CS3220 Web and Internet Programming
Introduction to Bootstrap

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About Bootstrap

https://getbootstrap.com/

Originally developer by Twitter

Most popular web UI library in the world

“Responsive, mobile-first”
Adding Bootstrap 4 to HTML

- Require HTML 5, CSS, and JavaScript (some components)

Starter Template at [https://getbootstrap.com/docs/4.0/getting-started/introduction/](https://getbootstrap.com/docs/4.0/getting-started/introduction/)
Overview

- **Layout**
- **Components**: various pre-built UI components like buttons
- **Content**: structures that contain content like tables
- **Utilities**: convenient and/or responsive ways to control various element properties like border, spacing, and visibility
- **Icons**: use external icon sets
Container

- Fixed-width
- Responsive, i.e. max-width changes based on screen size
- Full-width
Grid

- Bootstrap layout is based on a grid system with rows (.row) and columns (.col, .col-n, and .col-device-n)
- Each row has 12 columns
- Example: grid.html
  - Auto-width column
  - Total # of columns: 12, <12, >12
Make It Responsive ...

5 device categories (grid breakpoints) based on screen width

- Extra small
- Small (sm)
- Medium (md)
- Large (lg)
- Extra (large)

Phone (portrait) → Phone (landscape) → Tablet → Desktop
... Make It Response

```
col-12: 12-column wide when the device is extra small or above
col-12 col-md-4: 4-column wide when the device is medium or above; 12-column wide otherwise
col-12 col-md-4 col-lg-3: ??
```
My Globe Example

- Header and menu
- 3-column layout
- Responsive behavior
Component: Navbar ...

<nav>
  .navbar
  .navbar-expand-<device>
  Color Scheme
  Brand
    Link, image, and/or text
    .navbar-brand
... Component: Navbar

◆ Menu
  ■ `<ul>` with `.navbar-nav`
  ■ `<li>` with `.nav-item`
  ■ `<a>` with `.nav-link`

◆ Menu button and collapse behavior
  ■ `<button>` with `.navbar-toggler` and an icon
  ■ A collapsible element with `.collapse` and `.navbar-collapse`
About Bootstrap Utilities

Q: Why not just use plain CSS?
A: *Convenience, Responsiveness, and Theme*
Utilities: Border and Color

Border:
https://getbootstrap.com/docs/4.0/utilities/borders/

Color:
https://getbootstrap.com/docs/4.0/utilities/colors/

- Color theme
Utilities: Margin and Padding

{property}{sides}-{size}

or

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

See
https://getbootstrap.com/docs/4.0/utilities/spacing/
Utility: Display

https://getbootstrap.com/docs/4.0/utilities/display/

.d-<value>, .d-<device>--<value>

Value could be none, inline, block, and so on
Show/Hide Elements Responsively

- **d-\text{none}**: hide on extra small or above (i.e. always hide)
- **d-\text{none} d-\text{md-block}**: display as a block element on medium or above; hide otherwise
- **d-\text{none} d-\text{md-block} d-\text{lg-none}**: ?? (means display only on medium)
Using Icons

https://tagliala.github.io/vectoriconsroundup/

I’d recommend Font Awesome and MDI (for websites using Material Design)
Using Font Awesome Icons

- [https://fontawesome.com/get-started](https://fontawesome.com/get-started)

Include Font Awesome JavaScript code in HTML

```html
<i class="<style prefix> <icon name> [additional styling]"/>
```

See [https://fontawesome.com/how-to-use/svg-with-js](https://fontawesome.com/how-to-use/svg-with-js) for more details