Accessibility of Front-end Technologies

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What Is Accessibility?

> The UW community (including the public) has people with many disabilities
  - Mobility impairments, sensory impairments, learning disabilities, attention deficits, autism spectrum disorders, speech impairments, health impairments, and psychiatric conditions

> Accessibility is about information technology (IT) that gives people with disabilities the opportunity to **use the same services as a person without a disability in an equally effective and integrated manner**
Why Care About Accessibility?
Building an Inclusive University

> **Diversity**: The UW values diverse experiences and perspectives

> **Responsibility**: People who engage with the UW expect (and have often paid for) effective and integrated services

> **Commitment**: The UW is committed to providing access “in its services, programs, activities, education, and employment for people with disabilities”

> **Law**: It is the law. The UW is covered by the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and other federal and state laws

> **Risk**: We could get sued
Yes, We Could Get Sued

For a list, see
http://www.d.umn.edu/~lcarlson/atteam/lawsuits.html
What’s Happening

- **UW Accessibility Task Force**
  - Sponsored by Kelli Trosvig, UW CIO, and Randy Hodgins, VP of External Affairs
  - Includes representatives from Advancement, UW-IT, Human Resources, Student Services, Procurement, and Center for Teaching and Learning

- **Accessible Technology at the UW** - [http://uw.edu/accessibility](http://uw.edu/accessibility)
  - Information on making documents, websites, and videos
  - UW IT Accessibility Guidelines - [http://uw.edu/accessibility/guidelines](http://uw.edu/accessibility/guidelines)
  - IT Accessibility Checklist - [http://uw.edu/accessibility/checklist](http://uw.edu/accessibility/checklist)
Consider the Assistive Technology User

JAWS
NVDA
VOICEOVER
DRAGON
MyApp
Consider the Assistive Technology Developer

MyApp

Give the assistive technology developer front-end code with structure, semantic elements, and meta information

INFORMATION TECHNOLOGY
UNIVERSITY of WASHINGTON
Presentation Layer
Accessible Code Basics

- Standards based
- Structured
- Semantic element types
- Hierarchical headings
- Alternative text for visual elements
- Labelling form fields and tables
- ARIA landmarks and roles
Interface Basic Concepts

> **Perceivable** - Content and controls perceivable by all users
> **Operable** - Content and controls operable by all users
> **Understandable** - Content and user interfaces understandable by all users
> **Robust** - Interpretable by a wide variety of user agents, including assistive technologies

Specific methods described on the IT Accessibility Checklist - [http://uw.edu/accessibility/checklist](http://uw.edu/accessibility/checklist)
Testing Your Front-end Interface

> Consult with the **Access Technology Center** staff
  - atcenter@uw.edu
> Use the Checklist to review your design decisions
  - http://uw.edu/accessibility/checklist
> Turn off your mouse, then navigate with arrows and tabs
> Use a screen reader such as JAWS, NVDA, or Voiceover
> Use Web Developer’s Toolbar to assess your use of headings, ARIA, content sequencing
> Try using your product with Dragon Naturally Speaking
Of Libraries, Frameworks, and Themes

> Packages promise accessibility
> Whether the final product is accessible depends on how you put the pieces together and how you use them
> Easy to break accessibility features
> Be clear about your accessibility goals, then test regularly as work progresses
Of Hamburgers and Glyphs

Bootstrap components that have problems

```html
<div class="burger">
  <div class="bar1"></div>
  <div class="bar2"></div>
  <div class="bar3"></div>
</div>

<button type="button" class="btn btn-default"
  aria-label="Left Align">
  <span class="glyphicon glyphicon-align-left"
    aria-hidden="true"></span>
</button>
```
Going Beyond Compliance

1. **Function and Form** - Focus on accessibility guidelines to achieve technical compliance

2. **Problem Solving** - Research and design solution to support accessible task completion

3. **Framing** - Accessibility and diversity are integrated into the design process, driving creative thought and innovation

From “An Accessible Design Maturity Continuum” by David Sloan - http://www.paciellogroup.com/blog/2014/06/accessibility-maturity-continuum
Optimize for the Whole Experience

> The goal is not lots of features and functions
> Use UX to understand the whole user experience
> Optimize your products end-to-end process for reaching the user’s goal
> Focus on fewer features and functions and do them better, creating a clean integrated product that lets the user easily and efficiently reach their goal

From “Scenario-Focused Engineering” by Austina De Bonte and Drew Fletcher
Resources

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  - IT Accessibility Checklist - [http://uw.edu/accessibility/checklist](http://uw.edu/accessibility/checklist)

> **Access Technology Center**
  - [http://uw.edu/itconnect/learn/accessible/atac/](http://uw.edu/itconnect/learn/accessible/atac/)
  - atcenter@uw.edu
  - 206-685-4144

> **AccessibleWeb@U Community of Practice**
  - accessibleweb@uw.edu Mailman list