

Responsive Web Design Using Bootstrap Framework v5



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About the Trainer

With more than 10 years of experience teaching at a local polytechnic, Fritz is passionate about imparting knowledge to teens, adults, and children. He believes that an education in technology and in how things work is essential for everyone, so that they can harness and invent the technologies of the future.

He is excited about exploring anything related to computers and IT, with a keen interest in electronics and native cross-platform mobile app development so that our ubiquitous mobile phones can be conveniently used to control and interact with devices wirelessly and over the Internet.

Fritz is ACTA-certified, as well as a registered MOE instructor, and a graduate of the 2018 ConsenSys Blockchain Developer Program, with a Bachelor in Electrical and Electronic Engineering (Computer Specialisation) from Nanyang Technological University.



Let's Know Each Other...

Say a bit about yourself

- Name
- What Industry you are from?
- Do you have any prior knowledge in Bootstrap
- Why do you want to learn Bootstrap

Ground Rules

- Set your mobile phone to silent mode
- Actively participate in the class. No question is stupid.
- Respect each other view
- Exit the class silently if you need to step out for phone call, toilet break

Ground Rules for Virtual Training

- Upon entering, mute your mic and turn on the video. Use a headset if you can
- Use the 'raise hand' function to indicate when you want to speak
- Participant actively. Feel free to ask questions on the chat whenever.
- Facilitators can use breakout rooms for private sessions.



Guidelines for Facilitators

1. Once all the participants are in and introduce themselves
2. Goto gallery mode, take a snapshot of the class photo - makes sure capture the date and time
3. Start the video recording (only for WSQ courses)
4. Continue the class
5. Before the class end on that day, take another snapshot of the class photo - makes sure capture the date and time
6. For NRIC verification, facilitator to create breakout room for individual participant to check (only for WSQ courses)
7. Before the assessment start, take another snapshot of the class photo - makes sure capture the date and time (only for WSQ courses)
8. For Oral Questioning assessment, facilitator to create breakout room for individual participant to OQ (only for WSQ courses)
9. End the video recording and upload to cloud (only for WSQ courses)
10. Assessor to send all the assessment records, assessment plan and photo and video to the staff (only for WSQ courses).

Prerequisite

The following knowledge is assumed

- Basic HTML and CSS
- Basic Javascript

Agenda

Topic 1. Overview of Responsive Web Interface Design and Bootstrap

- What is Responsive Web Design?
- Introduction to Bootstrap Framework
- Create Responsive Web Layout using Bootstrap

Topic 2. Components and Graphics Content

- Create Basic Bootstrap Components
- Design GUI with Style and Content Elements

Topic 3. Interactivity and Responsiveness

- Create Interactive Components
- Apply Bootstrap Utilities
- Evaluate Web Interface Interactivity and Responsiveness

Topic 4 Single Page Design

- Web Design Requirement for Single Page
- Implement Single Page Design

Download Course Material

- You can download the course material from Google classroom <https://classroom.google.com>
- Enter the class code below to join the class on the top right.
- Goto Classwork>> Course material
- If you cannot access the Google Classroom, please inform trainer or staff.

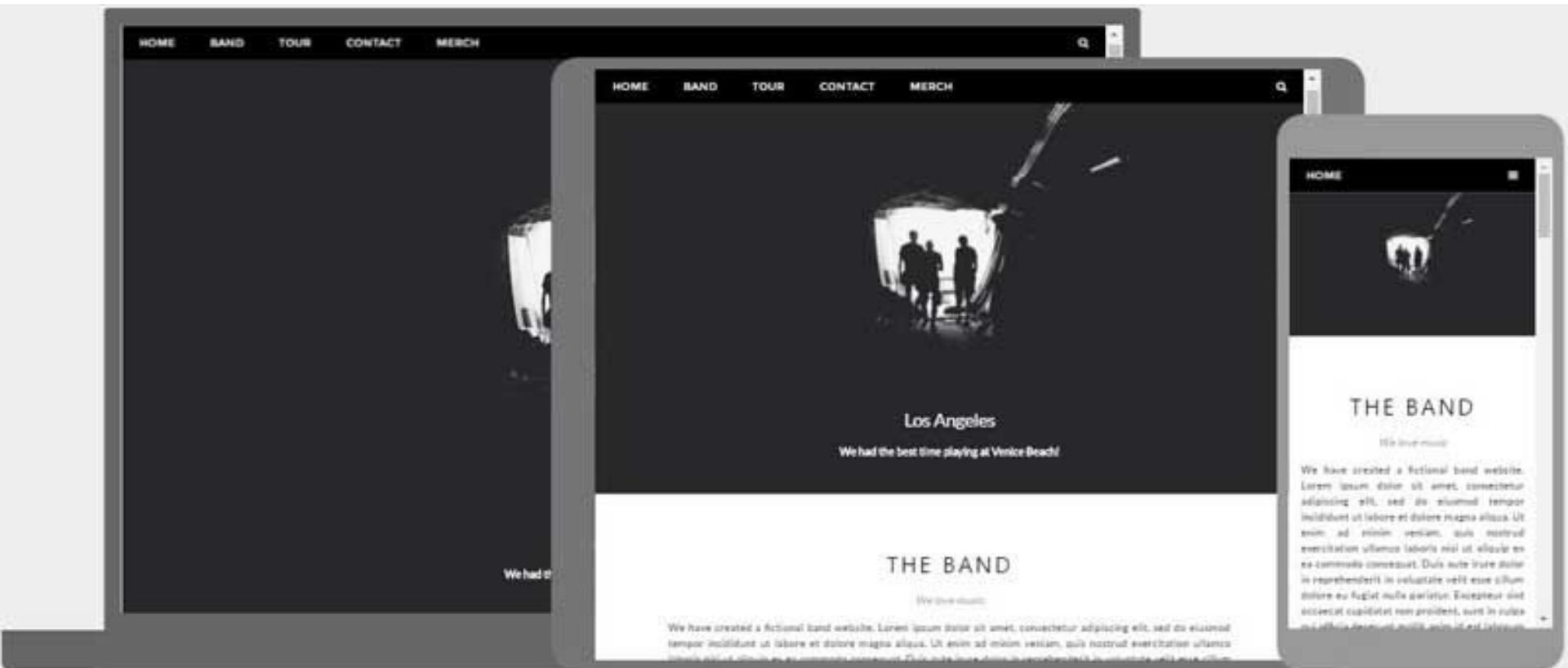
s4siglo

Topic 1

Overview of Responsive Web Interface Design and Bootstrap

Responsive Web Design

- Responsive web design is about creating web pages that look good on all devices!
- A responsive web design will automatically adjust for different screen sizes and viewports.



Activity: Responsive Web Page

- Open the responsive-website-demo.html in the sample codes
- Resize the web page to see the responsiveness.

Responsive Website Demo

Resize this responsive page!

London

London is the capital city of England.

It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Paris

Paris is the capital of France.

The Paris area is one of the largest population centers in Europe, with more than 12 million inhabitants.

