

Web Design & User Experience Engineering – Lecture-1

Website Architecture, Design Strategy and Planning and Creating web pages
– Semantic HTML4/5

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Get to know each other – Vidhi Kesaria

- ▶ Education: Bachelors in Computer Science, Masters in Information Systems from NEU, Boston
- ▶ Experience – Started with web development, front end software engineer, web architect, team lead, product management & now program management. Currently working with Microsoft as a Program manager lead.
- ▶ Passionate about making world a better place for living beings through technology. Web Design & User Experience is my first love.

Get to know each other – Students

- ▶ Please introduce yourself
 - ▶ your name,
 - ▶ your passion/interests
 - ▶ what you hope to learn from this class
- ▶ **Please write your name on a white sheet, fold it and place it on your desk for every class.**

Goal for this course - Web Design & User experience

- ▶ Provide an overview of the entire web design process from initial idea to final publication.
- ▶ Give you a clear understanding of every step involved, so you can see how it all links together.
- ▶ **Deliverable – Build 2 great responsive websites that can be used in real world!**
- ▶ Outcome: Provides opportunities/visibility into the following roles in the industry.
 - ▶ Designer, Web Developer, Front end software engineer, Information architect, User experience expert, Content creator or curator, Project manager, QA or any of the myriad of other disciplines that fall under or touch on the world of web design

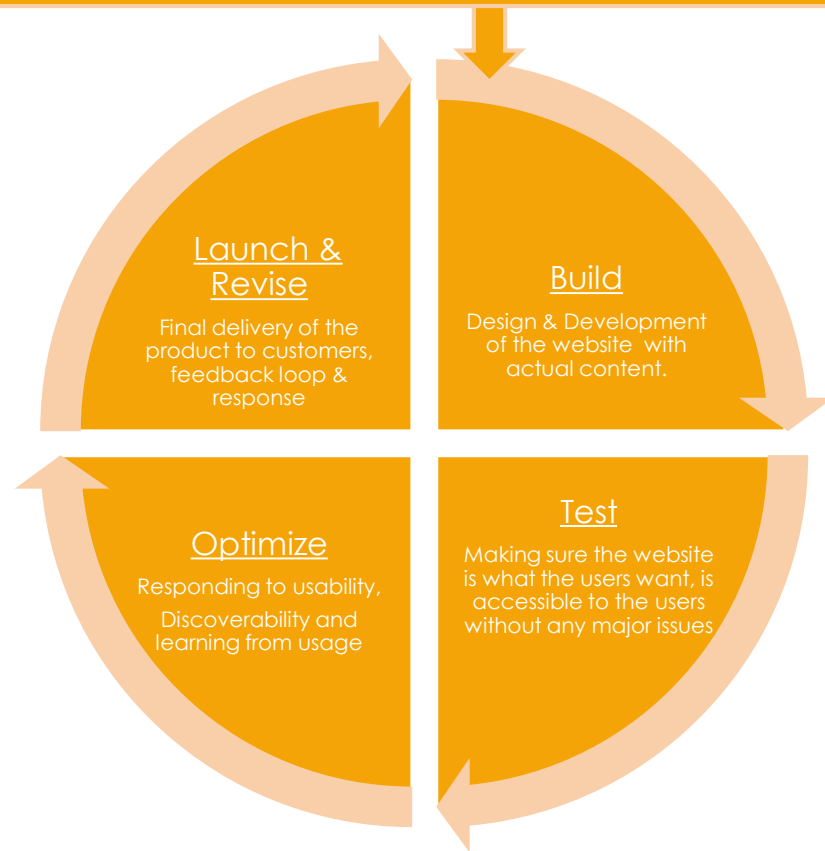
Why build responsive website?

- ▶ What is a Website?
 - ▶ Consists of Text, video, audio, and interactive elements (all sourced from a server and presented to you on a screen) --- all of that is information. So, Website is a means of presenting information.
- ▶ How are they different?
 - ▶ What makes the web unique in the way it presents that information, is our ability to link different pieces of information together and change and customize the user experience of accessing that information.
- ▶ Goal: To create informational user experiences that are accessible from any device that has a browser

How do we do it?

