

# Responsive Web Design Using Bootstrap

# Example: Responsive Website



Source: [geniuslynx.com](http://geniuslynx.com)

# Topics

- ▶ What is Responsive Web Design?
- ▶ Introduction to Bootstrap Framework
- ▶ Bootstrap Components
- ▶ Bootstrap Grid System
- ▶ Bootstrap & JavaScript
- ▶ Resources - Bootstrap Themes, and more...

# Responsive Web Design

- ▶ **Responsive Web Design (RWD)**
- ▶ It is an approach to web design aimed at allowing desktop webpages to be viewed in response to the size of the screen or web browser one is viewing with.

-Source Wikipedia

# RWD

- ▶ RWD uses only **HTML and CSS**.
- ▶ RWD makes your web page look good on all devices: desktops, tablets, and phones.
- ▶ It is called *responsive web design* when you use CSS and HTML to **resize, hide, shrink, enlarge, or move** the content to make it look good on any screen.
- ▶ It's a concept that provides mobile first approach.

Source: w3schools.com

# RWD Core

- ▶ HTML
- ▶ CSS
- ▶ Viewport
- ▶ Media Queries

# Viewport

- ▶ The viewport is the user's visible area of a web page.
- ▶ The viewport varies with the device, and will be smaller on a mobile phone than on a computer screen.
- ▶ HTML5 introduced a method to let web designers take control over the viewport, through the `<meta>` tag.
- ▶ `<meta name="viewport" content="width=device-width, initial-scale=1.0">`
- ▶ A `<meta>` viewport element gives the browser instructions on how to control the page's dimensions and scaling.
- ▶ 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=1.0` part sets the initial zoom level when the page is first loaded by the browser.

# Example

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# Media Queries

- ▶ Media query is a CSS technique introduced in CSS3.
- ▶ It uses the @media rule to include a block of CSS properties only if a certain condition is true.
- ▶ Example:

```
@media only screen and (max-width: 500px) {  
  body {  
    background-color: lightblue;  
  }  
}
```

# Frameworks

- ▶ Bootstrap
- ▶ Material Design Lite
- ▶ Materialize CSS
- ▶ Foundation
- ▶ Kendo UI
- ▶ W3.CSS
- ▶ Framework 7
- ▶ Ionic
- ▶ Bulma CSS
- ▶ And more...

# Bootstrap v4.3.1

## Bootstrap

Build responsive, mobile-first projects on the web with the world's most popular front-end component library.

Bootstrap is an open source toolkit for developing with HTML, CSS, and JS. Quickly prototype your ideas or build your entire app with our Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful plugins built on jQuery.

[Get started](#)[Download](#)

Currently v4.3.1



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

Now, Designed and built by the **Bootstrap team** with the help of **contributors**.

# Why Bootstrap?

- ▶ Modifying CSS can be tricky
- ▶ Cross browser support can be a challenge
- ▶ Designing page layout without tables
- ▶ Bootstrap makes it easier
- ▶ Replacement for HTML server controls
- ▶ Great for AJAX / SPA

# Bootstrap Features

- ▶ Theme Support
- ▶ Responsive Layout
  - ▶ Containers
  - ▶ Grid System
- ▶ Components
  - ▶ TextBox
  - ▶ Buttons
  - ▶ Modal
  - ▶ Cards, etc.
- ▶ Utilities - Border, Float, Position, Text, etc.



**One framework, every device.**

Bootstrap easily and efficiently scales your project with one code base, from phones to tablets to desktops.

# RWD & Bootstrap

- ▶ Mobile first approach:

Since Bootstrap, the framework consists of Mobile first styles throughout the **entire library** instead of in separate files.