Tokyo

Tokyo is the capital of Japan.

It is the center of the Greater Tokyo Area, and the most populous metropolitan area in the world.

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Activity: Responsive Testers

- You can test the responsiveness of a website using the following testers eg <http://disney.com>
- <http://www.responsivepx.com/>
- <https://responsivedesignchecker.com/>
- <https://chrome.google.com/webstore/detail/responsive-web-design-tester/enhcpefphhaiikpobimgcakinhabgiib?hl=en>

Bootstrap

- Bootstrap is a free front-end framework for faster and easier web development
- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins
- Bootstrap also gives you the ability to easily create responsive designs



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 4 is compatible with all modern browsers (Chrome, Firefox, Internet Explorer 10+, Edge, Safari, and Opera)

Download Bootstrap

- You can also download bootstrap from <https://getbootstrap.com/docs/4.6/getting-started/download/> and add the link of the css and js files to the head section of the website as shown below.

```
<link rel="stylesheet"  
href=".//bootstrap-4.6.0-dist/css/bootstrap.min.css">  
  <script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"  
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVB  
nE+IbbVYUew+OrCXaRkfj" crossorigin="anonymous"></script>  
  <script src=".//bootstrap-4.6.0-dist/js/bootstrap.bundle.min.js"  
integrity="sha384-Piv4xVNRYMGpqkS2by6br4gNJ7DXjqk09RmUpJ8jgGt  
D7zP9yug3goQfGII0yAns" crossorigin="anonymous"></script>
```

Activity: Download Bootstrap

- Open the index.html in the sample codes using the downloaded bootstrap files.

My First Bootstrap 4 Page

Resize this responsive page to see the effect!

Navbar [Link](#) [Link](#) [Link](#)

About Me

Photo of me:

Fake Image

Some text about me in culpa qui officia deserunt mollit anim..

Some Links

[Lorem ipsum dolor sit ame.](#)

TITLE HEADING

Title description, Dec 7, 2017

Fake Image

Some text..

Sunt in culpa qui officia deserunt mollit anim id est laborum consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco.

Install Bootstrap from CDN

- You can also install bootstrap without download the css and js files.
- you can add the bootstrap css and javascript from the CDN to the head section of the website as shown below.

```
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
<link rel="stylesheet"
      href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.0/dist/css/bootstrap.min.css"
      integrity="sha384-B0vP5xmATw1+K9KRQjQERJvTumQW0nPEzvF6L/Z6nronJ3oUOFUFpCjEU
      Quuq2+l" crossorigin="anonymous">
<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"
      integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrC
      XaRkfj" crossorigin="anonymous"></script>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.0/dist/js/bootstrap.bundle.min.js"
      integrity="sha384-Piv4xVNRYMGpqkS2by6br4gNJ7DXjqk09RmUpJ8jgGtD7zP9yug3goQfGII0y
      Ans" crossorigin="anonymous"></script>
```

Activity: Install Bootstrap from CDN

- Open the bootstrap-4-demo.html in the sample codes and see how to use the CDN

My First Bootstrap 4 Page

Resize this responsive page to see the effect!

Navbar [Link](#) [Link](#) [Link](#)

About Me

Photo of me:

Fake Image

Some text about me in culpa qui officia deserunt mollit anim..

Some Links

[Lorem ipsum dolor sit ame.](#)

TITLE HEADING

Title description, Dec 7, 2017

Fake Image

Some text..

Sunt in culpa qui officia deserunt mollit anim id est laborum consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco.

Containers

- Containers are the most basic layout element in Bootstrap and are required when using our default grid system. Containers are used to contain, pad, and (sometimes) center the content within them. While containers can be nested, most layouts do not require a nested container.
- 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

Default Container Class

- The default .container class is a responsive, fixed-width container, meaning its max-width changes at each breakpoint.

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

```
...
```

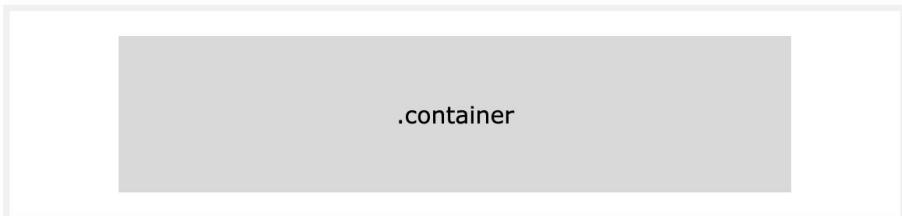
```
</div>
```

- Use .container-fluid for a full width container, spanning the entire width of the viewport.

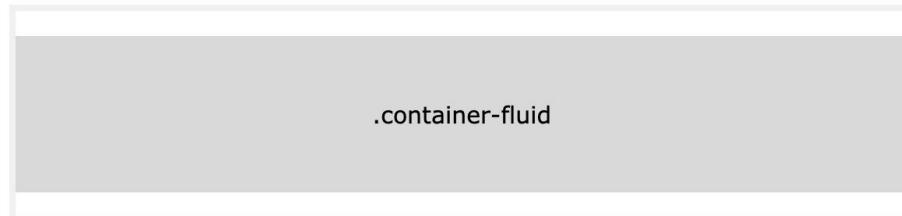
```
<div class="container-fluid">
```

```
...
```

```
</div>
```



.container

A diagram showing a light gray rectangular container with a white border, centered within a larger white frame. This represents a standard container with a fixed width.

.container-fluid

A diagram showing a very wide light gray rectangular container that spans the entire width of the slide, centered within a larger white frame. This represents a container-fluid with full width.