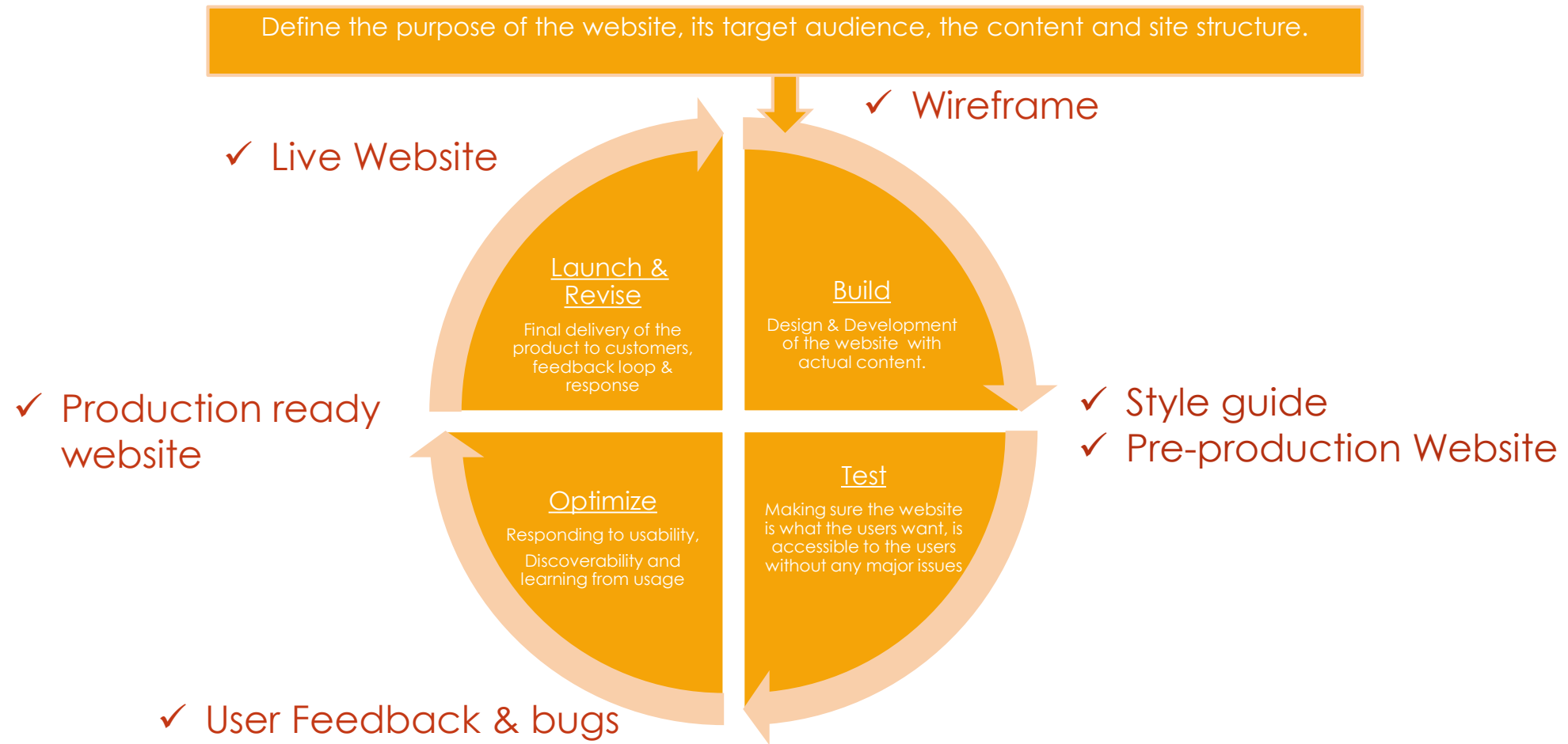
Design Strategy & Planning

Define the purpose of the website, its target audience, the content and site structure.



