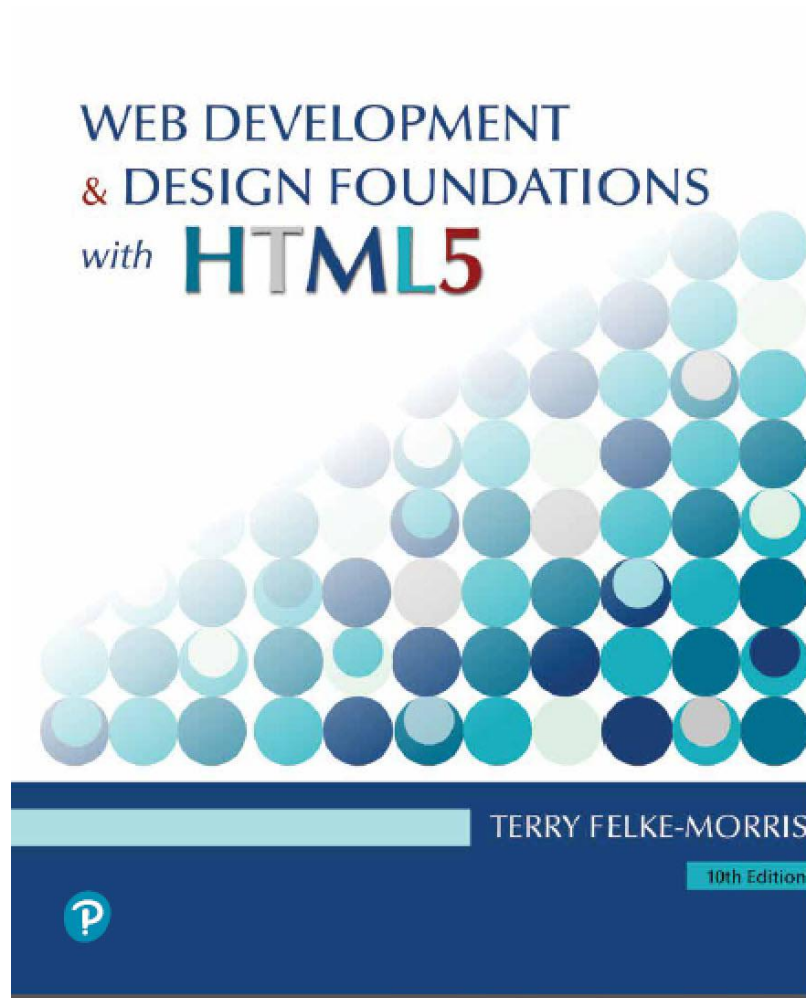# Web Development & Design Foundations with HTML5

Tenth Edition

Chapter 5

Web Design

Learning Outcomes

- Describe common types of website organization
- Describe principles of visual design
- Design for target audience
- Create clear, easy-to-use navigation
- Improve the readability of the text on your web pages
- Use graphics appropriately on web pages
- Apply universal design to web pages
- Describe web page layout design techniques
- Describe the concept of responsive web design
- Apply best practices of web design

Design for target audience
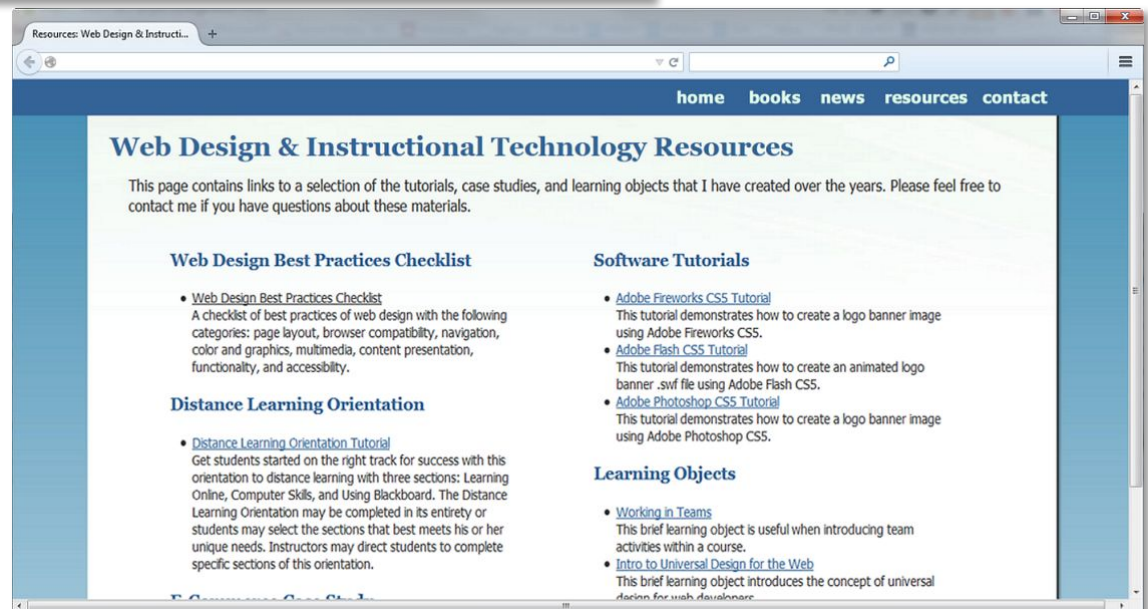
Website Organization