Activity: Container

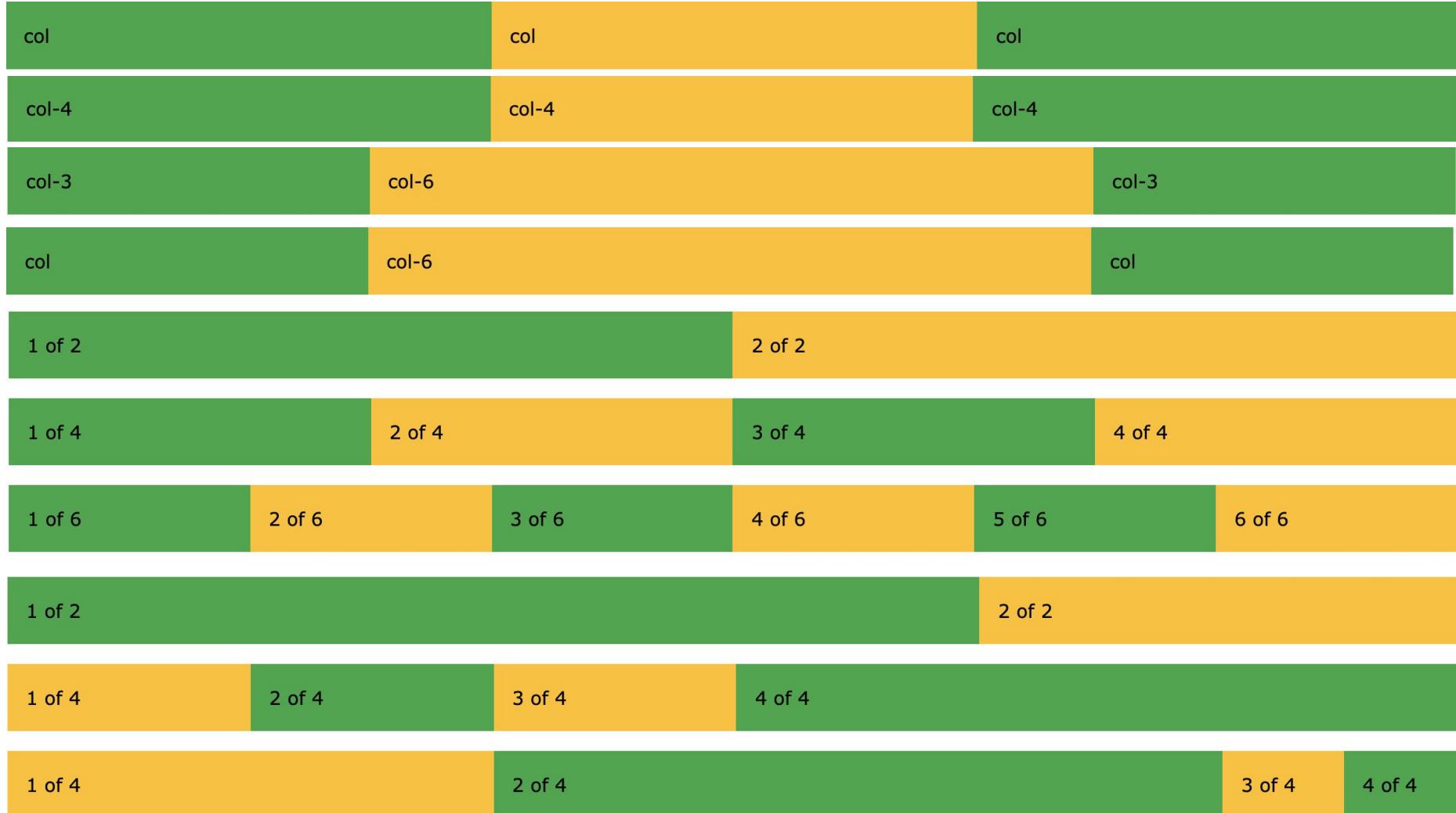
Open container.html and see the layout different between container and container-fluid classes

Bootstrap Grid System

- Bootstrap's grid system is built with flexbox and allows up to 12 columns across the page.
 - If you do not want to use all 12 columns individually, you can group the columns together to create wider columns:

Activity: Row and Col

- Open row-col.html and see how Bootstrap grid system works



CSS Flexbox

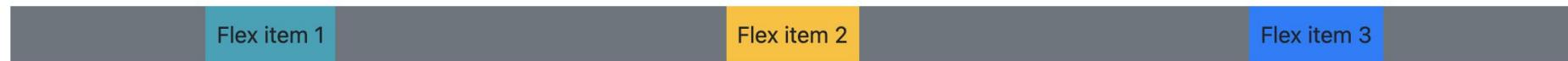
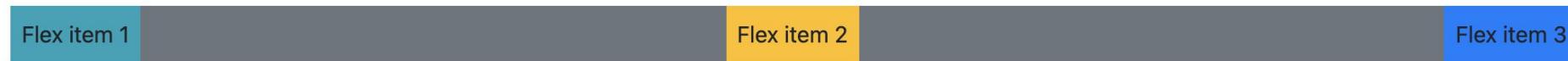
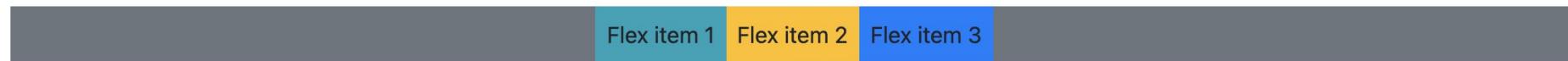
- The biggest difference between Bootstrap 3 and Bootstrap 4 is that Bootstrap 4 now uses flexbox, instead of floats, to handle the layout.
- The Flexible Box Layout Module, makes it easier to design flexible responsive layout structure without using float or positioning.
- To start using the Flexbox model, you need to first define a flex container.
- A Flexible Layout must have a parent element with the display property set to flex.
- Direct child elements(s) of the flexible container automatically becomes flexible items

Bootstrap Flex

- To create a flexbox container and to transform direct children into flex items, use the d-flex class.
- To create an inline flexbox container, use the d-inline-flex class.
- Use .flex-row to display the flex items horizontally (side by side). This is default.
- Use .flex-row-reverse to right-align the horizontal direction.
- Use .flex-column to display the flex items vertically (on top of each other), or .flex-column-reverse to reverse the vertical direction.
- Use the justify-content-* classes to change the alignment of flex items. Valid classes are start (default), end, center, between or around.

Activity: Bootstrap Flex

- Open flex.html and see how flex works in bootstrap



Breakpoints

- Breakpoints are the building blocks of responsive design. Use them to control when your layout can be adapted at a particular viewport or device size.
- Use media queries to architect your CSS by breakpoint. Media queries are a feature of CSS that allow you to conditionally apply styles based on a set of browser and operating system parameters. We most commonly use min-width in our media queries.
- Mobile first, responsive design is the goal. Bootstrap's CSS aims to apply the bare minimum of styles to make a layout work at the smallest breakpoint, and then layers on styles to adjust that design for larger devices. This optimizes your CSS, improves rendering time, and provides a great experience for your visitors.

Available Breakpoints

- Bootstrap includes six default breakpoints, sometimes referred to as grid tiers, for building responsively.
- Each breakpoint was chosen to comfortably hold containers whose widths are multiples of 12. Breakpoints are also representative of a subset of common device sizes and viewport dimensions—they don't specifically target every use case or device. Instead, the ranges provide a strong and consistent foundation to build on for nearly any device.

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

Responsive Container Class

- Responsive containers are new in Bootstrap v4.4. They allow you to specify a class that is 100% wide until the specified breakpoint is reached, after which we apply max-widths for each of the higher breakpoints.
- For example, .container-sm is 100% wide to start until the sm breakpoint is reached, where it will scale up with md, lg, and xl

```
<div class="container-sm">100% wide until small breakpoint</div>
<div class="container-md">100% wide until medium breakpoint</div>
<div class="container-lg">100% wide until large breakpoint</div>
<div class="container-xl">100% wide until extra large breakpoint</div>
```

Container Grid Size Dependence

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px
.container	100%	540px	720px	960px	1140px
.container-sm	100%	540px	720px	960px	1140px
.container-md	100%	100%	720px	960px	1140px
.container-lg	100%	100%	100%	960px	1140px
.container-xl	100%	100%	100%	100%	1140px
.container-fluid	100%	100%	100%	100%	100%

Grid Classes

The Bootstrap grid system has five classes:

- .col- (extra small devices - screen width less than 576px)
- .col-sm- (small devices - screen width equal to or greater than 576px)
- .col-md- (medium devices - screen width equal to or greater than 768px)
- .col-lg- (large devices - screen width equal to or greater than 992px)
- .col-xl- (xlarge devices - screen width equal to or greater than 1200px)
- The classes above can be combined to create more dynamic and flexible layouts.

