Web Technologies and Programming

Lecture 16

Style Guidelines For Interface Design (Elements of Visual Design)

Summary of Previous Lecture

- **Introduction to CSS3.**
- **CSS3 modules**
  - **Selectors**
  - **Box Model**
  - **Backgrounds and Borders**
  - **Text Effects**
  - **2D/3D Transformations**
- **CSS3 Rounded Corners**
- **CSS3 Properties.**
- **CSS3 border-image property**
- **CSS3 Border Images**

Summary of Previous Lecture

- **CSS3 Gradients**
  - **CSS3 Linear Gradients**
  - **CSS3 Radial Gradients**
- **CSS3 text-shadow**
- **CSS3 text-overflow**
- **CSS3 word-wrapping**
- **CSS3 2-D Transforms** (**translate(), rotate(), scale(), skewX()**)
- **CSS3 3-D Transforms(rotateX(), rotateY(), rotateZ()**)
- **CSS3 Media Queries**

Outline

- **Why User Interface should look Good?**
  - **Guidelines and Principles of User Interface Design**
  - **Principles of Screen Design**
  - **Interface Design Goals**
  - **Interaction Styles**
  - **Types of Interfaces**
  - **What are the Advantages of Style Guidelines?**
  - **What are Advantages of Good Interface?**
  - **What are Disadvantages of Bad Interface?**

Today's Lecture Outline

- **What are the Elements of Visual Design?**
  - **Font**
    - **Six Typographic Terms**
    - **Font Size**
    - **Types of Fonts**
    - **Proportional Vs. Fixed width Fonts**
    - **Case of Text**
  - **Layout**
  - **Color**
    - **Guidelines for Color Use**
  - **Labels**

1. User Interface

- **"The user interface is the most important part of any computer system." (Galitz, 2002, p. 1)**

- **"The best interface is the one that is not noticed, one that permits the user to focus on the information and task at hand, not the mechanisms used to present the information and perform the task." (Galitz, 2002, p. 4)**

1.1 Benefits of Good Design

- **Higher task** completion rates
- **More efficient** task completion rates
- **Reduced** training costs
- **Improved** customer service

1.2 Guidelines for Interface Design Process

- **Know your user or client**
- **Understand** the basic business function
- **Understand** the principles of good screen design
- **Develop system** menus and navigation schemes
- **Select** the proper kinds of windows
- **Select** the proper device-based controls
- **Choose** the proper screen-based controls

1.2 Guidelines for Interface Design Process…

- **Write** clear text and messages
- **Provide** effective feedback and guidance and assistance
- **Provide** effective internationalization and accessibility
- **Create** meaningful graphics, icons and images
- **Choose** the proper colors
- **Organize** and layout windows and pages
- **Test, test and retest**

1.2 Principles of User Interface Design

- "An interface must really be just an extension of a person. **This means that the system and its software must reflect a person's capabilities and respond to his or her specific needs.** It should be useful, accomplishing some business objectives faster and more efficiently than the previously used method or tool did. **It must also be easy and fun to use, evoking a sense of pleasure and accomplishment, not tedium and frustration.**" (Galitz, 2002, p. 40)

1.3 General Principles of User Interface Design

- **Aesthetically pleasing**
- **Clarity**
- **Compatibility**
- **Comprehensibility**
- **Configurability**
- **Consistency**
- **Control**
- **Directness**
- **Efficiency**

1.3 General Principles of User Interface Design...

- **Familiarity**
- **Flexibility**
- **Forgiveness**
- **Predictability**
- **Recovery**
- **Responsiveness**
- **Simplicity**
- **Transparency**
- **Trade-offs**

1.4 Principles of Good Screen Design

- **A well-designed screen:**
  - **Reflects** the capabilities, needs and tasks of its users
  - **Is developed** within the physical constraints imposed by the hardware on which it is displayed
  - **Effectively utilizes** the capabilities of its controlling software
  - **Achieves** the business objectives of the system for which it is designed

1.5 Interface Design Goals

- **Reduce** **visual work**

- **Reduce** **intellectual work**

- **Reduce** **memory work**

- **Reduce** **motor work**

- **Minimize or eliminate** **any burdens or obstructions imposed by technology**

1.6 Characteristics for Web Based Application

- **Clear navigation aids**
- **No dead-end pages**
- **Direct access**
- **Simplicity and consistency**
- **Design integrity and stability**
- **Feedback and dialog**
- **Bandwidth and interaction**
- **Interface design conventions**
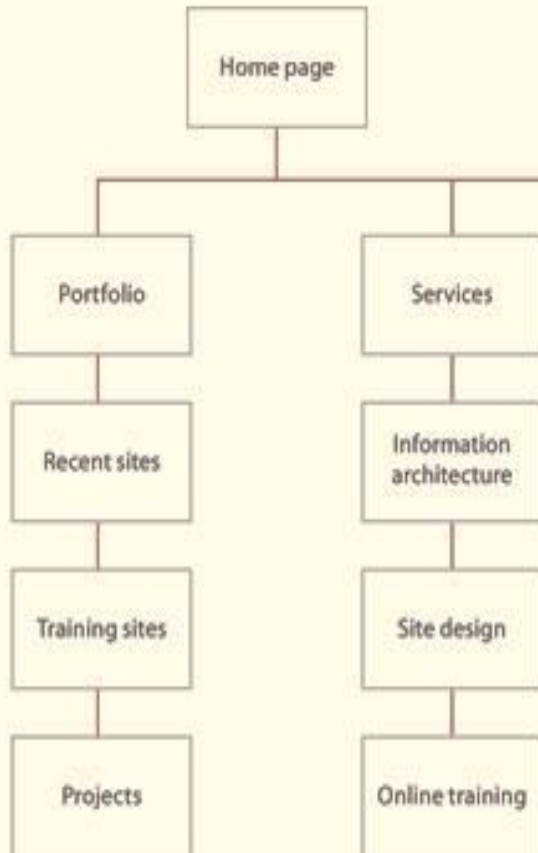- **What goes in the header area?**

