

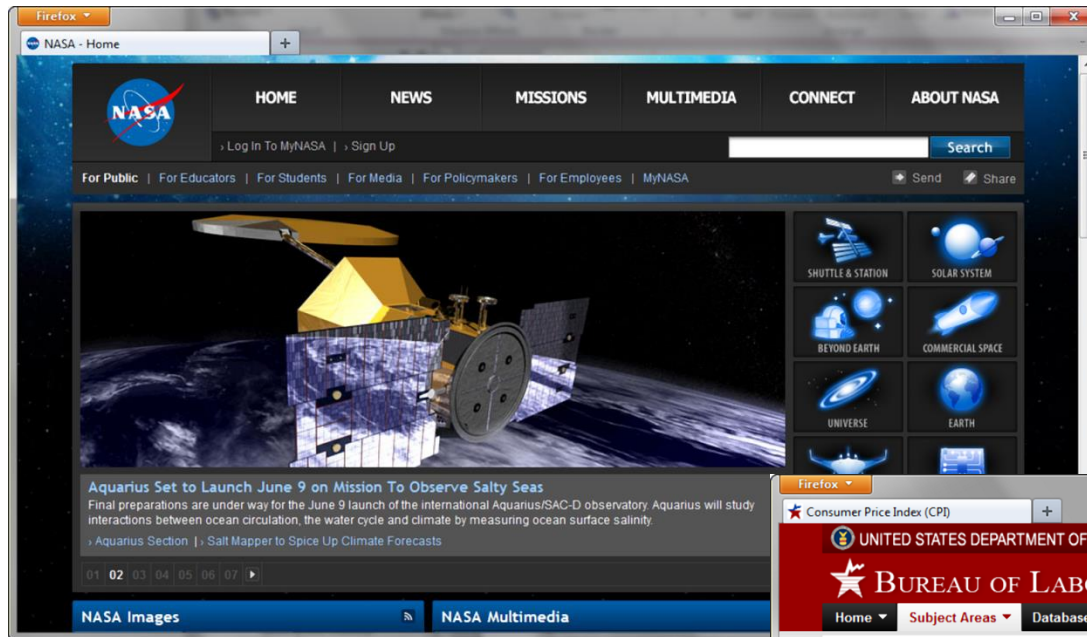
# Web Design



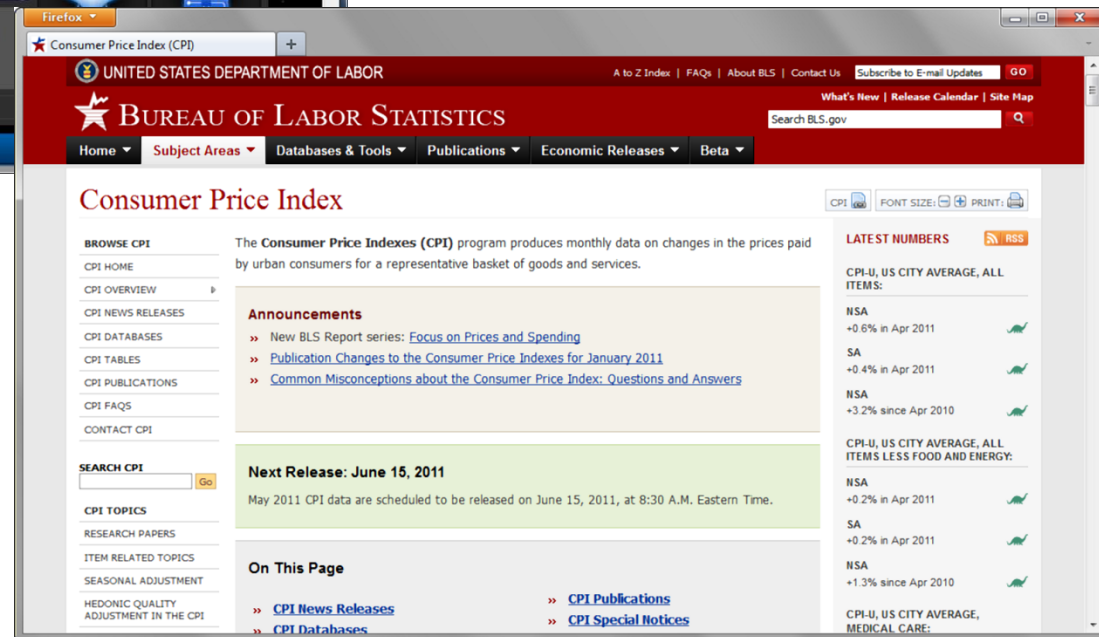
*“Don’t make something unless it is both necessary and useful; but if it is both necessary and useful, don’t hesitate to make it beautiful.”*

