    
  <figcaption class="figure-caption text-center">This is  
an image caption</figcaption>  
</figure>
```



This is an image caption

Bootstrap Alerts



- The alert component specifies the predefined message for a user actions. It is used to send the information such as warning, error or confirmation messages to the end users.
- You can create an alert box, by adding a class of `.alert` and along with contextual classes such as `.alert-success`, `.alert-info`, `.alert-warning`, `.alert-danger`, `.alert-primary`, `.alert-secondary`, `.alert-light` or `.alert-dark`.

Bootstrap Alerts

```
<h2>Alerts</h2>
<div class="alert alert-primary">
  primary alert - Welcome to CS425!!!
</div>
<div class="alert alert-secondary">
  secondary alert - Welcome to CS425!!!
</div>
<div class="alert alert-success">
  success alert - Welcome to CS425!!!
</div>
<div class="alert alert-danger">
  danger alert - Welcome to CS425!!!
</div>
<div class="alert alert-warning">
  warning alert - Welcome to CS425!!!
</div>
<div class="alert alert-info">
  info alert - Welcome to CS425!!!
</div>
<div class="alert alert-light">
  light alert - Welcome to CS425!!!
</div>
<div class="alert alert-dark">
  dark alert - Welcome to CS425!!!
</div>
```

Alerts

primary alert - Welcome to CS425!!!

secondary alert — Welcome to CS425!!!

success alert — Welcome to CS425!!!

danger alert — Welcome to CS425!!!

warning alert — Welcome to CS425!!!

info alert — Welcome to CS425!!!

light alert — Welcome to CS425!!!

dark alert — Welcome to CS425!!!

Bootstrap Alerts

- To build a dismissal alert, use the `.alert-dismissible` class to alert container. Add the `data-dismiss="alert"` attribute on a button element to close the button, which automatically dismisses the alert message box.

```
<div class="alert alert-success alert-dismissible">  
  <button type="button" class="btn-close" data-bs-dismiss="alert" aria-label="Close"></button>  
  <strong>Success!</strong> Welcome to CS425!!!  
</div>
```

Dismissal Alerts

[Codepen](#)

Success! Welcome to CS425!!!



Primary! Welcome to CS425!!!



Secondary! Welcome to CS425!!!



Danger! Welcome to CS425!!!



Warning! Welcome to CS425!!!



Info! Welcome to CS425!!!



Welcome to CS425!!!



Welcome to CS425!!!





Bootstrap Badges

- Badges are used to highlight the additional information to the content
- Create a badge by using `.badge` class along with contextual class `.badge-secondary`

```
<h1>Welcome to <span class="badge bg-  
secondary">CS425</span></h1>  
<h2>Welcome to <span class="badge bg-  
secondary">CS425</span></h2>  
<h3>Welcome to <span class="badge bg-  
secondary">CS425</span></h3>  
<h4>Welcome to <span class="badge bg-  
secondary">CS425</span></h4>  
<h5>Welcome to <span class="badge bg-  
secondary">CS425</span></h5>  
<h6>Welcome to <span class="badge bg-  
secondary">CS425</span></h6>
```

Welcome to **CS425**

Welcome to **CS425**

Welcome to **CS425**

Welcome to **CS425**

Welcome to **CS425**

Welcome to **CS425**

Bootstrap Badges

Contextual Badges



- Change the color of badge by using contextual class

```
<span class="badge bg-primary">Primary Badge</span>  
<span class="badge bg-secondary">Secondary Badge</span>  
<span class="badge bg-success">Success Badge</span>  
<span class="badge bg-danger">Danger Badge</span>  
<span class="badge bg-warning text-dark">Warning Badge</span>  
<span class="badge bg-info">Info Badge</span>  
<span class="badge bg-light text-dark">Light Badge</span>  
<span class="badge bg-dark">Dark Badge</span>
```

Bootstrap Badges

Pill Badges



- Make corners of the badge more rounded (larger border radius) by using `.rounded-pill` class

```
<span class="badge rounded-pill bg-primary">Primary Badge</span>  
<span class="badge rounded-pill bg-secondary">Secondary Badge</span>  
<span class="badge rounded-pill bg-success">Success Badge</span>  
<span class="badge rounded-pill bg-danger">Danger Badge</span>  
<span class="badge rounded-pill bg-warning text-dark">Warning Badge</span>  
<span class="badge rounded-pill bg-info">Info Badge</span>  
<span class="badge rounded-pill bg-light text-dark">Light Badge</span>  
<span class="badge rounded-pill bg-dark">Dark Badge</span>
```

Bootstrap Badges

Badges inside Buttons



- Badges inside buttons

