Announcements

- **Reference**
  - Art Theory for Web Design by Jennifer Golbeck
  - ISBN: 1-57676-142-8
  - (Available in Amazon)

COLORS IN WEB PAGES

- It should support the process of conveying information
- Based on the RGB system
- We have 16,777,216 colors (Quite a lot!)
- How many colors to use? The answer varies but you risk more by using a lot of colors than by using few
- Lot of colors → makes information harder to see and page harder to view
- Few colors → page could be boring

Color Theory

- **Primary colors** → red, yellow, and blue (notice different from RGB)
- **Secondary colors**
  - green – blue and yellow
  - orange – yellow and red
  - violet – red and blue
- **Hue** → pure color (e.g., red, blue) with no white or black added
- **Shade** →pure color with black added, extending from pure hue to black
- **Tint** → pure color with white added, extending from pure hue to white
- **Tone** → pure color with grey added, extending from pure hue to gray
  - A pure color is at full saturation
  - As saturation diminishes colors fade to gray

12-Hue Color Wheel

Classification of Colors

- **Complementary colors** → found directly across from one another
  - Have the greatest contrast
  - Example: orange and blue
- **Analogous colors**
  - Provide little contrast
  - Three to five colors found consecutively on the wheel
  - Usually found in nature
- **Warm colors**
  - Reds, oranges, yellows
  - Remind you of warm things
- **Cool colors**
  - Greens, blues, violets
  - Remind you of cool things
- **Harmonic color** →found equally spaced on the wheel (e.g., complementary colors)
  - Harmonic dyads (complementary colors)
  - Harmonic triad → collection of three colors
    - Example: red, blue, yellow

Approaches to Assigning Colors

- **Approach I → Main/Support/Emphasis colors**
  - Rule of thumb is two use three colors
    - **Main color** - occupies most of the web page area and defines the tone of the web page
    - **Support color**
      - Color closed to the main color and that supports it
      - Can often be an analogous color
    - **Emphasis color**
      - Used to emphasize certain elements of the web page
      - It contrasts with the Main and Support colors
      - Suggested color: complementary of main color or analogous colors of the complementary
    - **Examples:** http://www.cs.umd.edu/class/spring2009/cmsc122/index.shtml

Approaches to Assigning Colors

- **Approach II → Monochromatic**
  - A color is chosen and the web page is made of different variations of tints, shades, and saturations of the specified color
    - **Examples:** http://www.cbcb.umd.edu/
- **Approach III → Harmonic Triad**
  - Created by selecting three equidistant colors on the wheel
  - Provides for a design that is colorful and balanced
  - Red, blue and yellow is the strongest of the triads
  - **Example:** http://www.mcdonalds.com/

Elements to Keep in Mind

- **Cool colors**
  - Appear to be distant
  - Recommended for backgrounds
- **Warm colors**
  - Appear to be closer
  - Recommended for menus
- **High readability combinations**
  - Black text on white background
  - Blue text on white background
  - Black text on yellow background
- **Blue color** → perceived as strong and dependable
- **Green color** → associated with a calming feeling
- **Red color** → associated with making people feel hungry
- **Triad colors** → recommended for colorful/balanced web pages
- **Backgrounds** → use solid colors

Web-Safe Colors

- Came as a consequence of screens that could only display 256 colors
- You had to pick colors that could be displayed on these screens
- With advances of display technology, is this a big issue today?

Resources for Colors

- Let's look at some of the links in the resources section of the class web page
  - Gimp
  - How to obtain colors from a picture
  - How to generate background with gradients

Usability

- Measures of how easy is the interaction between the user and the web site
- Major aspects
  - **Speed** → How fast users can accomplish a task
    - Factors: configuration of the web site and page loading time
  - **Learnability** → how easy is to learn to interact with the site
  - **Efficiency** → how many errors the user makes while completing a task
  - **Memorability** → how easy users remember how to use the site once they have learned it
  - **User Preference** → how much the user enjoys using the interface

Guidelines for a Usable Web Page

- **Create Predictable Links**
  - Links should stand out from the rest of the code
  - Visited and unvisited colors should be easy to tell apart (users want to know what they have visited!)
  - Removing underlines from links makes user confuse links with text
  - Links should have descriptive names
  - If using images for links, distinguish them from the text and indicate they should be clicked
- **Use Descriptive Titles**
  - Titles should describe the site associated with them (e.g., notreal.com) and the page user is on
  - Titles are used as bookmarks names thus a descriptive name will help identify each bookmark

Guidelines for a Usable Web Page

- **Page Width**
  - Avoid a page width that will force horizontal scrolling
  - Horizontal scrolling can be avoided by using relative widths (e.g., percentages) rather than fixed widths
- **Page Length**
  - Long pages should be avoided
- **Size of a page**
  - Smaller the better
  - Images are the largest contributor to page size. Reduce their size as much as possible
- **Layout**
  - The page layout should indicate exactly how to accomplish the main task associated with the page. No elements (e.g., ads, graphics, etc.) should draw attention from components that perform the main task associated with the page
  - Good layout example: Google

Guidelines for a Usable Web Page

- **Legibility**
  - Make your pages legible
  - Font and color are two aspects to take into consideration
    - Use Times or Arial fonts
    - Smaller fonts can cause trouble
    - Black text on white background is preferable
- **Cross-Platform and Cross-Browser Compliance**
  - Check your pages work on Windows, Macs, and Unix OS, using different versions of each possible browser
  - Do not use browser specific features
  - Do not assume standard HTML and CSS will work the same across platforms

Usability: Frames

- **Frame**
  - Allows us to view several HTML documents in the same window
  - A page can be loaded in a frame while other stay constant
  - **Example:**
    http://java.sun.com/j2se/1.5.0/docs/api/index.html
- **Causes big problems from a usability point of view**
  - Bookmarking will not work as expected
  - Search engines have difficulties with frames
  - Printing can be problematic
- Effects associated with frames can be achieved via CSS positioning and ** ** tag.

Guidelines for an Usable Web Site

- **Visual Consistency** → When a new page is selected in a site it should be easy to identify it belongs to the same site
  - You can achieve consistency by
    - Using logos or banners
    - Keeping a consistent layout and configuration of elements. For example:
      - Navigation bar is consistent in its placement and appearance
      - Consistent coloring
  - If the layout is not consistent you can use identical colors and shape elements to make pages appear consistent
- **Navigation** → For an easily navigable site users should be clear about:
  - Where they will go when selecting a link
  - Where they are in the site
  - How to get back to a recognizable starting place

Guidelines for an Usable Web Site

- **Navigation: Approaches to organize a site**
  - **Sequential Organization** → Pages follow a certain order and are linked to one another in order. Appropriate for scenarios were:
    - Sequence of steps needed to complete a task are described
    - A story is told
    - Chronological information is presented
  - **Hierarchical Organization** → Appropriate for sites with a very large number of pages. A main page has categories with subcategories, etc. Users should know their position in the structure
  - **Web-based Organization** → Most common organizational structure
    - Web-like structure (should not force one of the organizations previously discussed)
    - Pages link to one another based on content
      - A page could be accessible only from one particular page
      - A page can connect many pages
      - Etc.

Guidelines for an Usable Web Site

- **Links**
  - Links names should be descriptive and indicate where the links go
  - Rather than next, prev, up, down add a description of the nature of the page that will be reached.

    “next: Weather in the USA”

    “up: Courses at UMCP”
- **Search**
  - Search tools for an entire web site can help users find what they need
  - The search should search the web site by default