*Shaker philosophy*

# Overall Design Is Related to the Site Purpose



**Consider the target audience of these sites**

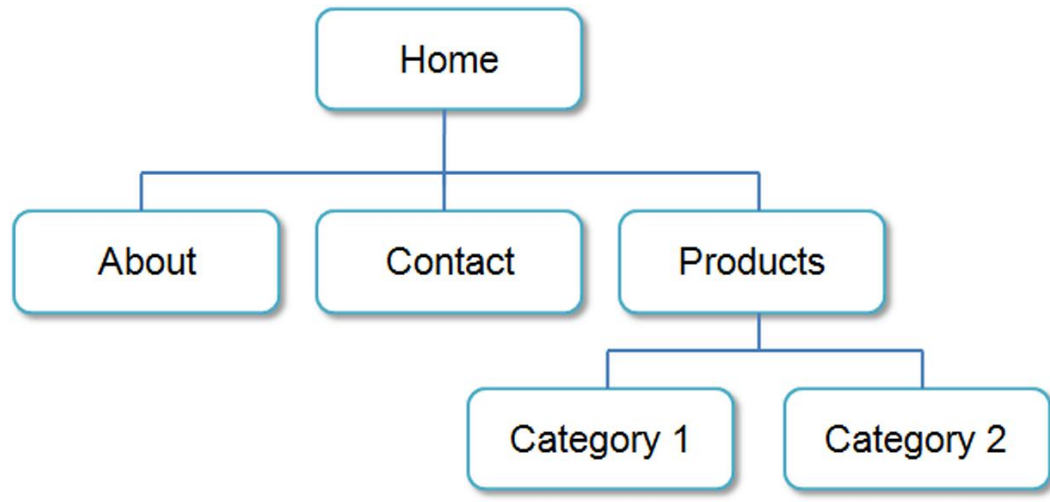


# WebSite Organization

- Hierarchical
- Linear
- Random  
(sometimes called Web Organization)