```
<button type="button" class="btn btn-primary">
  Inbox <span class="badge bg-light text-dark">4</span>
</button>
<button type="button" class="btn btn-info">
  Sent <span class="badge rounded-pill bg-dark">4</span>
</button>
<button type="button" class="btn btn-danger">
  Spam <span class="badge bg-warning text-dark">4</span>
</button>
<button type="button" class="btn btn-success">
  Important <span class="badge bg-danger">4</span>
</button>
<button type="button" class="btn btn-warning">
  Starred <span class="badge rounded-pill bg-light text-dark">4</span>
</button>
```

Bootstrap Breadcrumbs



- Used to show hierarchy-based information for a site and indicates current page's location within a navigational hierarchy.
- Bootstrap uses `.breadcrumb` class to define the list into breadcrumb and adds a separator via CSS to the list.

[Home](#) / [Tutorials Library](#) / Bootstrap 4

```
<ul class="breadcrumb">
  <li class="breadcrumb-item"><a href="#">Home</a></li>
  <li class="breadcrumb-item"><a href="#">Tutorials Library</a></li>
  <li class="breadcrumb-item active">Bootstrap 4</li>
</ul>
```

Bootstrap Buttons



- Bootstrap provides clickable button to put content such as text and images. You can include the text to button by using the `<input>` tag.
- Create button by using `.btn` class followed by desired style (e.g. `btn-success`). Bootstrap provides some options to style buttons, which are listed below:
 - **btn-primary**
 - **btn-secondary**
 - **btn-success**
 - **btn-danger**
 - **btn-warning**
 - **btn-info**
 - **btn-light**
 - **btn-dark**
 - **btn-link**

Bootstrap Buttons



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

Bootstrap Buttons



- Bootstrap provides semantic color to outline of a button by using `.btn-outline` class followed by desired style (e.g. `btn-outline-success`)



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

Bootstrap Buttons



- For smaller and larger buttons use `.btn-sm` and `.btn-lg` classes

Small button

Default button

Large button

```
<button type="button" class="btn btn-info btn-sm">Small button</button>  
<button type="button" class="btn btn-info">Default button</button>  
<button type="button" class="btn btn-info btn-lg">Large button</button>
```

- `btn-block` class creates block level button that span the full width of a parent

Block Level Info Button

```
<button type="button" class="btn btn-info btn-lg btn-block">Block Level  
Info Button</button>
```

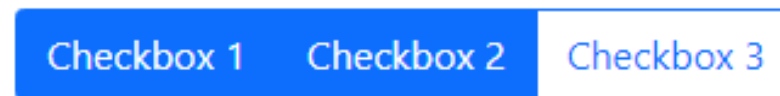

Bootstrap Buttons

[Codepen](#)

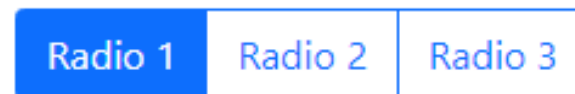


- Bootstrap 5 allows applying button styles to radio buttons and checkboxes to make use of toggle feature.
- You can provide toggling of checkboxes and radio buttons inside a `<label>` element

Checkbox



Radio Buttons

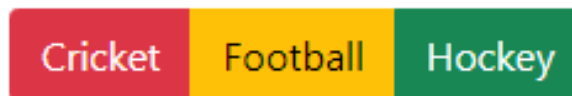


Bootstrap Button Groups



- Button groups allow multiple buttons to be stacked together on a single line.
- Create the basic button group by using `.btn-group` class inside `<div>` element