- Hierarchical

- Linear

- Random
  (*sometimes called Web Organization*)

Hierarchical Organization

- A clearly defined home page

- Navigation links to major site sections
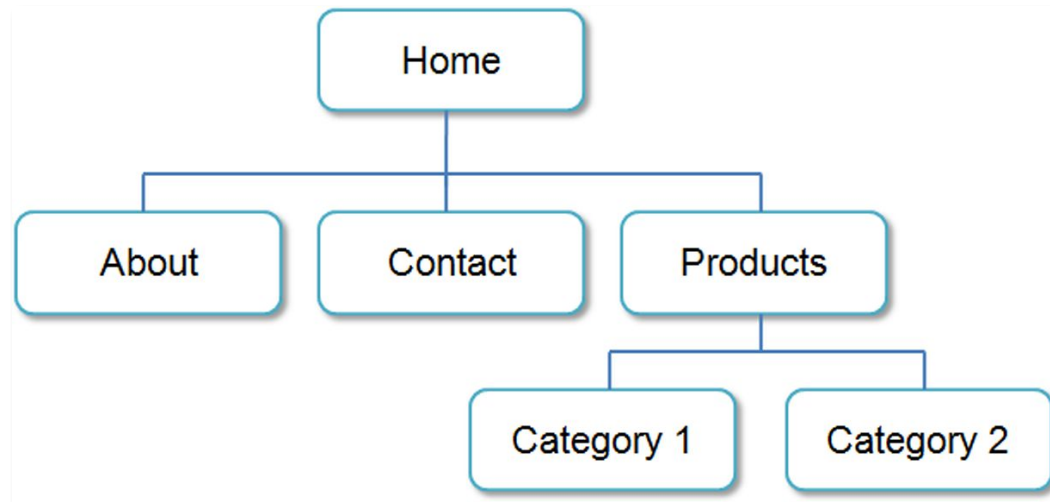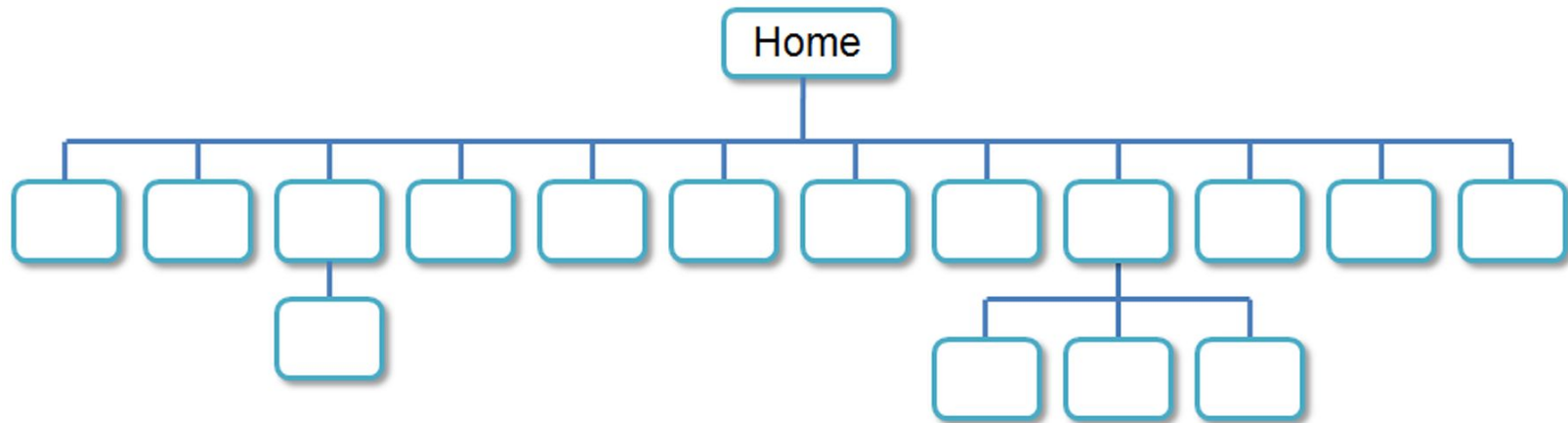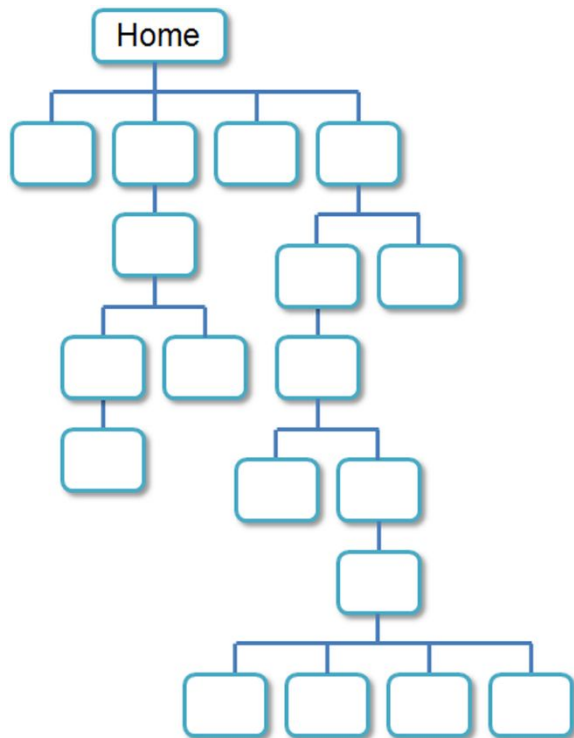
- Often used for commercial and corporate websites

Figure 5.3 Hierarchical site organization

Hierarchical & Shallow

- Be careful that the organization is not too shallow.