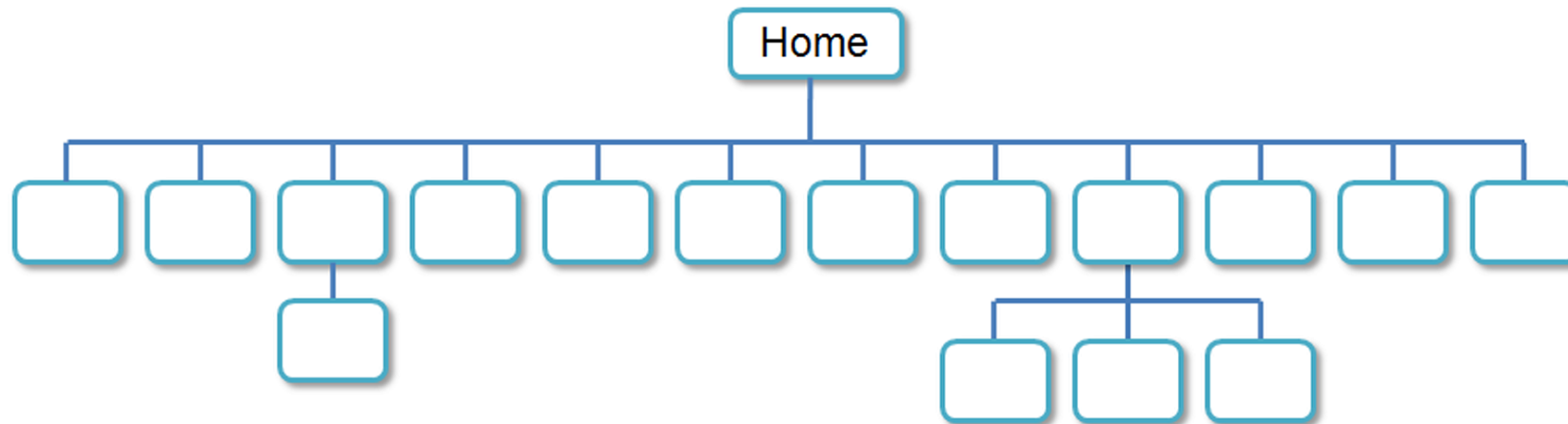
# Hierarchical Organization

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

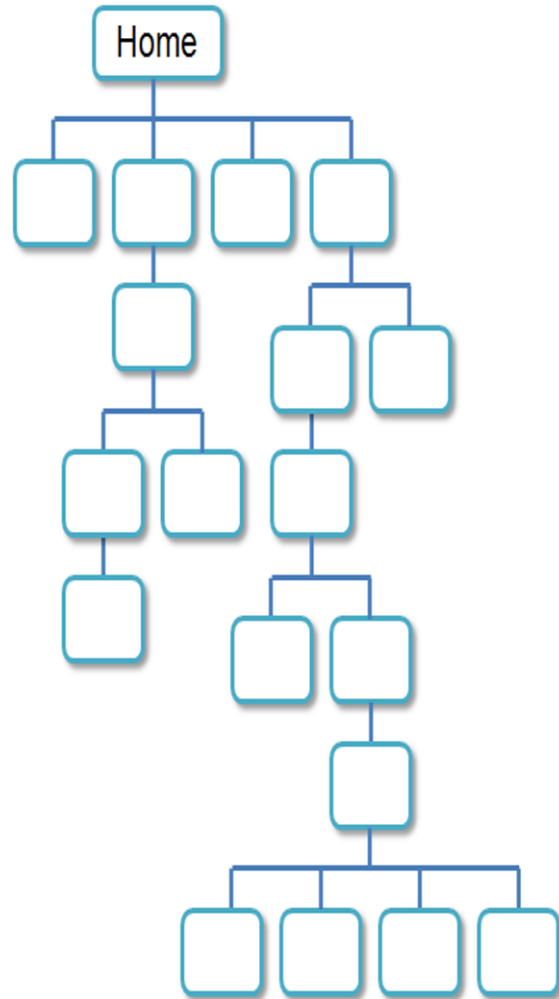


# Hierarchical & Shallow

- 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

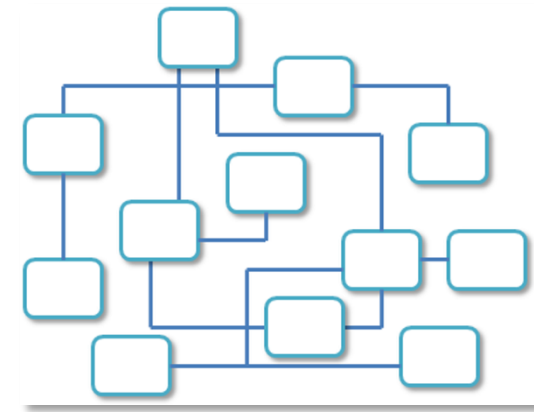
# Linear Organization

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



# Random Organization

- Sometimes called “Web” Organization (or Wiki)
- Usually there is no clear path through the site
- May be used with artistic or concept sites
- Not typically used for commercial sites





