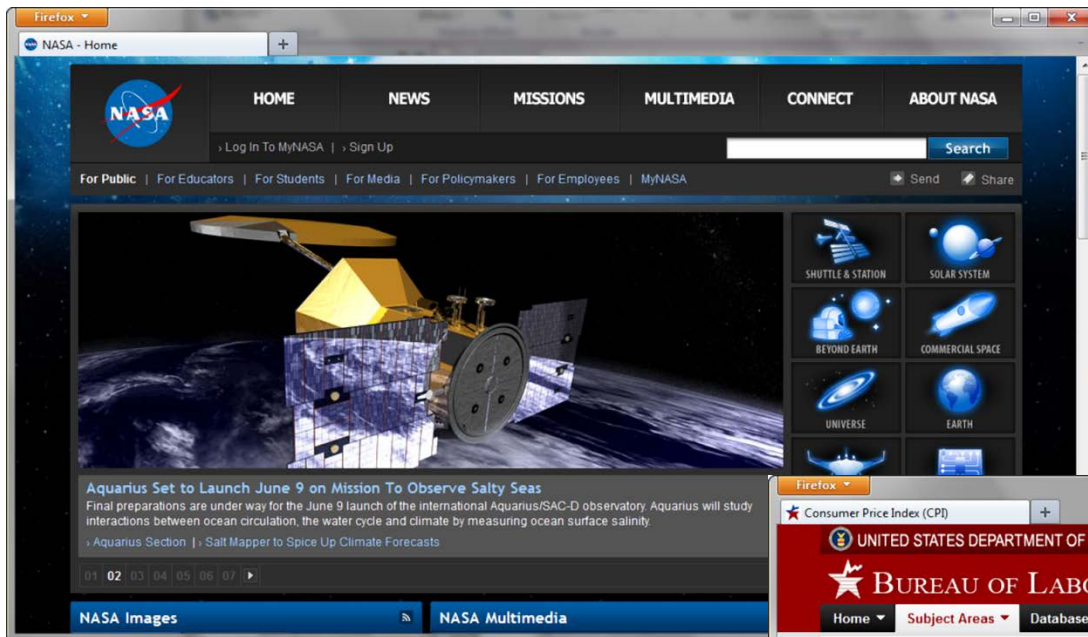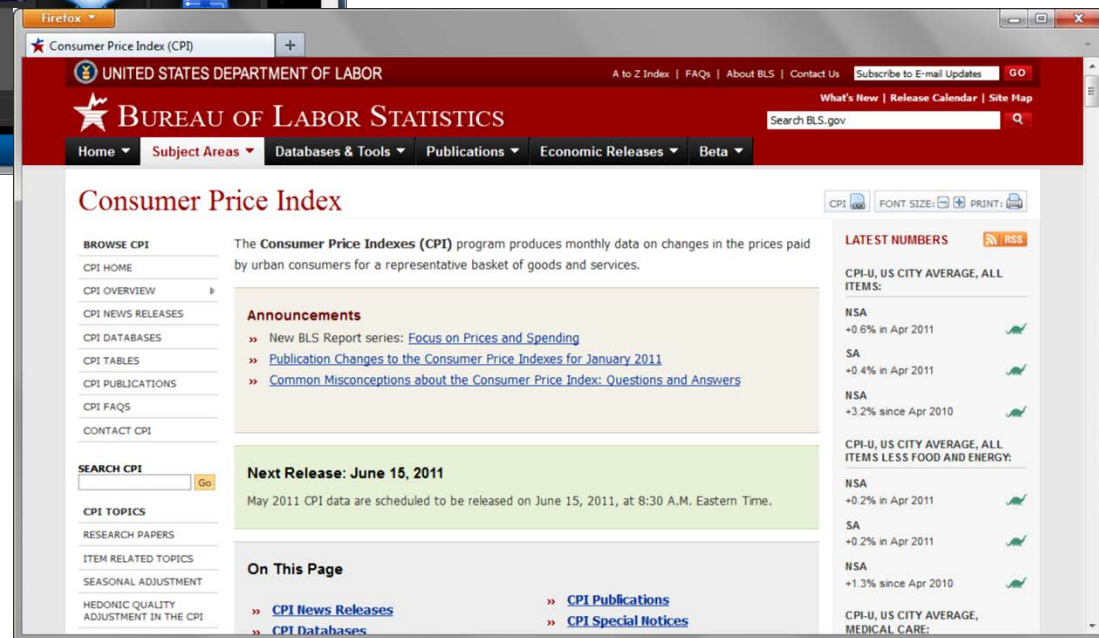# Web Design

"Don't make something unless it is both necessary and useful; but if it is both necessary and useful, don't hesitate to make it beautiful."
Shaker philosophy

Overall Design Is Related to the Site Purpose

Consider the target audience of these sites.