- Information Chunking

- Try to 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"
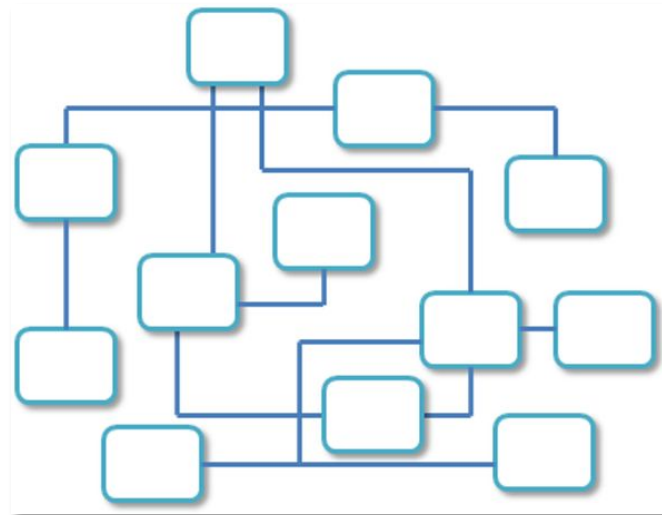
Linear Organization

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

Sequential viewing

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.

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 Principles

- Communication / User Interaction

  - First Seconds (Site Must Clearly Communicate Why it is Useful)

  - 10 Seconds (Convince User Site can be Navigated Easily

  - 1 Minute(Content is of Real Interest & Value)

- Usability

  - Intuitive Interface (Easy to Use)

  - Clear as to How to Perform Tasks, Successful Accomplishment of Tasks

  - Predictable

  - Value

The design principles of repetition, contrast, proximity & alignment
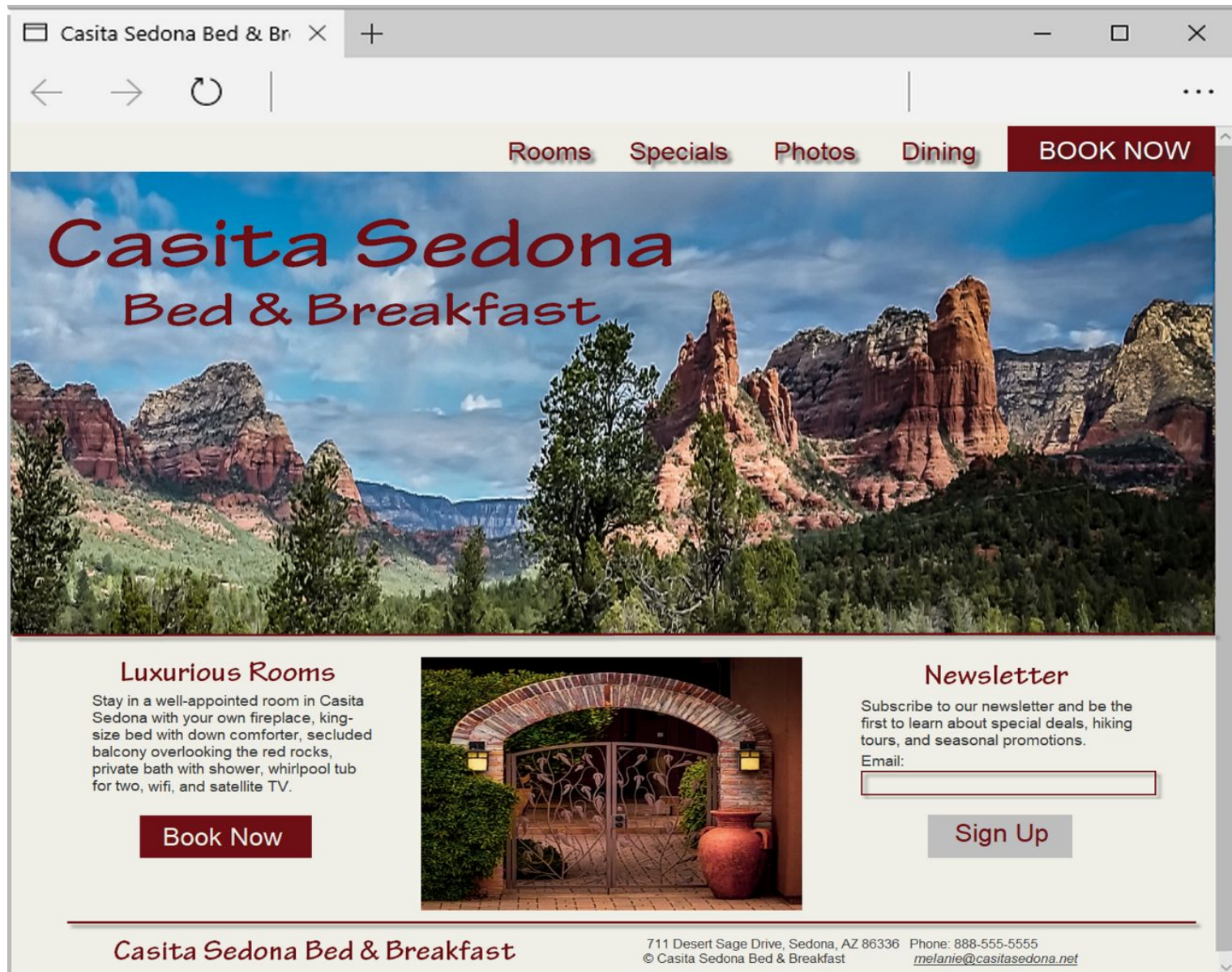
Design to Provide for Accessibility

