

ICT Web Design Essentials

Lesson 1: Principles of Web Design

LESSON SKILLS

After completing this lesson, you will be able to:

- Categorize a Web site according to its purpose and domain.
- Identify elements of a Web page.
- Critique the aesthetics and functionality of sample Web sites.
- Demonstrate knowledge of the color wheel and proper use of color.

KEY TERMS

accessibility	lossy compression
aesthetics	media compression
alignment	multimedia
CARP	.png
compatibility	proximity
contrast	raster images
domain name	repetition
functional	responsive design
.gif	top-level domain (TLD)
Human-Computer Interaction (HCI)	typography
.jpg	usability
layout	vector images
lossless compression	visual hierarchy

Points to Ponder

These Points to Ponder are designed to help you focus on key elements in this lesson. They are also suitable for use to spark discussions or individual research.

- Explain why contrast and alignment are important to design.
- Describe the color wheel, and identify primary and secondary colors.
- List two guidelines for choosing a Web site's color scheme.
 - Explain how color affects a Web site's appeal.
- Explain the CARP principles of design (contrast, alignment, repetition, proximity), and give an example of how each principle is used in designing aesthetic layouts.
- Explain the difference between vector and raster graphics.
 - Explain the difference between lossless and lossy compression.
- List four accessibility guidelines that should be used by Web designers.
 - Explain why the listed guidelines are important.

Overview

In this lesson, you will explore the principles of Web Design, including domain types, aesthetics, usability, functional design principles, multimedia use and Web page interactivity.

Web Site Categories and Domains

Objectives

3.1.1: Identify Web site domains, and relate a site's domain to its purpose.

This section examines how Web site categories and domains can provide clues to the purpose and location of the Web site.

A Web site address, or **domain name**, consists of three parts: the server (host) name (usually www, which stands for World Wide Web), the second-level domain, also called the registered company domain name, and the **top-level domain (TLD)**, which is the domain category. For example Figure 1-1 shows the domain name for CIW Certified, the company name "CIWcertified" is the second-level domain and ".com" is the top-level domain.



Figure 1-1: Typical domain name

Web sites are grouped by their top-level domain, also called a domain category (such as .com, .edu or .uk), which identifies the type of organization to which the Web site belongs. The domain category can provide visitors with a clue to the purpose or location of the organization that owns the site.

Domain categories can indicate the site's country of origin. For example, .ca is from Canada, .uk is from the United Kingdom, .au is from Australia, and so forth. The domain categories are in the native language of the country, which is not necessarily English; the domain suffix for Germany is .de because the German name for that country is Deutschland. There is a .us category for the United States of America, but it's not as commonly used as the categories from other countries.

A site's top-level domain may not always be an accurate representation of its content. For example, .com is an unrestricted suffix that was originally intended for commercial entities but is now considered a generic category used by both businesses and individuals. Also, .org was designed for non-profit organizations, but today some schools and school districts also use it as do organizations that are not strictly non-profit. There are however, some top-level domains that are indeed accurate representations of their content. These top-level domains are restricted; permission is required in order to use them. These include .gov (government sites), .edu (educational sites), and .mil (military sites).

Here are some examples of top-level domain categories:

- www.nytimes.com – Commercial: The New York Times
- www.redcross.org – Organization: in this case, non-profit

- www.ed.gov – Government: The Department of Education
- www.disneystore.co.uk – Country of origin: the UK site for the Disney Store
- www.marines.mil – Military: the official site of the US Marine Corps
- www.ucla.edu – Educational: The University of California, Los Angeles

Suggested activities

- Matching Web Site Categories and Domains (Hands-on and Online)
- Searching Web Site Categories and Domains (Hands-on)

Aesthetic Web Design

Objectives

3.1.2: Relate basic components of a Web page (e.g., color, space, written content, typography, images, links, multimedia) to aesthetic, functional and/or usable design principles.

3.1.3: Define aesthetic design, and explain how aesthetics can affect a visitor's perception of a Web site's information.

3.1.4: Demonstrate knowledge of color wheel concepts and effective use of color on a Web site.

3.1.6: Critique the aesthetic design, usability and accessibility of sample Web sites.