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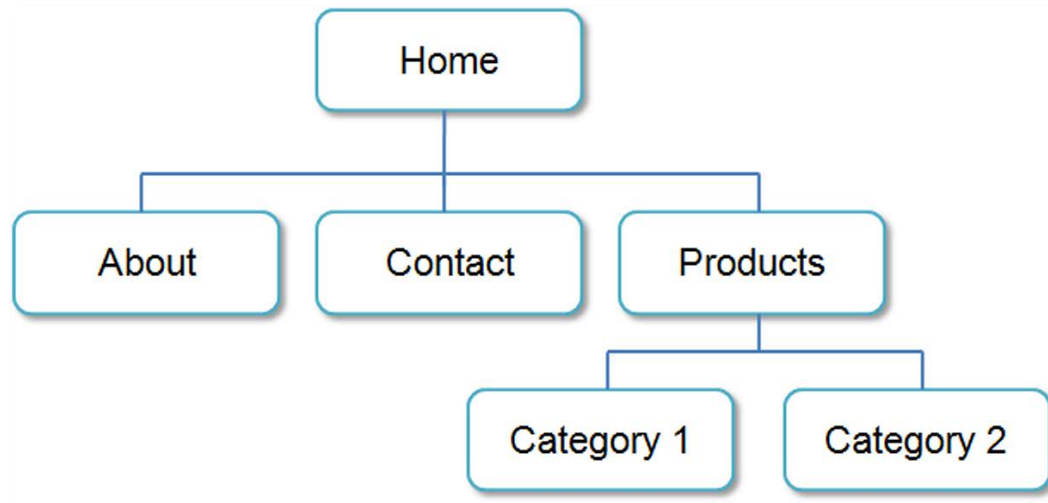UNIVERSITY
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WebSite Organization

- Hierarchical

- Linear

- Random
(sometimes called Web Organization)

Hierarchical Organization

- A clearly defined home page
- Navigation links to major site sections
- Often used for commercial and corporate websites