"The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect."
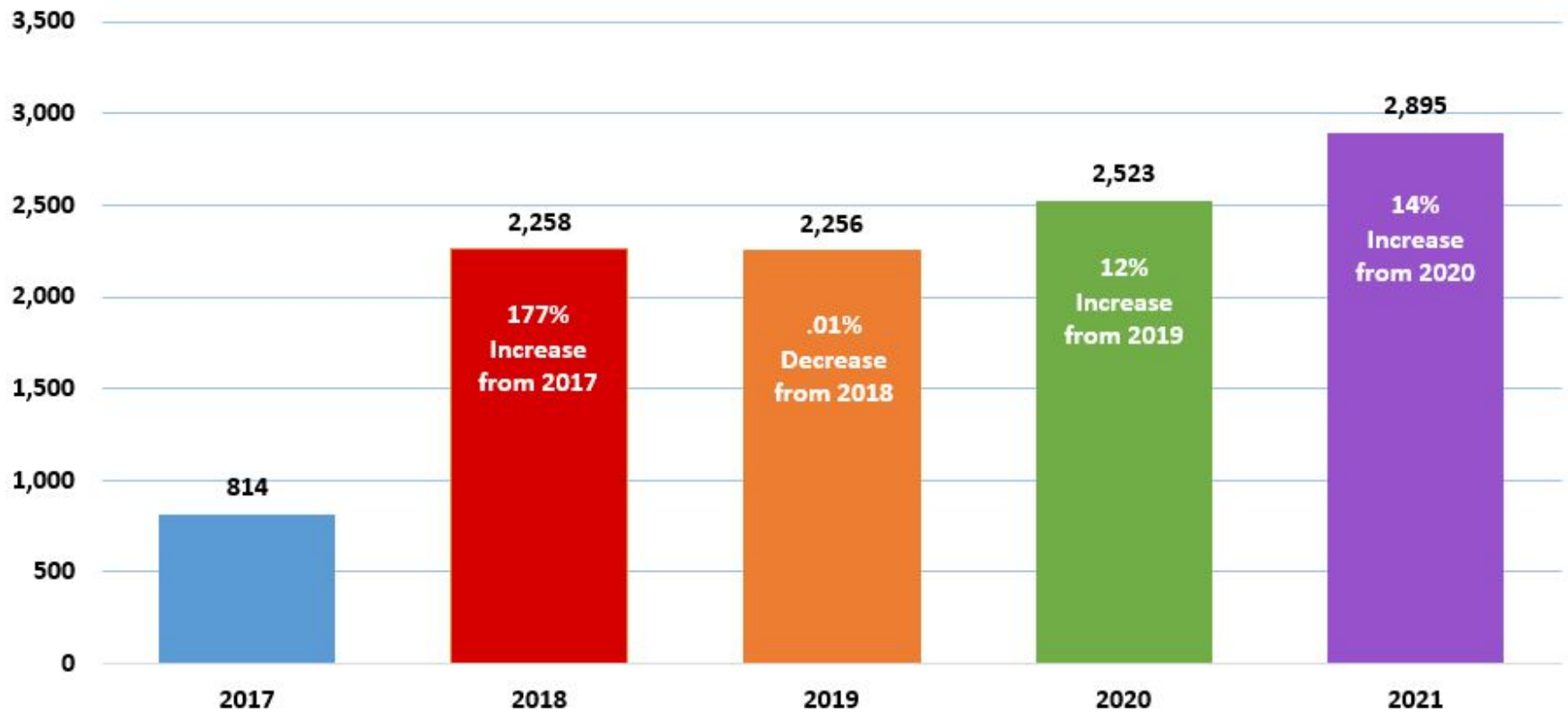– Tim Berners-Lee

Who benefits from increased accessibility?