How do we do it?

Design Strategy & Planning



Plan – Content Strategy

- ▶ Define who you are designing it for and what they want.
 - ▶ User Persona
- ▶ Type of content will go on the site, and how these pieces of content will be grouped
 - ▶ Content audit & mapping
- ▶ Hierarchical structure of the site as a whole and the content on individual pages and views, and you've architected a map of the structure and interconnections of all the content on the site.
 - ▶ Information Architecture
- ▶ Wireframing – Mobile first: Blueprint for a website (boxes of content devoid of design)



Build

- ▶ Design
 - ▶ Deliverable: Style guide
- ▶ Development
 - ▶ Deliverable: Actual working code (website)
- ▶ Content
 - ▶ Assets and texts



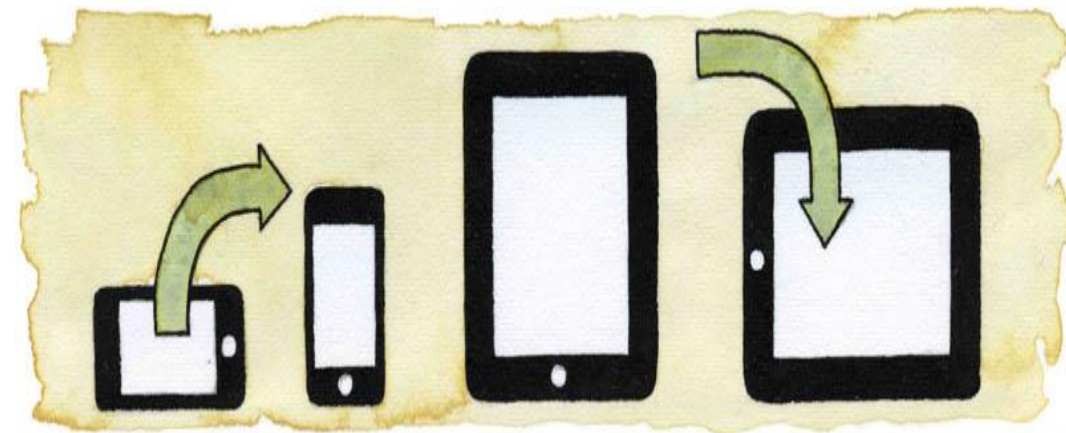
Test

- ▶ Accessibility

- ▶ All devices, browsers



- ▶ Break edge case testing



Optimize

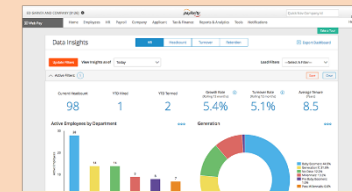


User Experience
based on
Usability



Discoverability

- Social Media
- SEO



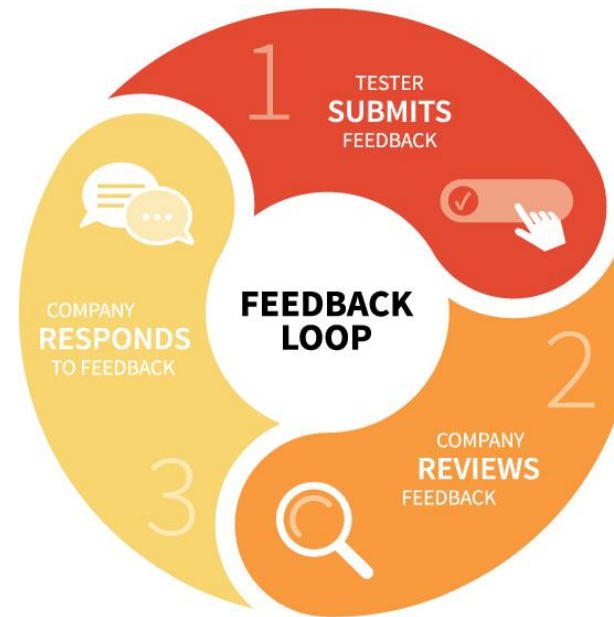
Analytics for
tracking usage

Launch & Reset

▶ Launch Strategy



▶ Feedback Loop



Class Schedule

- ▶ 1) Website Architecture, Design, Strategy and Planning and Creating web pages – Semantic HTML4/5
- ▶ 2) Design using CSS (covers CSS3)
- ▶ 3) Responsive web design & frameworks, CSS Preprocessors
- ▶ 4) Making the web page Interactive - JavaScript (Datatypes, Inline, Embedded and Advanced, Inclusion of JavaScript, variables, operators, loops, functions, error try/catch, JavaScript objects, constructors, properties and objects included in JavaScript)
- ▶ 5) Working with DOM Model and JavaScript Events
- ▶ 6) Using JQuery and other popular JavaScript libraries
- ▶ 7) Hosting on AWS, Assignment presentation with demo and Project work begins (learning project planning phase)
- ▶ 8) Reviewing wireframes and learning about design & style guide, development and content gathering
- ▶ 9) Review styled website with actual content, learn about interactive javascript
- ▶ 10) Review functional websites, learn about website Personalization techniques - Storing information, Advanced HTML5 Apis