1.7 Interaction Style

- **Direct manipulation**
- **Menu selection**
- **Form fill-in**
- **Natural language**
- **Command language**
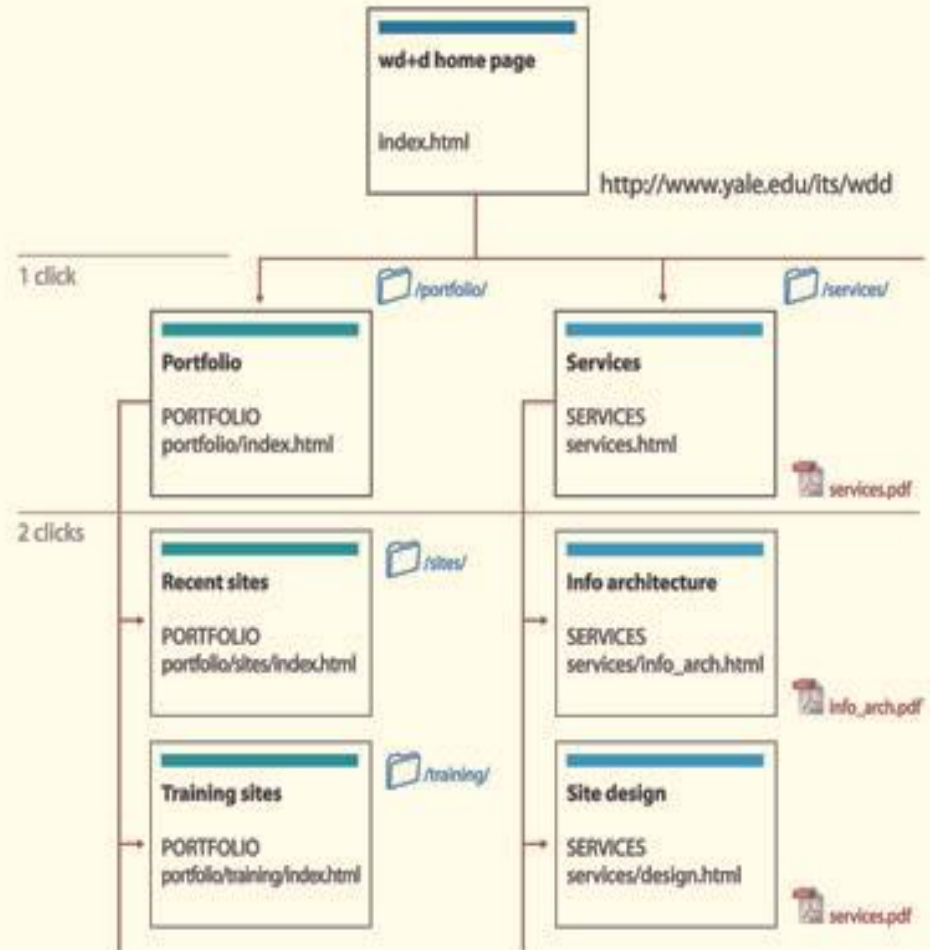
1.8 Types of Interfaces