- A person with a physical disability
- A person using a slow Internet connection
- A person using an old, outdated computer
- A person using a mobile phone

Web Accessibility Lawsuits

ADA Title III Website Accessibility Lawsuits in Federal Court
2017-2021

Design for Accessibility (1 of 2)

- Legal Requirement: Section 508

Standards: WCAG 2.0, WCAG 2.1

- W3C's WAI (Web Accessibility Initiative)

  – http://www.w3.org/WAI

  – Create Web Content Accessibility Guidelines (WCAG)

    ▪ https://www.w3.org/TR/WCAG21/

Design for Accessibility

Based on Four Principles (POUR)

1. Perceivable

   Content must be Perceivable

2. Operable

   Interface components in the content must be Operable

3. Understandable

   Content and controls must be Understandable

4. Robust

   Content should be Robust 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)
- Line length – max 50 to 75 characters per line.

Color Scheme based on an Image

https://www.degraeve.com/color-palette/index.php
http://www.cssdrive.com/imagepalette/

Color Palette Generator
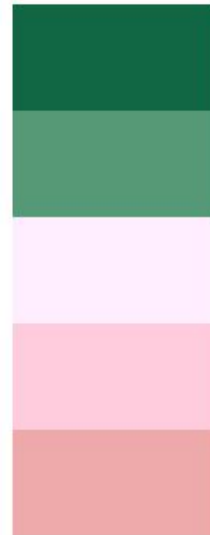
#116644	
#559977	
#ffeeff	
#ffccdd	
#eeaaaa	
dull	

#008844	
#33aa77	
#ffeeee	
#ffbbdd	
#ff7799	
vibrant	

Color Theory

Color Theory:

• the study of color and its use in design

Color Wheel

• Primary Colors

• Secondary Colors

• Tertiary Colors

Yellow with a shade, tint, and tone

| Yellow | Shade | Tint | Tone |

Color Schemes Based on Color Wheel

- Monochromatic – shades, tints, or tones of the same color

- Analogous – a main color and two colors adjacent to it

- Complementary – two colors that are opposite each other

Monochromatic color scheme

Complementary color scheme

Analogous color scheme

Color Schemes Based on Color Wheel

- Split Complementary – a main color, the color opposite it (the complement) and two colors adjacent to the complement

- Triadic- three colors that are equidistant on the color wheel

- Tetradic – two complementary color pairs

Split complementary color scheme

Triadic color scheme

Tetradic color scheme

Implementing a Color Scheme

Choose one color to be dominant

Use other colors in the color scheme as accent colors

- headings,
- subheadings
- borders,
- list markers, etc.

Use neutrals such as white, off-white, gray, black, or brown

Do not restrict yourself to web-safe colors

Feel free to use tints, shades, or tones of colors

Verify Sufficient Contrast

When you choose colors for text and background, sufficient contrast is needed so that the text is easy to read.

Use one of the following online tools to verify contrast:

- http://webaim.org/resources/contrastchecker
- http://snook.ca/technical/colour_contrast/colour.html
- http://juicystudio.com/services/luminositycontrastratio.php

Color Scheme Resources

https://meyerweb.com/eric/tools/color-blend

http://paletton.com

http://www.colorsontheweb.com/colorwizard.asp

https://color.adobe.com/create

http://www.colorspire.com

http://hslpicker.com

Can you read this easily?