- ▶ Browser Support: Bootstrap supports the **latest, stable releases** of all major browsers and platforms. On Windows, **Internet Explorer 10-11 / Microsoft Edge**.
- ▶ More at - <https://getbootstrap.com/docs/4.3/getting-started/browsers-devices/>

# What's included?

- ▶ **Scaffolding:** Bootstrap provides a basic structure with Grid System, link styles, background. This is covered in detail in the section Bootstrap Basic Structure
- ▶ **CSS:** Bootstrap comes with feature of global CSS settings, fundamental HTML elements styled and enhanced with extensible classes, and an advanced grid system. This is covered in detail in the section Bootstrap with CSS.
- ▶ **Components:** Bootstrap contains over a dozen reusable components built to provide iconography, dropdowns, navigation, alerts, popovers, and much more. This is covered in detail in the section Layout Components.

# What's included?

- ▶ **JavaScript Plugins:** Bootstrap contains over a dozen custom jQuery plugins. You can easily include them all, or one by one. This is covered in details in the section Bootstrap Plugins.
- ▶ **Customize:** You can customize Bootstrap's components, LESS variables, and jQuery plugins to get your very own version.
- ▶ You can download the latest version of Bootstrap from <https://getbootstrap.com/>.



# Media Queries

- ▶ Media Queries - "conditional CSS rule".
- ▶ It simply applies some CSS based on certain conditions set forth. Media Queries in Bootstrap allow you to move, show and hide content based on viewport size.

```
// Extra small devices (portrait phones, less than 576px)
// No media query for `xs` since this is the default in Bootstrap

// Small devices (landscape phones, 576px and up)
@media (min-width: 576px) { ... }

// Medium devices (tablets, 768px and up)
@media (min-width: 768px) { ... }

// Large devices (desktops, 992px and up)
@media (min-width: 992px) { ... }

// Extra large devices (large desktops, 1200px and up)
@media (min-width: 1200px) { ... }
```

Source: [getbootstrap.com](https://getbootstrap.com)

# Typography

- ▶ Bootstrap uses Helvetica Neue, Helvetica, Arial, and sans-serif in its default font stack. Using typography feature of Bootstrap you can create headings, paragraphs, lists and other inline elements.
- ▶ Headings:

Heading	Example
<code>&lt;h1&gt;&lt;/h1&gt;</code>	<b>h1. Bootstrap heading</b>
<code>&lt;h2&gt;&lt;/h2&gt;</code>	<b>h2. Bootstrap heading</b>
<code>&lt;h3&gt;&lt;/h3&gt;</code>	<b>h3. Bootstrap heading</b>
<code>&lt;h4&gt;&lt;/h4&gt;</code>	<b>h4. Bootstrap heading</b>
<code>&lt;h5&gt;&lt;/h5&gt;</code>	<b>h5. Bootstrap heading</b>
<code>&lt;h6&gt;&lt;/h6&gt;</code>	<b>h6. Bootstrap heading</b>