Hierarchical & Shallow
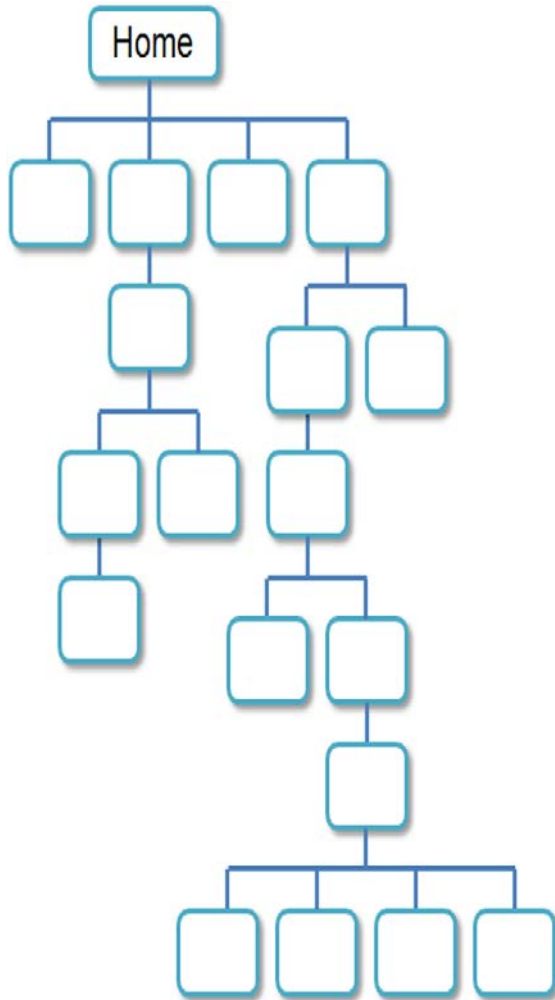
- Be careful that the organization is not too shallow.
  - Too many choices → a confusing and less usable web site
  - Information Chunking
    - Research by Nelson Cowan: adults typically can keep about four items or chunks of items in short-term memory
  - Be aware of the number of major navigation links
  - Try group navigation links visually into groups with no more than about four links
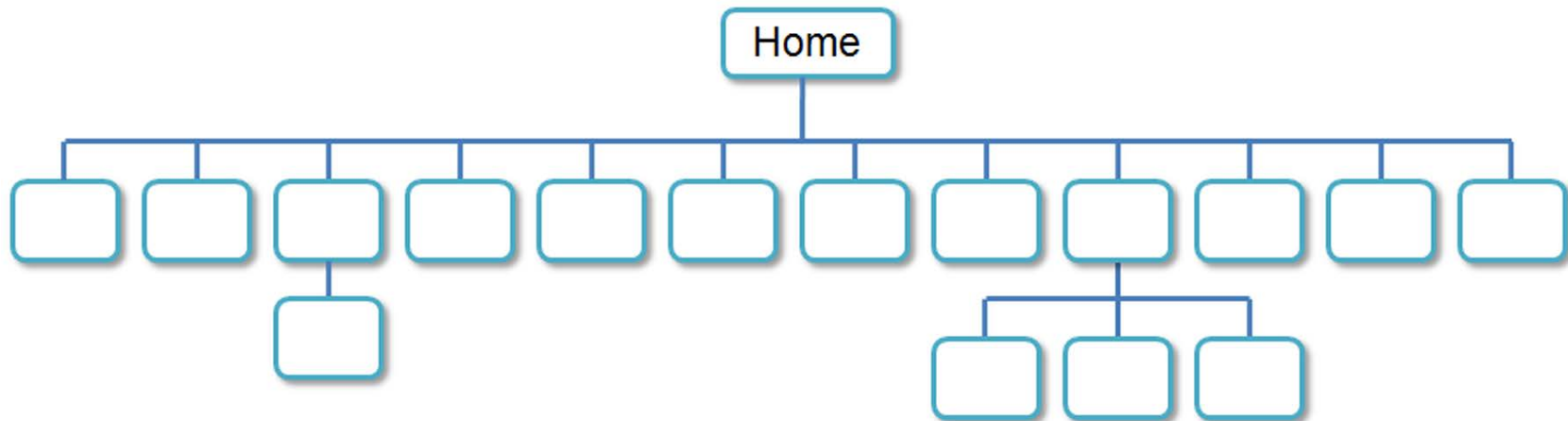
Hierarchical & Deep

- Be careful that the organization is not too deep
  - This results in many "clicks" needed to drill down to the needed page

- User Interface "Three Click Rule"
  - A web page visitor should be able to get from any page on your site to any other page on your site with a maximum of three hyperlinks

Linear Organization

- A series of pages that provide a tutorial, tour, or presentation.
- Sequential viewing

Home Page → Lesson 1 → Lesson 2 → Lesson 3 → Summary

Random Organization

- Sometimes called "Web" Organization

- Usually there is no clear path through the site

- May be used with artistic or concept sites

- Not typically used for commercial sites

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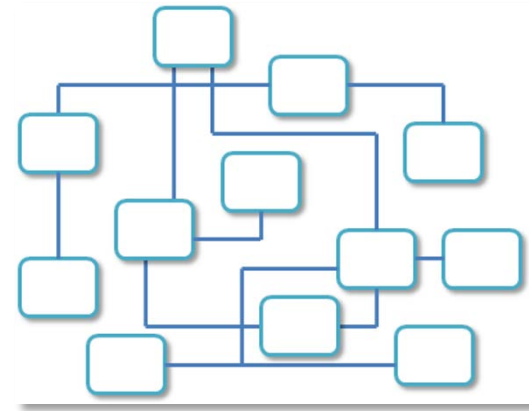
Design Principles

- Repetition
  - Repeat visual elements throughout design
- Contrast
  - Add visual excitement and draw attention
- Proximity
  - Group related items
- Alignment
  - Align elements to create visual unity

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Design to Provide for Accessibility

- Tim Berners-Lee:

  "The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect."