# 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



# 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

# 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

# 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)

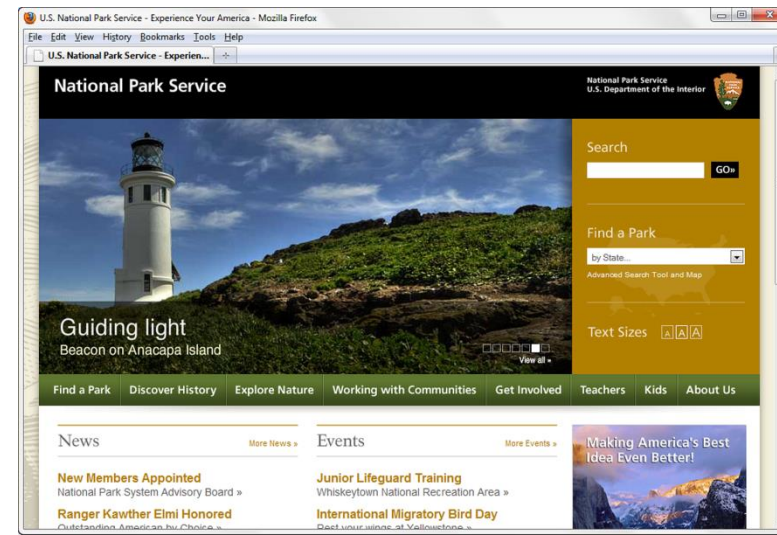
# Making Color Choices

- 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>



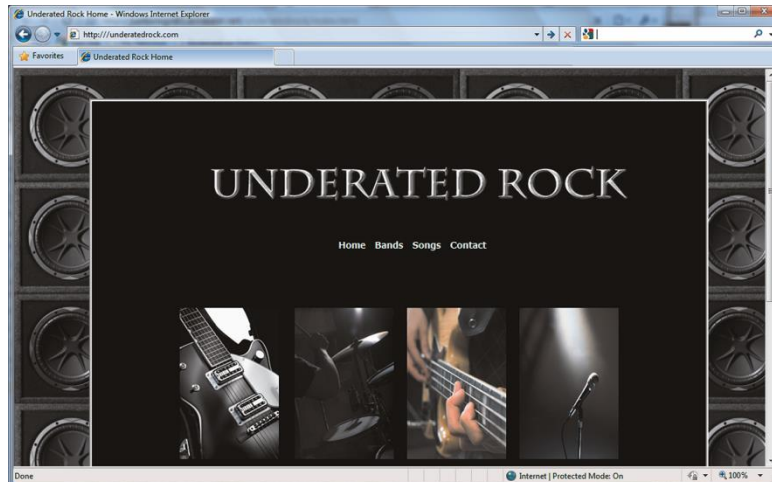


Appealing to Kids & Preteens

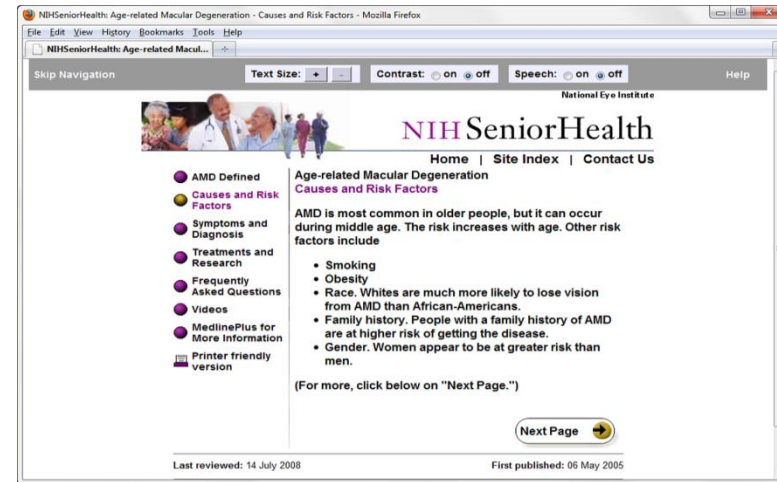


Appealing to Everyone

## 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

- Use anti-aliased text in images
- Use only necessary images
- Reuse images
- Goal: image file size should be as small as possible