Basic Structure of a Bootstrap Grid

```
<div class="row">
  <div class="col-*-*></div>
  <div class="col-*-*></div>
</div>
<div class="row">
  <div class="col-*-*></div>
  <div class="col-*-*></div>
  <div class="col-*-*></div>
</div>
<div class="row">
  <div class="col"></div>
  <div class="col"></div>
  <div class="col"></div>
</div>
```

First example: create a row (`<div class="row">`). Then, add the desired number of columns (tags with appropriate `.col-*-*` classes). The first star (*) represents the responsiveness: sm, md, lg or xl, while the second star represents a number, which should add up to 12 for each row.

Grid Examples

```
.col-sm-3
```

```
.col-sm-3
```

```
.col-sm-3
```

```
.col-sm-3
```

```
<div class="row">
  <div class="col-sm-3">.col-sm-3</div>
  <div class="col-sm-3">.col-sm-3</div>
  <div class="col-sm-3">.col-sm-3</div>
  <div class="col-sm-3">.col-sm-3</div>
</div>
```

```
.col-sm-4
```

```
.col-sm-8
```

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

Activity: Grid

- Open grid.html and see the layout different between container and container-fluid classes
- Try out the following columns

```
<div class="col-sm-4">  
<div class="col-md-4">  
<div class="col-lg-4">
```

- In addition, try out the following span

```
<div class="col-sm-8">  
<div class="col-sm-2">  
<div class="col-sm-2">
```

Mix and Match

Don't want your columns to simply stack in some grid tiers? Use a combination of different classes for each tier as needed.

.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

Example of Mix and Match

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

Activity: Mix and Match

Open mix-and-match.html, modify the code to show 3 columns for 1st row and 2 columns for 2nd row on small screen.

Services



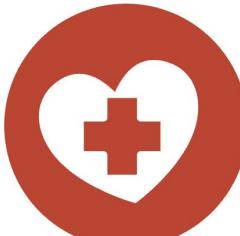
Exotic Pets

We offer specialized care for reptiles, rodents, birds, and other exotic pets.



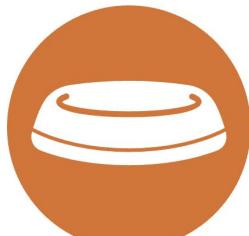
Grooming

Our therapeutic grooming treatments help battle fleas, allergic dermatitis, and other challenging skin conditions.



GeneralHealth

Wellness and senior exams, ultrasound, x-ray, and dental cleanings are just a few of our general health services.



Nutrition

Let our nutrition experts review your pet's diet and prescribe a custom nutrition plan for optimum health and disease prevention.



Pest Control

We offer the latest advances in safe and effective prevention and treatment of fleas, ticks, worms, heart worm, and other parasites.



Vaccinations

Our veterinarians are experienced in modern vaccination protocols that prevent many of the deadliest diseases in pets.

Services



Exotic Pets

We offer specialized care for reptiles, rodents, birds, and other exotic pets.



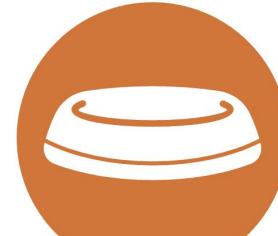
Grooming

Our therapeutic grooming treatments help battle fleas, allergic dermatitis, and other challenging skin conditions.



GeneralHealth

Wellness and senior exams, ultrasound, x-ray, and dental cleanings are just a few of our general health services.



Nutrition

Let our nutrition experts review your pet's diet and prescribe a custom nutrition plan for optimum health and disease prevention.

Nested Columns

To nest your content with the default grid, add a new .row and set of columns within an existing column.

```
<section class="col-xs-3 col-xs-6 col-sm-offset-0 col-sm-6 col-md-4  
col-lg-12">  
  <div class="row">  
    <div class="col-lg-1">  
        
    </div>  
    <div class="col-lg-5">  
      <h3>Exotic Pets</h3>  
      <p>We offer specialized care for reptiles, rodents, birds, and  
other exotic pets.</p>  
    </div>  
  </div>  
</section>
```

Activity: Nested Columns

Open nesting-columns.html and see how nesting columns work

Services



General Health

Wellness and senior exams, ultrasound, x-ray, and dental cleanings are just a few of our general health services.



Exotic Pets

We offer specialized care for reptiles, rodents, birds, and other exotic pets.



Grooming

Our therapeutic grooming treatments help battle fleas, allergic dermatitis, and other challenging skin conditions.



Nutrition

Let our nutrition experts review your pet's diet and prescribe a custom nutrition plan for optimum health and disease prevention.



Pest Control

We offer the latest advances in safe and effective prevention and treatment of fleas, ticks, worms, heart worm, and other parasites.



Vaccinations

Our veterinarians are experienced in modern vaccination protocols that prevent many of the deadliest diseases in pets.

Topic 2

Components and Graphics Content

Text/Typography

- Bootstrap uses a default font-size of 16px, and its line-height is 1.5.
- The default font-family is "Helvetica Neue", Helvetica, Arial, sans-serif.
- In addition, all `<p>` elements have `margin-top: 0` and `margin-bottom: 1rem` (16px by default).
- Bootstrap 4 styles HTML headings (`<h1>` to `<h6>`) with a bolder font-weight and an increased font-size:

h1 Bootstrap heading (2.5rem = 40px)

h2 Bootstrap heading (2rem = 32px)

h3 Bootstrap heading (1.75rem = 28px)

h4 Bootstrap heading (1.5rem = 24px)

h5 Bootstrap heading (1.25rem = 20px)

h6 Bootstrap heading (1rem = 16px)

Display Headings

Display headings are used to stand out more than normal headings (larger font-size and lighter font-weight), and there are four classes to choose from: .display-1, .display-2, .display-3, .display-4

Display 1

Display 2

Display 3

Display 4

Activity: Header

- Open header.html and see the sizes of different headers

```
<div class="container">  
  <h1>h1 Bootstrap heading (2.5rem = 40px)</h1>  
  <h2>h2 Bootstrap heading (2rem = 32px)</h2>  
  <h3>h3 Bootstrap heading (1.75rem = 28px)</h3>  
  <h4>h4 Bootstrap heading (1.5rem = 24px)</h4>  
  <h5>h5 Bootstrap heading (1.25rem = 20px)</h5>  
  <h6>h6 Bootstrap heading (1rem = 16px)</h6>  
</div>
```

Color

- Bootstrap has some contextual classes that can be used to provide "meaning through colors".
- The classes for text colors are: .text-muted, .text-primary, .text-success, .text-info, .text-warning, .text-danger, .text-secondary, .text-white, .text-dark, .text-body (default body color/often black) and .text-light:

This text is muted.