- Who benefits from increased accessibility?
  - A person with a physical disability
  - A person using a slow Internet connection
  - A person using an old, out-dated computer

- Legal Requirement in US: Section 508
- Standards: WCAG 2.0

Design for Accessibility

- Web Content Accessibility Guidelines 2.0 WCAG 2.0
  - http://www.w3.org/TR/WCAG20/Overview
  - http://www.w3.org/WAI/WCAG20/quickref

Based on Four Principles (POUR)

1. **P**erceivable
   Content must be **P**erceivable

2. **O**perable
   Interface components in the content must be **O**perable

3. **U**nderstandable
   Content and controls must be **U**nderstandable

4. **R**obust.
   Content should be **R**obust enough to work with current and future user agents, including assistive technologies

Writing for the Web

- Avoid long blocks of text
- Use bullet points
- Use headings and subheadings
- Use short paragraphs

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Design "Easy to Read" Text

- Use common fonts:
  - Arial, Helvetica, Verdana, Times New Roman

- Use appropriate text size:
  - medium, 1em, 100%

- Use strong contrast between text & background

- Use columns instead of wide areas of horizontal text

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More Text Design Considerations

- Carefully choose text in hyperlinks

  - Avoid "click here"
  - Hyperlink key words or phrases, not entire sentences

- Chek yur spellin (Check your spelling)

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Making Color Choices

- ## How to choose a color scheme?
  - – Monochromatic
    - • http://meyerweb.com/eric/tools/color-blend

  - – Choose from a photograph or other image
    - • http://www.colr.org

  - – Begin with a favorite color
    - • Use one of the sites below to choose other colors
      - – http://www.colorschemedesigner.com
      - – http://www. colorjack.com
      - – http://www.colorsontheweb.com/colorwizard.asp

Appealing to Kids & Preteens
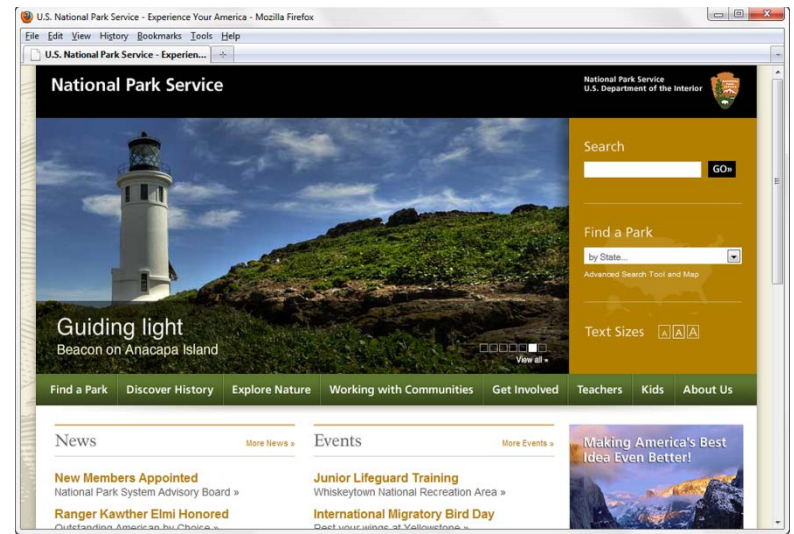
Appealing to Everyone