- **Command Line Interface (CLI)**

- **Graphical User Interface (GUI)**

- **Menu Driven Interface**

- **Natural Language Interface**
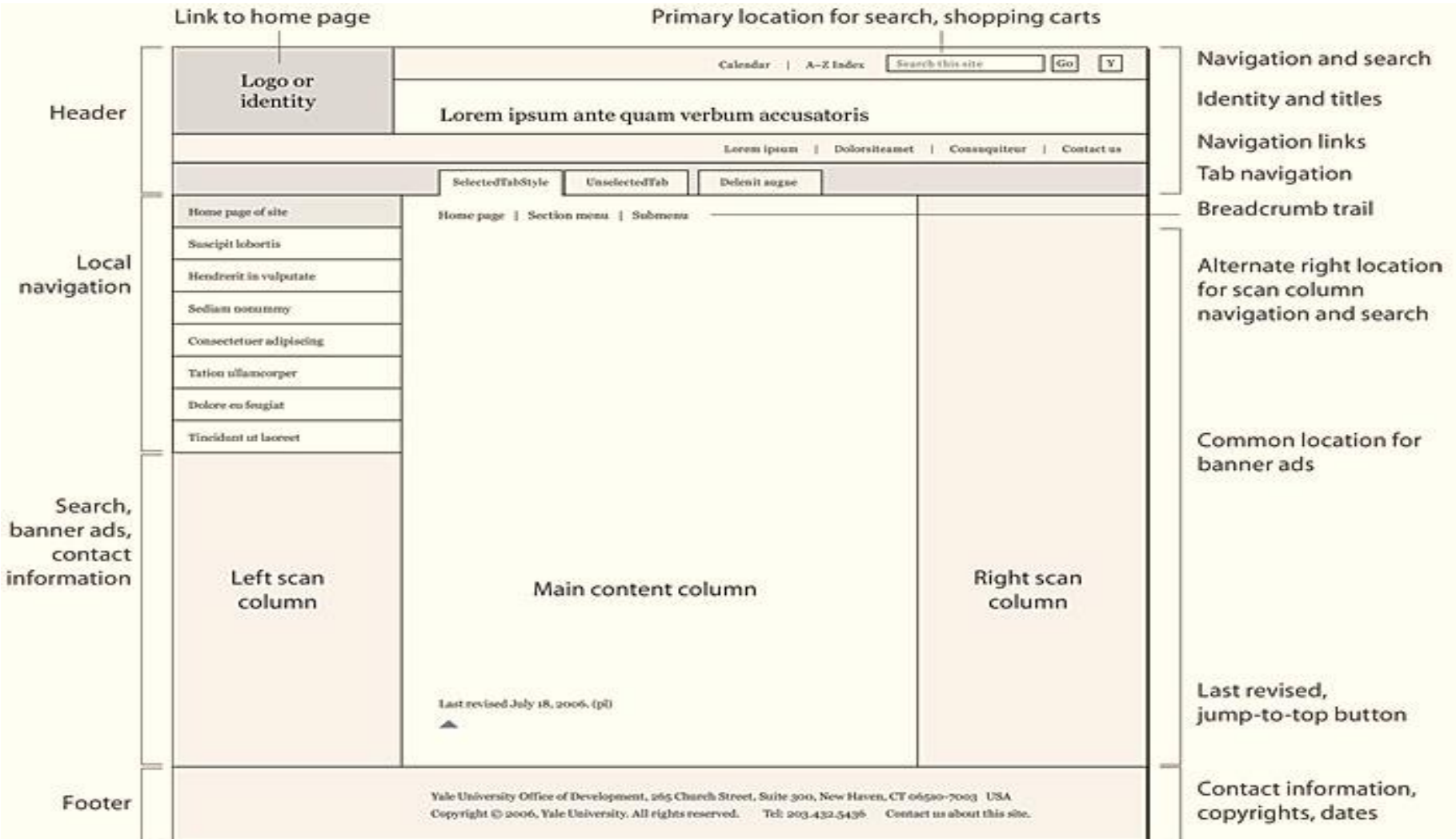
1.9 Web Based Application - Comparison

Early simple site diagram for planning

Mature site diagram for the technical team

1.10 Interface Design Convention (Web Based Application)

Link to home page

Primary location for search, shopping carts

Header

Logo or identity

Calendar | A–Z Index | Search this site | Go | Y

Navigation and search

Lorem ipsum ante quam verbum accusatoris

Identity and titles

Lorem ipsum | Dolorsiteamet | Consuquiteur | Contact us

Navigation links

SelectedTabStyle | UnselectedTab | Delenit augue

Tab navigation

Home page of site

Home page | Section menu | Submenu

Breadcrumb trail

Local navigation

Suscipit lobortis

Hendrerit in vulputate

Alternate right location for scan column navigation and search

Sediam nonummy

Consectetuer adipiscing

Tation ullamcorper

Dolore eu feugiat

Tincidunt ut laoreet

Common location for banner ads

Search, banner ads, contact information

Left scan column

Main content column

Right scan column

Last revised July 18, 2006. (pl)

Last revised, jump-to-top button

Footer

Yale University Office of Development, 265 Church Street, Suite 300, New Haven, CT 06510-7003 USA
Copyright © 2006, Yale University. All rights reserved.   Tel: 203.432.5436   Contact us about this site.

Contact information, copyrights, dates

21

1.11 Advantages of Style Guidelines

- **It helps you focus on design issues early in the development process**

- **The customized style guide can steer decision making throughout the design process**

- **It can also serve as a record of the design decisions that have been taken and of the design constraints that have been identified, so that the design team can refer back to them**

1.11 Advantages of Style Guidelines…

- **The customized style guide will help ensure consistency across the user interface. This should help improve the usability of the User Interface.**

- **One can check against the customized style guide during the evaluation.**

- **If it is used across the organization, it will help to give a corporate look to all the User Interfaces.**

1.12 Good Interface Vs. Bad Interface

- **Good Interface**
  - **Saves money**
  - **Convinces user to use product**
  - **Keeps existing users and bring in new ones**
  - **Achieves usability**
- **Bad Interface**
  - **Leads to User Frustration and Dissatisfaction**
  - **Loss of Productivity**
  - **Less Efficiency**
  - **More Money**

1.13 Conclusion

- **It's also common that beautiful interfaces don't stay beautiful.**

- **Interface style guides are extremely best practices for design and development. However, keeping that information updated and functional is imperative**

2. Elements of Visual Design

- **Principles**
  - Principles of Design describe the methods of arranging and assembling elements.
    - Balance, Unity, Variety, Proportion, Rhythm and Grids

- **Elements**
  - Elements of Design are the graphic items that are the building blocks of all design
    - Line, Shape, Space, Color, Value, Texture, Movement and Type