Color wheel

Color & Target Audience
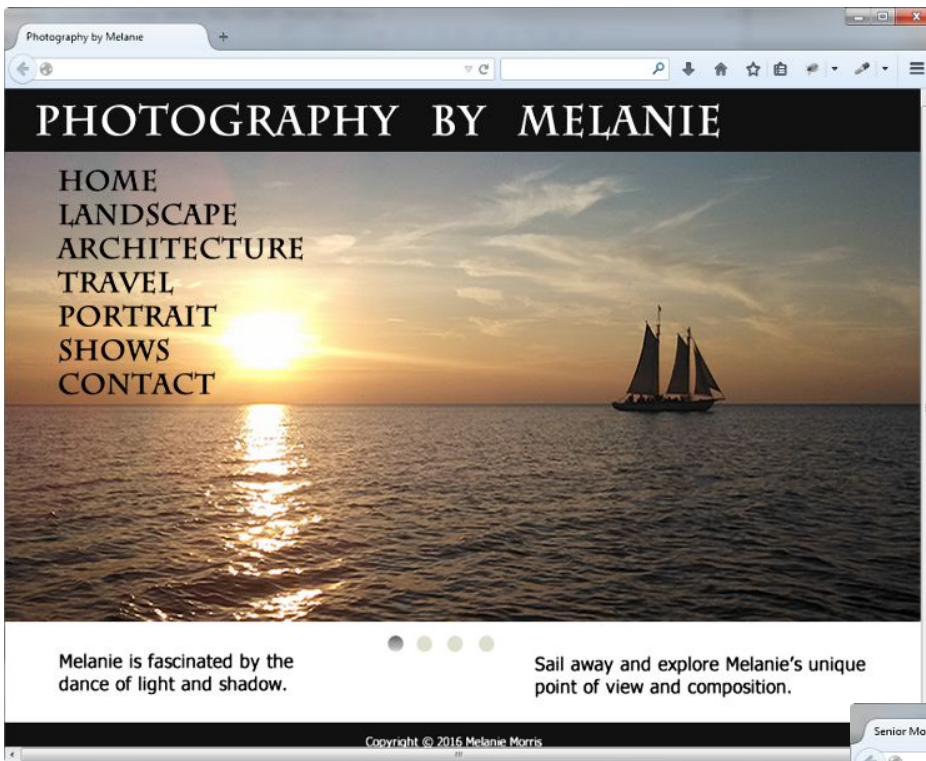
Color & Target Audience
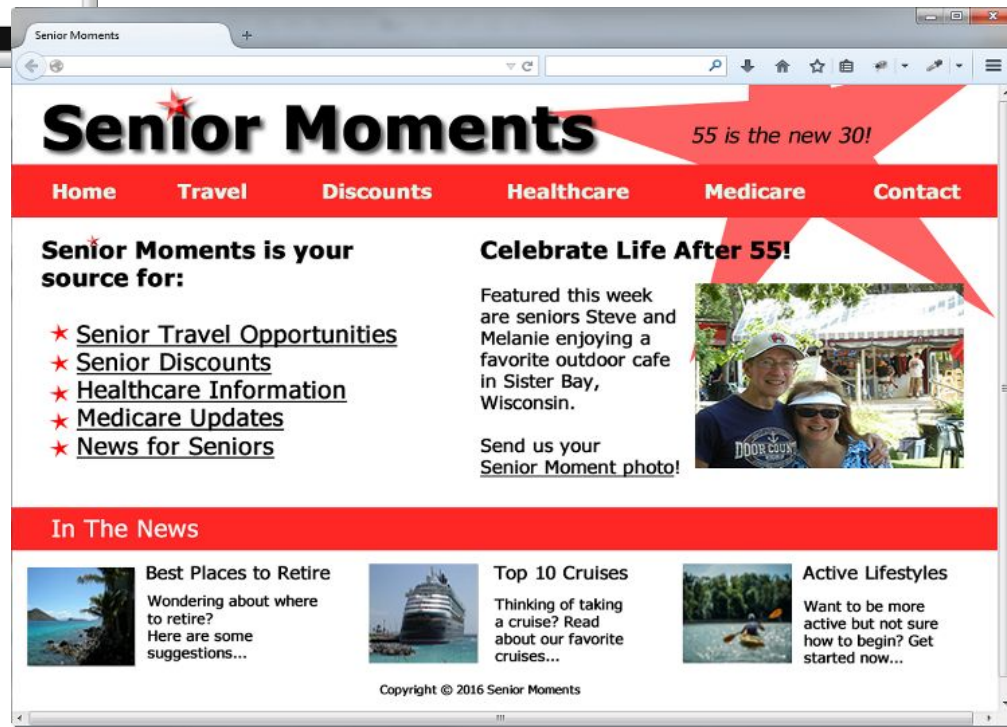
Checkpoint

1. List the four basic principles of design.
   View the home page of your school and describe how each principle is applied.

2. View https://www.walmart.com , http://www.willyporter.com , and https://www.sesamestreet.org/art-maker

3. Describe the target audience for each site.
   How do their designs differ?
   Do the sites meet the needs of their target audiences?

Use of Graphics & Multimedia

- File size and dimension matter - Optimization

- Provide for robust navigation, reuse images

- Antialiased/aliased text considerations
  - https://www.gimp.org/

- Provide alternate text

- Use only necessary multimedia

Antialiased Aliased

Web Page Design Browsers & Screen Resolution

- Test with multiple browsers
  - Chrome, Mozilla Firefox, Microsoft Edge, Apple Safari

- Test at various screen resolutions

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

Navigation Design

- Make your site easy to navigate
  - Provide clear 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

Breadcrumb and Dynamic Navigation
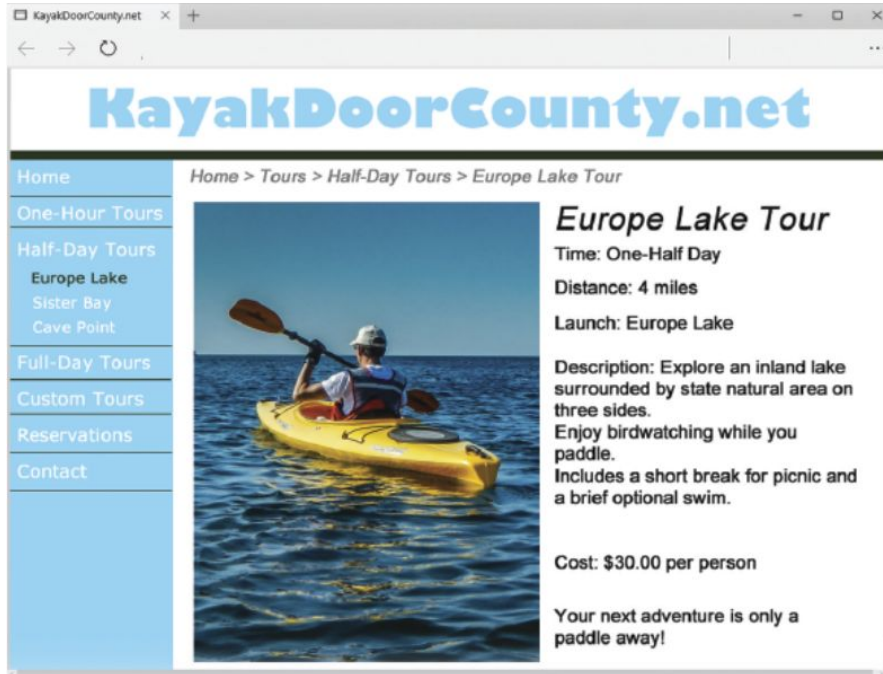
Wireframe