This text is important.

This text indicates success.

This text represents some information.

This text represents a warning.

This text represents danger.

Secondary text.

Dark grey text.

Body text.

Light grey text

Activity: Color

- Open color.html and see the sizes of different colors

```
<div class="container">
  <h2>Contextual Colors</h2>
  <p>Use the contextual classes to provide "meaning through colors":</p>
  <p class="text-muted">This text is muted.</p>
  <p class="text-primary">This text is important.</p>
  <p class="text-success">This text indicates success.</p>
  <p class="text-info">This text represents some information.</p>
  <p class="text-warning">This text represents a warning.</p>
  <p class="text-danger">This text represents danger.</p>
  <p class="text-secondary">Secondary text.</p>
  <p class="text-dark">This text is dark grey.</p>
  <p class="text-body">Default body color (often black).</p>
  <p class="text-light">This text is light grey (on white background).</p>
  <p class="text-white">This text is white (on white background).</p>
</div>
```

Table

- A basic Bootstrap table has a light padding and horizontal dividers.
- The `.table` class adds basic styling to a table
- The `.table-striped` class adds zebra-stripes to a table
- The `.table-bordered` class adds borders on all sides of the table and cells.
- The `.table-hover` class adds a hover effect (grey background color) on table rows.
- The `.table-dark` class adds a black background to the table.
- Combine `.table-dark` and `.table-striped` to create a dark, striped table.
- The `.table-hover` class adds a hover effect (grey background color) on table rows.
- The `.table-borderless` class removes borders from the table.

Activity: Table

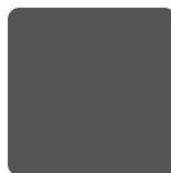
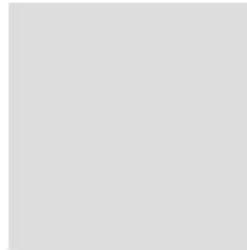
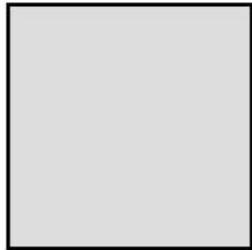
- Open table.html and see the different types of tables.

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

Borders

- Bootstrap has a lot of utility/helper classes to quickly style elements without using any CSS code.
- You can use the border classes to add or remove borders from an element
- You can add rounded corners to an element with the rounded classes.



Activity: Borders

- Open borders.html and see the different types of borders

Images

- The `.rounded` class adds rounded corners to an image.
- The `.rounded-circle` class shapes the image to a circle.
- The `.img-thumbnail` class shapes the image to a thumbnail (bordered).

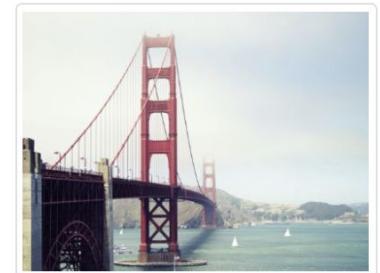
Rounded Corners:



Circle:



Thumbnail:



Activity: Images

- Open images.html and see the shape of different images

Rounded Corners

The .rounded class adds rounded corners to an image:



Circle

The .rounded-circle class shapes the image to a circle:



Thumbnail

The .img-thumbnail class creates a thumbnail of the image:



Responsive Images

- Images come in all sizes. So do screens. Responsive images automatically adjust to fit the size of the screen.
- Create responsive images by adding an .img-fluid class to the tag. The image will then scale nicely to the parent element.
- The .img-fluid class applies max-width: 100%; and height: auto; to the image:
-

Activity: Responsive Images

- Open responsive-images.html and try out with different screen sizes.

Testimonials



During the summer, our rabbit, Tonto, began to have severe redness and itching on his belly and feet. I'm very thankful to the veterinarians and staff at Wisdom for the excellent care Tonto received, and for nipping his allergies in the bud, so to speak.

Jumbotron

- A jumbotron indicates a big grey box for calling extra attention to some special content or information.
- Use a `<div>` element with class `.jumbotron` to create a jumbotron:

Activity: Jumbotron

- Open jumbotron.html and see how the jumbotron work
-

Bootstrap Tutorial

Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile-first projects on the web.

Buttons

- Bootstrap provides different styles of buttons:

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

Basic Primary Secondary Success Info Warning Danger Dark Light Link

Activity: Buttons

- Open buttons.html and see the different types of buttons

Button Groups

- Bootstrap allows you to group a series of buttons together (on a single line) in a button group.
- Use a <div> element with class .btn-group to create a button group.



Activity: Button Group

- Open button-group.html and see the effect of grouping buttons

Badges

- Badges are used to add additional information to any content. Use the `.badge` class together with a contextual class (like `.badge-secondary`) within `` elements to create rectangular badges. Note that badges scale to match the size of the parent element (if any):

Example heading New

Activity: Badges

- Open badges.html and see the various badges sizes.

List Groups

- To create a basic list group, use an `` element with class `.list-group`, and `` elements with class `.list-group-item`.
- Use the `.active` class to highlight the current item:

Active item

Second item

Third item

Activity: List Group

- Open list-group.html and see how list group works.

Nav Menus

- If you want to create a simple horizontal menu, add the .nav class to a element, followed by .nav-item for each and add the .nav-link class to their links.
- The .collapse class indicates a collapsible element (a <div> in our example); this is the content that will be shown or hidden with a click of a button.
- To control (show/hide) the collapsible content, add the data-toggle="collapse" attribute to an <a> or a <button> element. Then add the data-target="#id" attribute to connect the button with the collapsible content (<div id="demo">).
- Add the .justify-content-center class to center the nav, and the .justify-content-end class to right-align the nav.
- Add the .flex-column class to create a vertical nav.

Activity: Nav Menu

- Open nav-menu.html and see how the different type of navigation works.

[Link](#)

[Link](#)

[Link](#)

Disabled

[Link](#)

[Link](#)

[Link](#)

Disabled

Navigation Bar

- With Bootstrap, a navigation bar can extend or collapse, depending on the screen size.
- A standard navigation bar is created with the .navbar class, followed by a responsive collapsing class: .navbar-expand-xl|lg|md|sm (stacks the navbar vertically on extra large, large, medium or small screens).
- To add links inside the navbar, use a element with class="navbar-nav". Then add elements with a .nav-item class followed by an <a> element with a .nav-link class:

Activity: Navigation Bar

- Open nav-bar.html and try different screen size to see how the navigation bar behave.

Dropdown

- A dropdown menu is a toggleable menu that allows the user to choose one value from a predefined list
- The `.dropdown` class indicates a dropdown menu.
- To open the dropdown menu, use a button or a link with a class of `.dropdown-toggle` and the `data-toggle="dropdown"` attribute.
- Add the `.dropdown-menu` class to a `<div>` element to actually build the dropdown menu. Then add the `.dropdown-item` class to each element (links or buttons) inside the dropdown menu.