2.1 Fonts

- **Font Metrics**
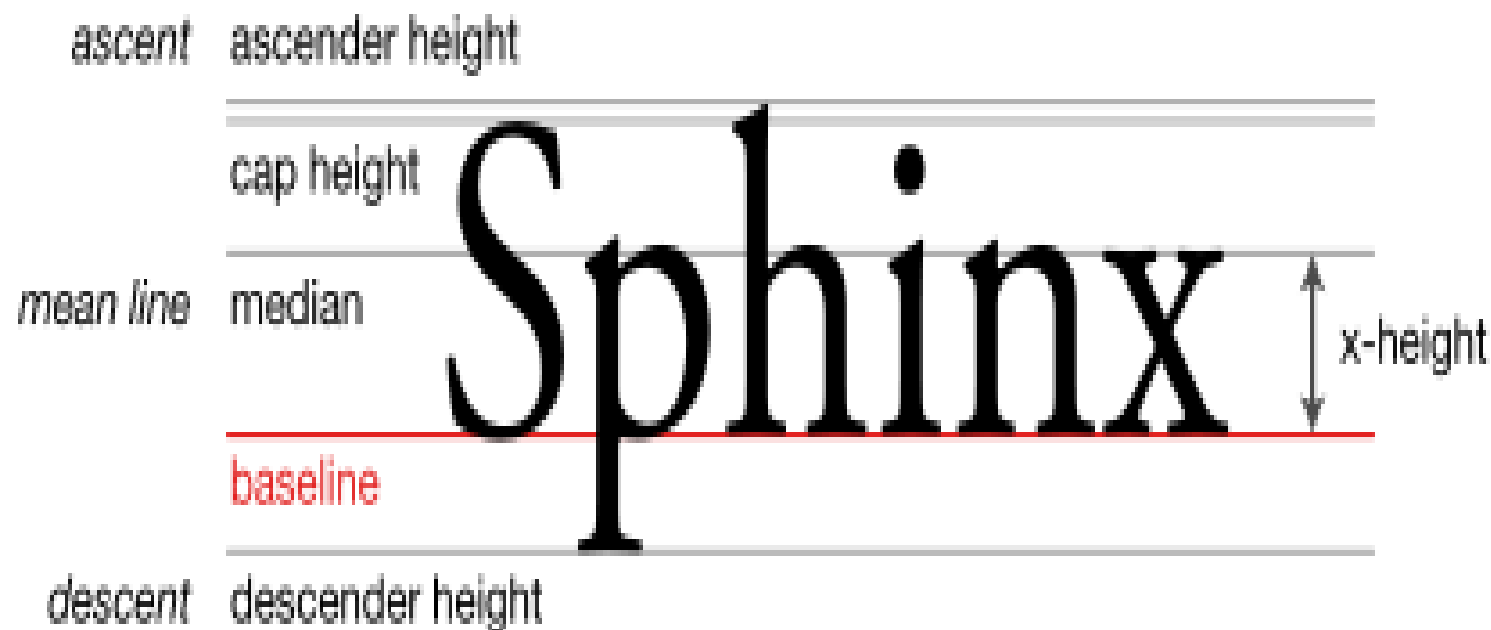
2.1.1 Typography

- **Typography is the style and appearance of words**

- We **can** present words *in* many FONTS

- and in many different sizes

- **We see how it effects the user**

2.1.1 Typography…

- Typography has huge effects on how people see and interact with your content. Type, although often invisible to most people, has an enormous effect on how your content is communicated.
  - **For example:** consider the letter "R" as done in Gill Sans. In this letterform, there is a perception that the weight of the letter is uniform throughout. However, when examined closely, there is a difference in the weights at different parts of the letter. If you look at the bottom of the letter, you see a different thickness than in other parts of the letter. This is an example that shows that in graphic design, it is important to design things to be perceptually balanced and perceptually uniform.

2.1.1 Typography...

2.1.1 Typography…

- **Here are six typographic terms to know**
  - **Point Size**
  - **Leading**
  - **X-height**
  - **Ascenders and Descenders**
  - **Weight**
  - **Serifs**

2.1.1.1 Point Size

- **The point size of the font** is simply the size of the font on the page. Note that although point sizes specify the height of the font in points, a 12 point size in one font will not always be exactly identical to 12 points in another font.

The current font size is: 6pt
The current font size is: 8pt
The current font size is: 9pt
The current font size is: 10pt
The current font size is: 10.95pt
The current font size is: 12pt
The current font size is: 14.4pt
The current font size is: 17.28pt
The current font size is: 20.74pt
The current font size is: 24.88pt

2.1.1.2 Leading

- **Leading refers to the height of the line, with greater leading meaning greater space between each line of the content. It's customary to have 20% of your font size as your leading.**
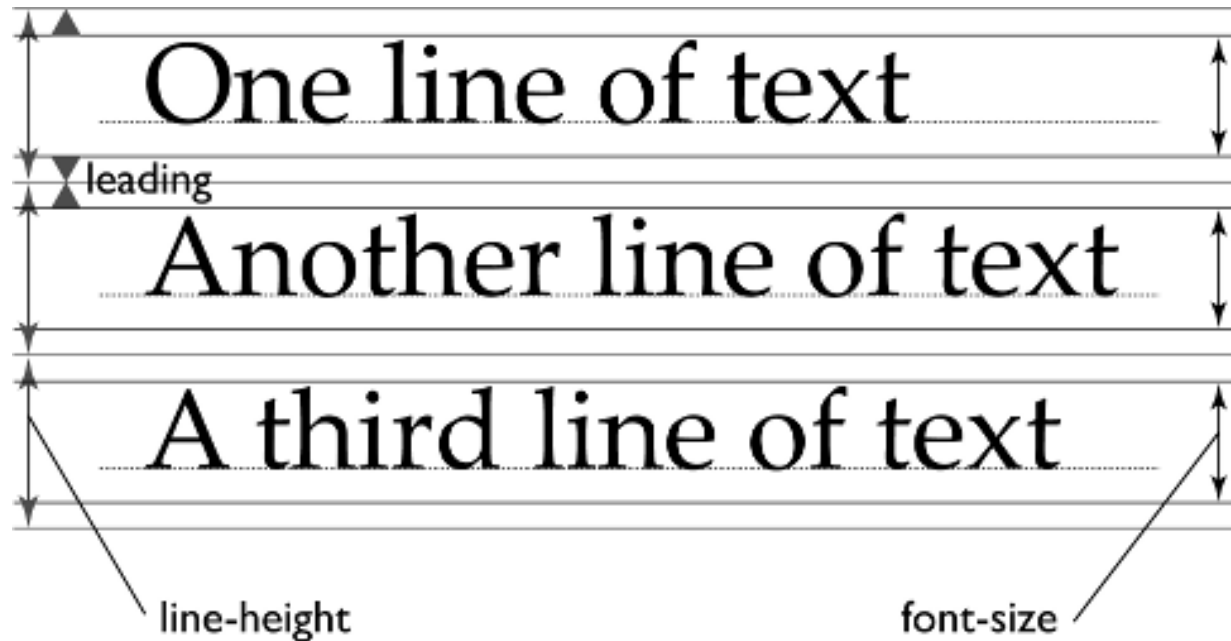
2.1.1.3 X-height