```
<div class="btn-group">  
  <button type="button" class="btn btn-danger">Cricket</button>  
  <button type="button" class="btn btn-warning">Football</button>  
  <button type="button" class="btn btn-success">Hockey</button>  
</div>
```



Bootstrap Button Groups

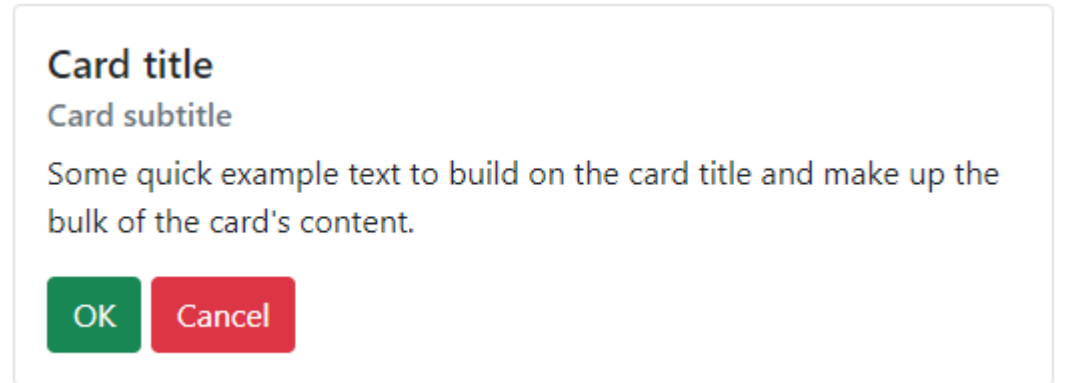


- Display the button group vertically by using the class `.btn-group-vertical`

```
<div class="btn-group-vertical" role="group">  
  <button type="button" class="btn btn-danger">Cricket</button>  
  <button type="button" class="btn btn-warning">Football</button>  
  <button type="button" class="btn btn-success">Hockey</button>  
</div>
```



Bootstrap Cards



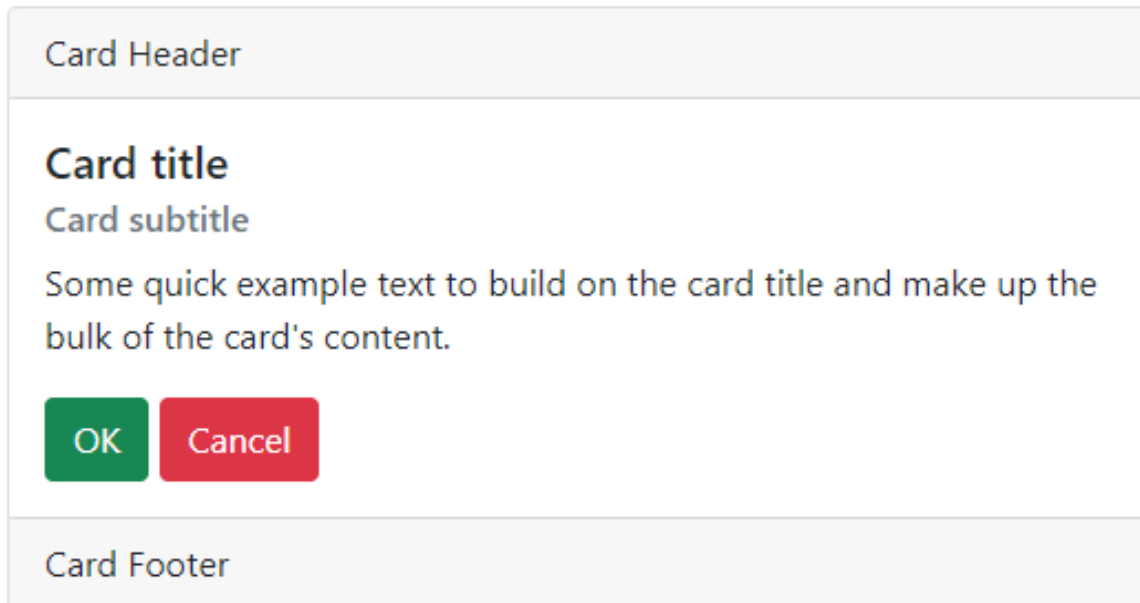
- Card is a content container which displays a bordered box with some padding around it. It includes background colors, headers, footers and other display options.
- To get a basic card, just add `.card` class to the `<div>` element and place the content inside a `.card-body` class

```
<div class="card">
  <div class="card-body">
    <h5 class="card-title">Card title</h5>
    <h6 class="card-subtitle mb-2 text-muted">Card subtitle</h6>
    <p class="card-text">Some quick example text to build on the card title and make up the bulk
of the card's content.</p>
    <a href="#" class="btn btn-success">OK</a>
    <a href="#" class="btn btn-danger">Cancel</a>
  </div>
</div>
```

Bootstrap Cards



- Add header for the card by using the `.card-header` class and footer by using the `.card-footer` class