Use of Color
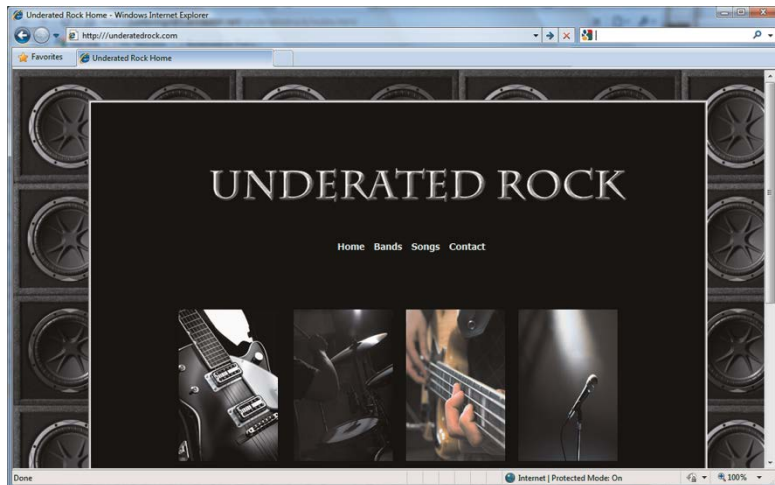
Appealing to Young Adults
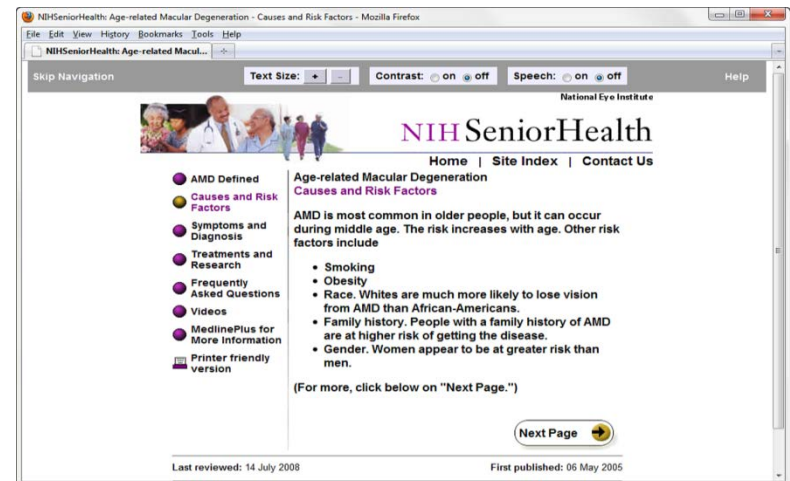
Appealing to Older Adults

Use of Graphics & Multimedia

- File size and dimension matter
- Provide for robust navigation
- Antialiased/aliased text considerations
- Provide alternate text
- Use only necessary multimedia

Graphic Design Best Practices(1)

- Be careful with large graphics!
  - Remember 60K recommendation

- Use the alt attribute to supply descriptive alternate text

- Be sure your message gets across even if images are not displayed.
  - If using images for navigation provide plain text links at the bottom of the page

- Use animation only if it makes the page more effective and provide a text description

Graphic Design Best Practices(2)

- Choose colors on the web palette if consistency across older Windows/Mac platforms is needed

Antialiased **Aliased**

- Use anti-aliased text in images

- Use only necessary images

Do you really need to see a photo of a dog right now?

- Reuse images

- Goal: image file size should be as small as possible

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Navigation Design

- Make your site easy to navigate
  - Provide clearly labeled navigation in the same location on each page
  - Most common – across top or down left side

- Consider:
  - Navigation Bars
  - Breadcrumb Navigation
  - Using Graphics for Navigation
  - Dynamic Navigation
  - Site Map
  - Site Search Feature
  - "Skip to Content" Hyperlink

Wireframe

- A sketch of blueprint of a web page
- Shows the structure of the basic page elements, including:
  - Logo
  - Navigation
  - Content
  - Footer

Web Page Design Page Layout

- Place the most important information "above the fold"
- Use adequate "white" or blank space
- Use an interesting page layout

Branding / Site Logo

| Home | Services | Products | About | Contact |

Heading
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aliquam laoreet mi sed sapien tristique et cursus lorem venenatis. Curabitur fermentum purus ut odio sodales consectetur interdum purus dictum. Donec ac purus a lectus rutrum auctor quis sed justo. In sed enim eu dui posuere lobortis id eget diam.

Subheading
Maecenas ac lorem et leo sagittis dictum. Nam congue fringilla velit, at bibendum nulla placerat in. Integer dictum tortor sit amet felis placerat sed vehicula nisl lobortis.

- Fusce volutpat enim ut felis tincidunt
- Non ornare tellus commodo
- Sed nec diam erat

Morbi iaculis libero mi. Integer vel dolor at erat interdum interdum sit amet sit amet ligula. In molestie massa eu sem dapibus et consequat purus pulvinar.