A sketch or blueprint of a web page

Shows the structure of the basic page elements, including:

- Header
- Navigation
- Content
- Footer
- Image locations

Web Page Design Page Layout
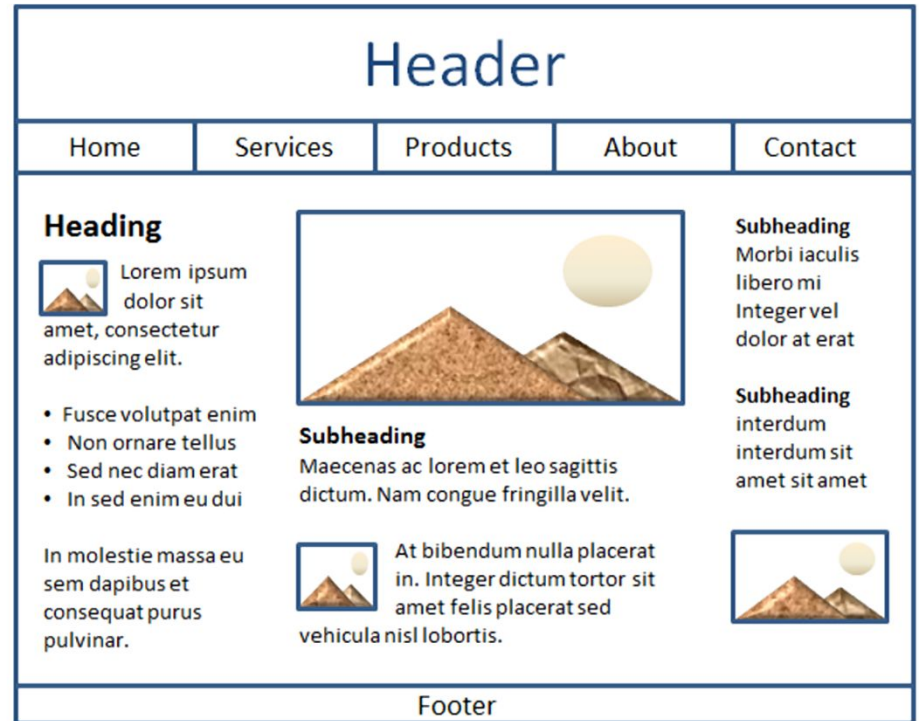## An adequate page layout

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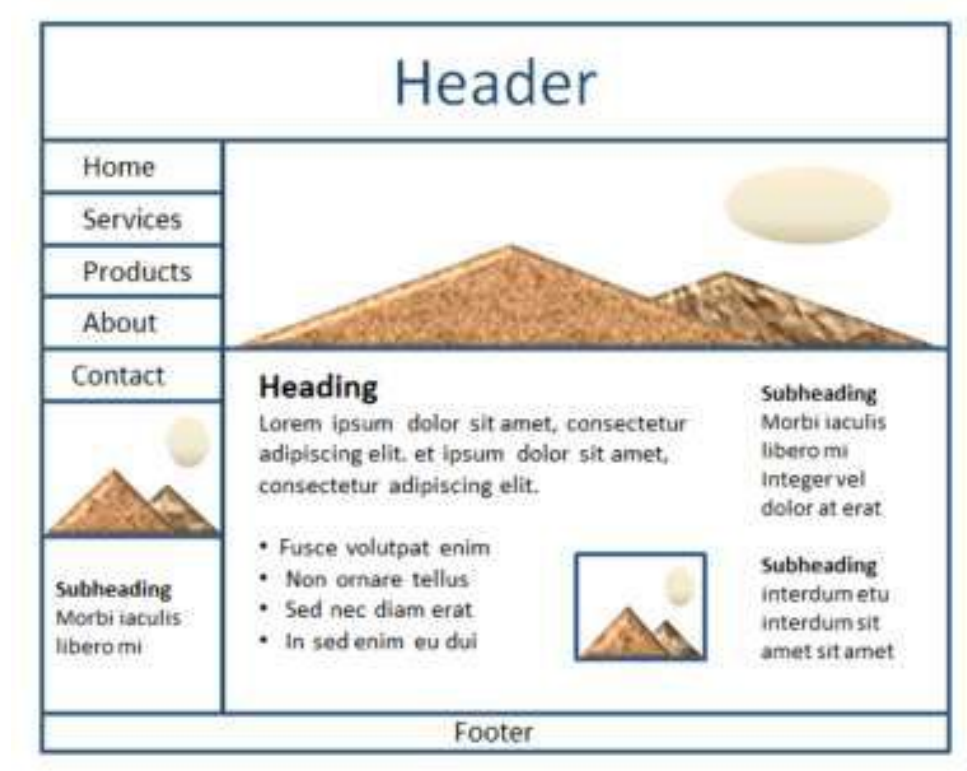
An adequate page layout

