CI6206
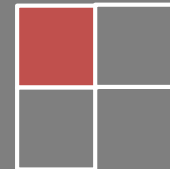# Internet
Programming

Bootstrapping

Wong Twee Wee

Ver1.1

What is Responsive Web Design?

- Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.

- Bootstrap is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first web sites.

- Bootstrap is completely free to download and use!

What is Bootstrap?

- ➡ Bootstrap is a <u>free front-end framework</u> 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

Bootstrap History

➡ Bootstrap was developed by Mark Otto and Jacob Thornton at Twitter, and released as an open source product in August 2011 on GitHub.

➡ Advantages of 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 3, mobile-first styles are part of the core framework

➡ **Browser compatibility:** Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Safari, and Opera)

Similar Responsive Frameworks

➧ Bootstrap is not alone. There are numerous frameworks that are similar. The key to picking one is to understand your requirements.

➧ Check out here for a full list

Selection of frameworks

two types of framework :

- simple frameworks
  - o "grid systems" that offers style sheets with column systems.
- complete frameworks (e.g Bootstrap)
  - o configurable features like styled-typography, sets of forms, buttons, icons and other reusable components built to provide navigation, alerts, popovers, and more, images frames, HTML templates, custom settings, etc.

Where to Get Bootstrap?

➡ There are two ways to start using Bootstrap on your own web site.

  ➡ Download Bootstrap from getbootstrap.com

  ➡ If you want to download and host Bootstrap yourself, go to getbootstrap.com, and follow the instructions there.

  ➡ Include Bootstrap from a CDN

  ➡ If you don't want to download and host Bootstrap yourself, you can include it from a CDN (Content Delivery Network).

  ➡ MaxCDN provides CDN support for Bootstrap's CSS and JavaScript. You must also include jQuery.

Bootstrap CDN

MaxCDN:

```html
<!-- Latest compiled and minified CSS -->
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.1.3/css/bootstrap.min.css">

<!-- jQuery library -->
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>

<!-- Popper JS -->
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.3/umd/popper.min.js">
</script>

<!-- Latest compiled JavaScript -->
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.1.3/js/bootstrap.min.js">
</script>
```

Create Web Page with Bootstrap (1)

- Add the HTML5 doctype

  - Bootstrap uses HTML elements and CSS properties that require the HTML5 doctype.

  - Always include the HTML5 doctype at the beginning of the page, along with the lang attribute and the correct character set:

```
<!DOCTYPE html>
<html lang="en">
   <head>
     <meta charset="utf-8">
   </head>
</html>
```

Create Web Page with Bootstrap (2)

- Bootstrap is mobile-first

  - Bootstrap 4 is designed to be responsive to mobile devices. Mobile-first styles are part of the core framework.

  - To ensure proper rendering and touch zooming, add the following <meta> tag inside the <head> element:

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

  - The width=device-width part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

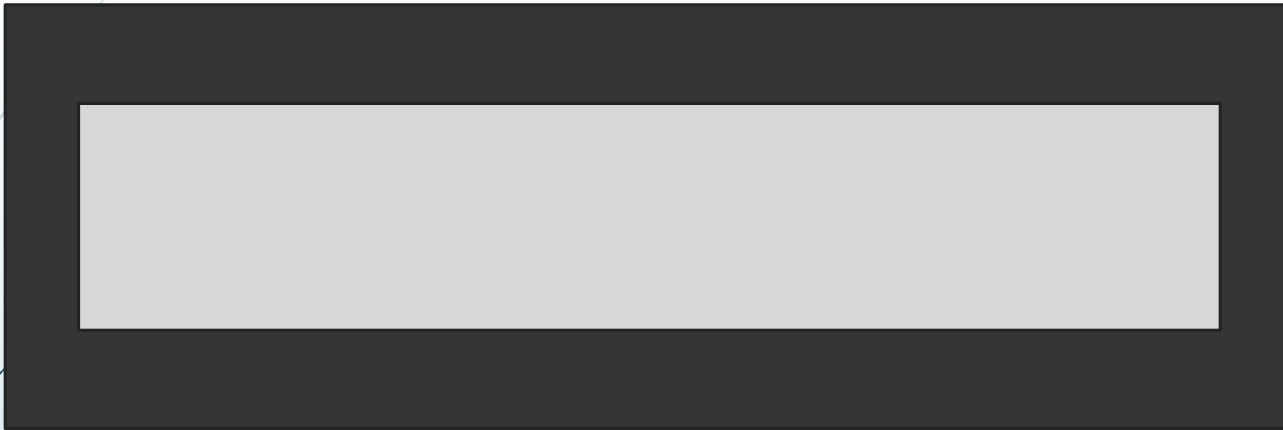 - The initial-scale=1 part sets the initial zoom level when the page is first loaded by the browser.

