

CS 312

## Internet Concepts

# Developing Web Content: Website Design

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## Website Design

- ◆ What separates good websites from bad ones?
- ◆ Appeal to target audience
  - » examples: [www.nasa.gov](http://www.nasa.gov), [www.bls.gov](http://www.bls.gov)
  - ❖ NASA vs. Bureau of Labor Statistics

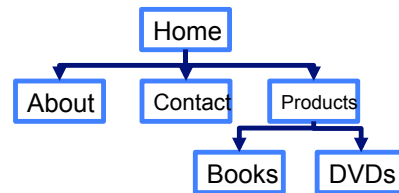
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# Website Organization

## Hierarchical

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- ◆ Clearly defined home page
- ◆ Links to major site sections
- ◆ Break down site into small, easily managed topics (chunking)
  - » Humans can store only 5-9 chunks of information at a time in short-term memory
  - » Try not to place more than 9 major navigation links on a page
    - ❖ or group links into no more than 9 sections
- ◆ Avoid too deep
  - » three click rule – visitor should be able to get from any page on your site to any other page on your site with a max of three links
- ◆ Main section content pages should have same look and feel

<http://memory.loc.gov/ammem/gmdhtml/gmdhome.html>

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# Website Organization

## Linear

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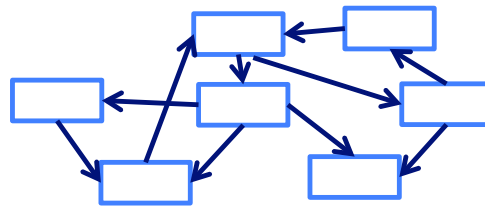
- ◆ Pages are viewed sequentially (one after another)
  - » often have 'next' and 'previous' buttons
- ◆ Often used for tutorial webpages

<http://www.w3schools.com/html/>

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# Website Organization

## Random



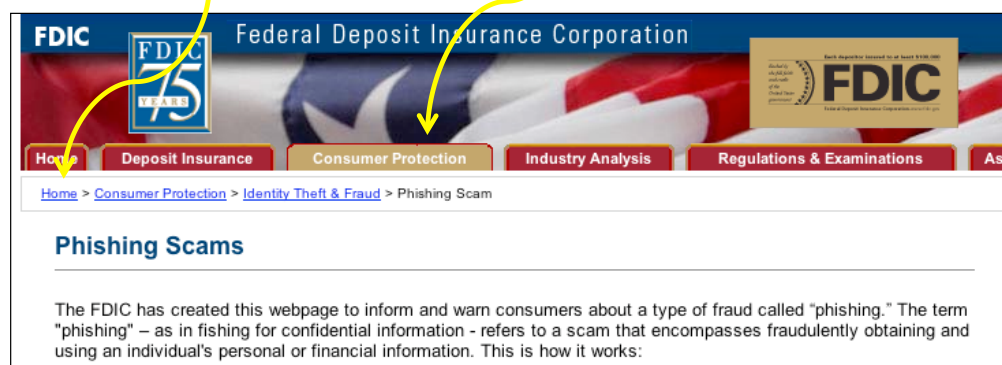
- ◆ Offers no clear path through the pages
- ◆ Usually found on sites that try to be different
- ◆ Not used for commercial websites
  - » why not??

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# Website Navigation

## Best Practices

- ◆ Ease of Navigation
  - » clearly labeled navigation links
  - » breadcrumb trails
- ◆ Navigation Bars
  - » make it clear where user is and where they can go next



<http://www.genome.gov/>

<http://www.loc.gov/wiseguide/jun09/index-flash.html>

<http://www.grants.gov/index.jsp>

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# Website Navigation

## Best Practices

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- ◆ Short Pages
  - » less than three or more screen lengths
  - » break long pages into multiple short pages
- ◆ Table of Contents
  - » [http://www.grants.gov/help/general\\_faqs.jsp](http://www.grants.gov/help/general_faqs.jsp)
- ◆ Site Map and Site Search
  - » site map – allows user to scan the options available over the entire website
  - » <http://www.grants.gov/sitemap/sitemap.jsp>

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## Design Principles

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- ◆ Repetition
  - » repeat visual elements throughout design
  - » ties the work together
- ◆ Contrast
  - » add visual excitement and draw attention
  - » good contrast between background color and text
- ◆ Proximity
  - » group related items physically close together
  - » unrelated items should have space between them
- ◆ Alignment
  - » align elements to create visual unity

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# Web Page Design

## Best Practices

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### ◆ Load Time

- » want pages to load as quickly as possible
- » good practice to limit total file size of web page and all associated images to under 60 KB
  - ❖ how long would it take a browser to download this?

### ◆ Perceived Load Time

- » amount of time user is aware of waiting while loading the page
- » break large page into smaller pages
- » divide large images into smaller component images
  - ❖ each will display as it is loaded

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# Web Page Design

## Best Practices

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### ◆ Above the Fold

- » place important information near the top of the page
- » common screen resolution is 800x600, so amount of screen above the fold is about 410 pixels
  - ❖ accounting for web browser menus and controls

### ◆ Web Page "Real Estate"

- » location of banners, headings, and navigation is important
- » eyes are most often drawn to the upper-left of the page, then go left to right
- » most valuable web real estate is upper-left corner and top center

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# Web Page Design

## Best Practices

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### ◆ Horizontal Scrolling

- » avoid it!
- » for 800x600 resolution, amount of viewable screen is about 760 pixels

### ◆ Adequate White Space

- » blank space in areas around blocks of text increases readability

### ◆ Target Audience

- » use of color <http://www.usmint.gov/kids/>
- » reading level <http://underatedrock.com>
- » animation <http://www.drs.wa.gov/>
  - ❖ don't use an animated GIF just because you have one!

