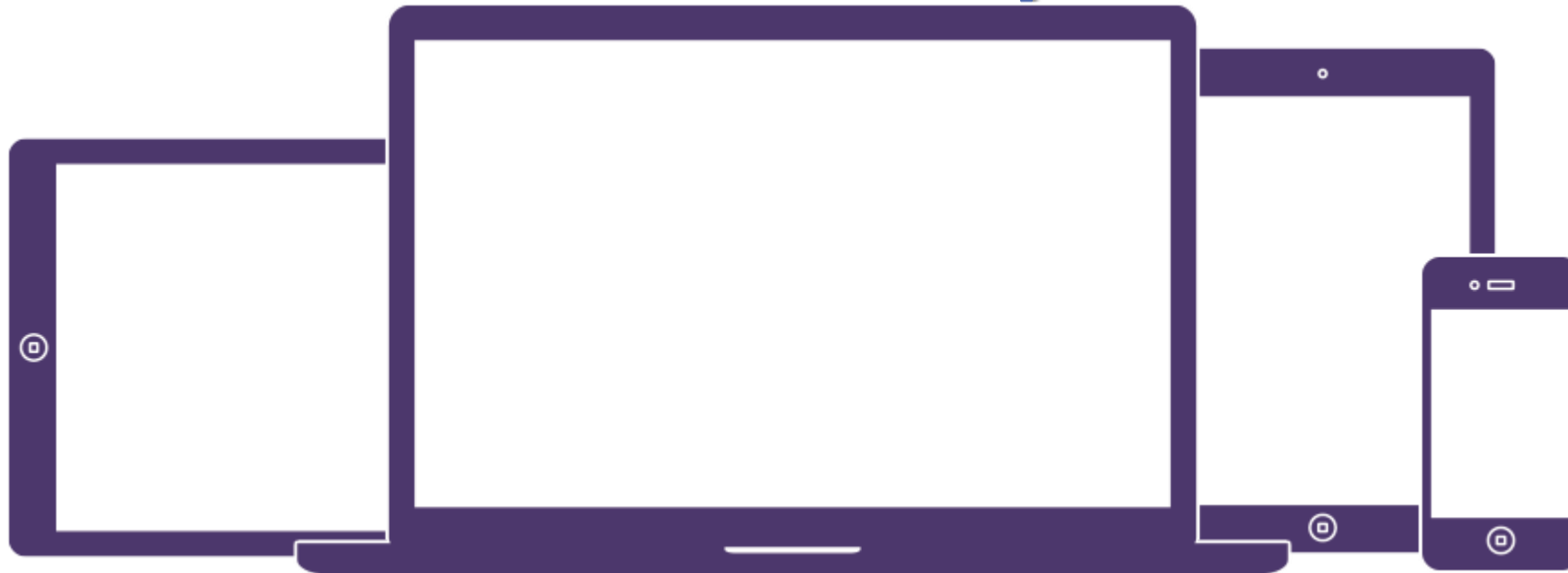# Bootstrap

One framework, every device

What is Bootstrap?

- Bootstrap is a CSS and JavaScript UI framework

- Is designed to help you non-designer types to balance your layouts and designs

- Bootstrap easily and efficiently scales your websites and applications with a single code base

- Written by two of Twitter's senior developers to make sure they got a consistent look and feel across all of the projects they were creating for Twitter
  - In August 2010 released as an open source project on GitHUb
  - Since February 2012, it has been the most starred GitHub development project

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Which version?

- V3 vs. V4

- Current version is v4.1.0

- But the ASP template in VS uses version 3.3.7

- And there are many braking changes from v. 3 to v. 4!

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How to get?