Create Web Page with Bootstrap (3)

- Containers
  - Bootstrap also requires a containing element to wrap site contents.
  - There are two container classes to choose from:
    - The .container class provides a responsive **fixed width container.**
    - The .container-fluid class provides a **full width container**, spanning the entire width of the viewport.
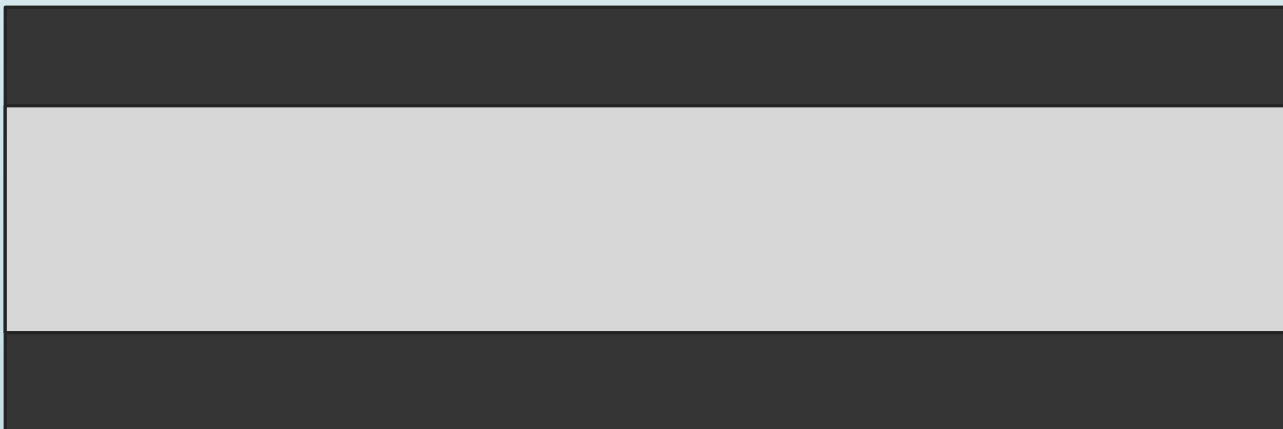- **Note:** Containers are not nestable (you cannot put a container inside another container).

Containers

- .container

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

- .container-fluid

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

Container padding

Where *size* is one of:

- 0 - for classes that eliminate the margin or padding by setting it to 0
- 1 - (by default) for classes that set the margin or padding to $spacer * .25
- 2 - (by default) for classes that set the margin or padding to $spacer * .5
- 3 - (by default) for classes that set the margin or padding to $spacer
- 4 - (by default) for classes that set the margin or padding to $spacer * 1.5
- 5 - (by default) for classes that set the margin or padding to $spacer * 3
- auto - for classes that set the margin to auto

➡ By default

    ➡ 15px left and right padding

    ➡ Without top or bottom padding

➡ Use extra padding and margins if required

    ➡ For example, **pt-3** means "add a top padding of 16px":

    ➡ The classes are named using the format **{property}{sides}-{size}**

    ➡ P – padding, T – top, size - 0-5 or Auto ($spacer = 16)

    ➡ https://getbootstrap.com/docs/4.0/utilities/spacing/

➡ sm, md, lg, and xl

    ➡ {property}{sides}-{breakpoint}-{size}

➡ xs

    ➡ {property}{sides}-{size}

Grid System

Bootstrap's grid system allows up to 12 columns across the page.

Grid Classes

- The Bootstrap grid system has four classes:
  - xs (for phones – screen < 576px)
  - sm (for tablets – screen >= 576px)
  - md (for desktops- screen >= 768px)
  - lg (for larger desktops – screen >= 992px)
  - Xl (xlarge devices – screen >= 1200px)
- The classes above can be combined to create more dynamic and flexible layouts.