## Aliased



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

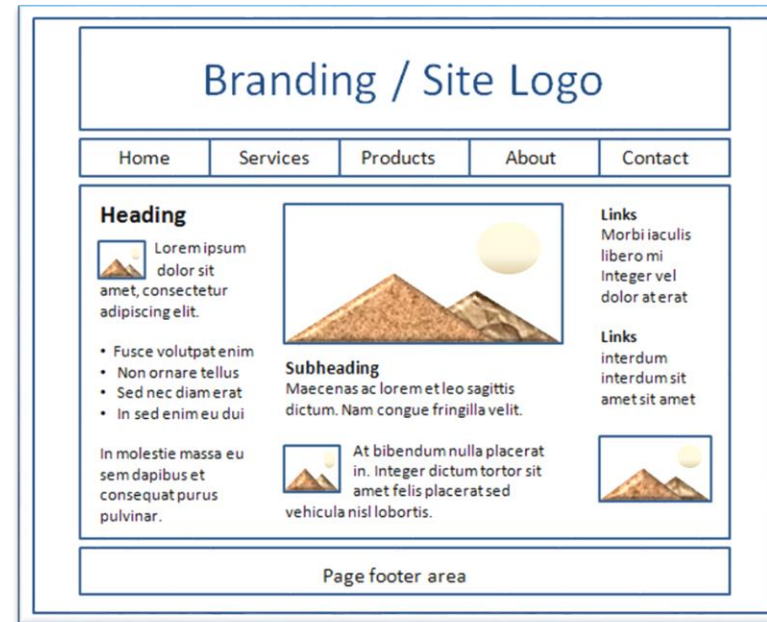
# Navigation Design

- 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



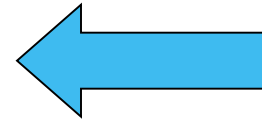
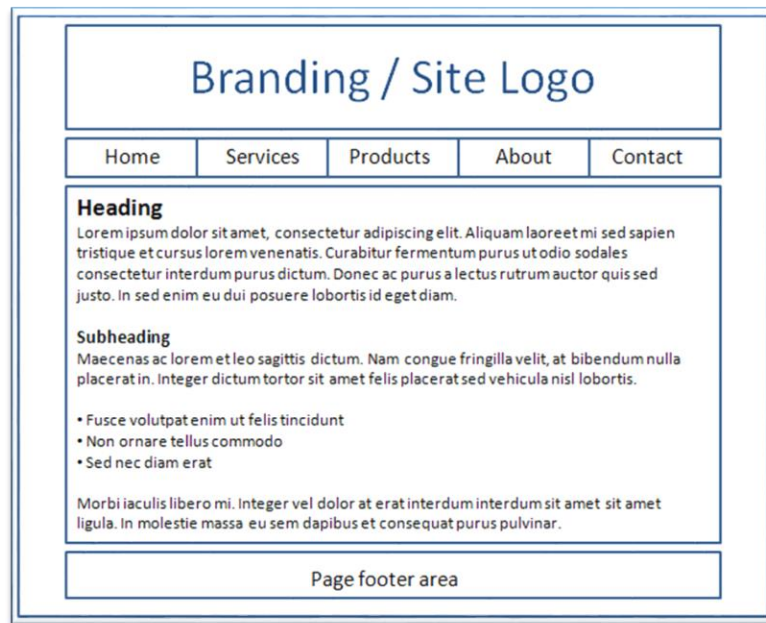
# Wireframe