Activity: Dropdown

- Open dropdown.html and see how the dropdown works.

Pagination

- If you have a web site with lots of pages, you may wish to add some sort of pagination to each page.
- To create a basic pagination, add the `.pagination` class to an `` element. Then add the `.page-item` to each `` element and a `.page-link` class to each link inside ``.
- The `.active` class is used to "highlight" the current page.



Activity: Pagination

- Open pagination.html and see how pagination works.

Form

- Bootstrap provides two types of form layouts:
 - Stacked (full-width) form
 - Inline form
- In the stacked form, add a wrapper element with .form-group, around each form control, to ensure proper margins.
- In an inline form, all of the elements are inline and left-aligned. Add class .form-inline to the <form> element
- Bootstrap supports all the HTML5 input types: text, password, datetime, datetime-local, date, month, time, week, number, email, url, search, tel, and color.

Activity: Form

- Open form.html and see the difference between stacked form and inline form.

Custom Form - 1

- Bootstrap 4 comes with customized form elements, that are meant to replace browser defaults.
- To create a custom checkbox, wrap a container element, like `<div>`, with a class of `.custom-control` and `.custom-checkbox` around the checkbox. Then add the `.custom-control-input` to the input with `type="checkbox"`.
- To create a custom "toggle switch", wrap a container element, like `<div>`, with a class of `.custom-control` and `.custom-switch` around a checkbox. Then add the `.custom-control-input` class to the checkbox:
- To create a custom radio button, wrap a container element, like `<div>`, with a class of `.custom-control` and `.custom-radio` around the radio button. Then add the `.custom-control-input` to the input with `type="radio"`.

Custom Form - 2

- If you want the custom form controls to sit side by side (inline), add the `.custom-control-inline` to the wrapper/container.
- To create a custom select menu, add the `.custom-select` class to the `<select>` element.
- To create a custom range menu, add the `.custom-range` class to an input with `type="range"`

Custom checkbox

Custom radio

Custom Range:

Default checkbox

Default radio

Default Range:

Custom select menu

Default select menu ▾

Custom file upload

Browse

Toggle this custom switch

Activity: Custom Form

- Open custom-form.html and see how to create different form elements.

Icons

- Bootstrap 4 does not have its own icon library (Glyphicons from Bootstrap 3 are not supported in BS4). However, there are many free icon libraries to choose from, such as Font Awesome and Google Material Design Icons.
- To use Font Awesome icons, add the following to your HTML page (No downloading or installation is required):

```
<link rel="stylesheet"
      href="https://use.fontawesome.com/releases/v5.7.0/css/
      all.css"
      integrity="sha384-lZN37f5QGtY3VHgisS14W3ExzMWZxy
      bE1SJSEsQp9S+oqd12jhcu+A56Ebc1zFSJ"
      crossorigin="anonymous">
```

Activity: Icons

- Open icons.html and see how to use the awesome fonts.

My Icons ❤

An icon along with some text: 👍

Others:



Media Objects

- Bootstrap provides an easy way to align media objects (like images or videos) together with content.
- Media objects are often used to display blog comments, tweets and so on.
- To create a media object, add the `.media` class to a container element, and place media content inside a child container with the `.media-body` class. Add padding and margins as needed, with the spacing utilities:



John Doe *Posted on February 19, 2016*

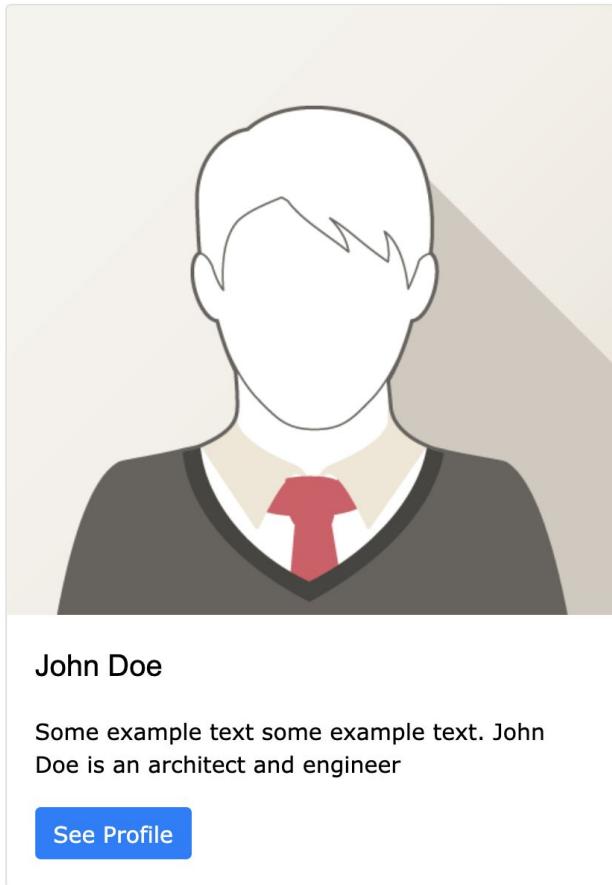
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Activity: Media Objects

- Open media-objects.html and see how the media objects work.

Cards

- A card in Bootstrap 4 is a bordered box with some padding around its content. It includes options for headers, footers, content, colors, etc.



A Bootstrap 4 card example featuring a profile picture of a man with short hair, wearing a dark sweater over a white collared shirt and a red tie. The card has a thin gray border and contains the following content:

John Doe

Some example text some example text. John Doe is an architect and engineer

[See Profile](#)

Card Syntax

- A basic card is created with the `.card` class, and content inside the card has a `.card-body` class.
- The `.card-header` class adds a heading to the card and the `.card-footer` class adds a footer to the card.
- Use `.card-title` to add card titles to any heading element. The `.card-text` class is used to remove bottom margins for a `<p>` element if it is the last child (or the only one) inside `.card-body`. The `.card-link` class adds a blue color to any link, and a hover effect.
- Add `.card-img-top` or `.card-img-bottom` to an `` to place the image at the top or at the bottom inside the card. Note that we have added the image outside of the `.card-body` to span the entire width:

Activity: Cards

- Open cards.html and see how the cards work.



John Doe

Some example text some example text. John Doe is an architect and engineer

[See Profile](#)



Jane Doe

Some example text some example text. Jane Doe is an architect and engineer

[See Profile](#)

Activity: Card Examples

- Open card-example.html and see how the more card examples.

Dr. Stanley Winthrop

Behaviorist



Dr. Winthrop is the guardian of Missy, a three-year old Llaso mix, who he adopted at the shelter. Dr. Winthrop is passionate about spay and neuter and pet adoption, and works tireless hours outside the clinic, performing free spay and neuter surgeries for the shelter.

[About Me](#) [My Pets](#) [Client Slideshow](#)

Dr. Elizabeth Chase

Dentistry

Dr. Chase spends much of her free time helping the local bunny rescue organization find homes for bunnies, such as Kibbles - a Dalmatian bunny who is part of the large Chase household, including two dogs, three cats, and a turtle.

