Accessibility Beginning-To-End: Accessibility in Web Design Workflows
What We Will Cover Today

We will:

• Discuss basic web accessibility

• Explore accessibility considerations for project roles

• Consider how project roles must work together for accessibility

We will not:

• Discuss advanced accessibility topics

• Give you a formula to use

• Tell you how to do your job
Accessible – A Definition

“Accessible” means that individuals with disabilities are able to

• independently acquire the same information,
• engage in the same interactions, and
• enjoy the same services within the same timeframe

as individuals without disabilities, with substantially equivalent ease of use.

Department of Justice
Disability – A Definition

A disability is — with respect to an individual:

1) a physical or mental impairment that substantially limits one or more major life activities; OR

2) a record of such an impairment; OR

3) being regarded as having such an impairment

(Americans with Disabilities Act, Section 3)
Impact of Disabilities

- Difficult to perceive presented information
- Difficult to interact with a user interface
- Difficult to determine the purpose of a web page or user interface
- Difficult to remember details
- Increase the time needed to complete a task

Disabilities often require an alternative mode of interaction
Common Disabilities

**Visual**
- Blindness / Low-Vision
- Color-Blindness

**Auditory**
- Deaf / Hard-of-Hearing

**Kinesthetic**
- Low-Mobility
- Low-Coordination

**Cognitive**
- Impaired Information Processing
- Impaired Memory
Users who are blind:

- Perceive one element at a time
- Navigate using the keyboard (tab and arrow keys)
- Use enter key or space bar to select/activate an item

Require:

- Extra semantic information (e.g., markup that describes structure and purpose)
- Keyboard operability
- Extra time to complete tasks
How Disabilities Affect Interaction: Users Who Are Low-Vision / Colorblind

Users who are low-vision / colorblind:

• May need to magnify the screen
• May not perceive color information

Require:

• Higher color contrast ratios
• Clear visual information structure
Users who are deaf / hard-of-hearing:

• May not perceive audible cues
• May have difficulty reading with animation present
• English is a second language for some; ASL is not English

Require:

• Captions or transcripts
• A way to stop animations
How Disabilities Affect Interaction: Users With Motor Impairments

Users with motor impairments:

• May not be able to use a mouse

• Navigate using tab key

• Use enter key or space bar to select/activate an item

Require:

• A clear visual focus indicator

• Keyboard operability

• Logical tab order
How Disabilities Affect Interaction: Users With Cognitive Impairments

Users with cognitive impairments:

• May have difficulty remembering steps
• May have trouble focusing on tasks
• May have trouble with complex information

Require:

• Clear visual information structure
• Clear visual focus indicator
• Clear process indicators
• Extra time to complete tasks
• Avoidance of jargon and overly complex language
Implications

• Accessibility support is not an enhancement
  • Enhancements enrich the user experience
  • Accessibility allows “equivalent ease of use”

• Accessibility support is multi-faceted
  • Must consider multiple modalities of interaction
  • User needs sometimes compete

• Address accessibility throughout the project life-cycle
  • Not always possible to add accessibility at the end
  • Ensure accessibility requirements are understood by all project team members
An Example
A Framework for Accessibility

• Accessibility support should not be random!

• Use accessibility laws and standards to guide your approach
  - Section 508 of the Rehabilitation Act of 1973
  - W3C Web Content Accessibility Guidelines (WCAG) 2.0

• Automated tools can help you
  - Ainspector Sidebar for Firefox
  - Functional Accessibility Evaluator (FAE)
WCAG 2.0 Principles

• Organized into 4 general principles:
  1. Perceivable
  2. Operable
  3. Understandable
  4. Robust

• These are referred to as the **POUR Principles**.

• Success Criteria Level AA is mandated by Section 508 (beginning January 2018)
Principle 1: Perceivable

Information and user interface components must be presentable to users in ways they can perceive.

This means:

• Using multiple ways to convey information

• Alerting users to dynamic changes in accessible ways
Principle 2: Operable

User interface components and navigation must be operable.

This means:

• Making all functionality available via the keyboard
• Providing users enough time to complete actions
• Helping users navigate
Principle 3: Understandable

Information and the operation of user interface must be understandable.

This means:

- Ensuring that content is understandable without visual cues like proximity or color
- Making pages appear and act in predictable ways
- Helping users avoid and correct mistakes
Principle 4: Robust

Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

This means:

- Conforming with recognized standards
- Using appropriate semantic markup for interactive widgets
- Testing all supported platforms
Agenda for Today

1. Small-group discussion based on project role (35 min.)
   - Designer
   - Developer
   - Content Creator
   - Project Manager

2. Break (10 min.)

3. Cross-role project: Build a website! (45 min.)
   1. Change to a new group based on your number

4. Group Presentations / Closing Remarks (30 min.)