- **The height of the lowercase letters is known as the x-height of the font, which has an effect on the readability of the font. In general, fonts with greater x-heights are easier to read at small font sizes than fonts with smaller x-heights.**
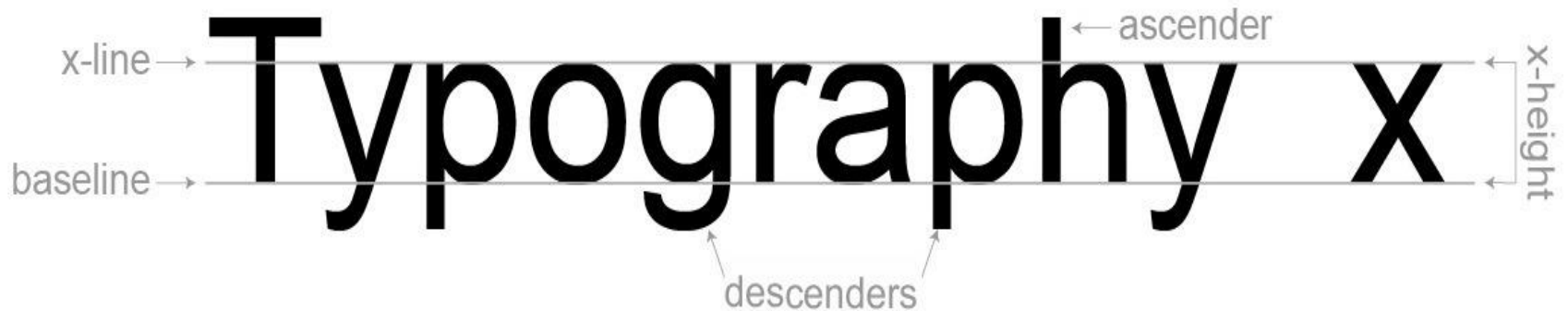
2.1.1.4 Ascenders and Descenders

- **These are the parts of the letters that extend above or below the lines of the font, such as the part of the letter "y" that extends below the bottom, or the part of the letter "l" that extends above the top.**
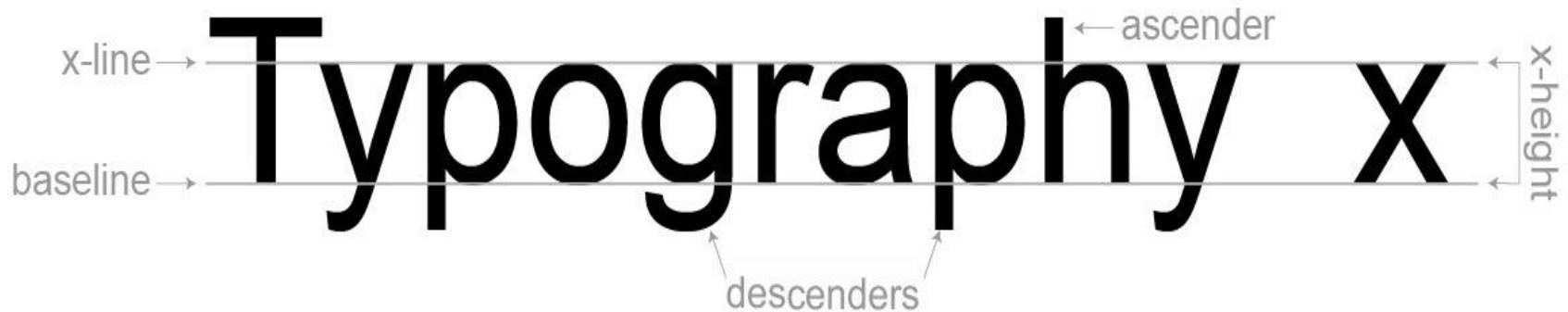
2.1.1.5 Weight

- **The weight of a font refers to the thickness of the letters, and can range from thin or light to bold and heavy. The weight of a font also can provide a good contrast to what the content is trying to convey.**

A A A A A A A A A
100 200 300 400 500 600 700 800 900

2.1.1.6 Serifs

- **Fonts can be divided into two main categories: serif fonts and sans-serif fonts. Serif fonts are the ones with the little serifs coming out of the edges of the font, giving it a more traditional look, while sans-serifs don't have these additional markings, making them look more modern. Historically, serif fonts are considered easier to read, even though there's no way to quantitatively prove that statement.**

Palatino   Warnock   Giovanni

Baskerville   Minion   Jenson

2.1.2 Font Size

- **Font sizes are traditionally expressed in printers' points (pt)**
  - **1 pt = 1/72 inch = 0.35mm**

2.1.2 Font Size…

- **10 pt is legible, 11 or 12 pt is better**
- **The distinction between two fonts should be min of 2 pts.**
  - **Human eye cannot detect smaller difference**
- **For Example:**
  - **If you use 12 pt for text**
  - **14 pt for header**
  - **10 pt for foot note**
  - **16 pt or larger for tiltes.**

2.1.2 Font Size…

2   Sixteen Point Fonts Might Be Used for Titles

### 2.1   Fourteen Point Fonts for Section Headings

Twelve point is great for flowing text such as this[a]. Remember that font size changes should be differentiated by at least two points.

