

Web Frameworks

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Overview

- Web frameworks are software frameworks for web development, which simplify common tasks
- **jQuery** is a Javascript library for Javascript programming
- **Bootstrap** is a HTML/CSS/Javascript framework for developing responsive, mobile first applications
 - Developed by Twitter and released to the public in 2011
- **AngularJS** is a Javascript framework that extends HTML and supports “data binding” in web pages.
 - Developed by Google

jQuery

- Can be included by loading the Javascript library in the header of a page
- The basic jQuery structure involves applying an action to all elements as follows:
 - `$(selector).action()`
 - `$` - specifies we are using jQuery (you can also use *jQuery*)
 - `selector` – a CSS style selector to apply the an action to
 - `action()` – a function to apply to each selector
- Examples
 - `$("p").hide()` - hides all `<p>` elements.
 - `$(".test").hide()` - hides all elements with `class="test"`.
 - `$("#test").hide()` - hides the element with `id="test"`.
- Tutorial: <https://www.w3schools.com/jquery/default.asp>

Bootstrap

- Can be included by loading the Javascript and CSS libraries in the header of a page
- Basic design concepts
 - Responsive to changes in screen size (e.g., desktop vs. mobile)
 - Grid system of 12 columns
 - Collapsible navbars and other elements
- Used by specifying existing *classes*, e.g.
 - col-sm-4 – element is 4 columns wide
 - btn and btn-primary for buttons
- Tutorial: <https://www.w3schools.com/bootstrap4/default.asp>

Selected Bootstrap examples

- Grid: https://www.w3schools.com/bootstrap4/bootstrap_grid_basic.asp
- Buttons: https://www.w3schools.com/bootstrap4/bootstrap_buttons.asp
- Navbar: https://www.w3schools.com/bootstrap/bootstrap_navbar.asp

AngularJS

- Can be included by loading the Javascript library in the header of a page
- Angular utilizes DOM attributes (known as *directives*) to embed dynamic behavior in the HTML part of a page
 - **ng-app** defines an angular application
 - **ng-model** binds an HTML element value to application data
 - **ng-bind** and **expressions** (written as {{variable}}) bind application data to the HTML
 - **ng-init** initializes an angular variable
 - and others...
- Tutorial: <https://www.w3schools.com/angular/default.asp>
- Let's look at some examples...