Accessibility Workshop

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Course Overview

- What is Accessibility?

- Why Accessibility?

- Accessibility in Word and PowerPoint

- Accessibility in PDFs

- Accessible Web Experiences

- Incorporating Accessibility into Your UX Process

Hello World

- Your name?

- Your day to day work?

- Your experience with web development?
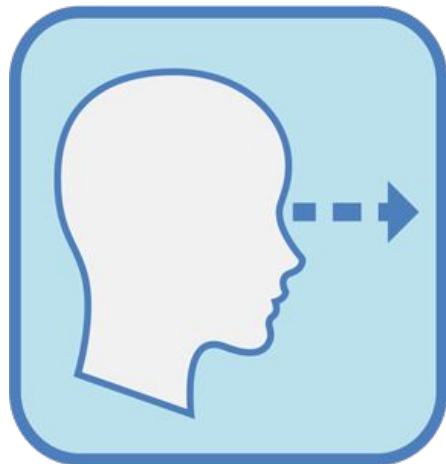
- What you most want to learn?

THE MOST HELPFUL WEBSITE EVER

Source: Cordelia Dillon, Twitter

What is Accessibility?

- The web should work for all people

- With accessibility, we remove barriers

- Take into account disabilities

Accessibility Categories

Seeing

Hearing

Interacting

Learning

- Visual Impairments
- Colorblindness

- Hearing Impairments

- Traumatic injury
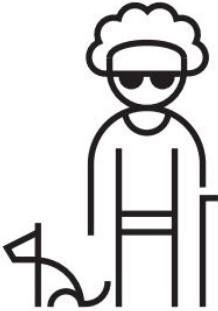- Diseases
- Tremors

- Memory Loss
- Comprehension
- Attention

	Permanent	Temporary	Situational
Touch	One arm	Arm injury	New parent
See	Blind	Cataract	Distracted driver

https://www.microsoft.com/en-us/design/inclusive

Hear

Deaf   Ear infection   Bartender

Speak

Non-verbal   Laryngitis   Heavy accent

https://www.microsoft.com/en-us/design/inclusive

What are some examples of accessibility features?

Standardization

Section 508

"Agencies must give disabled employees and members of the public access to information that is comparable to access available to others." - **1998**

WCAG 2.0

Perceivable

Operable

Understandable

Robust

Perceivable

- Text alternatives
- Captions for multimedia
- Content that can be presented in different ways
- Easy for users to see and hear content

Operable

- Make all functionality available from keyboard
- Enough time to read
- Don't cause seizures
- Navigate and find content

Understandable

- Readable and understandable
- Make content appear and operate predictably
- Help users avoid and correct mistakes

Robust

- Maximize compatibility with current and future user tools

Why Accessibility

- Mobile Web Design
- Usability
- SEO
- It's the right thing to do

UX

User Interface Design

Accessibility

Usability

NO PARKING
11 A.M. TO 1 P.M.
TUESDAY
STREET CLEANING

TOW AWAY
SCHOOL DAYS
NO STOPPING
MON THRU FRI
7:30 AM THRU 4 PM

SCHOOL DAYS EXCEPTIONS
15 MINUTES
MON THRU FRI
7:30 AM TO 8 AM
SCHOOL BUSINESS
CCMC 7.03.300

TOW AWAY
SCHOOL DAYS
CCMC 7.03.010
1 HOUR PARKING
MON THRU FRI
4 PM 6 PM
ONCE PER DAY, PER DISTRICT
CCMC 7.03.305

DIST. PERMITS EXEMPT 4
CCMC 7.03.300

TOW AWAY
CCMC 7.03.010
1 HOUR PARKING
NON-SCHOOL DAYS
SUN 12 MID-NITE THRU FRI 6 PM
ONCE PER DAY, PER DISTRICT
CCMC 7.03.305

NO STOPPING
FRI THRU SUN
6 PM 12 MID-NITE
CCMC 7.03.300
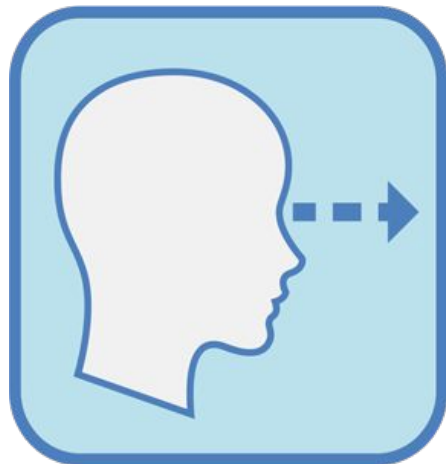DIST. PERMITS EXEMPT 4

Who should be involved?

