Full Stack Application Development- SE ZG503

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Lecture No: 16 Accessibility

UX based on Technologies used

- Consider the technologies that people use to experience our websites
  - devices,
  - browsers,
  - operating systems, and
  - assistive technologies

- How to design for them
- **Responsive design** is about creating fluid designs through HTML and CSS that adapt seamlessly to screen size, resolution, and aspect ratio, so that the layout remains optimally usable and attractive
- **Accessible design** is about creating designs that are usable and enjoyable by people with disabilities, including physical, sensory, cognitive, and neurological problems
- **Universal design** is about creating designs that are usable and enjoyable by everyone, regardless of age, status, culture, ethnicity, or ability

Accessibility

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  - devices,
  - browsers,
  - operating systems, and
  - assistive technologies

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Designing for accessibility

- The most important way to design for assistive technologies is to design with different users in mind, following usability guidelines

- Designing for keyboard input
- Designing for Screen Readers
- Careful color and color contrast choices

- Web accessibility is about removing barriers that prevent people with disabilities from accessing websites.

Principles of accessibility

- The **Web Content Accessibility Guidelines** *(***WCAG 2.0***)* by W3C defines

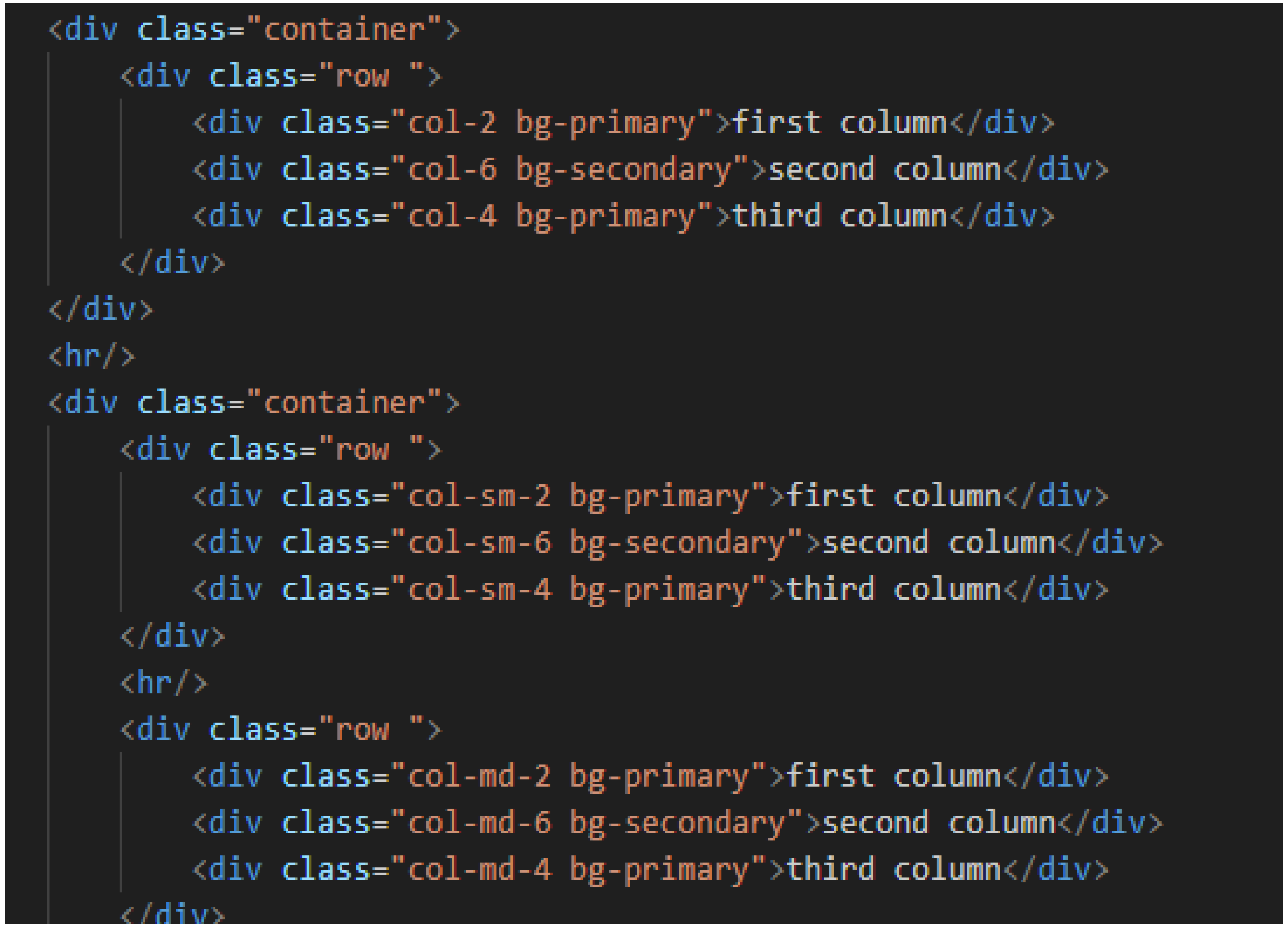
- Four principles of accessibility.