Bootstrap Grids

- Sample codes

<div class="col-md-12">Span 12 columns</div>

<div class="col-md-6">Span 6</div><div class="col-md-6">Span 6</div>

<div class="col-md-4">Span 4</div><div class="col-md-8">Span 8</div>

<div class="col-md-4">Span 4</div><div class="col-md-4">Span 4</div> <div class="col-md-4">Span 4</div>

- Bootstrap's grid system is responsive, and the columns will re-arrange automatically depending on the screen size.

Basic Structure of a Bootstrap Grid

```
<div class="row">
  <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>
```

- First; create a row (<div class="row">). Then, add the desired number of columns (tags with appropriate .col-*-*classes). Note that numbers in .col-*-* should always add up to 12 for each row.

Grid System Rules

- Rows must be placed within a `.container` (fixed-width) or `.container-fluid` (full-width) for proper alignment and padding
- Use rows to create horizontal groups of columns
- Content should be placed within columns, and only columns may be immediate children of rows
- Predefined classes like `.row` and `.col-sm-4` are available for quickly making grid layouts
- Grid columns are created by specifying the number of 12 available columns you wish to span. For example, three equal columns would use three .col-sm-4
- Column widths are in percentage, so they are always fluid and sized relative to their parent element
- See some examples …

Stacked-to-horizontal

```
<div class="container">
  <div class="row">
    <div class="col-sm-6 bg-success">
      Left 50%
    </div>
    <div class="col-sm-6 bg-warning">
      Right 50%
    </div>
  </div>
</div>
```

Three Equal Columns

➡Three equal columns ([desktop version](#)):

➡Three equal columns ([tablet version](#)):

➡Three equal columns ([smart phone version](#)):

Colors

- Convey meaning through color with a handful of color utility classes. Includes support for styling links with hover states, too.


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

Jumbotron

- A lightweight, flexible component that can optionally extend the entire viewport to showcase key marketing messages on your site.

Hello, world!

This is a simple hero unit, a simple jumbotron-style component for calling extra attention to featured content or information.

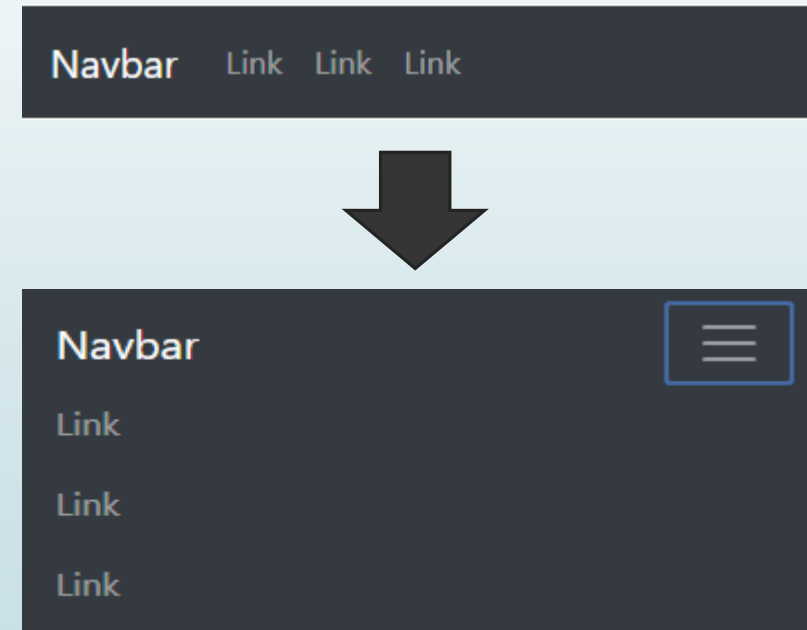```
<div class="jumbotron text-center" style="margin-bottom:2">
  <h1 class="display-5">My First Bootstrap 4 Page</h1>
  <p>Resize this responsive page to see the effect!</p>
</div>
```

# Navigation Bar

- Includes support for branding, navigation, and more, including collapse plugin.