Page footer area

This is usable, but a little boring. See the next slide for improvements in page layout

Web Page Design Page Layout(2)

Better →
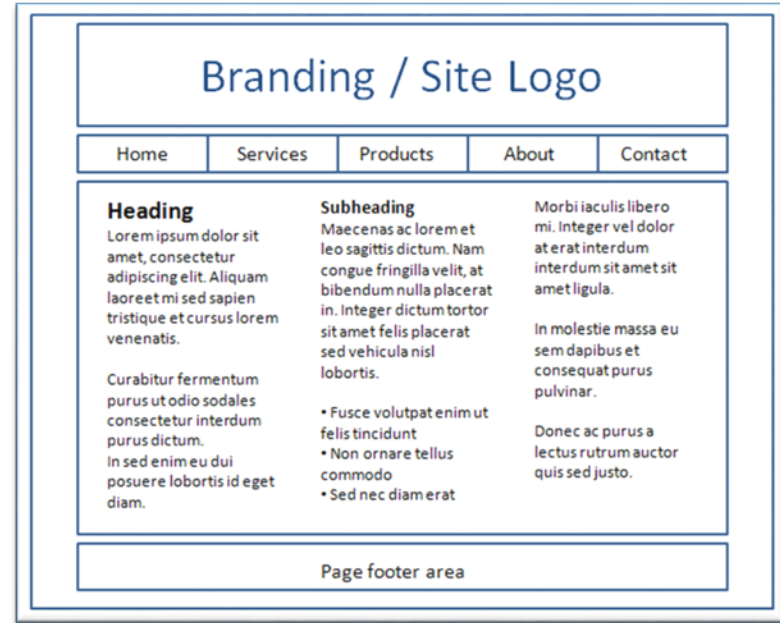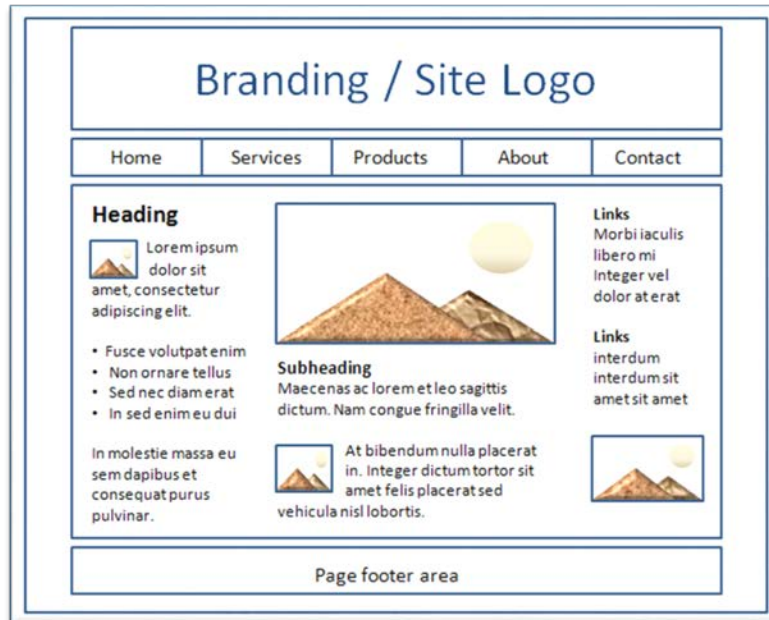
Columns make the page more interesting and it's easier to read this way

Branding / Site Logo

| Home | Services | Products | About | Contact |

Heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aliquam laoreet mi sed sapien tristique et cursus lorem venenatis.

Curabitur fermentum purus ut odio sodales consectetur interdum purus dictum.
In sed enim eu dui posuere lobortis id eget diam.

Subheading

Maecenas ac lorem et leo sagittis dictum. Nam congue fringilla velit, at bibendum nulla placerat in. Integer dictum tortor sit amet felis placerat sed vehicula nisl lobortis.

• Fusce volutpat enim ut felis tincidunt
• Non ornare tellus commodo
• Sed nec diam erat

Morbi iaculis libero mi. Integer vel dolor at erat interdum interdum sit amet sit amet ligula.

In molestie massa eu sem dapibus et consequat purus pulvinar.

Donec ac purus a lectus rutrum auctor quis sed justo.

Page footer area

Branding / Site Logo

| Home | Services | Products | About | Contact |

Heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

• Fusce volutpat enim
• Non ornare tellus
• Sed nec diam erat
• In sed enim eu dui

In molestie massa eu sem dapibus et consequat purus pulvinar.

Subheading

Maecenas ac lorem et leo sagittis dictum. Nam congue fringilla velit.

At bibendum nulla placerat in. Integer dictum tortor sit amet felis placerat sed vehicula nisl lobortis.