Activity

Write down one of your favorite websites to use on the card.

Write down 3 reasons why you like it.

Interacting with Computers with Disabilities

Accessibility Categories

Seeing

- Visual Impairments
- Colorblindness

Hearing

- Hearing Impairments

Interacting

- Traumatic injury
- Diseases
- Tremors

Learning

- Memory Loss
- Comprehension
- Attention

Interactions

- Screen readers/VoiceOver Utilities

- Assume that you can't use a mouse (or a trackpad)

- Buttons, Links, and Forms

User Activity

In your group of 4, assign the following roles:

1. Person 1

2. Person 2

3. Person 3

4. Recorder

User Activity

Person 1 - Complete the form

Person 2 - Complete the form with just the keyboard

Person 3 - Complete the form zoomed to 200%

Person 4 - Write down times

Expectations

- Screen Magnifier - always zoomed in

- How do we let someone know that there is something out of their view?

- Self Advancing Fields

Content

- Include what people want and need

- How do we know what people need?

NORMAL

PROTANOPIA

DEUTERANOPIA

TRITANOPIA

REQUIRED FIELDS ARE INDICATED IN RED

FIRST NAME

LAST NAME

TELEPHONE

* REQUIRED FIELD

FIRST NAME

LAST NAME

* TELEPHONE

BDG V-Neck Tee
$14.00 · 2 for $28

more BDG

★★★★☆
Reviews (109)

COLOR:

SIZE: XS S M L XL   LIGHT GREEN

Memory Issues

- Forms - Labels

MS Word Guidelines

- Add headings in Order (like an outline)

- Alt text for images

- Descriptive Links

- Contrast between colors

Create A Document

- Add a header

- Three Heading 2

- One Image

- Two Links

Exporting as an Accessible PDF

Video

- Captions

- Transcripts

Video Transcripts

#1. Identify the speaker

(Cat)

Meow is what I say all day.

Video Transcripts

#2. Identify sound effects

(Perry)

Thank you, Detroit!

[audience cheers]

Video Transcripts

#3. Describe music

[Men at Work singing "Land Down Under"]

Video Transcripts

#4. Describe lyrics if essential for understanding

♪ He just smiled and gave me a vegemite sandwich ♪♪

Video Transcripts

#5. Use ellipses for pauses

(Cat)

Meow… it's what I say all day.

Video Transcripts

#6. Italicize foreign words and phrases

(Cat)

Bonjour, human.

Video Transcripts

#7. Capitalize for emphasis

(Randy)

NO ONE messes with Randy!

Video Transcripts

1. Identify the speaker

2. Identify sound effects

3. Describe music

4. Describe lyrics if essential for understanding

5. Use ellipses for pauses

6. Italicize foreign words and phrases

7. Capitalize for emphasis

PowerPoint Best Practices

1. Slide Layouts

2. Alternative Text for Images

3. Display Text for Links

4. Use Accessibility Checker

HTML

Features of Accessible Pages

- HTML headings
- Accessible with keyboard
- Accessible images
- Accessible forms
- Accessible tables
- Effective use of color
- Meaningful link text

http://www.washington.edu/accessibility/web/

iPhone Guidelines: 44px wide

Microsoft Guidelines: 34px wide
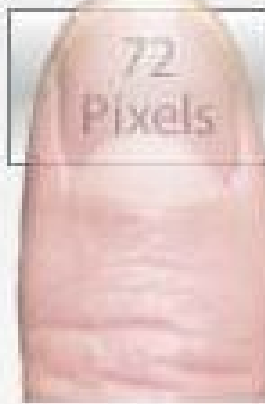
Nokia Guidelines: 28px wide

Index

Thumb

Fitts's Law
The time it takes to reach a target is longer if the target is smaller.

HTML5

The latest version of HTML
- W3C Candidate Recommendation, Dec. 2012

Uses consistent semantic tagging for easy readability by people, computers, and devices

Improves interactivity and support for a wide range of mobile devices

Includes just about everything from HTML4

Semantic HTML

Aims to better differentiate content from one another for indexing, searchability, collaboration, and accessibility.

New elements come from an analysis of over ONE BILLION web pages.

```
<div class="header">          <header>

<div id="footer">             <footer>
```

For more info on the study:
https://developers.google.com/webmasters/state-of-the-web/

Semantic HTML

<header> represents a group of introductory content

<nav> contains links to other pages or resources

<section> indicates a generic section of the document

<article> indicates a self-contained composition within a document (article, blog entry, forum post, etc.)