- Download the latest stable version from http://getbootstrap.com

- Use NuGet

- Use npm

- Use a CDN:

4.1.0

```
<!-- Latest compiled and minified CSS -->
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">

<!-- Optional theme -->
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap-
theme.min.css">

<!-- Latest compiled and minified JavaScript -->
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js">
</script>
```

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How to Use – V. 3.x

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Bootstrap 101 Template</title>

    <!-- Bootstrap -->
    <link href="css/bootstrap.min.css" rel="stylesheet">
    <link href="css/bootstrap-theme.min.css" rel="stylesheet">

    <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -->
    <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
    <!--[if lt IE 9]>
      <script src="https://oss.maxcdn.com/html5shiv/3.7.2/html5shiv.min.js"></script>
      <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
    <![endif]-->
  </head>
  <body>
    <h1>Hello, world!</h1>

    <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.1/jquery.min.js"></script>
    <!-- Include all compiled plugins (below), or include individual files as needed -->
    <script src="js/bootstrap.min.js"></script>
  </body>
</html>
```

How to Use – V. 4.x

- When you only need to include Bootstrap's compiled CSS or JS, you can use the Bootstrap CDN
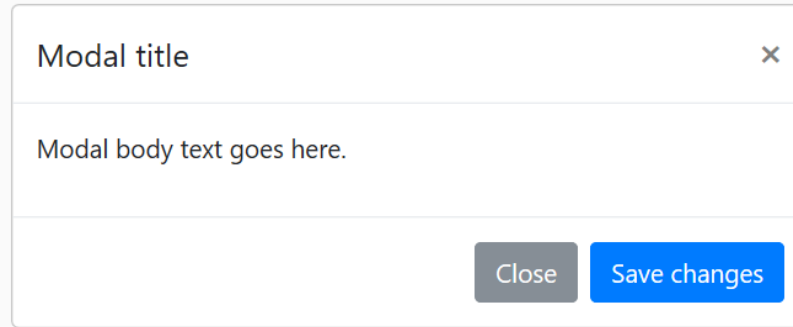
- **CSS only**

```
<link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.1.0/css/bootstrap.min.css"
integrity="sha384-9gVQ4dYFwwWSjIDZnLEWnxCjeSWFphJiwGPXr1jddIhOegiu1FwO5qRGvFXOdJZ4"
crossorigin="anonymous">
```

- **JS, Popper.js, and jQuery**

```
<script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-
q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"
crossorigin="anonymous"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.0/umd/popper.min.js"
integrity="sha384-cs/chFZiN24E4KMATLdqdvsezGxaGsi4hLGOzlXwp5UZB1LY//20VyM2taTB4QvJ"
crossorigin="anonymous"></script>
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.1.0/js/bootstrap.min.js"
integrity="sha384-uefMccjFJAIv6A+rW+L4AHf99KvxDjWSu1z9VI8SKNVmz4sk7buKt/6v9KI65qnm"
crossorigin="anonymous"></script>
```

Which components require jQuery, BS.JS, and Popper.js?

- Alerts for dismissing
- Buttons for toggling states and checkbox/radio functionality
- Carousel for all slide behaviors, controls, and indicators
- Collapse for toggling visibility of content
- Dropdowns for displaying and positioning (also requires Popper.js)
- Modals for displaying, positioning, and scroll behavior
- Navbar for extending our Collapse plugin to implement responsive behavior
- Tooltips and popovers for displaying and positioning (also requires Popper.js)
- Scrollspy for scroll behavior and navigation updates

Modal title	×
Modal body text goes here.	
	Close Save changes

```
<div class="modal" tabindex="-1" role="dialog">
 <div class="modal-dialog" role="document">
  <div class="modal-content">
   <div class="modal-header">
    <h5 class="modal-title">Modal title</h5>
    <button type="button" class="close"
                data-dismiss="modal" aria-label="Close">
     <span aria-hidden="true">&times;</span>
    </button>
   </div>
   <div class="modal-body">
    <p>Modal body text goes here.</p>
   </div>
   <div class="modal-footer">
    <button type="button" class="btn btn-primary">Save changes</butto
    <button type="button" class="btn btn-secondary" data-dismiss="mod
   </div>
```

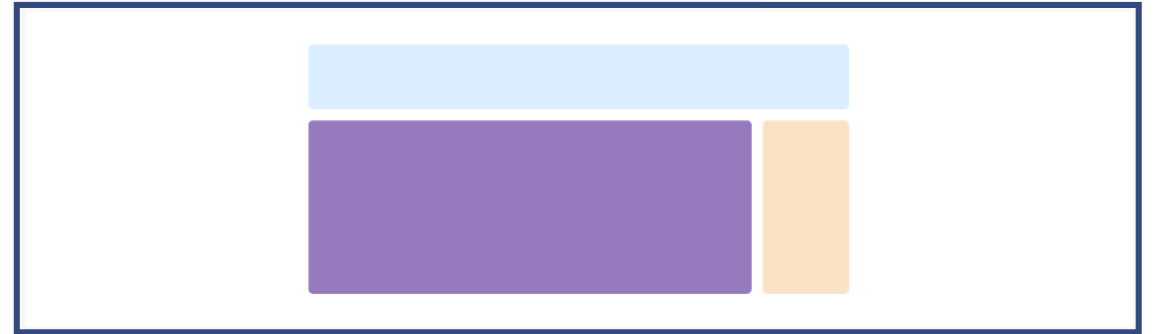# Bootstrap layout

wrapping containers

a powerful grid system

a flexible media object

responsive utility classes

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Containers

- Are required when using the grid system
- Two Choises:
  - class="container"
    - Fixed-width container
    - Its max-width changes at each breakpoint
  - **class="container-fluid"**
    - Fluid-width
    - 100% wide all the time