```html
<nav class="navbar navbar-expand-sm bg-dark navbar-dark">
  <a class="navbar-brand" href="#">Navbar</a>
  <button class="navbar-toggler" type="button" data-toggle="collapse" data-
    target="#collapsibleNavbar1">
    <span class="navbar-toggler-icon"></span>
  </button>

  <div class="collapse navbar-collapse" id="collapsibleNavbar1">
    <ul class="navbar-nav">
      <li class="nav-item">
        <a class="nav-link" href="#">Link</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">Link</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">Link</a>
      </li>
    </ul>
  </div>
</nav>
```
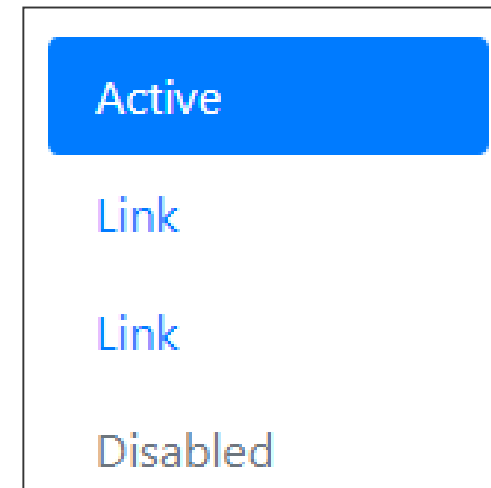
Navigation

Navigation available in Bootstrap share general markup and styles, from the base .nav class to the active and disabled states. Swap modifier classes to switch between each style.

➡ Alignment
➡ Tabs
➡ Fill
➡ Fill and Justify
➡ Flex utitlity

https://getbootstrap.com/docs/4.0/components/navs/

Navigation

```html
<ul class="nav nav-pills flex-column">
  <li class="nav-item">
    <a class="nav-link active" href="#">Active</a>
  </li>
  <li class="nav-item">
    <a class="nav-link"  href="#">Link</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">Link</a>
  </li>
  <li class="nav-item">
    <a class="nav-link disabled" href="#">Disabled</a>
  </li>
</ul>
```
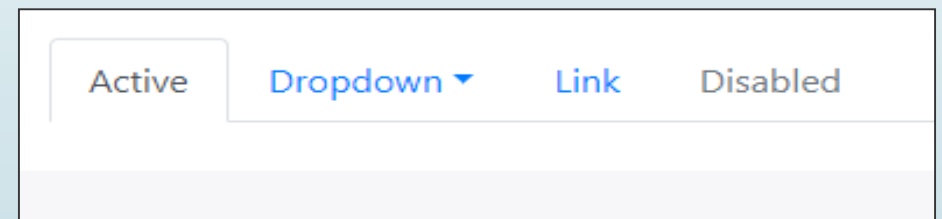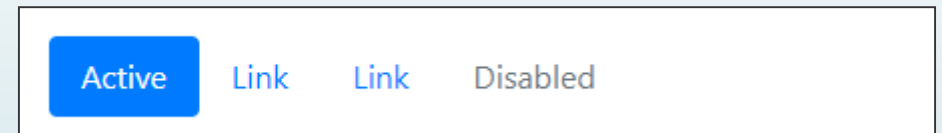
Bootstrap Tables

- A **basic** Bootstrap table has a light padding and only horizontal dividers.
  - The .table class adds basic styling to a table:
- **Striped Rows**
  - The .table-striped class adds zebra-stripes to a table:
- **Bordered Table**
  - The .table-bordered class adds borders on all sides of the table and cells:
- **Hover Rows**
  - The .table-hover class enables a hover state on table rows:
- **Responsive Tables**
  - The .table-responsive class creates a responsive table. The table will then scroll horizontally on small devices (under 768px). When viewing on anything larger than 768px wide, there is no difference:

Striped rows

Use `.table-striped` to add zebra-striping to any table row within the `<tbody>`.

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

Bootstrap Buttons


```
<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-danger">Danger</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-light">Light</button>
<button type="button" class="btn btn-dark">Dark</button>

<button type="button" class="btn btn-link">Link</button>
```

DEMO!

2 Main Pic	10 Menu and search		
12 Pic Carousell			
3 Feature 1 Description	3 Feature 2 Description	3 Feature 3 Description	3 Feature 4 Description
12 Media Objects Pic – Description Pic - Description			
12			
3 Footer 1 Description	3 Footer 2 Description	3 Footer 3 Description	3 Footer 4 Description