Defining a Website
First Step in Website Development

Process - Define
To define a website we must ask ourselves questions and define various aspects of the site
- What's the purpose of the website?
- Who is the intended audience?
- What is the primary content?
- What kind of interaction with readers is needed?
- Who is responsible for what?
- What are the technical requirements?

Purpose
- Why is the website needed?
- What is the main goal of having a website?
- Are there other objectives?
- What is the primary message?

Primary Content
Define the content by answering questions
- What information will be needed?
- Which information already exists?
  - In what format is the information currently available?
- What information will change and how often?
- Will information from a database be needed?
- Will any media be needed?
  - Graphics, video, sound?

Interaction with audience
- Is interaction between audience and organization needed?
- What types of interaction?
  - email
  - inquiry input forms
  - multimedia interaction
  - chat
  - discussion/forum area

Audience
- Define the audience by answering questions:
- Who is going to access the website?
- Is there any demographic information available?
- What generalizations can be made about the audience?
  - Age, location, education level, types of computer, connection speeds, interests
- What relationship do they have with the organization?
  - Employee, customer, student, fan...
- What issues may come up with usability & accessibility?
- Why will people access the site?
- Will they be able to find the needed information?
Who is responsible for what

- Someone needs to be responsible
  - No one assigned then the site quickly becomes outdated
- Responsibility is often broken down between content, structure and visual design
  - Web Developer – designs and maintains the technological structure of the web site
  - Content Developer – provides and maintains the content
  - Graphic artist – creates the visual appeal
- Sometimes these are the same person:
  - Smaller websites may not need more than 1 person
  - Larger websites may need many people with some maintaining different sections

What technology aspects?

- Which server is being used?
  - In-house
    - Does current computing power meet the needs?
    - Anything new needed?
    - What costs are involved?
- Out-sourced to a web host?
  - Which one?
  - What does it cost?
- Which domain names needed?
- What server technologies are needed
  - Is database integration needed?
  - Are server generated pages needed?
  - Can those capabilities be handled by the server?

Planning a Website

Next Step in Website Development

Process - Plan

- Establish a timeline for completion
- Outline content organization
- Determine navigational needs
- Design layout & visual appeal
- Define legal aspects
- Determine tools needed
- Collect content

Timeline

- Determine:
  - How much time is needed to develop the site?
  - When is the rollout date?
  - What needs to be accomplished when?
- Create a timeline that maps out when each step should be completed
- For class our timeline is defined by the dates of the course and due dates of the milestones

Organization of site

- Assists with determining navigation
  - Navigation often reflects organization
- Determine general categories for organization of information
- List pages needed for site.
  - For small sites, list each page needed
  - For our website project - all pages should be listed
  - Larger sites list the major pages and categories of other pages
- The organization should take into consideration
  - Emphasis of purpose
  - Who the primary audience is
  - The needs of the audience
  - Secondary audience
  - Content
Visual Aspects

- Will a graphics artist be needed?
- Start planning visual appeal
  - Create a rough layout of the screen
- Visual elements needed
  - Banner & Logo
  - General visual layout
  - Graphics
  - Color scheme
- Visual appeal should be geared to the audience and help emphasis the main message.

Legal Aspects

- What legal issues are involved?
  - Copyright of content
  - Avoid infringing on the copyright of others
    - Royalties on graphics, photos, music, video, etc.
- Are there any legal requirements
  - Participation of minors
    - May need parental consent
  - Notifications needed
  - Protecting any data collected
  - Legality of activities

Tools Needed

- Software
  - Web page creation
    - High end - site management
    - Simple editing
  - Graphics
    - High end - creation & editing
    - Low end - editing only
  - Other media
    - Sound/record/edit, video capture/edit
  - File transfer
    - Often included in the high end web software
  - Various browsers
- Hardware
  - Computer
  - Scanner
  - Camera
  - Microphones
  - Testing
    - Various platforms, monitors sizes
- Advanced tools
  - Server generated pages & database integration
  - Active server Pages
  - PHP
  - Other server technology
  - Programming
    - Javascript
    - Java
    - Other

Content

- Content is crucial. Without it - you have no reason for a site.
  - Pre-existing content
    - Collect
    - Edit pre-existing text for web use
  - New Content
    - Write Text
    - Create images & other media
- One of the hardest parts
  - Often businesses know they need a website and don’t know what content to put on it or can’t agree what to put on it.