This section focuses on the design principles used to create aesthetically pleasing, attractive, engaging and efficient Web sites.

Link to Learn More

- [The Art of Web Design](#) (YouTube video, 7 mins)

A successful Web site combines all of its design elements and functionality into a cohesive unit that is both appealing and easy to use. It should be attractive and easy to navigate. It should be easy for a user to figure out how to do what they want or need to do on the site, which also means the design needs to be well thought out. Another way of looking at this is to think of your home page as the way you are teaching people to use your site. Keeping the navigation consistent from the first page onward is a way to create comfort in looking at other pages.

Think about a Web site you've visited that you didn't like. Think specifically about design elements (colors, ease of navigation, fonts, etc.). What didn't you like about it? Next, think about a Web site you do like: why? What do these sites have in common? What are some of the major differences?

Aesthetics in Web design deals with the way the site is laid out: its graphics (if any), its links, its colors, its fonts – everything about the way the site actually looks. Aesthetics are used to create the look and feel of a Web site, engage visitors, draw them in and invite exploration. It also impacts how visitors perceive the information contained in the site and how they judge the site's credibility and usability. The site's

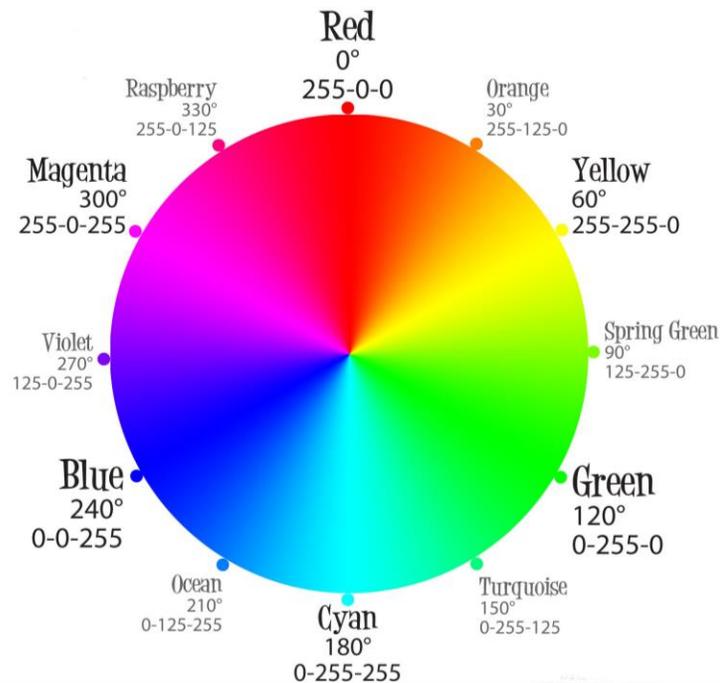


Figure 1-5: Color wheel — primary, secondary and tertiary RGB colors.

RGB is denoted as a 3-part number with each part containing 3 digits from 0-255, 0 being the absence of color and 255 being full color. HTML also works with 6-digit Hexadecimal numbers. Table 1-1 contains the RGB and Hexadecimal numbers for white, black, red, green and blue.

Table 1-1: RGB and Hexadecimal numbers

Color	RGB	Hexadecimal
White	255,255,255	#FFFFFF
Black	000,000,000	#000000
Red	255,000,000	#FF0000
Green	000,255,000	#00FF00
Blue	000,000,255	#0000FF

Link to Learn More

Partial color blindness is much more widespread than commonly realized. Read about color blindness to determine which color combinations are most easily read by the largest number of people. For information, color deficiency simulations and links to color-blindness tests, visit

<http://www.visibone.com/colorblind/>.

There are four main types of color schemes: *monochromatic*, *analogous*, *complementary* and *triadic*.

1. **Monochromatic** color schemes use varying colors, shades or tints of the same hue. (See Figure 1-6.) Start with a base color, generally darker, and then choose at least two other shades of the base color. Monochromatic color schemes can make a Web page simpler and often more accessible for people

with color disabilities (see "Accessibility" later in this lesson). Its minimalistic design allows content to shine.