- 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



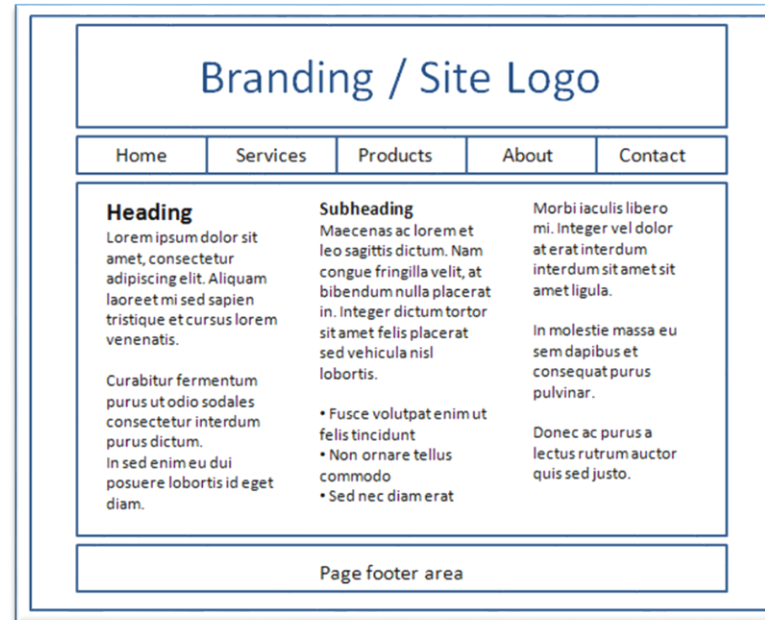
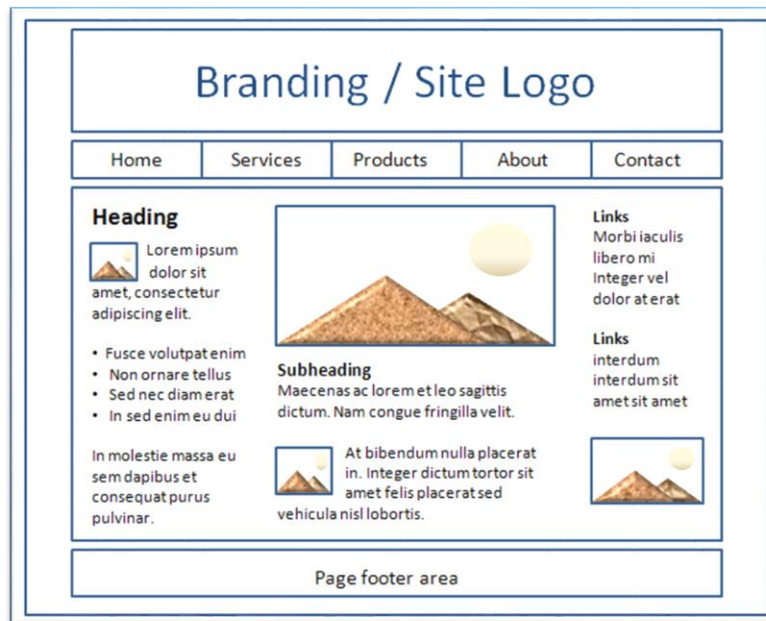
This is usable, but a little boring. See the next slide for improvements in page layout

# Web Page Design Page Layout(2)

Better



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



Best



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

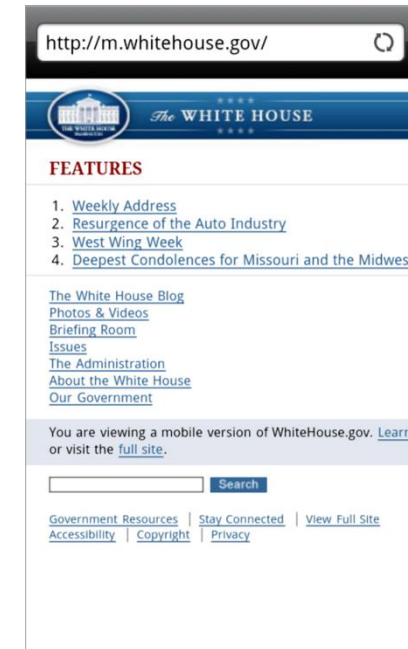
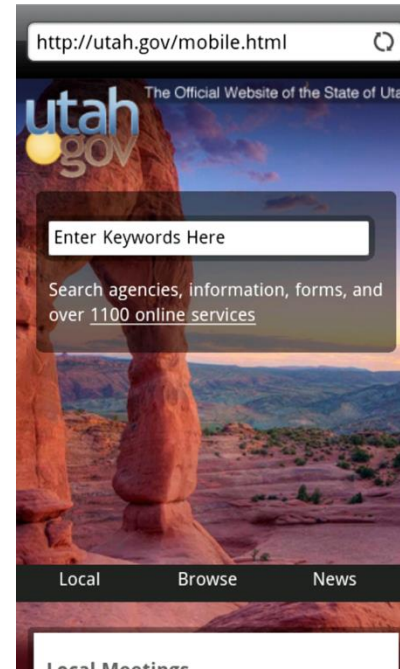
# Page Layout Design Techniques

