



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>

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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>

- Information on making documents, websites, and videos
- UW IT Accessibility Guidelines - <http://uw.edu/accessibility/guidelines>
- IT Accessibility Checklist - <http://uw.edu/accessibility/checklist>

Consider the Assistive Technology User



JAWS

NVDA

VOICEOVER

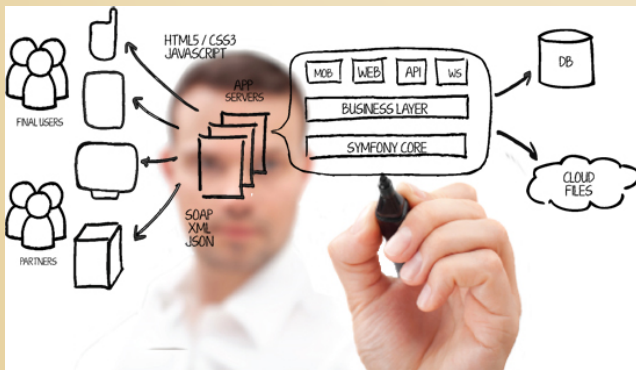
DRAGON

MyApp

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Consider the Assistive Technology Developer



MyApp

JAWS

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

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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>

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 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

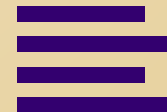
Of Hamburgers and Glyphs

Bootstrap components that have problems

```
<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>
- > **Access Technology Center**
 - <http://uw.edu/itconnect/learn/accessible/atc/>
 - atcenter@uw.edu
 - 206-685-4144
- > **AccessibleWeb@U Community of Practice**
 - accessibleweb@uw.edu Mailman list
 - <https://mailman13.u.washington.edu/mailman/listinfo/accessibleweb>