<http://vischeck.com/vischeck/vischeckURL.php> - check for color blindness

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# Web Page Design

## Best Practices

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### ◆ Browser-Friendly

- » design for browser most likely to be used by your target audience
  - ❖ [http://www.w3schools.com/browsers/browsers\\_stats.asp](http://www.w3schools.com/browsers/browsers_stats.asp)
- » test pages in various browsers
  - ❖ <http://browsershots.org/>

### ◆ Common Screen Resolutions

- » 1024x768
- » 1280x1024
- » 800x600

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# Web Page Design

## Components

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- ◆ Page layout design
- ◆ Text design
- ◆ Graphic design

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## Page Layout Design Techniques

- ◆ Ice Design
  - » solid or fixed design
  - » page hugs the left margin
  - » fixed-width block-level element used to format the page
  - » right-hand side of page will often contain lots of empty space

<http://www.students.gov>

<http://www.league.org>

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## **Page Layout Design Techniques**

### ◆ Jello Design

- » content is centered
- » may be of fixed width or 80% of page
- » typically more pleasing than Ice at higher resolutions
- » even margins on both sides

<http://www.energy.gov/>

<http://www.officedepot.com/>

<http://www.pbs.org/>

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## **Page Layout Design Techniques**

### ◆ Liquid Design

- » fluid web page
- » content takes up 100% of window regardless of screen resolution
- » no blank margin on either side
- » often designed using CSS instead of tables

<http://www.illinois.gov/tech/>

<http://moodle.org>

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# Page Layout Design Techniques

## Differences

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- ◆ Ice and Jello give the designer more control over layout than Liquid
  - » but result in large empty areas when viewed at higher resolutions
- ◆ Liquid uses entire window no matter the resolution
  - » important to test site with various resolutions

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# Text Design

## Best Practices

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- ◆ Long blocks of text and long paragraphs are hard to read
- ◆ Use short sentences and bulleted lists
- ◆ Use common fonts (Arial, Verdana, Times New Roman)
  - » if visitor doesn't have an unusual font, a default will be displayed
- ◆ Sans serif fonts are easier to read on screen than serif fonts
- ◆ Be careful with font sizes
  - » 12 point font is "medium" and 1 em

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# Text Design

## Best Practices

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- ◆ Use appropriate color combinations
  - » contrast and look good together
  - » <http://www.colorcombos.com/>
  - » <http://www.colorschemer.com/online.html>
- ◆ Be aware of line length and alignment
  - » use white space and multiple columns
- ◆ **Bold** or *emphasize* important text
- ◆ Hyperlink phrases or words, not entire sentences
- ◆ Avoid the use of "click here"
- ◆ Check spelling and grammar


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# Graphic Design

## Best Practices

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- ◆ Choose colors on the web color palette
  - » 216 colors available
  - » [http://www.w3schools.com/Html/html\\_colors.asp](http://www.w3schools.com/Html/html_colors.asp)
- ◆ Use antialiased text in images
  - » smoothes jagged edges
- ◆ Use only necessary images
  - » faster load times
- ◆ Keep images as small as possible
  - » faster load times

 Alias

 Anti-aliased

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# Graphic Design

## Best Practices for Accessibility

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- ◆ Some users access webpages through screen readers
  - » can't handle images
- ◆ Make sure site is usable even if images are not displayed
- ◆ Use alternate text for images
- ◆ Consider a text-only version of the page
  - » <http://www.nhc.noaa.gov/?text>
- ◆ Limit the use of animation
- ◆ Provide a method to skip repetitive navigation links
  - » <http://www.nihseniorhealth.gov/>

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## Copyright and Fair Use

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- ◆ We cannot arbitrarily copy others' text and images
- ◆ Copyright and fair use overview
  - » [http://fairuse.stanford.edu/Copyright\\_and\\_Fair\\_Use\\_Overview/](http://fairuse.stanford.edu/Copyright_and_Fair_Use_Overview/)
- ◆ Website permissions
  - » [http://fairuse.stanford.edu/Copyright\\_and\\_Fair\\_Use\\_Overview/chapter6](http://fairuse.stanford.edu/Copyright_and_Fair_Use_Overview/chapter6)
    - ❖ Ways to stay out of trouble
    - ❖ Transferring information to and from a website
    - ❖ Connecting to other websites

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## Final Thoughts

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- ◆ Google's Matt Cutts evaluates good and bad sites
  - » [http://www.youtube.com/watch?v=ecI\\_hCBGEIM](http://www.youtube.com/watch?v=ecI_hCBGEIM)
  - » 1:00 – icarkits.com
  - » 9:00 – fazalfurniture.com
  - » 18:30 - hivinsite.ucsf.edu
  - » 22:30 – blogsense.biz
  - » 25:00 – comfortfeetshop.com
  - » 32:00 – closebys.com
  - » 40:25 – plug for Live HTTP Headers plug-in
  - » 43:00 – plug for Google Webmasters console
- ◆ How well do ODU and ODU-CS websites follow best practices?
  - » <http://www.odu.edu>
  - » <http://www.cs.odu.edu>

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## Summary

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- ◆ Web Site Organization
- ◆ Web Site Navigation – Best Practices
- ◆ Design Principles
- ◆ Web Page Design – Best Practices
- ◆ Page Layout Design Techniques
- ◆ Text Design – Best Practices
- ◆ Graphic Design – Best Practices

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