- 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



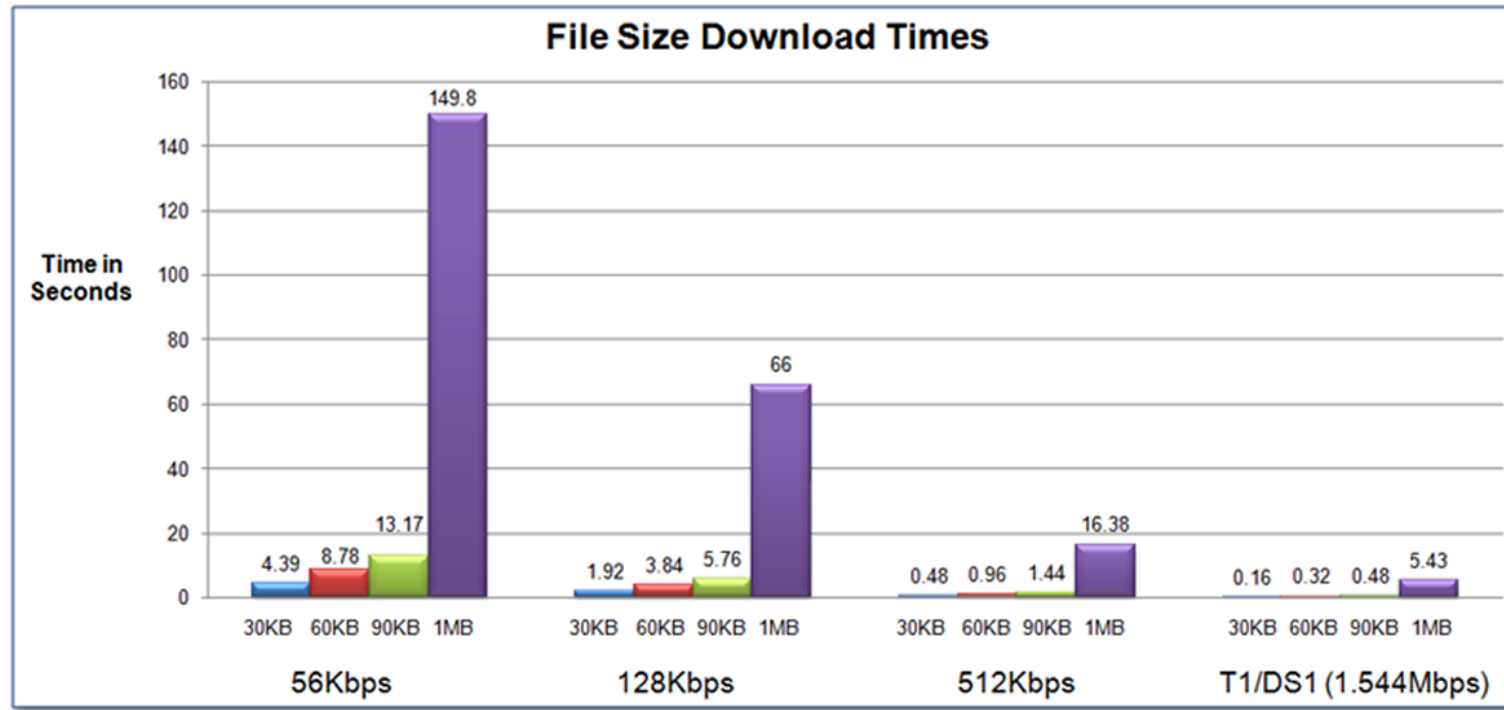
# Design for the mobile Web

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



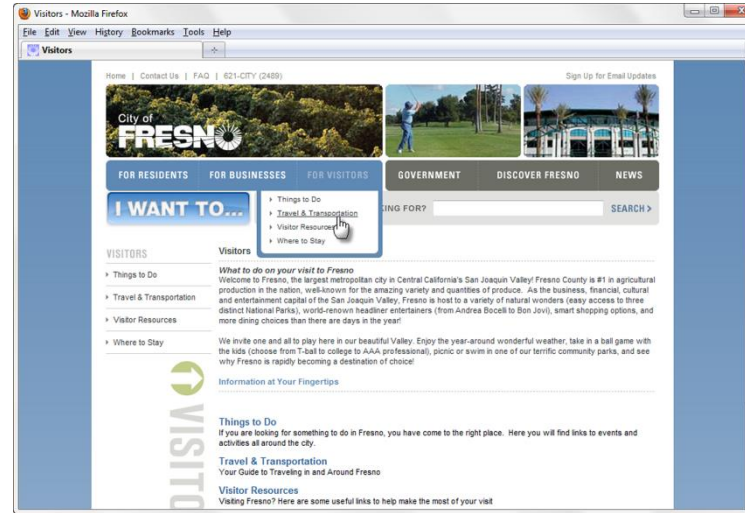
# Web Page Design - Load Time

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



# 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
  - Edge
- Design to look OK in commonly used browsers and implement new technologies in modern browsers → Progressive Enhancement

# Web Design Best Practices Checklist

- Page Layout
- Browser Compatibility
- Navigation
- Color and Graphics
- Multimedia
- Content Presentation
- Functionality
- Accessibility

<http://terrymorris.net/bestpractices>

# Web Fonts

- Certain fonts work best in headlines, while others read well in paragraphs
- Some font families are large enough to include international scripts and special characters
- And if the font comes in a range of different styles (like italics or small caps) and weights (from hairline to ultra-black), it'll offer more tools to fine-tune the design as the project comes together
- Lean more: Choosing Web Fonts: A Beginner's Guide  
<https://design.google/library/choosing-web-fonts-beginners-guide/>

# 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/>

- Sketch

Sketch is a digital design toolkit built to help you create your best work — from early ideas, through to final assets

<https://www.sketchapp.com/>

**A user interface is like a joke.  
If you have to explain it,  
It's not that good.**



# DON'T MAKE ME THINK

A Common Sense Approach to Web Usability, 2nd Edition,  
by Steve Krug

(<http://www.uxbooth.com/articles/10-usability-lessons-from-steve-krugs-dont-make-me-think/>)

# Usability Means...

- Usability means making sure something works well, and that a person of average ability or experience can use it for its intended purpose without getting hopelessly frustrated.