```
<div class="container">
  <!-- Content here -->
</div>
```

```
<div class="container-fluid">
  <!-- Content here -->
</div>
```

The grid

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Getting Started Bootstrap</title>
    <!-- Bootstrap core CSS -->
    <link href="bootstrap.min.css" rel="stylesheet">
  </head>
  <body>

    <div class="container">

        <div class="row">
            <div class="col-md-3">.col-md-3</div>
            <div class="col-md-6">.col-md-6</div>
            <div class="col-md-3">.col-md-3</div>
        </div>

    </div><!-- /.container -->

    <script src="jquery.min.js"></script>
    <script src="bootstrap.min.js"></script>
  </body>
</html>
```
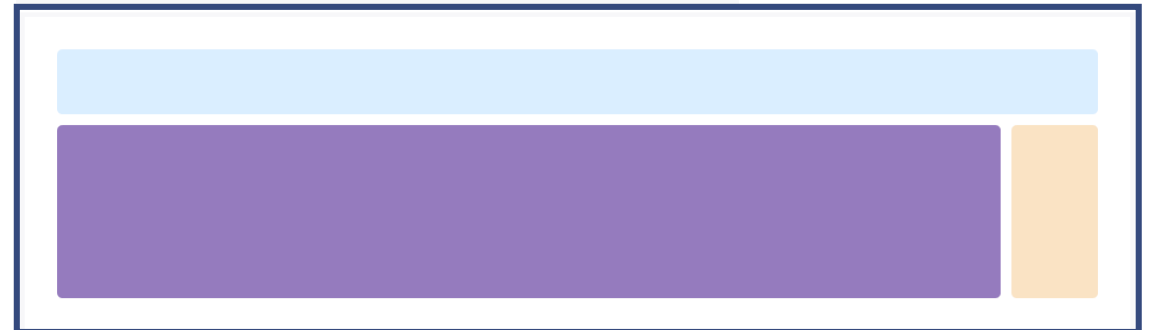
The grid creates page layouts with a series of rows and columns that house the content

Blocks of content are created by specifying the **number of columns** you wish to span

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1
span 4			span 4			span 4			
span 4			span 8								
span 6						span 6					
span 12											

.col-md-3	.col-md-6	.col-md-3

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The Grid System

- Get three equal-width columns **starting at desktops and scaling to large desktops**
  - On mobile devices, tablets and below, the columns will automatically stack

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

- Get three columns **starting at desktops and scaling to large desktops** of various widths

.col-md-3	.col-md-6	.col-md-3

- Two columns with two nested columns

.col-md-8		.col-md-4
.col-md-6	.col-md-6	

- **Grid columns should add up to twelve for a single horizontal block**

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Five (four) Tiers of Grids

The key breakpoints in the grid system

V4

	Extra small devices (portrait phones)	Small devices (landscape phones)	Medium devices (tablets)	Large devices (Desktops)	Extra large devices (large desktops)
Bootstrap name	xs	sm	md	lg	Xl
Class prefix	.col-	.col-sm-	.col-md-	.col-lg-	.col-xl-
Container min-width	None (auto)	576px	768px	992px	1200