- ▶ 11) Review personalization features and learn about performance
- ▶ 12) Review performance & learn about AngularJS (Understand Angular JS, Separation of Responsibilities, Integrating Angular JS with existing JavaScript and JQuery Applications, Global APIs)
- ▶ 13) SEO and Accessibility Techniques & Tools + Project work
- ▶ 14) Written exams, Final project submission & Demo

Course Grading

- ▶ Assignments 20%
- ▶ Class Participation 5%
- ▶ Midterm Project/Presentations 20%
- ▶ Final Exam 20%
- ▶ Final Project and Presentation 35%

HTML – Hypertext Markup Language

- ▶ The set of markup symbols or codes placed in a file intended for display on a web browser.
- ▶ Importance of HTML - Browser uses it to render and identify content. Provides structure to the webpage - is the backbone.
- ▶ Tags, elements & Attributes
 - ▶ Tags – individual markup code. eg `<p></p>`
 - ▶ Elements – tags with content eg. `<p>Hello World! </p>`
 - ▶ Attributes – modifies the purpose of a tag eg. `<p lang="en">...</p>`

HTML – Hypertext Markup Language

- ▶ Nesting structure
 - ▶ Rules for nesting (elements that allow) & Syntax rules
 - ▶ `<p> Hello World! </p>`
- ▶ Content is identified by tags and attributes can enhance functionality

Basic web page

- ▶ `<!doctype html5>`
 - ▶ `<html lang="en">`
 - ▶ `<head>`
 - ▶ `<meta charset="utf-8">`
 - ▶ `<title>My first web page</title>`
 - ▶ `</head>`
 - ▶ `<body>`
 - ▶ `<h1>Hello World</h1>`
 - ▶ `</body>`
 - ▶ `</html>`

Basic Web page

- ▶ DTD – describes the markup language syntax
- ▶ HTML element– contains the web page document
 - ▶ Head element – contains the head section. The head section contains information that describes the web page document
 - ▶ Title element– Text displays in title bar of window
 - ▶ Meta element – describes the character encoding
- ▶ Body element – contains the body section
 - ▶ The body section contains the text and elements that display in the browser viewport

HTML

- ▶ *HTML* stands for Hyper Text Markup Language. It is used to give websites structure

- ▶ HTML Document structure
- ▶ "brains" of a webpage because they communicate vital information to the web browser, but are not visible to a webpage visitor.