Web Development Ethics

Responsibility in creating websites

What is Ethics?

- Ethics is thinking about the effects of your actions and doing what helpful rather than hurtful.
- How do we know if something is ethical or not?
- Apply the ethical tests of
  - Universality
  - Reversibility
  - Transparency
- As part of these, think of the consequences for everyone involved
What are those ethical tests?

- Universality - Do you think it is okay for everyone to behave like that?
  - Consequences - What if everyone did this? What would be the consequences for everyone else?
- Reversibility - If someone did this to you, would you be okay with it?
- Transparency - Would you still do this if everyone knew about it?
  - If a TV camera was pointed at you, would you still do this action?

Web Development Ethics Topics

- Copyright infringement & fair use
- Being aware of laws
- Creating websites responsibly
  - Responsible Search Engine Optimization (SEO)

This is not a comprehensive list of ethical topics related to website development, but it highlights some areas to think about when developing your websites.

Applying the 3 Tests

- Applying the 3 tests to Academic Dishonesty
  - Universality - Do you think it is okay for everyone to be dishonest in academics?
    - Consequences of everyone being academically dishonest
      - Educational degrees become worthless
    - If it’s not okay for everyone, then it fails this ethical test.
  - Reversibility - If someone did this to you, would you be okay with it?
    - How would you feel if you were a teacher and found out that a student cheated?
      - It’s not a good feeling.
  - If you won’t want someone doing this to you, then it fails this ethical test.

Applying the 3 Tests (cont)

- Transparency - Would you still do this if everyone knew about it?
  - Would you cheat if your family knew?
  - Would you still cheat if TV camera was pointed at you and everyone could see you cheating?
  - If you wouldn’t do this in front of everyone, then it fails this ethical test.
- Something that fails all 3 tests is definitely unethical.
- In addition to the 3 tests, know the consequences of your actions!
  - The following are possible consequences for the student
    - Bad grade on an assignment
    - Failure of the course
    - Expulsion from the college
    - Loss of job opportunities

Applying the 3 Tests (cont)

- Other consequences
  - Devalues the time and energy of the teacher
  - If many students cheat, then it devalues the whole school and could cause loss of accreditation.
    - Degrees from an unaccredited institution are not as valuable.

Ethical Topics

In this lesson we’ll cover these topics related to website development:

- Copyright infringement & fair use
- Being aware of laws
- Creating websites responsibly
  - Responsible search engine optimization

This is not a comprehensive list of ethical topics related to website development, but it highlights some areas to think about when developing your websites.
Copyright Infringement

- Copyright infringement is illegal.
- Copying any copyrighted element from another website without express permission from the owner is infringing on copyright.
- Elements may be:
  - Text
  - Graphics
  - Animation
  - Music in any form
  - Videos
  - Design
  - Any other item which is copyrighted

Protecting a site with copyright

- Sites can be protected by adding a copyright notice.
  - Required elements:
    - Word copyright or the symbol ©
    - Year
    - Copyright owner (Can be an organization or an individual)
- Copyrights should be registered. For information about registering a copyright see the US Copyright Office

Fair Use

- Certain elements may be quoted under fair use under certain conditions
  - Purpose — such as non-commercial, educational, comment, critic
  - Amount used — for text 10% or 1000 words which ever is less
  - Also this cannot be your complete work.
- Always cite references when quoting the works of others or using images from other sources.

Keep it Legal

- Be aware of any laws governing web sites
  - Data collection
  - Dealing with minors
  - Privacy statement
  - Accessibility compliance
- Any other area of the law should be considered
  - Be aware of the laws in general of which activities are legal and which are not.