# Web applications should explain themselves

- As far as humanly possible, when I look at a web page it should be self-evident. Obvious. Self-explanatory.

# Don't Make Me Think

- As a rule, people don't like to puzzle over how to do things. If people who build a site don't care enough to make things obvious it can erode confidence in the site and its publishers.

# Don't waste my time

- Much of our web use is motivated by the desire to save time. As a result, web users tend to act like sharks. They have to keep moving or they'll die.

# Users still cling to their back buttons

- There's not much of a penalty for guessing wrong. Unlike firefighting, the penalty for guessing wrong on a website is just a click or two of the back button. The back button is the most-used feature of web browsers.

# We're creatures of habit

- If we find something that works, we stick to it. Once we find something that works — no matter how badly — we tend not to look for a better way. We'll use a better way if we stumble across one, but we seldom look for one.

# No Time for Small Talk

- Happy talk is like small talk – content free, basically just a way to be sociable. But most Web users don't have time for small talk; they want to get right to the beef. You can – and should – eliminate as much happy talk as possible.



# Don't lose search

- Some people (search-dominant users), will almost always look for a search box as they enter a site. These may be the same people who look for the nearest clerk as soon as they enter a store.

# We form mental site-maps

- When we return to something on a Web site, instead of relying on a physical sense of where it is, we have to remember where it is in the conceptual hierarchy and retrace our steps.

# Make it easy to go home

- Having a home button in sight at all times offers reassurance that no matter how lost I may get, I can always start over, like pressing a Reset button or using a “Get out of Jail free” card.