<aside> contains tangentially related content like sidebars, pull quotes, etc.

<footer> contains information about the section (citations, copyright, etc.)

Header	
Link Link Link Link	Aside
Article 1	
Article 2	
Article 3	
Footer	
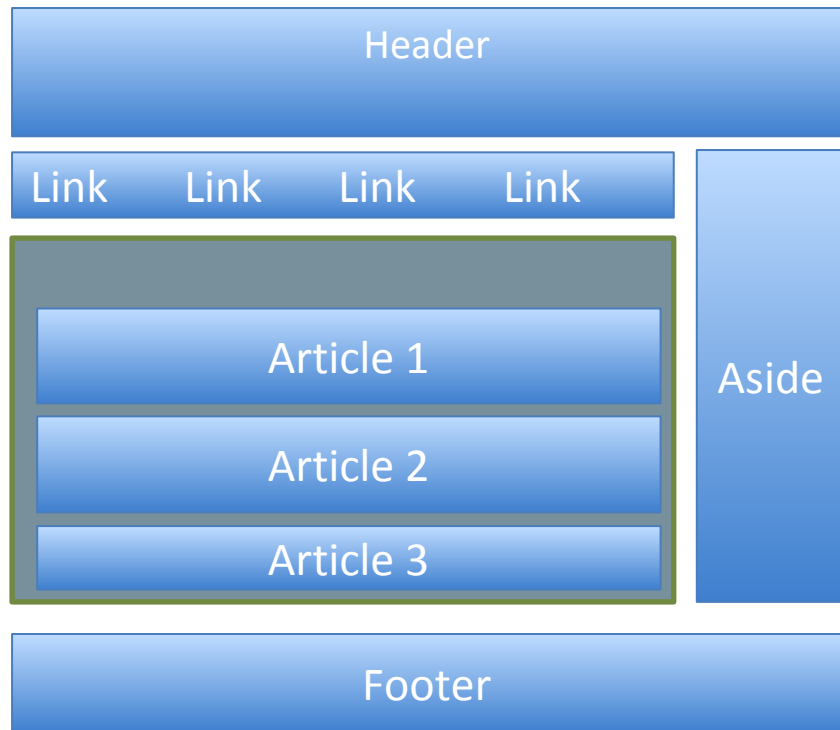
Semantic Tables

\<caption\> adds a caption to a table

\<thead\> groups table head elements

\<tbody\> groups table body elements

\<tfoot\> groups table footer elements

<caption>2017 Data</caption>

	\<thead\>	
	\<tbody\>	
\<tfoot\>		

Outlining HTML

A mechanism for producing outline summaries of web pages based on how they are marked up.

The HTML5 spec describes how outlining should be used to increase accessibility.

- Search engines.
- Screen readers.
- Other automated processes.

Outlining Best Practices

- Use <section> to define sections of the parent element.
  - <section>, <nav>, <aside>, and <article> create the outline.
- Every parent element and every section element should have a title (h1-h6) to avoid "untitled" sections.

```
<body>
<h1>Snowtooth Mountain</h1>
<section>
  <p>Snowtooth is the best mountain that doesn't exist.
</p>
</section>
<section>
  <p>We are better at these than other mountains.</p>
</section>
</body>
```

1. Snowtooth Mountain
   1. *Untitled Section*
   2. *Untitled Section*

Outlining Best Practices
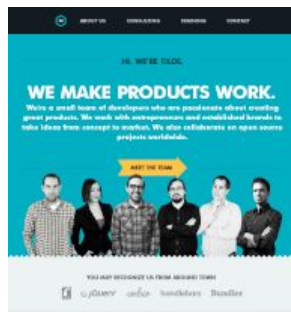
```
<body>
<h1>Snowtooth Mountain</h1>
<section>
  <h1>About the Mountain</h1>
  <p>Snowtooth is the best mountain that doesn't exist.
</p>
</section>
<section>
  <h1>Ski Lessons</h1>
  <p>We are better at these than other mountains.</p>
</section>
</body>
```

1. Snowtooth Mountain
   1. About the Mountain
   2. Ski Lessons

Responsive Design

The practice of creating flexible websites that deliver user-friendly experiences on any device.