```
<div class="card">  
  <div class = "card-header">Card Header</div>  
  <div class="card-body">  
    ...  
  </div>  
  <div class = "card-footer">Card Footer</div>  
</div>
```

Bootstrap Cards

[Codepen](#)



- Place the image at the top of the card by using `.card-img-top` class

```
<div class="card" style="width:300px">  
    
  <div class="card-body">  
    ...  
  </div>  
</div>
```

- Place the image at the bottom by using `.card-img-bottom` class to the `` element



A Bootstrap card with a light gray background. At the top, there is a large orange and yellow tree logo. Below the logo, the text "University of Cyprus" is written in a green serif font. At the bottom of the card, there is a blue button with the text "More Info".

HTML


HTML stands for Hypertext Markup Language, and it is the most widely used language to write Web Pages.

[More Info](#)

CSS

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

[More Info](#)



A Bootstrap card with a light gray background. The text "University of Cyprus" is written in a green serif font. At the bottom of the card, there is a large orange and yellow tree logo.

Bootstrap Cards

- Add the background image to a card and place the text on the top of an image by using `.card-img-overlay` class.

```
<div class="card" style="width:300px">
  
  <div class="card-img-overlay">
    <p class="card-text">HTML stands for Hypertext Markup Language.
It is the most widely used language to write Web Pages</p>
    <a href="#" class="btn btn-primary">More Info</a>
  </div>
  <div class="card-body">
    ...
  </div>
</div>
```

Image Overlay

HTML stands for Hypertext Markup Language. It is the most widely used language to write Web Pages

[More Info](#)

University
of Cyprus

HTML

HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.




Bootstrap Card Groups

- Card groups can be used to place multiple cards as single attached element. The `.card-group` class specifies equal width and height columns and removes left and right margins between each card.
- **Note** – On the small screens (less than 576px), cards will get displayed vertically along with top and bottom margin.

```
<div class="card-group">  
  <div class="card"> ... </div>  
  <div class="card"> ... </div>  
  <div class="card"> ... </div>  
</div>
```

[Codepen](#)



| | | |
|---|--|--|
|  University of Cyprus |  University of Cyprus |  University of Cyprus |
| HTML HTML stands for Hypertext Markup Language, and it is the most widely used language to write Web Pages. | CSS Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable. | Bootstrap Bootstrap is a sleek, intuitive, and powerful, mobile first front-end framework for faster and easier web development. |
| Card Footer | Card Footer | Card Footer |

Bootstrap Carousel



- Carousel is a flexible, responsive way to add a slider to your site. To create a carousel,
 - Add the `.carousel` and `.slide` classes to the container along with an id.
 - Specify the slides in a `<div>` with class `.carousel-inner` and each slide defined with `.carousel-item` class.
 - Add the `.active` class to one of the slides to make carousel visible; otherwise the carousel will not be visible.
- A simple slideshow below shows basic carousel with indicators and controls

```

<div id="carouselExample" class="carousel slide w-100" data-bs-ride="carousel" data-bs-interval="3000">
  <div class="carousel-indicators">
    <button type="button" data-bs-target="#carouselExample" data-bs-slide-to="0" class="active"></button>
    <button type="button" data-bs-target="#carouselExample" data-bs-slide-to="1"></button>
    <button type="button" data-bs-target="#carouselExample" data-bs-slide-to="2"></button>
  </div>
  <div class="carousel-inner">
    <div class="carousel-item active">
      