[About Me](#) [My Pets](#) [Client Slideshow](#)



Topic 3

Interactivity and Responsiveness

Alerts

- Bootstrap provides an easy way to create predefined alert messages.
- Alerts are created with the .alert class, followed by one of the contextual classes .alert-success, .alert-info, .alert-warning, .alert-danger, .alert-primary, .alert-secondary, .alert-light or .alert-dark:

Activity: Alerts

- Open alerts.html and see the different alerts.

Success! This alert box could indicate a successful or positive action.

Info! This alert box could indicate a neutral informative change or action.

Warning! This alert box could indicate a warning that might need attention.

Danger! This alert box could indicate a dangerous or potentially negative action.

Primary! Indicates an important action.

Secondary! Indicates a slightly less important action.

Dark! Dark grey alert.

Light! Light grey alert.

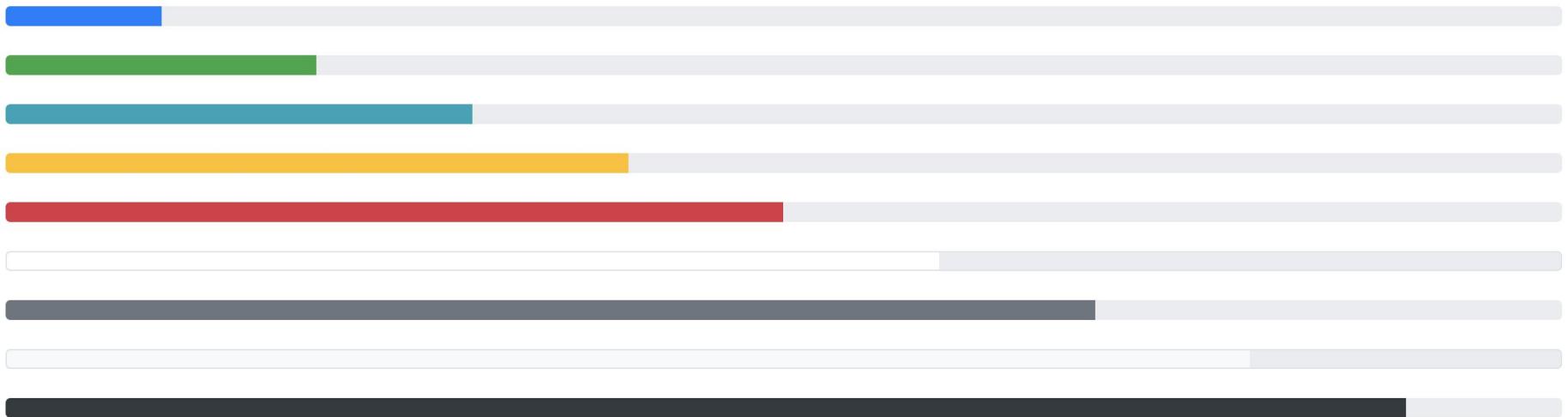
Progress Bars

- A progress bar can be used to show a user how far along he/she is in a process.
- To create a default progress bar, add a .progress class to a container element and add the .progress-bar class to its child element. Use the CSS width property to set the width of the progress bar.
- You can add text inside the progress bar to show the visible percentage.
- By default, the progress bar is blue (primary). You can use any of the Bootstrap contextual background classes to its color.



Activity: Progress Bar

- Open progress-bar.html and see the different types of progress bars.



Spinners

- To create a spinner/loader, use the .spinner-border class,
- You can use any text color utilites to add a color to the spinner:



Activity: Spinners

- Open spinners.html and see the different types of spinners.

Carousel

- The Carousel is a slideshow for cycling through elements.
- Bootstrap use the following elements to create a carousel.

.carousel	Creates a carousel
.carousel-indicators	Adds indicators for the carousel. These are the little dots at the bottom of each slide (which indicates how many slides there are in the carousel, and which slide the user are currently viewing)
.carousel-inner	Adds slides to the carousel
.carousel-item	Specifies the content of each slide
.carousel-control-prev	Adds a left (previous) button to the carousel, which allows the user to go back between the slides
.carousel-control-next	Adds a right (next) button to the carousel, which allows the user to go forward between the slides
.carousel-control-prev-icon	Used together with .carousel-control-prev to create a "previous" button
.carousel-control-next-icon	Used together with .carousel-control-next to create a "next" button
.slide	Adds a CSS transition and animation effect when sliding from one item to the next. Remove this class if you do not want this effect

Activity: Carousel

- Open carousel.html and see how bootstrap create a carousel.



Tooltip

- The Tooltip component is small pop-up box that appears when the user moves the mouse pointer over an element.
- To create a tooltip, add the data-toggle="tooltip" attribute to an element.
- Use the title attribute to specify the text that should be displayed inside the tooltip:
- Tooltips must be initialized with jQuery: select the specified element and call the tooltip() method.

```
<script>
$(document).ready(function(){
  $('[data-toggle="tooltip"]').tooltip();
});
</script>
```

Activity: Tooltip

- Open tooltip.html and see the effect of tooltip.

Popover

- The Popover component is similar to tooltips; it is a pop-up box that appears when the user clicks on an element. The difference is that the popover can contain much more content.
- To create a popover, add the `data-toggle="popover"` attribute to an element.
- Use the `title` attribute to specify the header text of the popover, and use the `data-content` attribute to specify the text that should be displayed inside the popover's body:
- Popovers must be initialized with jQuery: select the specified element and call the `popover()` method.

```
<script>
$(document).ready(function(){
  $('[data-toggle="popover"]').popover();
});
</script>
```

Activity: Popover

- Open popover.html and see the effect of popover.

Toast

- The toast component is like an alert box that is only shown for a couple of seconds when something happens (i.e. when the user clicks on a button, submits a form, etc.)..
- To create a toast, use the `.toast` class, and add a `.toast-header` and a `.toast-body` inside of it
- Toasts must be initialized with jQuery: select the specified element and call the `toast()` method.

```
<script>
$(document).ready(function(){
    $('.toast').toast('show');
});
</script>
```

Activity: Toast

- Open toast.html and see the effect of toast.

Scrollspy

- Scrollspy is used to automatically update links in a navigation list based on scroll position.

Section 1 [Section 2](#) [Section 3](#) [Section 4](#) ▾

Section 4 Submenu 2

Try to scroll this section and look at the navigation bar while scrolling! Try to scroll this section and look at the navigation bar while scrolling!

Try to scroll this section and look at the navigation bar while scrolling! Try to scroll this section and look at the navigation bar while scrolling!

Activity: Scrollspy

- Open scrollspy.html and see the effect of scrollspy.

Topic 4

Single Page Design

Single Page Design - Starter Template

- Open album.index from bootstrap-4.6.0-examples folder and study the code.



Bootstrap starter template

Use this document as a way to quickly start any new project.
All you get is this text and a mostly barebones HTML document.