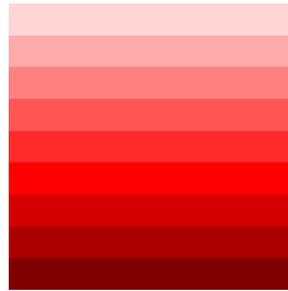
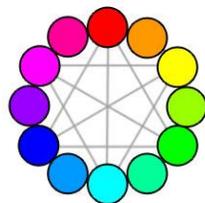


Figure 1-6: Monochromatic color

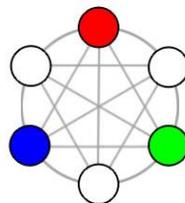
2. **Analogous** color schemes use colors that are next to each other on the color wheel. They are usually a good match and create eye-pleasing effects. It's important to make sure you have enough contrast when choosing an analogous color scheme.
3. **Complementary** colors are across from each other on the color wheel. Using them can create a vibrant look. They're not generally good for text, but can be effective in making elements stand out.
4. **Triadic** colors are colors that are evenly spaced around the color wheel. They are generally best used when one color is dominant and the others are used as accents.

Figure 1-7 illustrates the concept of color schemes.

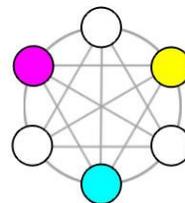
12 Point RGB Color Wheel



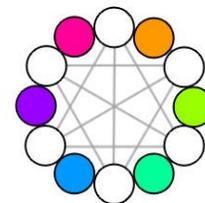
Color Wheel



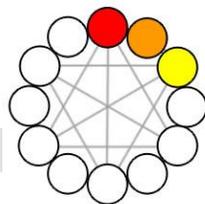
Primary Colors



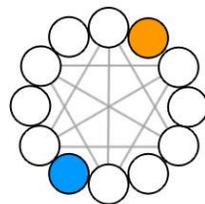
Secondary Colors



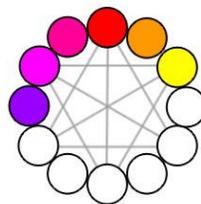
Tertiary Colors



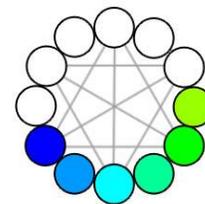
Analogous Colors



Complimentary Colors



Warm Colors



Cool Colors

Figure 1-7: Color schemes



Analyzing Multimedia and Interactivity



In this activity, you will visit two Web sites and compare their interactivity and use of multimedia. Follow the directions and submit your results to your teacher.

1. Locate two Web sites that use multimedia and interactivity. List the name and Web address for each site.
2. Write three questions that a Web designer should consider when analyzing whether a Web site uses multimedia and interactivity correctly.
3. Use the questions you wrote in Step 2 to analyze the use of multimedia and interactivity on the Web sites you identified in Step 1.
4. Determine which of the two Web sites use multimedia and interactivity more effectively. Explain your answer.



Matching Web Site Categories and Domains



In this activity, you will review Web site categories and domains. Write the letter of the correct match next to each Web site category or domain.

Domain Category	Definition
_____ 1. .com	a. U.S. government
_____ 2. .edu	b. Business
_____ 3. .gov	c. Network
_____ 4. .org	d. France
_____ 5. .net	e. United Kingdom
_____ 6. .mil	f. United States of America
_____ 7. .us	g. Organization
_____ 8. .uk	h. Educational
_____ 9. .biz	i. U.S. military
_____ 10. .fr	j. Commercial
	k. Entertainment



Using a Color Scheme Generator



In this activity, you will use a color scheme generator to explore various color schemes. Follow the directions below.

1. Visit the [WebsiteTips.com Color Scheme Chooser](http://websites tips.com/colortools/sitepro/) page at <http://websites tips.com/colortools/sitepro/>.
2. Experiment with various colors by dragging the black box along the color palette.
3. Test each color chosen in the monochromatic, complementary and triadic color schemes.
4. Change the color scheme by selecting the scheme name in the **Scheme** drop-down list.
5. Create a list of two or three colors schemes you like, and include the scheme type and the colors used.
6. Think about the kinds of Web sites your color schemes would enhance the message or purpose of the site.