    </div>
    <div class="carousel-item">
      
    </div>
    <div class="carousel-item">
      
    </div>
  </div>
  <button class="carousel-control-prev" data-bs-target="#carouselExample" type="button" data-bs-slide="prev">
    <span class="carousel-control-prev-icon" aria-hidden="true"></span>
    <span class="visually-hidden">Previous</span>
  </button>
  <button class="carousel-control-next" data-bs-target="#carouselExample" type="button" data-bs-slide="next">
    <span class="carousel-control-next-icon" aria-hidden="true"></span>
    <span class="visually-hidden">Next</span>
  </button>
</div>

```

INDICATORS

SLIDE 1

SLIDE 2

SLIDE 3

LEFT ARROW

RIGHT ARROW

Bootstrap bundle (JS + popper) file needed!

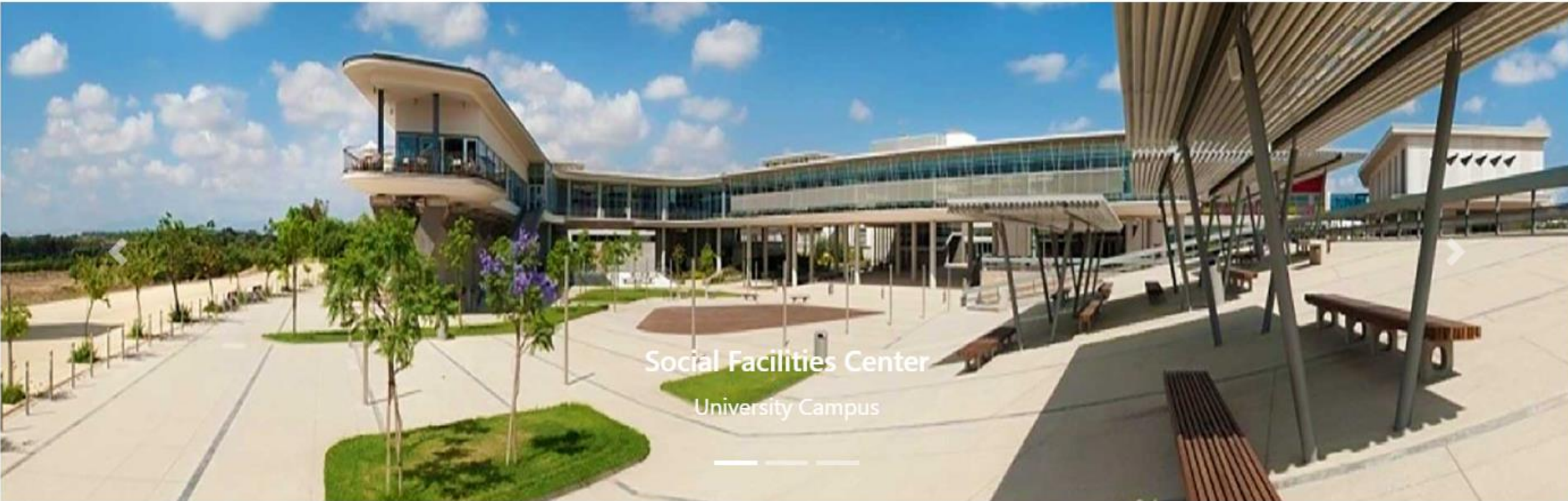
Bootstrap Carousel

[Codepen](#)



Bootstrap Carousel with caption

[Codepen](#)



Social Facilities Center
University Campus

Bootstrap Collapse



- Collapse component is used to show or hide the content by using `.collapse` class.
- The content can be collapsed by adding `data-bs-toggle="collapse"` attribute on anchor `<a>` or button `<button>` element. The id of these elements references to the id of the content to collapse the data.
- Collapse using Link
 - Collapse the content with `<a>` tag by using **href** value of the ID of the content to collapse.
- Collapse using Button
 - Collapse the content with `<button>` tag by using **data-bs-target** attribute with value of the ID of the content to collapse.

Bootstrap Collapse (with link)

[Codepen](#)



```
<p>
  <a class="btn btn-primary" data-bs-
toggle="collapse" href="#collapsewithlink"
role="button" aria-expanded="false" aria-
controls="collapsewithlink">Click Me</a>
</p>

<div class="collapse" id="collapsewithlink">
  <div class="card card-body">
    Lorem ipsum dolor sit amet, consectetur
adipiscing elit, sed do eiusmod tempor incididunt
ut labore et dolore magna aliqua. Ut enim ad
minim veniam, quis nostrud exercitation.
  </div>
</div>
```

Click the button to reveal the content below

Click Me

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation.



Bootstrap Accordion

- Use collapsible content to make an *accordion* which is often used for content such as FAQs, overviews, etc.