---

[a]10 pt might be used for subscripts and footnotes.
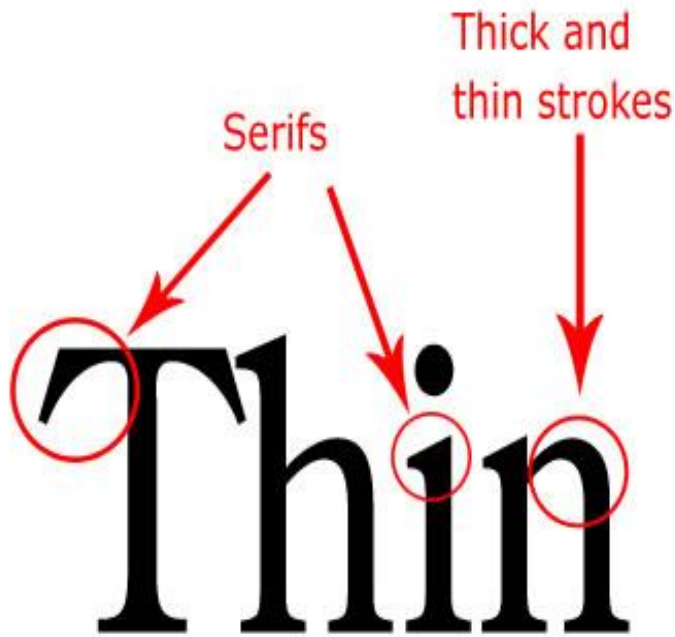
2.1.3 Types of Fonts

- **Serif** is a slight extra line at the end of a letter stroke
  - Times Roman and Georgia
- **Sans Serif** (French = without serif) font does not have such embellishments
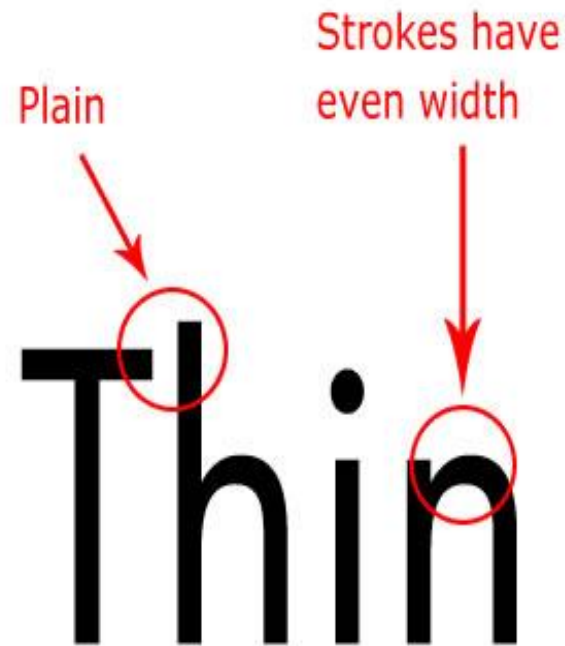 - Arial, Helvetica and Verdana