- **Perceivable**: Information and other interface elements must be visible to everyone.
- **Operable**: Everyone must be able to navigate around any website.
- **Understandable**: The information on websites must be easily understandable.
- **Robust**: The content and its interpretation must be reliable, and compatible with different devices, browsers, and assistive technologies.

Guidelines

- Using semantic HTML elements.
- Use Text Alternatives for non text content like images
  - <img src=“” alt=“Logo” />
- Ensure that form elements are accessible.
- Arrange the HTML document with a logical and hierarchical structure.
- Use appropriate heading elements
- Ensure that all interactive elements are accessible via the keyboard.
- Maintain sufficient contrast between text and background colors to enhance readability.

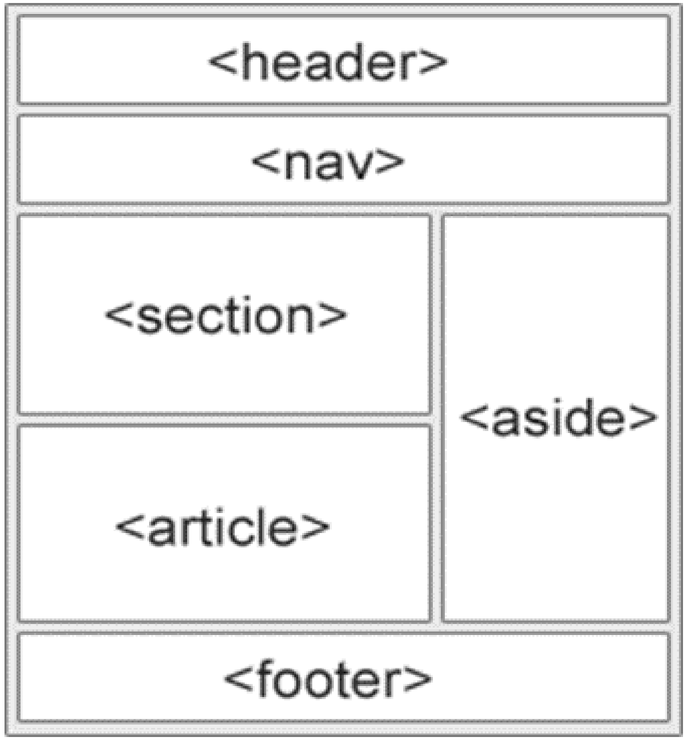
An army of <div> elements



```
<div class="container">
    <div class="row ">
        <div class="col-2 bg-primary">first column</div>
        <div class="col-6 bg-secondary">second column</div>
        <div class="col-4 bg-primary">third column</div>
    </div>
</div>
<hr/>
<div class="container">
    <div class="row ">
        <div class="col-sm-2 bg-primary">first column</div>
        <div class="col-sm-6 bg-secondary">second column</div>
        <div class="col-sm-4 bg-primary">third column</div>
    </div>
    <hr/>
    <div class="row ">
        <div class="col-md-2 bg-primary">first column</div>
        <div class="col-md-6 bg-secondary">second column</div>
        <div class="col-md-4 bg-primary">third column</div>
    </div>
```

Semantic Elements

- header: <header>.
- navigation bar: <nav>.
- main content: <main>,
- Main content can be organized into subsections by
  - <article>, and
  - <section>
- sidebar: <aside>; often placed inside <main>.
- footer: <footer>.



ARIA

- The Web Accessibility Initiative's Accessible Rich Internet Applications specification (WAI-ARIA)
- ARIA provides additional information to assistive technologies about the roles, properties and states of elements.

Example

```
<button aria-expanded="false" onclick="toggleCollapsible()">
  Toggle Section
</button>
<div class="content" aria-hidden="true">
    <p>This is the content of the collapsible section.</p>
</div>
```

Testing for accessibility

- **Keyboard only**: Check if you can access all parts of your website while only using the keyboard
- **Screen reader**: Download a screen reader or use the built in one for your OS and view your website through it.
- **Magnification**: Enlarge your font to 200%.
- **Checklists**: There are many accessibility checklists available to check your designs and HTML against, based on the WCAG guidelines.
  - WebAIM (http://webaim.org/standards/wcag/checklist/)
- **WAVE**: WebAIM also provides the WAVE extension for Chrome and Firefox, which checks accessibility automatically

Here are some of the ways of testing the accessibility of your website

Self Reading

- https://testsigma.com/tools/accessibility-testing-tools/

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Thank You!