```
<div class="accordion" id="accordionExample">
  <div class="accordion-item">
    <h2 class="accordion-header" id="headingOne">
      <button class="accordion-button" type="button" data-bs-
toggle="collapse" data-bs-target="#collapseOne" aria-
expanded="true" aria-controls="collapseOne">
        Accordion Item #1
      </button>
    </h2>
    <div id="collapseOne" class="accordion-collapse collapse
show" aria-labelledby="headingOne" data-bs-
parent="#accordionExample">
      <div class="accordion-body">
        <strong>This is the first item's accordion
body.</strong> It is hidden by default ...
      </div>
    </div>
  </div>
  <div class="accordion-item">
  </div>
</div>
```

Accordion Item #1

This is the first item's accordion body. It is hidden by default, until the collapse plugin adds the appropriate classes that we use to style each element. These classes control the overall appearance, as well as the showing and hiding via CSS transitions. You can modify any of this with custom CSS or overriding our default variables. It's also worth noting that just about any HTML can go within the `.accordion-body`, though the transition does limit overflow.

Accordion Item #2

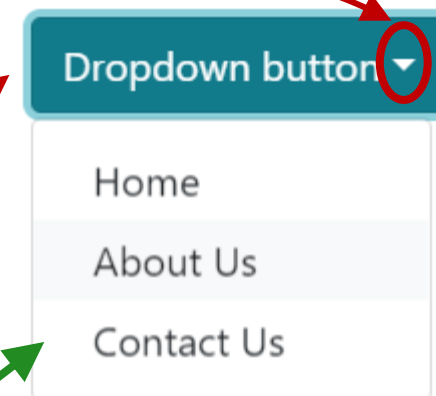
Accordion Item #3



Bootstrap Dropdowns

- Dropdown menus are toggleable, contextual menus for displaying links in a list format.
- To use dropdown, just wrap the dropdown menu within the `.dropdown` class.

```
<div class="dropdown">  
  <button class="btn btn-info dropdown-toggle" type="button"  
  id="dropdownMenuButton" data-bs-toggle="dropdown" aria-  
  expanded="false">Dropdown button</button>  
  <div class="dropdown-menu" aria-labelledby="dropdownMenuButton">  
    <a class="dropdown-item" href="#">Home</a>  
    <a class="dropdown-item" href="#">About Us</a>  
    <a class="dropdown-item" href="#">Contact Us</a>  
  </div>  
</div>
```



Not required

Bootstrap Forms



- The form element is used to collect input from user by using fields such as checkboxes, radio buttons, or text fields etc.
- You can wrap labels and controls in a `<div>` element with class `.mb-3` (margin-bottom) and or `.row`. These classes provide visually appealing spacing between `<div>` elements.
- Add a class of `.form-control` to all textual `<input>`, `<textarea>`, and `.form-select` to all `<select>` elements. These classes include styles for general appearance, focus state, sizing, and more.

Bootstrap Forms



```
<form>
  <div class="mb-3 row">
    <label for="exampleInputEmail1" class="form-label">Email</label>
    <input type="email" class="form-control" id="exampleInputEmail1" placeholder="Enter your email">
  </div>
  <div class="mb-3 row">
    <label for="exampleInputPassword1" class="form-label">Password</label>
    <input type="password" class="form-control" id="exampleInputPassword1" placeholder="Enter your password">
  </div>
  <div class="mb-3 form-check">
    <label class="form-check-label" for="exampleCheck1">Remember me</label>
    <input type="checkbox" class="form-check-input" id="exampleCheck1">
  </div>
  <button type="submit" class="btn btn-primary">Sign In</button>
</form>
```

.mb-3 .row

Email label element input element

Enter your email

Password

Enter your password

Remember me

Sign In

Form layout without bootstrap

Email Enter your email

Password Enter your password

Remember me

Sign In

Button element



- A [`<button type="submit">`](#) submits the form rather than behaving like a simple [`<button type="button">`](#) push-button.
 - When using `submit`: Under the *action*, attribute (e.g. `<form action="/new.php">`) add the file, where you want to reach after clicking *Submit* button.
- From the [HTML5 specification](#):
 - A *button* element with no *type* attribute specified represents the same thing as a button element with its *type* attribute set to *"submit"*.
- The *type* (of the button) attribute can take the following possible values*:
 - `submit`: submit the form. This is the default value.
 - `reset`: resets the form.
 - `button`: does nothing.

* WE WILL ELABORATE ON THIS ISSUE LATER (LAB08 + LAB10) WHEN DISCUSSING FORM SUBMISSION

Bootstrap Forms

Example Input

Enter your email

Example Select

Select Option #2

Example Multiple Select

Multiple Select #1
Multiple Select #2
Multiple Select #3
Multiple Select #4

Keep Ctrl key pressed

Example Textarea