2.1.3 Types of Fonts…

2.1.3 Types of Fonts…

Serif Font

Serifs

Thick and thin strokes

Thin
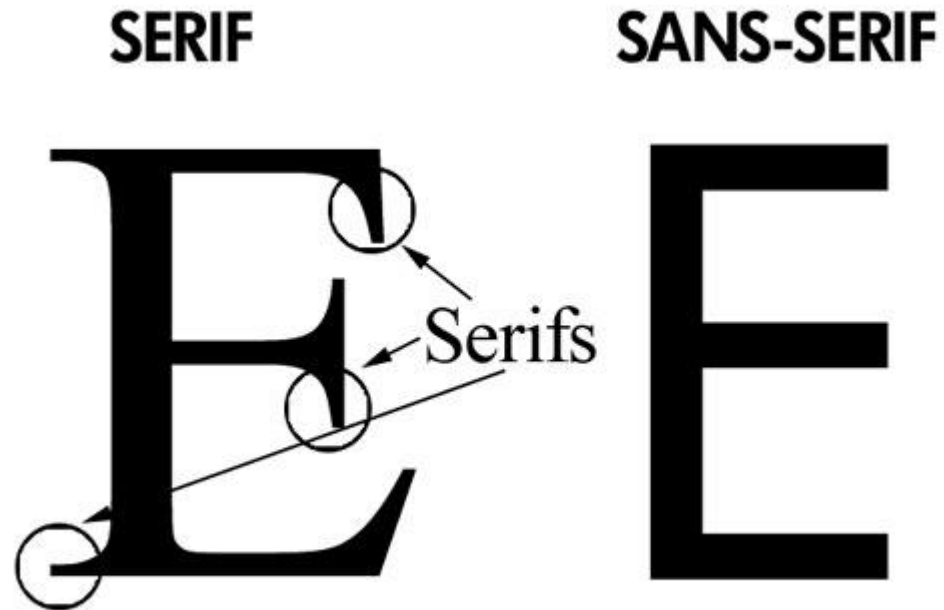
Century Old Style

Sans Serif Font
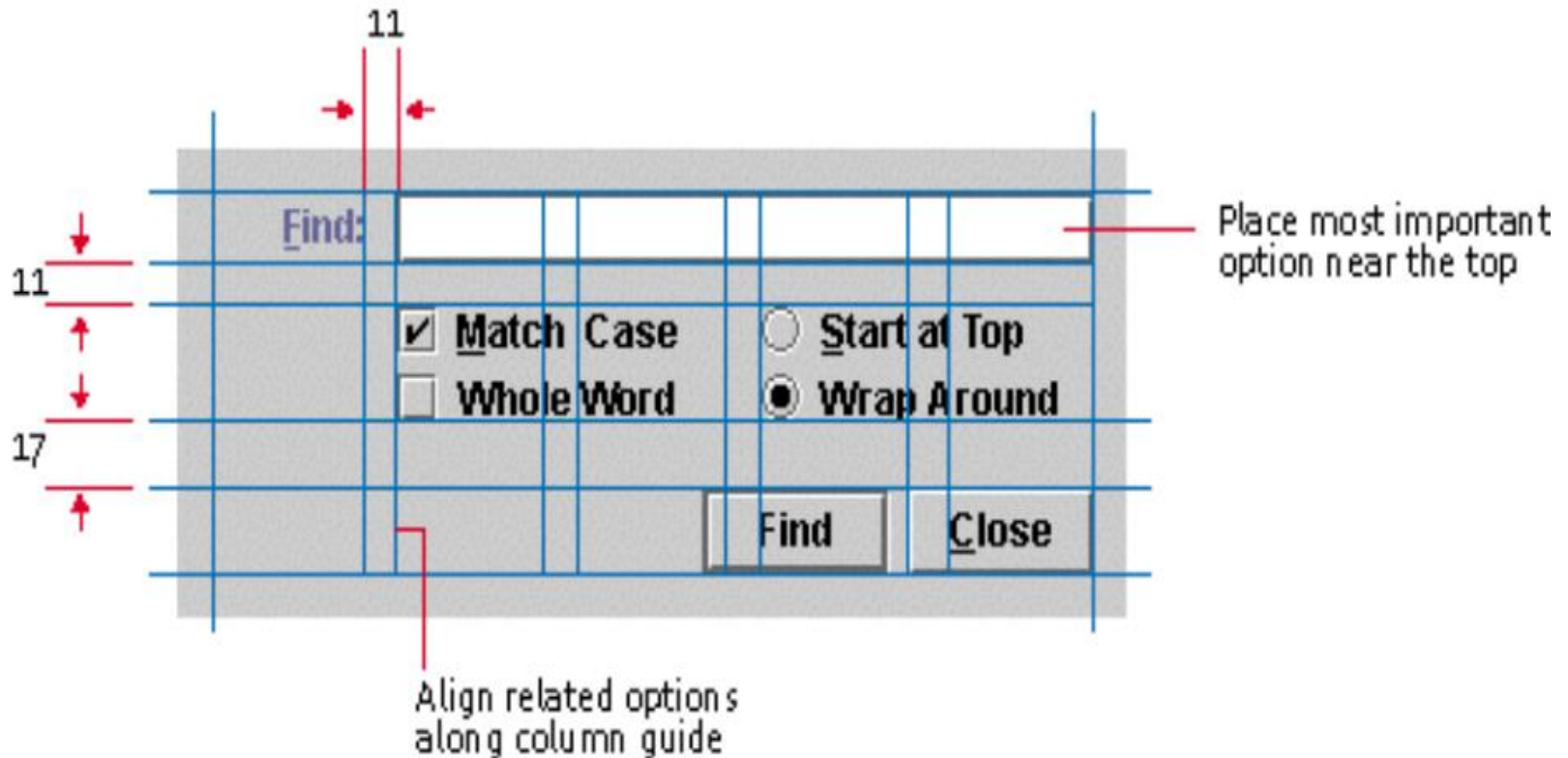
Plain

Strokes have even width

Thin

Futura Book

2.1.3 Types of Fonts…

- **Serif or Sans Serif?**
  - **When reading passages of text serif** text may be easier to read than san serif, but the evidence is not conclusive
  - Ultimately, picking a typeface depends primarily on application of the content being used. **When choosing a font for a logo**, the font should be something that stands out, is clear, and makes a statement. **But when choosing a font for a book**, the font should be chosen to maximize readability of the content.

2.2 Layout

- **The next tool for creating a visual hierarchy that is clear and distinguishable is to consider the layout of your content. By grouping things and putting them on a grid, we can visually guide the user into a design.**

- **The first example of a grid comes from the Java grid systems****. As you can see, all of the elements in this dialog box have been arranged in a grid, or a set of invisible lines that all elements in the dialog box snap to.**

2.2 Layout…

11

Find:

11

17

Match Case
Whole Word

Start at Top
Wrap Around

Find   Close

Place most important
option near the top

Align related options
along column guide

2.2 Layout...

- **Consider the table of contents of a book as another example of the difference a good layout can make. One layout of the contents that you are likely familiar with is spacing content out with periods or spaces, like we see in this example.**

Web Applications...cs142
Interactive Software Design...cs294h
Paradigm Shifts in Mobile & Social Computing
Systems...cs294s
Research Topics in Human-Computer Interaction....cs376
d.compress - Designing Calm.......................................cs377d
Designing Liberation Technology.................................cs379l
Beyond Bits & Atoms: Designing Technological
Tools...cs402
Envisioning the Future of Learning.......................educ333B
Press Play: Interactive Device Design..........................ee47

2.2 Layout…

- **However, by simply moving things around a little bit and applying some typographic variation**, we can improve this layout dramatically. By putting the course titles in a smaller column that is right aligned with the course names in a larger, left aligned column, we can provide a much clearer layout of the information.

cs142	Web Applications
cs294h	Interactive Software Design
cs294s	Paradigm Shifts in Mobile & Social Computing Systems
cs376	Research Topics in Human-Computer Interaction
cs377d	d.compress - Designing Calm
cs379l	Designing Liberation Technology
cs402	Beyond Bits & Atoms: Designing Technological Tools
educ333B	Envisioning the Future of Learning
ee47	Press Play: Interactive Device Design

2.3 Color

- The last tool to **utilize when working on a visual design is color**.