Links
Morbi iaculis libero mi Integer vel dolor at erat

Links
interdum interdum sit amet sit amet

Page footer area

← **Best**

Columns of different widths interspersed with graphics and headings create the most interesting, easy to read page

Page Layout Design Techniques

- Ice Design
  - AKA rigid or fixed design
  - Fixed-width, usually at left margin

- Jello Design
  - Page content typically centered
  - Often configured with a fixed or percentage width such as 80%

- Liquid Design
  - Page expands to fill the browser at all resolutions

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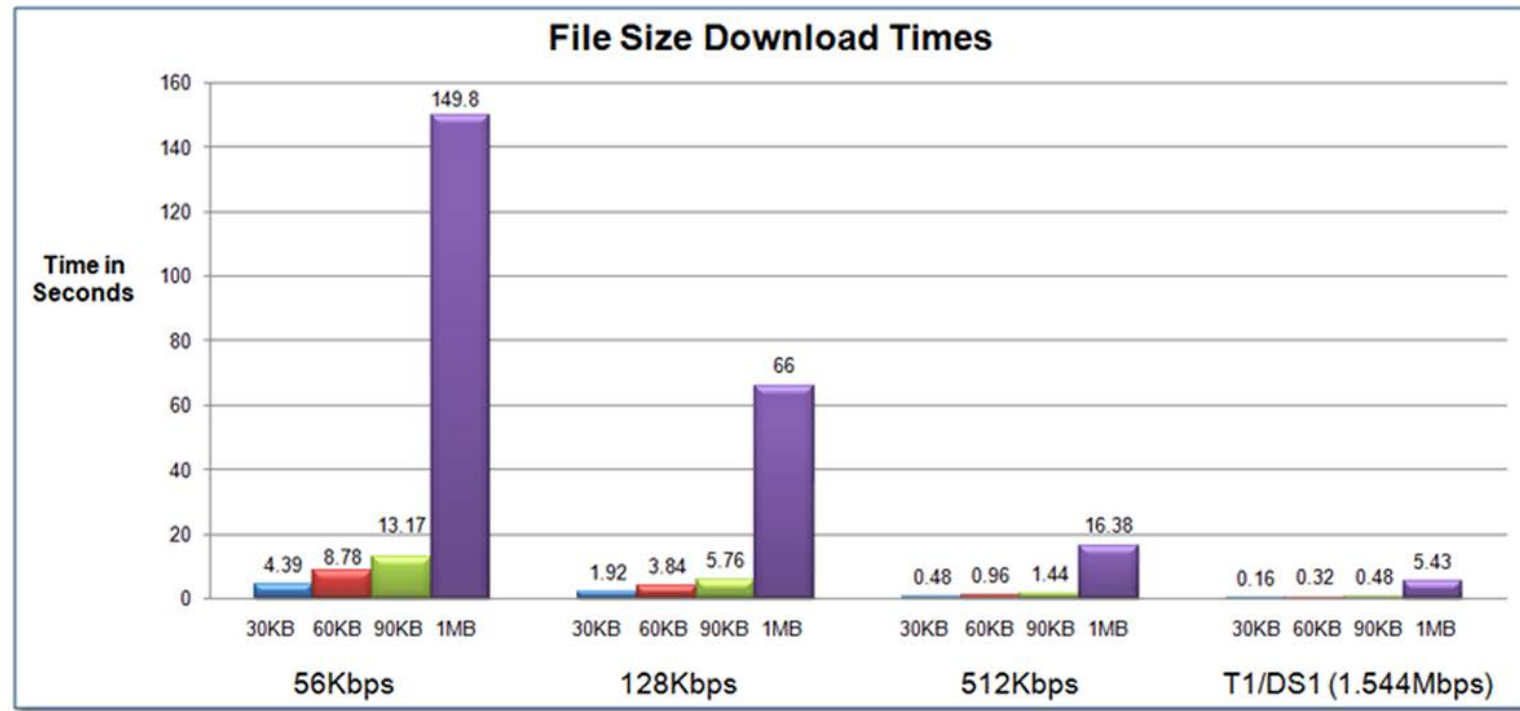SCHOOL OF ENGINEERING