Better ⟶

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

Web Page Design Page Layout

Page Layout Design Techniques - Fixed

Fixed Layout

- AKA rigid or "ice" design

- Fixed-width often at left margin
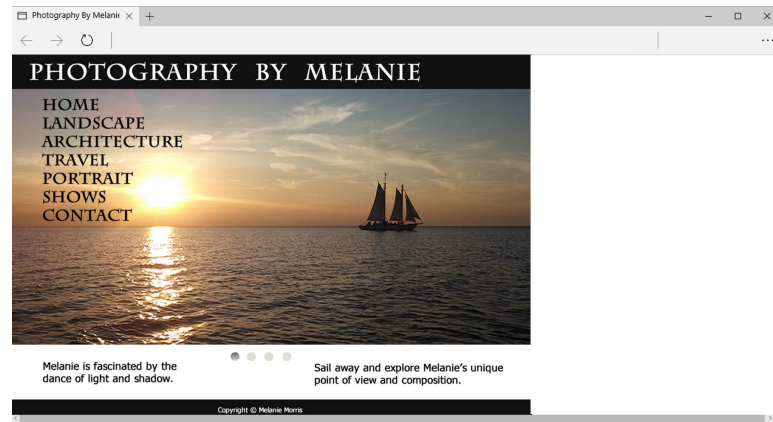
- More appealing if fixed with content is centered

Figure 5.37

Figure 5.38

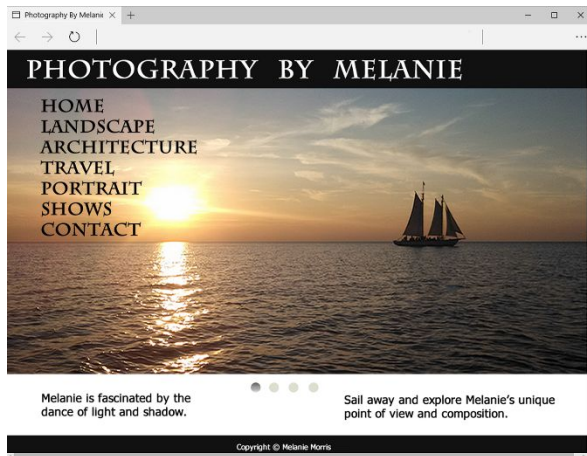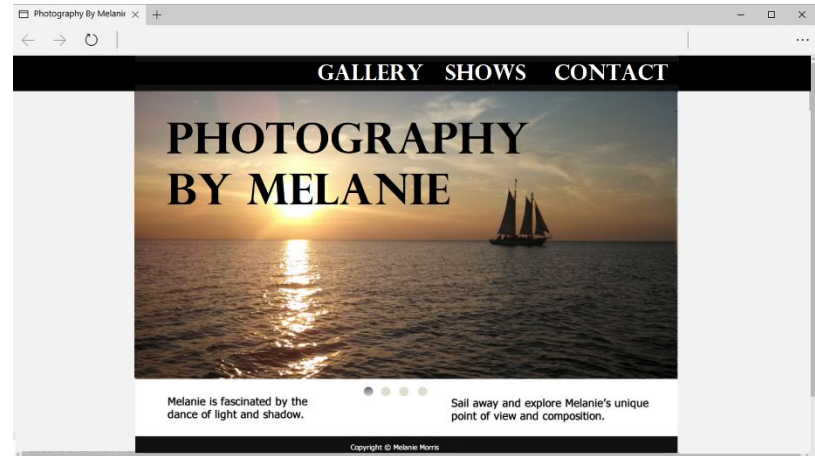# Page Layout Design Techniques- Fluid

Figure 5.39

Figure 5.40

Fluid Layout

- AKA "liquid" design
- Expands to fill the browser at all resolutions.

Fluid Layout Adaptation:

- Full width top bar
- Other age content typically centered with side margins

Mobile Design Quick Checklist

Small screen size
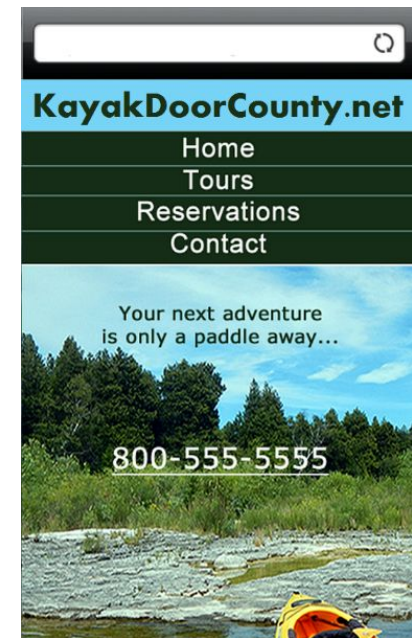
Bandwidth issues

Single-column layout

Maximize contrast

Optimize images for mobile display

Descriptive alternate text for images

Progressive Enhancement

Responsive Web Design

Desktop vs Mobile Display

Web Design Best Practices Checklist

https://terrymorris.net/bestpractices

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

Checkpoint

View the home page of your school. Use the Best Practices Checklist (Table 5.1) to evaluate the page. Describe the results.

Summary

1. This chapter introduced you to best practices of web design.

2. The choices you make in the use of color, graphics, and text should be based on your particular target audience.