Legal areas

- Any illegal activities that break other laws not specific related to websites
- Examples
  - First amendment protects free speech, but that doesn't include the right to liable, slander, or otherwise defame another individual, company, organization or other entity.
  - Gambling is illegal in Hawaii, so sites originating in Hawaii should not contain gambling

Create Websites Responsibly

- Not necessarily against any laws, but good idea to be responsible.
- Use accurate information on your sites.
  - Avoid spreading rumors and hoaxes
  - Verify information
- Be considerate of others
  - Consider usability
  - Use accessibility standards
Responsible SEO

- SEO (Search Engine Optimization)
- Black Hat versus White Hat SEO
  - Black Hats
    - Use whatever means possible to get sites listed higher in search engine listings
    - Also called spamdexing
  - White Hats
    - Use search engine optimization responsibly and don’t bend the rules to get a higher listing
- Develop websites responsibly!

Easing Web Site Creation

Templates, library items, snippets

Web Site Tools

- When creating consistent websites use tools which will help standardize the web sites
- Cascading Style Sheets (CSS)
  - Visual display of elements
- Templates
  - Structural design
- Snippets
  - Elements or code available to pull into webpages

Templates

- Ease creation of multiple pages with the same basic design
- Unlike style sheets which just contain design, templates contain structural elements.
- May also contain CSS coding or links to CSS files
- In coding, add comments to indicate where the content can be added.
  `<!-- comments -->` where comments is the actual words for your comment

Consistent elements

- Templates contain consistent basic design, layout and elements for a site that can consist of
  - Banners/logo
  - Navigation
  - Layout specifications
  - Embedded (in document) styles
  - Text portions of pages which remain the same
  - Copyright notices
  - Site URL
  - Other items which repeat on each page

Working with Templates

- Templates do not contain the information, graphics or other items which change with each page.
- Templates only contain the consistent elements which appear on every page
- Using templates
  - Create a basic template with editable regions
  - Create individual pages based on the template
  - Add content for each page into the editable regions
Snippets

- Snippets are pieces of code that can be used over and over again.
- You can create pieces of code as snippets to be reused in any program including coding - just save the code to different files and copy the snippets when needed.

Design to Template

Creating structure from plan

General Idea

- Determine what the site should be like.
  - Sketch out a design on paper
  - Use a image editing program to design
- Things to determine for the design
  - Site identification: Where will it be placed on the page? What will it look like?
  - Navigation needs: Do you need more than one set of navigation links? Where will they be located?
  - Main content: Main content should be in the center of the design. Do you need columns? Sidebars?
  - Footer: Do you need a footer with information such as copyright, last date updated, and other such information

Draw boxes for layout

- On the design and draw boxes around the basic categories of elements within your page.
  - Draw boxes around any groupings
  - Which elements will be grouped together?
  - Will the whole page be grouped?
  - Label the boxes
  - Each of these boxes should become a layout structure
  - Division, header, article, nav, footer

Template Items

- Determine what's on the template
  - Which elements should be on each and every page?
  - Which elements are on some pages but not other pages?
  - Which elements change with each page?
- Mark items on your design
  - Items that are on all pages should be placed on the template
  - Items which change with each page should be indicated as an editable area for the template

Structure from Design

- Once you have the basic idea of what you want on your site, you can begin to construct the structure.
- Keep in mind that the structure is not styling.
- You need to give some thought to how the page should be structured.
  - Think of not being able to see the site, but to have a screen reader read the site. Screen readers read in the normal flow of HTML regardless of where items are placed on the screen with CSS.
  - What information would be read first?
  - What next?
  - What is least important and should be placed last?
  - Construct the basic structure to match how things should be read by a screen reader and not how they should be laid out on the page.
Create Template

- Create a basic page with the content that is to appear on each and every page.
  - Place the content in the normal flow
  - Place content in appropriate structures
  - The boxes on your design become layout structures
  - Use the labels from the boxes to be the division ID - but be sure that no spaces are used in the ID.
    - For instance a box labeled "main content" should be given the ID of "maincontent" or "main_content" or "mainContent"
- Add in comment areas for areas that change
- Recommend adding the site name in the title of the template so you don't have to add it to every page.