1. `<!DOCTYPE html>` : Tells the web browser to expect an HTML document.
2. `<html>...</html>` : The root of the HTML document and parent of all other HTML elements on the webpage.
3. `<head>...</head>` : Enclose other metadata about the site, such as its title.
4. `<title>...</title>` : Contains the site's title, which is one way users can find your site through a search engine, like Google.
5. `<meta charset="utf-8"/>` : Tells the web browser which character set to use. In this case, the character set is "utf-8".

HTML - Elements

- ▶ H1-h6 heading tags
- ▶ p, is used to hold one or more sentences, just like paragraphs in an essay or a book.
- ▶ <a> - Anchor elements use an *attribute* to link users to websites. Attributes customize the behavior or appearance of HTML elements. Anchor elements use the href attribute, which specifies the webpage to link to.

```
graph TD
    subgraph Tag
        direction LR
        A[attribute name] --- B[link text]
    end
    A --- C[<a href="https://www.google.com/maps">Use Google Maps</a>]
    B --- C
    C --- D[attribute value]
```

The diagram illustrates the structure of an HTML anchor tag. It shows the tag `Use Google Maps` with labels pointing to its parts: 'attribute name' points to `href`, 'link text' points to `Use Google Maps`, and 'attribute value' points to the entire `href="https://www.google.com/maps"` string.

HTML - Elements

- ▶ `` - Adding images to a webpage
 - ▶ Eg. ``
- ▶ `<video>` - To add video to a webpage
 - ▶ Eg.
 - ▶ `<video width="320" height="240" controls>`
 - ▶ `<source src="video-url.mp4" type="video/mp4">`
 - ▶ `</video>`
 - ▶ width and height: Set the size of the screen that displays the video.
 - ▶ controls: Adds play, pause and volume control.
 - ▶ source src: Sets the URL of the video to play.

HTML - Elements

Lists & list item

- ▶ Unordered list
- ▶ Ordered list
- ▶ Definition list

Eg. Unordered list

```
parent element [ <ul>  
                  <li>First Item</li>  
                  <li>Second Item</li> ] children  
                  </ul>
```

HTML - Elements

- ▶ *Div elements:*

- ▶ divide your page by enclosing other elements.
- ▶ These enclosed groups of elements can then be organized, moved and styled independently from one another.

- ▶ `<div class="container">`

- ▶

- ▶ `</div>`

HTML– New Key HTML5 Elements

Tag	Description
<article>	Defines an article in the document
<aside>	Defines content aside from the page content
<figure>	Defines self-contained content, like illustrations, diagrams, photos, code listings, etc.
<figcaption>	Defines a caption for a <figure> element
<footer>	Defines a footer for the document or a section
<header>	Defines a header for the document or a section
<main>	Defines the main content of a document
<nav>	Defines navigation links in the document
<section>	Defines a section in the document

More info - <https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5>

Tools to debug

- ▶ Inspect element – most of the browsers
- ▶ Chrome – chrome extensions
- ▶ IE – developer tools
- ▶ Additional plugins – like firebug, web developer

Links

- ▶ All the tags - <http://www.w3schools.com/html/default.asp>
- ▶ New html5 tags
http://www.w3schools.com/html/html5_new_elements.asp
- ▶ Other useful links-
- ▶ <https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5>
- ▶ http://wps.pearsoned.com/ecs_felke_bwdHTML5_CSS3_3/
- ▶ <http://html5doctor.com/lets-talk-about-semantics/>

Write valid html

- ▶ Check your code for syntax errors
- ▶ Benefit:
 - ▶ Valid code à more consistent browser display
- ▶ W3C HTML Validation Tool
 - ▶ <http://validator.w3.org>

Assignment 1

- ▶ Using what you learned in the class please create a portfolio website only using HTML/HTML5 tags (no JavaScript or stylesheet at this point)
- ▶ Website should have at least 3 pages like home, About, work, contact (hint use HTML5 nav element for it) and use appropriate html tags for the content.
- ▶ Add footer with a link that user can email the webmaster if there is any questions for the website and other “copyright information” and “Terms and conditions” page