# Display headings

Display 1

Display 2

Display 3

Display 4

## Blockquotes

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

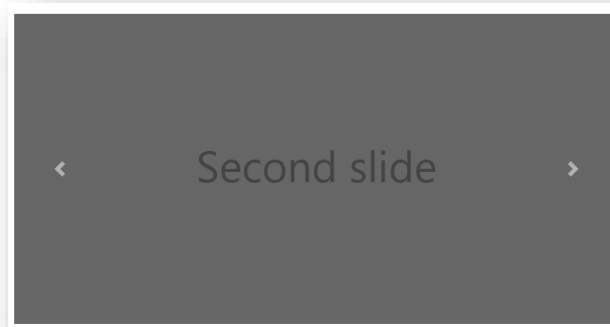
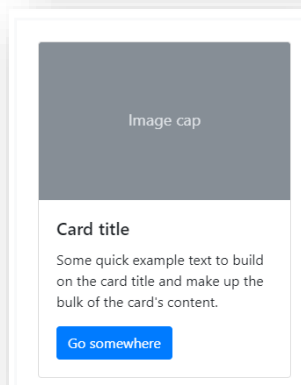
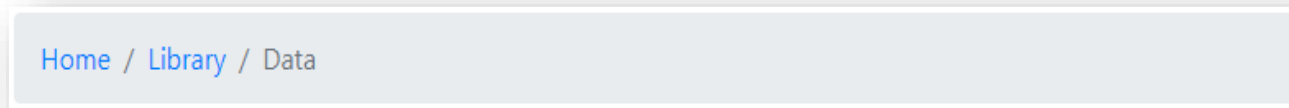
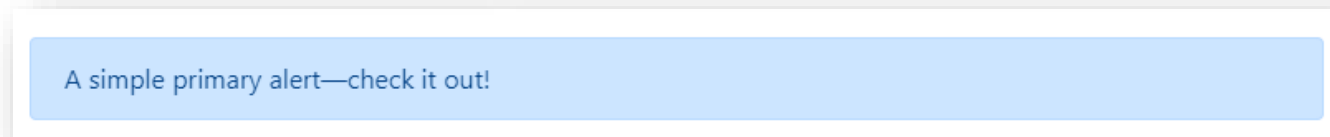
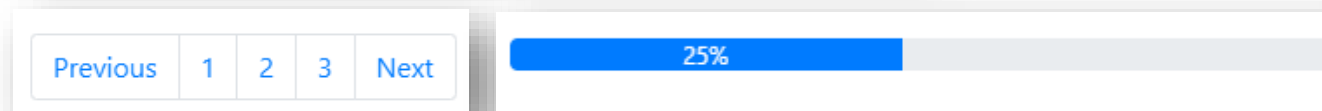
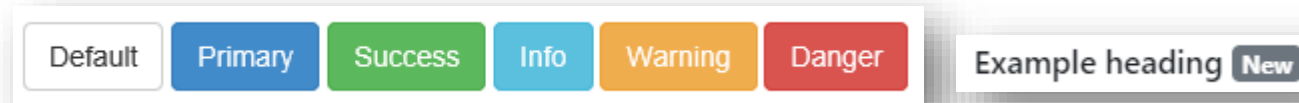
— Someone famous in *Source Title*

# Tables

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

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# Components



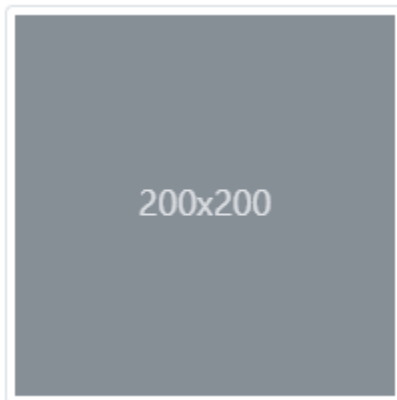
Source: [getbootstrap.com](https://getbootstrap.com)

# Images

- ▶ ``



Source: geniuslynx.com



Source: getbootstrap.com

``

# Grid System

Bootstrap's grid system uses a series of containers, rows, and columns to layout and align content. It's built with flexbox and is fully responsive.

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px
Max container width	None (auto)	540px	720px	960px	1140px
Class prefix	.col-	.col-sm-	.col-md-	.col-lg-	.col-xl-
# of columns	12				
Gutter width	30px (15px on each side of a column)				
Nestable	Yes				
Column ordering	Yes				

Source: [getbootstrap.com](https://getbootstrap.com)

# Grid System

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

.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					

Source: [getbootstrap.com](http://getbootstrap.com)



# Resources

- ▶ <https://getbootstrap.com>
- ▶ <https://startbootstrap.com>
- ▶ <https://bootsnipp.com>
- ▶ <https://www.bootstrapdash.com/>
- ▶ <https://themes.getbootstrap.com/>
- ▶ Bootstrap Studio
- ▶ Mobirise
- ▶ Pinegrow Web Editor
- ▶ Visual Studio Code
- ▶ <https://designshack.net/articles/css/20-awesome-resources-for-twitter-bootstrap-lovers/>

# Icons

- ▶ Bootstrap doesn't include an icon library by default.
- ▶ Recommended:
  - ▶ [Font Awesome](#)
  - ▶ [Iconic](#)
  - ▶ [Octicons](#)



# THANK YOU!

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