V3

	Extra small devices (Phones)	Small devices (Tablets)	Medium devices (Desktops)	Large devices (Desktops)
Bootstrap name	xs	sm	md	lg
Class prefix	.col-xs-	.col-sm-	.col-md-	.col-lg-
Container min-width	None (auto)	750px	970px	1170px

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Use of Grids

- Mixed: mobile, tablet, and desktop

.col-xs-12 .col-md-8	.col-xs-6 .col-md-4

.col-xs-6 .col-md-4	.col-xs-6 .col-md-4	.col-xs-6 .col-md-4

.col-xs-6	.col-xs-6

Responsive utilities

	Extra small devicesPhones (<768px)	Small devicesTablets (≥768px)	Medium devicesDesktops (≥992px)	Large devicesDesktops (≥1200px)
.visible-xs-*	Visible	Hidden	Hidden	Hidden
.visible-sm-*	Hidden	Visible	Hidden	Hidden
.visible-md-*	Hidden	Hidden	Visible	Hidden
.visible-lg-*	Hidden	Hidden	Hidden	Visible
.hidden-xs	Hidden	Visible	Visible	Visible
.hidden-sm	Visible	Hidden	Visible	Visible
.hidden-md	Visible	Visible	Hidden	Visible
.hidden-lg	Visible	Visible	Visible	Hidden

Fonts

- To get modern, beautiful fonts with zero latency Bootstrap v4 uses system UI fonts

- This font-family is applied to the <body> and automatically inherited globally throughout Bootstrap

- The fallback is "Helvetica Neue", Arial, sans-serif !default;

The quick brown fox jumps over the lazy dog.
Fira Sans   Firefox OS

The quick brown fox jumps over the lazy dog.
Roboto   Android and Chrome OS

The quick brown fox jumps over the lazy dog.
San Francisco   iOS and Mac OS

The quick brown fox jumps over the lazy dog.
Segoe UI   Windows and Windows Phone

https://www.smashingmagazine.com/2015/11/using-system-ui-fonts-practical-guide/

Headings

	Version 3	Version 4
EXAMPLE		
h1. Bootstrap heading	Semibold 36px	Semibold 2.5rem (40px)
h2. Bootstrap heading	Semibold 30px	Semibold 2rem (32px)
h3. Bootstrap heading	Semibold 24px	Semibold 1.75rem (28px)
h4. Bootstrap heading	Semibold 18px	Semibold 1.5rem (24px)
h5. Bootstrap heading	Semibold 14px	Semibold 1.25rem (20px)
h6. Bootstrap heading	Semibold 12px	Semibold 1rem (16px)

Styles for headings 1 through 6

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Icons

- Bootstrap v3 included Glyphicons

- In Bootstrap v4 you must include icons your self e.g. Font Awesome

- Search icons here: https://glyphsearch.com/?library=glyphicons

Components

- Over a dozen reusable components with code examples to copy-paste …
https://getbootstrap.com/docs/4.0/examples/

  – Navs
  – Navbar
  – Breadcrumbs
  – Modal
  – Collapse
  – Tooltip
  – …

Customizing Bootstrap

- For V.3:
  To customize Bootstrap's components, Less variables, and jQuery plugins to get your very own version
  https://getbootstrap.com/docs/3.3/customize/

- Or
  Compile Bootstrap with your own asset pipeline by downloading Bootstraps source Sass, JavaScript, and documentation files
  - This option requires some additional tooling:
    - Sass compiler (Libsass or Ruby Sass is supported) for compiling your CSS
    - Autoprefixer for CSS vendor prefixing

- Download the sass sources
  https://getbootstrap.com/docs/4.0/getting-started/download/

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References & Links

- http://getbootstrap.com/
- Building Beautiful, Responsive Sites with Bootstrap
  https://docs.microsoft.com/en-us/aspnet/core/client-side/bootstrap
- W3schools
  http://www.w3schools.com/bootstrap/default.asp

- Alternatives to Bootstrap
  - Foundation
    http://foundation.zurb.com/
  - Semantic UI
    http://semantic-ui.com/usage/layout.html
  - **Flexbox**
    https://scotch.io/tutorials/a-visual-guide-to-css3-flexbox-properties
    https://css-tricks.com/snippets/css/a-guide-to-flexbox/
  - Material Design Lite
    https://getmdl.io/index.html
  - Tachyons
    http://tachyons.io/

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