```
<form>
  ...
  <h4>Example Select</h4>
  <div class="mb-3 row">
    <select class="form-select"
    id="exampleFormControlSelect1">
      <option>Select Option #1</option>
      <option>Select Option #2</option>
      <option>Select Option #3</option>
      <option>Select Option #4</option>
      <option>Select Option #5</option>
    </select>
  </div>
  <h4>Example Multiple Select</h4>
  <div class="mb-3 row">
    <select multiple class="form-select"
    id="exampleFormControlSelect2">
      <option>Multiple Select #1</option>
      <option>Multiple Select #2</option>
      <option>Multiple Select #3</option>
      <option>Multiple Select #4</option>
      <option>Multiple Select #5</option>
    </select>
  </div>
  <h4>Example Textarea</h4>
  <div class="form-group">
    <textarea class="form-control"
    id="exampleFormControlTextarea1" rows="3"></textarea>
  </div>
</form>
```



Bootstrap Forms

- Create horizontal forms by adding the `.row` class to form groups. The width of labels and controls can be specified by using `.col-*-*` classes and add the `.col-form-label` class to your `<label>`, so that you can place form controls vertically centered.
- See more [here](#).

Horizontal Forms

First
Name

Last
Name

Radios

- Option 1
- Option 2
- Option 3 (disabled)

Checkbox

- Option 1
- Option 2



Bootstrap Input groups

- Using input groups you can easily prepend and append text or buttons to the text-based inputs.
- You can create an input group by adding `.input-group` class within `<div>` element.
- See [here](#)

@ Username

Recipient's username @example.com

Your vanity URL

https://example.com/users/

\$.00

Username @ Server

With textarea

Bootstrap Modal



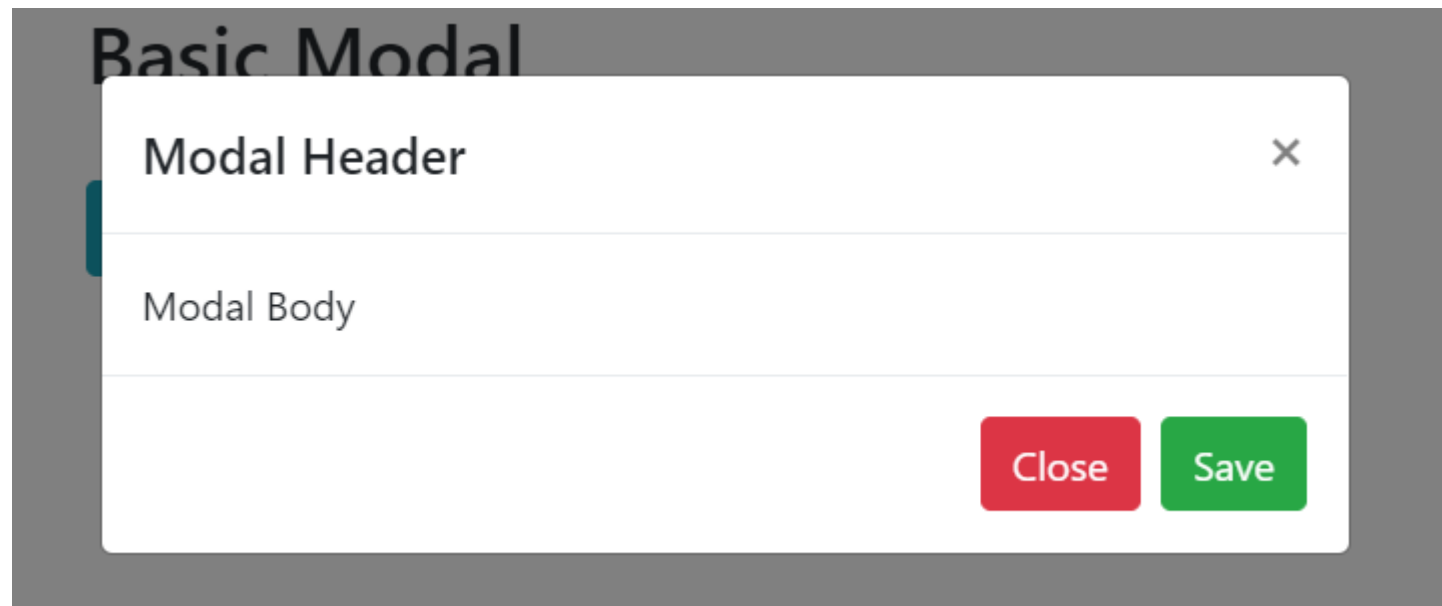
- Modal is a child window that is layered over its parent window. It displays the content from a separate source that can have some interaction without leaving the parent window.
- Create a modal by using the `.modal` class and attribute `data-bs-toggle="modal"` on a element, like a button or link, along with a `data-bs-target="#identifier"` or `href="#identifier"` to target a specific modal to toggle.

Bootstrap Modal



Basic Modal

Launch Modal



[Codepen](#) for advanced modal design

Bootstrap Navs



- Bootstrap provides navigation items for your site in a horizontal menu.
- Create a nav menu by adding `.nav` class to `` element followed by `nav-items` and add the `nav-link` class to create link for the nav items.