Responsive Design

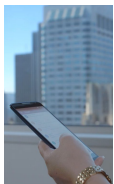Key Components of a Responsive Site
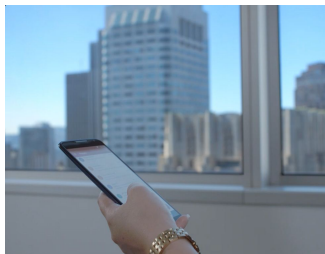
A Flexible Grid.
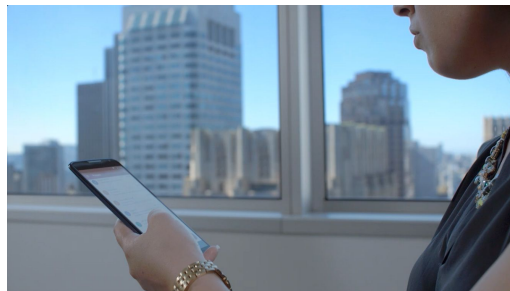
Responsive Design

Key Components of a Responsive Site
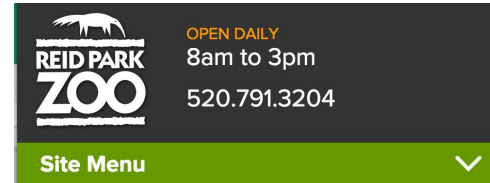
Flexible Content.

phone-sm.jpg
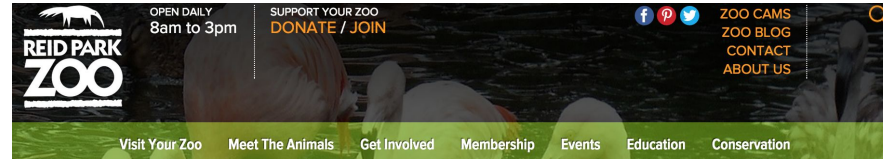

phone-md.jpg

phone-lg.jpg

Responsive Design

Key Components of a Responsive Site
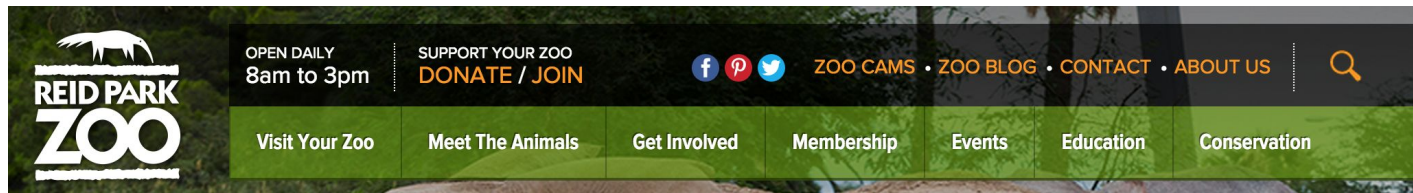
Media Queries.

`@media only screen(max-width: 600px)`
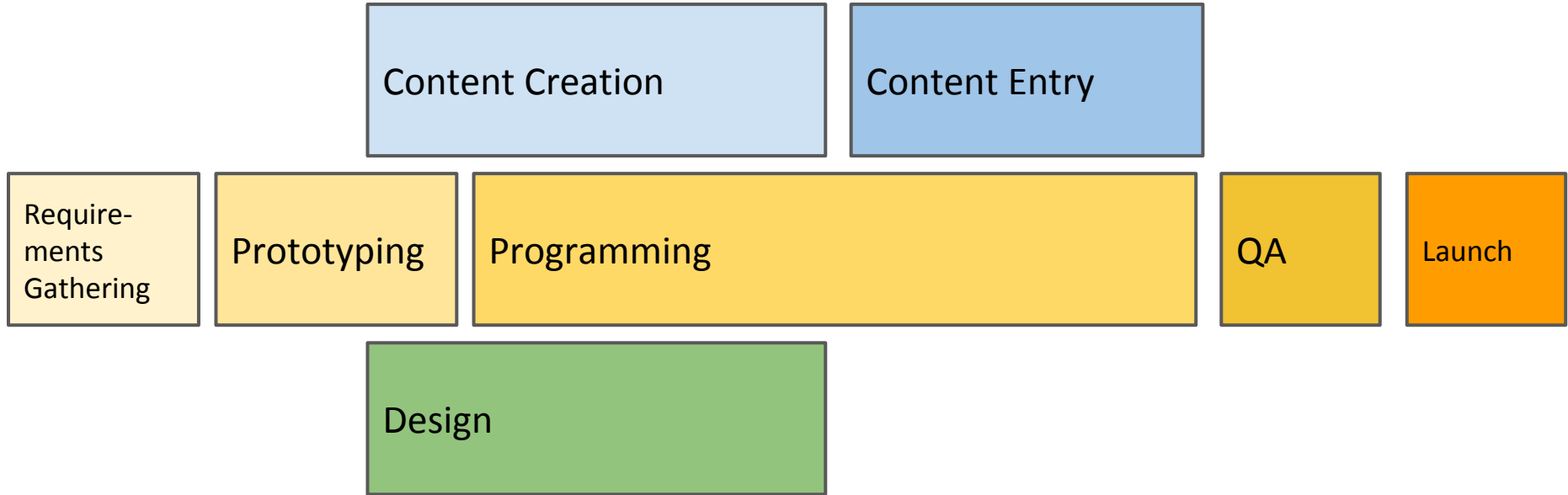
`@media only screen(min-width: 601px)`