Design for the mobile Web

- Design Considerations:
  - Small screen size
  - Low bandwidth
  - Font, color, and media issues
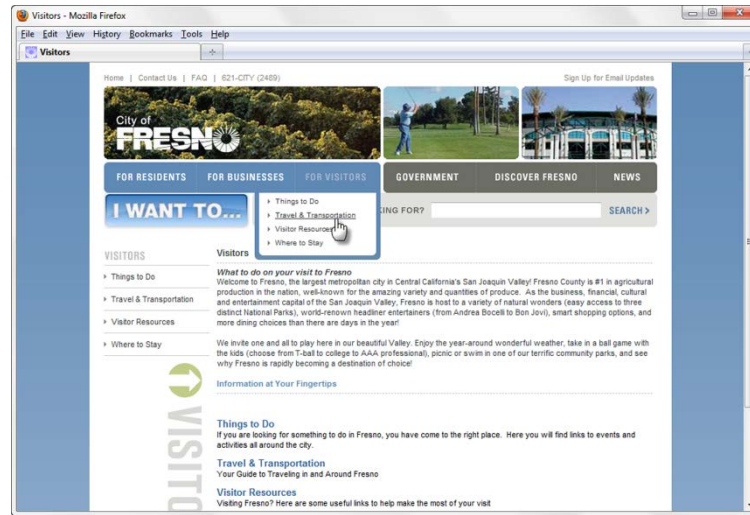 - Awkward controls, limited processor and memory
  - Functionality
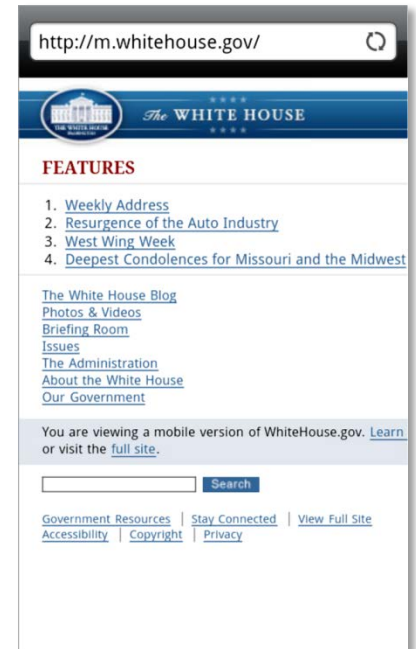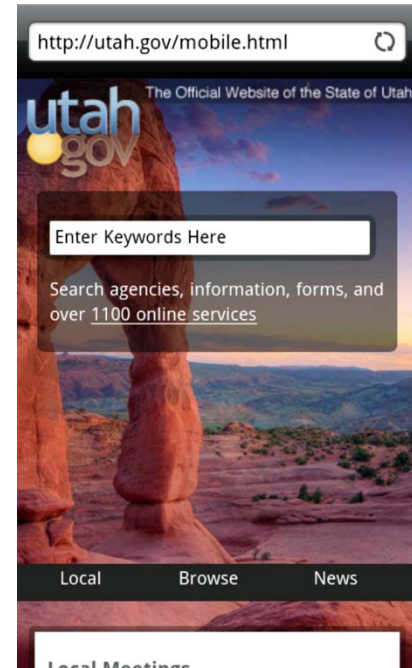
Web Page Design - Load Time

- Watch the load time of your pages
- Try to limit web page document and associated media to under 100K on the home page

File Size Download Times

Web Page Design - Screen Resolution

- Test at various screen resolutions
  - Most widely used: 1024x768, 1280x800, 1366x768 and 1920x1080

- Design to look good at various screen resolutions
  - Centered page content
  - Set to either a fixed or percentage width

Web Page Design - Browser Compatibility

- Web pages do NOT look the same in all the major browsers

- Test with current and recent versions of:
  - Internet Explorer
  - Chrome
  - Firefox
  - Safari

- Design to look OK in commonly used browsers (like old Internet Explorer versions) and implement new technologies (like CSS3) in modern browsers – Progressive Enhancement

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Web Design Best Practices Checklist

- Page Layout

- Browser Compatibility

- Navigation

- Color and Graphics

- Multimedia

- Content Presentation

- Functionality

- Accessibility

http://terrymorris.net/bestpractices

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Tools

- Pencil
An open-source GUI prototyping tool that's available for ALL platforms
http://pencil.evolus.vn/Downloads.html

- Balsamic
The trial is fully functional for 30 days. Afterwards, you'll need to buy a license to save your work
https://balsamiq.com/