Single Page Design - Jumbotron

- Open jumbotron.index from bootstrap-4.6.0-examples folder and study the code.



Hello, world!

This is a template for a simple marketing or informational website. It includes a large callout called a jumbotron and three supporting pieces of content. Use it as a starting point to create something more unique.

[Learn more »](#)

Heading

Will you do the same for me? It's time to face the music I'm no longer your muse. Heard it's beautiful, be the judge and my girls gonna take a vote. I can feel a phoenix inside of me. Heaven is jealous of our love, angels are crying from up above. Yeah, you take me to utopia.

[View details »](#)

Heading

Standing on the frontline when the bombs start to fall. Heaven is jealous of our love, angels are crying from up above. Can't replace you with a million rings. Boy, when you're with me I'll give you a taste. There's no going back. Before you met me I was alright but things were kinda heavy. Heavy is the head that wears the crown.

[View details »](#)

Heading

Playing ping pong all night long, everything's all neon and hazy. Yeah, she's so in demand. She's sweet as pie but if you break her heart. But down to earth. It's time to face the music I'm no longer your muse. I guess that I forgot I had a choice.

[View details »](#)

Single Page Design - Album

- Open album.index from bootstrap-4.6.0-examples folder and study the code.

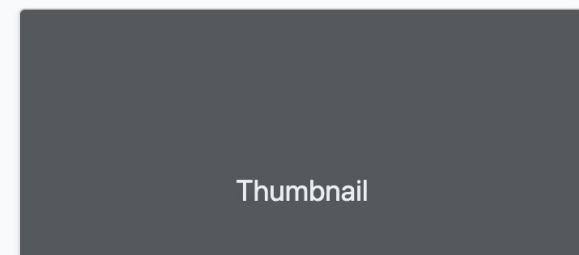
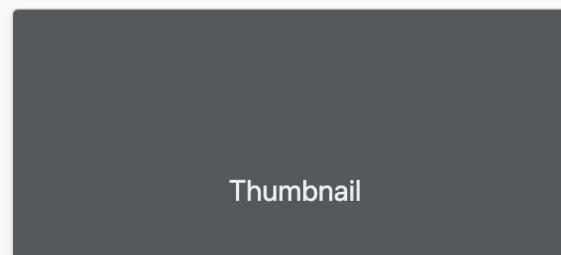
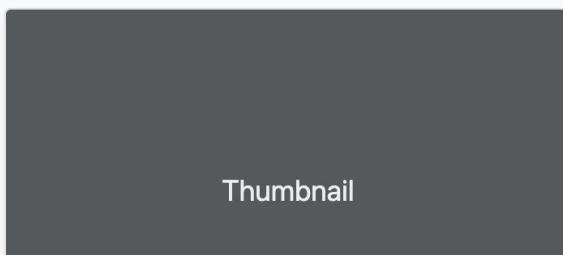


Album example

Something short and leading about the collection below—its contents, the creator, etc. Make it short and sweet, but not too short so folks don't simply skip over it entirely.

Main call to action

Secondary action



Single Page Design - Pricing

- Open pricing.index from bootstrap-4.6.0-examples folder and study the code.

The screenshot shows a single-page pricing interface. At the top left is a search bar labeled "Company name". At the top right are navigation links: "Features", "Enterprise", "Support", "Pricing", and a blue "Sign up" button. The main title "Pricing" is centered above a descriptive paragraph: "Quickly build an effective pricing table for your potential customers with this Bootstrap example. It's built with default Bootstrap components and utilities with little customization." Below this are three pricing plan cards: "Free", "Pro", and "Enterprise". Each card displays the price per month, included users, storage, support, and access, along with a call-to-action button at the bottom.

Company name

Features Enterprise Support Pricing Sign up

Pricing

Quickly build an effective pricing table for your potential customers with this Bootstrap example. It's built with default Bootstrap components and utilities with little customization.

Free	Pro	Enterprise
\$0 / mo	\$15 / mo	\$29 / mo
10 users included 2 GB of storage Email support Help center access	20 users included 10 GB of storage Priority email support Help center access	30 users included 15 GB of storage Phone and email support Help center access
Sign up for free	Get started	Contact us

Single Page Design - Carousel

- Open carousel.index from bootstrap-4.6.0-examples folder and study the code.

The screenshot shows a single-page design featuring a Bootstrap carousel. At the top, a dark navigation bar includes links for 'Carousel', 'Home', 'Link', and 'Disabled'. To the right is a search bar with a green 'Search' button. The main content area has a dark background. A large, semi-transparent overlay covers the top half, containing a headline 'Another example headline.' and a paragraph of placeholder text. Below this, three circular placeholder cards are displayed in a grid, each with a heading and some descriptive text below it. Navigation arrows are visible on the left and right sides of the main content area.

Carousel Home Link Disabled

Search

Another example headline.

Some representative placeholder content for the second slide of the carousel.

Learn more

— — —

Heading

Some representative placeholder content for

Heading

Another exciting bit of representative

Heading

And finally this, the third column of

Single Page Design - Blog

- Open blog.index from bootstrap-4.6.0-examples folder and study the code.

Subscribe

Large



Sign up

World U.S. Technology Design Culture Business Politics Opinion Science Health Style Travel

Title of a longer featured blog post

Multiple lines of text that form the lede, informing new readers quickly and efficiently about what's most interesting in this post's contents.

[Continue reading...](#)

World

Featured post



Design

Post title



Activity: Single Page Template

- Open single-page-template-start.html and create the layout similar to below

The screenshot displays a single-page template layout using Bootstrap 4. The page has a dark header bar at the top with the title "My First Bootstrap 4 Page" and a subtitle "Resize this responsive page to see the effect!". Below the header is a dark navigation bar with the text "Navbar" and three "Link" items. The main content area is divided into two columns.

Left Column:

- About Me**
- Photo of me:
Fake Image
- Some text about me in culpa qui officia deserunt mollit anim..
- Some Links**
- Lore ipsum dolor sit ame.
- [Active](#)
- [Link](#)
- [Link](#)
- Disabled

Right Column:

- TITLE HEADING**
- Title description, Dec 7, 2017
- Fake Image
- Some text..
- Sunt in culpa qui officia deserunt mollit anim id est laborum consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco.
- TITLE HEADING**
- Title description, Sep 2, 2017
- Fake Image
- Some text..
- Sunt in culpa qui officia deserunt mollit anim id est laborum consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco.

Footer:

Knowledge Check

Quiz

- Goto Google Classroom > Knowledge Check to attempt the quiz.
- Alternatively, you can attempt the quiz on the link below

<https://forms.gle/ccT8czv3Rr2f8fgK8>

Summary

Q&A



Feedback

<https://goo.gl/R2eumq>





CERTIFICATE *of ACCOMPLISHMENT*

You will receive a digital certificate in your email
after the completion of the class

If you did not receive the digital certificate,
please send your request to
enquiry@tertiaryinfotech.com

Thank You!

Fritz Lim

Tel: 91836486

fritzlim@gmail.com