`@media only screen(min-width: 800px)`

UX Process

UX Design Process

Requirements Gathering

Gather Analytics Data

Conduct User Research

Competitive Review

Requirements Gathering

- Assessment of the tasks
  - Understand all of the details
  - Analyze the audience
  - Write Use Cases
- Order Use cases by most frequent for a mobile user
- Do your best to make every use case successful in no more than 3 clicks (page depth no deeper than 3 pages)

Activity: Functional Requirements

- Think about the functional requirements for your app
  - What problem does it solve?
  - What will it do?
  - What type of app will you be creating?

Thinking about the User

- Who is your audience?

- Who is your population? Teens, men, women, parents, hipsters?

User Context

- Where is the user?
- Why is the user accessing your mobile site?
- What is the user looking for?
- What can you offer to help solve the user's problem?
- Where will the user be when accessing your site?

User Stories

- Not requirements, specifications or designs
- The work needed to create user stories should be substantial if you're thorough
- Craft user stories based on people's needs - everyone else can create solutions that address the needs in the user story

User Stories

As a Type Q customer, I need to be able to register for Program J in both desktop and mobile contexts, so that I remain certified.

Why is this good?

It includes:
- The customer is identified as a specific type.
- The category is also detailed.

It doesn't include:
- Detailed requirements
- Specs
- Design Details

User Stories

A persona should include:

- Social and demographic characteristics.

- Needs, desires, goals

- Habits (consumer habits, behavior)

- Expertise

- Accessibility info

How to Build Personas

- Interview anyone who has info.

- Look for patterns

- Create scenarios for users

- Analytics

- Think about motivations

Activity: Personas

Define 3 personas for your app.

Write 3 user stories for each persona.

Wireframing

Allows you to test what works before expensive coding

Correct Mistakes

Avoid wrong assumptions

Increases Team Communication

Activity: Wireframing

- Create a sketch wireframe for a few screens of the application

- Use sticky notes, paper, etc.

- Keep accessibility features in mind

Usability Testing

- Define Goals

- Choose the Test

- Create User Tasks

- Write a Research Plan

- Conduct the Test

- Draft Up a Quick Report

Usability Testing

Write a couple of usability tests for the app

Accessibility Testing

- Keyboard

- Outline

- aXe Developer Tools

- Test with People

Resource Name	Resource Link
Section 508	www.section508.gov
WCAG	https://www.w3.org/WAI/intro/wcag
UW Accessibility	http://www.washington.edu/accessibility/web/
W3 Accessible Videos	https://www.w3.org/2008/06/video-notes
Google Web Accessibility	https://developers.google.com/web/fundamentals/accessibility/
Microsoft Inclusive Design	https://www.microsoft.com/en-us/design/inclusive
PDF Accessibility	http://webaim.org/techniques/acrobat/converting
A11Y Project	http://a11yproject.com/resources.html

Tool Name	Tool Link
aXe Browser Extension (Chrome Web Extension)	https://chrome.google.com/webstore/detail/axe/lhdoppojpmngadmnindnejefpokejbdd?hl=en-US
Color Contrast Checker	http://leaverou.github.io/contrast-ratio/
Accessibility Testing API	https://tenon.io/
ChromeVox	http://www.chromevox.com/
Wave Accessibility Extension for Firefox	https://addons.mozilla.org/en-US/firefox/addon/wave-accessibility-tool/

Checklist Name	Checklist Link
508 Accessibility Checklist	http://webaim.org/standards/508/508checklist.pdf
Vox Accessibility Checklist	http://accessibility.voxmedia.com/
WCAG Checklist	http://webaim.org/standards/wcag/checklist
HHS Checklists	https://www.hhs.gov/web/section-508/making-files-accessible/checklist/