- **The best designs often only use a couple of colors**.

- In fact, it is usually helpful to design in grayscale first, using layouts and typography as the main methods of creating visual hierarchy, **and adding color to strengthen and highlight other elements**. Then, when moving from grayscale to color, be sure to keep the luminance values of the grayscale mockup that you created.

2.3 Color…

- **Color is used to compliment all objects and tie them together**

- **Color can create emotion and leave a lasting impression**

- **Use colors that create harmony in your design.**

2.3.1 Guidelines for Color Use

- **Don't use too many colors**
- **Use color coding to support use tasks**
- **Allow users to control color coding**
- **Design for monochrome then add color**
- **Use color coding consistently**
- **Avoid color pairings which clash**
- **Use color change to show status change**
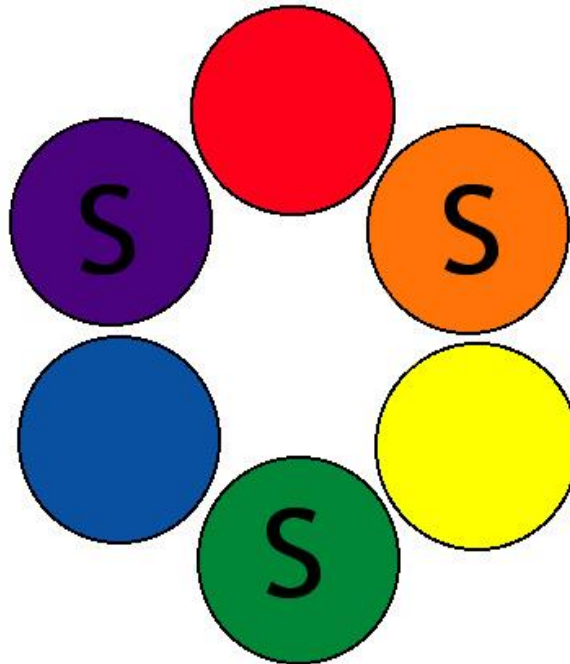- **Be aware that color displays are usually lower resolution**

2.3.2 Primary Colors

- **Red, Blue and Yellow**
  - **They are the building blocks to create all other colors.**
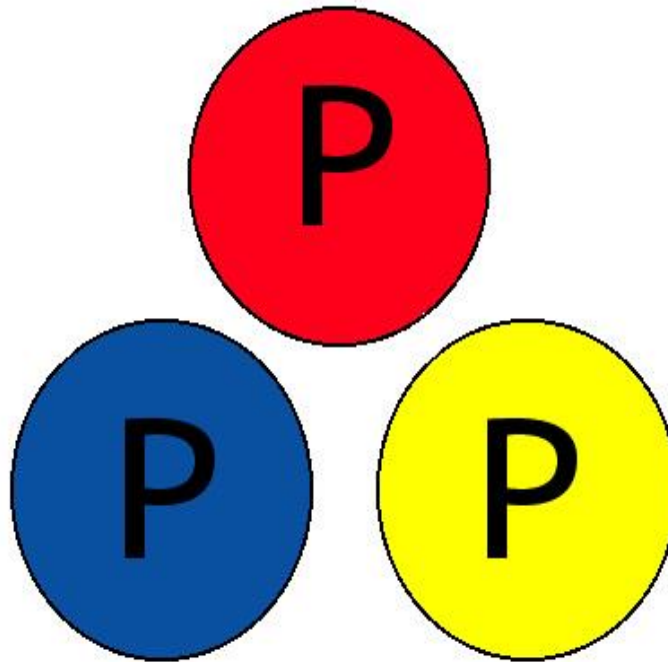
2.3.3 Secondary Colors

- **Violet, Green and Orange**
  - **When two of the primary colors are mixed together, a secondary color is made**

2.4 Lables

- **Labeled data fields**

- **Left-align labels**, fields, columns in tables

- **Use meaningful, unambiguous labels**

- **For Beginners**, searching n size menu:
  - If label unknown, examine all items, S ~ n
  - If label known, search linearly or randomly, S ~ n

- **Textual labels** help beginners, infrequent users.

Summary of Today's Lecture

- **Why User Interface should look Good?**
  - **Guidelines and Principles of User Interface Design**
  - **Principles of Screen Design**
  - **Interface Design Goals**
  - **Interaction Styles**
  - **Types of Interfaces**
  - **What are the Advantages of Style Guidelines?**
  - **What are Advantages of Good Interface?**
  - **What are Disadvantages of Bad Interface?**

Summary of Today's Lecture

- **What are the Elements of Visual Design?**
  - **Font**
    - **Six Typographic Terms**
    - **Font Size**
    - **Types of Fonts**
    - **Proportional Vs. Fixed width Fonts**
    - **Case of Text**
  - **Layout**
  - **Color**
    - **Guidelines for Color Use**
  - **Labels**

THANK YOU