```
<ul class="nav">
  <li class="nav-item">
    <a class="nav-link active" href="#">Home</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">About Us</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">Contact</a>
  </li>
  <li class="nav-item">
    <a class="nav-link disabled" href="#">Sign-In
(Disabled)</a>
  </li>
</ul>
```

[Home](#) [About Us](#) [Contact](#) [Sign-In \(Disabled\)](#)

Bootstrap Navs



- Nav can be aligned to the center by adding the `.justify-content-center` class and to the right side by adding `.justify-content-end` class

```
<ul class="nav justify-content-center">  
  ...  
</ul>
```

```
<ul class="nav justify-content-end">  
  ...  
</ul>
```

Center Aligned Nav

[Home](#) [About Us](#) [Contact](#) [Sign-In](#)

Right Aligned Nav

[Home](#) [About Us](#) [Contact](#) [Sign-In](#)

Bootstrap Navs



- create vertical nav by adding the `.flex-column` class to the `.nav` element

```
<ul class="nav flex-column">  
  ...  
</ul>
```

Vertical Alignment

[Home](#)

[About Us](#)

[Contact](#)

[Sign-In](#)

Bootstrap Navs

- You can create tabbed interface nav by using `.nav-tabs` class and nav menu to nav pills by using `.nav-pills` class.
- You can also add a dropdown menu to a tab or pill by using the `.dropdown` class in `` element

```
<ul class="nav nav-tabs">  
  ...  
</ul>
```

```
<ul class="nav nav-pills">  
  ...  
</ul>
```

[Codepen](#)



Navigation Tabs

Home About Us Contact Sign-In

Navigation Pills

Home About Us Contact Sign-In

Tabs With Dropdown

Home Library ▾ About Us Contact

Pills with dropdown

Home Library ▾ About Us Contact

Bootstrap Navbar



- Navbar provides navigation headers for your application or site. Navbars collapse in mobile views and become horizontal as the available viewport width increases.
- To create a basic navbar, **add the `.navbar` class with responsive collapsing class `.navbar-expand{-xxl|-xl|-lg|-md|-sm}`** (provides navbar on extra extra large, extra large, large, medium or small screens).
- To add links to the navbar, simply add an unordered list with the `.navbar-nav` class. To define each individual list item, add `.nav-item` class to `` element and use the `.nav-link` class to an `<a>` element for individual links.

Bootstrap Navbar

[Codepen](#)



Basic Navbar

Navbar Home About Us Contact

Image Logo



tutorialspoint

Home About Us Contact

Navbar With Dropdown

Navbar Home About Us Contact Library ▾

Exercise 1

Links on menu hover and active:
color: #ff0000;
border-bottom: 2px solid #FD3A13;

Navigation menu (navbar): border-bottom 1px solid color #dbdbdb



EPL425 News Home (current) World Politics Business Science Sports Tech Travel Health

70px



Syria war: Why the battle for Aleppo matters

1 mins ago



Apple Appears to Be Making People Healthier

3 mins ago



Ray madison may struggle to get best from Paul in a 4-2-3-1 formation

Condimentum ultrices mi est a arcu at cum a elementum per cum turpis dui vulputate vestibulum in vehicula montes vel. Mauris nam suspendisse consectetur mus...

2h ago



Key Republicans sign letter warning against

2 mins ago



Faith in a time of COVID-19

11 mins ago

Carousel (uses classes carousel, slide, carousel-inner, carousel-item, ...)

h3

h4
2x2 cards grid (use classes row col card card-body, card-text, ...)

340px

30px

color red, font-weight: 600

1/4

1/4

1/2