Bootstrap 5

Front-end Framework

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 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

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)

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

- You must include the following Bootstrap's CSS, JavaScript, and jQuery from MaxCDN into your web page.

```
<!-- Latest compiled and minified Bootstrap CSS -->
<link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/5.0.0-alpha1/css/bootstrap.min.css crossorigin="anonymous">
<script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.0/dist/umd/popper.min.js" crossorigin="anonymous"></script>
<script src="https://stackpath.bootstrapcdn.com/bootstrap/5.0.0-alpha1/js/bootstrap.min.js" crossorigin="anonymous"></script>
```

Advantage of using the Bootstrap CDN:
- Many users already have downloaded Bootstrap from MaxCDN when visiting another site. As a result, it will be loaded from cache when they visit your site, which leads to faster loading time. Also, most CDN's will make sure that once a user requests a file from it, it will be served from the server closest to them, which also leads to faster loading time.

Custom Elements

- Typography

- Forms

- Tables

- Buttons

- Images

Bootstrap has classes and snippets to easily make your HTML elements look much cleaner and more stylish

CSS Components

- Glyphicons
- Dropdowns
- Button Groups
- Navbar
- Breadcrumbs
- Labels

- Badges
- Alerts
- Jumbotron
- Progress Bars
- Media Objects
- List Group

- Panels
- Wells
- Input Groups

JavaScript Widgets

- Modal
- Dropdown
- Tabs
- Tooltip
- Popover
- Alert
- Carousel / Slider

Bootstrap uses over a dozen custom JavaScript/JQuery plugins that can be used by simply including **JQuery** and the **bootstrap.js** file

Grids rules and uses

- Bootstrap's grid system 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:

```
<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.

.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1

.col-md-8		.col-md-4

.col-md-4	.col-md-4	.col-md-4

.col-md-6	.col-md-6

Grid Classes

- The Bootstrap grid system has four classes:
  - xs (for phones)
  - sm (for tablets)
  - md (for desktops)
  - lg (for larger desktops)
- The classes above can be combined to create more dynamic and flexible layouts.

Create Web Page with Bootstrap (1)

- 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 3 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.** (See Sample)
    - The .container-fluid class provides a **full width container**, spanning the entire width of the viewport. (See Sample)
- **Note:** Containers are not nestable (you cannot put a container inside another container).

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.

Tables

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

- 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:

Button component

Button Styles
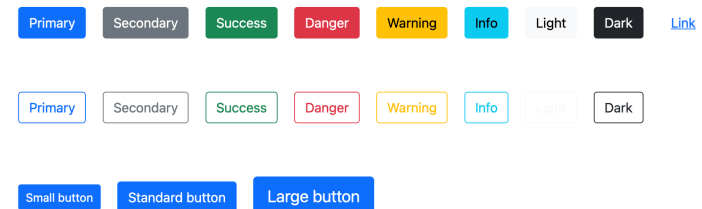
Bootstrap provides seven styles of buttons with the following classes:

    .btn-default

    .btn-primary

    .btn-success

    .btn-info

    .btn-warning

    .btn-danger

    .btn-link

The button classes can be used on the following elements:

 <a>   <button>   <input>

- <button class="btn btn-primary"></button>
-
- btn-outline-secondary
- Disabled, active
- data-bs-toggle="button"
- <div class="btn-group"> </div>

Forms

Class="form-label"

Class="form-control"

Form-control form-color-picker

Form-select

Form-select-lg

Form-check

   Form-check-input

   Form-check-label

Class="Input-group"

 class="form-floating" (floats label within the input)

Required (for validation)

Is-valid is-invalid

Valid-feedback, invalid-feedback

Alert component

- ```
  <div class="alert alert-success alert-dismissible"
      role="alert"> Alert
          <button class="btn-close" aria-label="close"
  data-bs-dismiss="alert"> </button>
  </div>
  ```

A simple warning alert with **an example link**. Give it a click if you like.	✕

A simple info alert with **an example link**. Give it a click if you like.	✕

A simple light alert with **an example link**. Give it a click if you like.	✕

A simple dark alert with **an example link**. Give it a click if you like.	✕

card component

- <div class="card">
- <img class="**card-img**-top" src="source.png">
- <h2 class="card-header">
- <div class="card-body **card-img-overlay**">
- <div class="card-title">
- <div class="card-subtitle">
- <div class="card-text">
- <div class="card-footer">

<img class='card-img-bottom" src="">
<div class="card-group"> (combine multiple cards)

modal component

<button class="btn btn-primary" **data-bs-toggle**="**modal**" **data-bs-target="#modal**">open</div>
        <div class="modal" fade id='modal' >
        <div class="modal-dialog **modal-dialog-scrollable** <u>modal-fullscreen</u>">
        <div class="modal-content">
        <div class="modal-header">
         <button btn-close data-bs-dismiss="modal"></button> (for the X sign)
        "modal-body"
        "modal-footer"
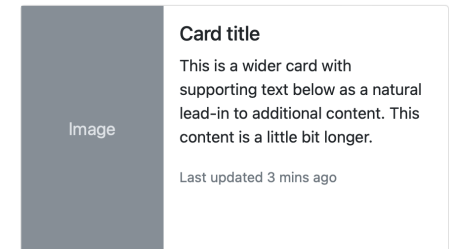
modal component

```
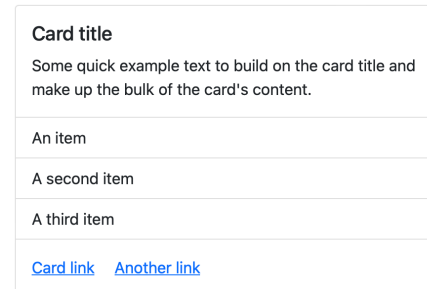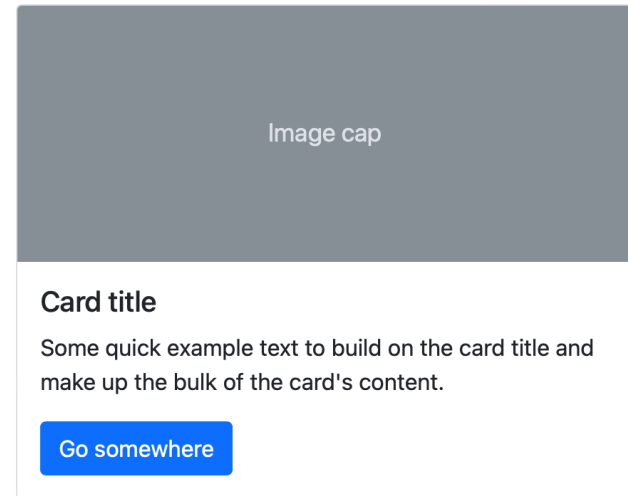<button class="btn btn-primary" data-bs-toggle="collapse" data-bs-
target="#row" aria-expanded="true" aria-controls="row">Toggle</div>
<div class="row">
<div class="col>
<div class="box></div>
```