



UNIVERSITY OF SCIENCE  
HO CHI MINH CITY

CTT534 – Thiết Kế Giao Diện  
HK II 2015 – 2016

# Graphic Design – Part 2

21/4/2016

# Outline

- 
- Graphic design philosophies
  - Design guidelines

# Graphic design philosophies

- Aesthetic appeal does not automatically confer usability
- UI design must balance the meaning of its visual elements that conform the mental model of operation
- Preferences
  - ❑ Simple and natural user's "language"
  - ❑ Economy of visual elements
  - ❑ Clean, well organized
  - ❑ Less is more

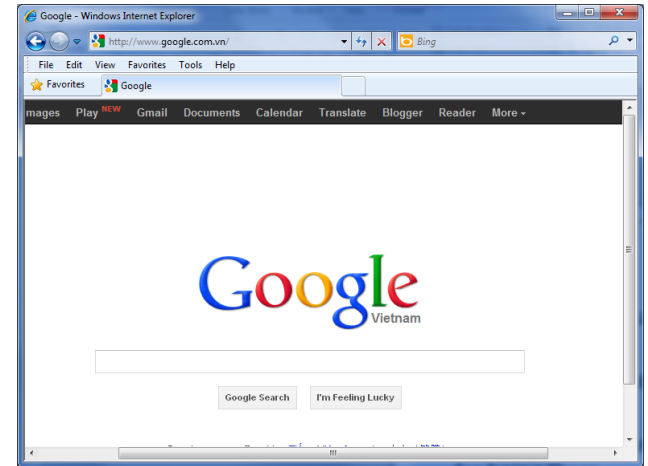
# Guidelines for good graphic design

## ■ Basic principles

- ❑ Metaphor
- ❑ Simplicity and Clarity
- ❑ Consistency
- ❑ Organization/Alignment/Proximity/Grid
- ❑ Legibility and readability
- ❑ Color/Contrast

# Simplicity

- “Keep it simple, stupid.” (KISS)
  - “Less is more.”
  - “When in doubt, leave it out.”
- 
- Every element in an interface should have a reason for being there
    - make that reason clear too



# Techniques for simplicity

## ■ Reduction

- ❑ Decide what essentially needs to be conveyed by the design
- ❑ Examines every element if it serves essential purposes
- ❑ Remove inessential elements



# Techniques for simplicity (cont'd)

## ■ Regularity

### □ Use a regular pattern

- minimize the unnecessary differences between elements with regularity
- elements provided by the operating system. The users are already familiar them

### □ Limit inessential variation among elements

- use the same font, color, line width, dimensions, orientation for multiple elements
- irregularities in your design will be magnified in the user's eyes and assigned meaning and significance

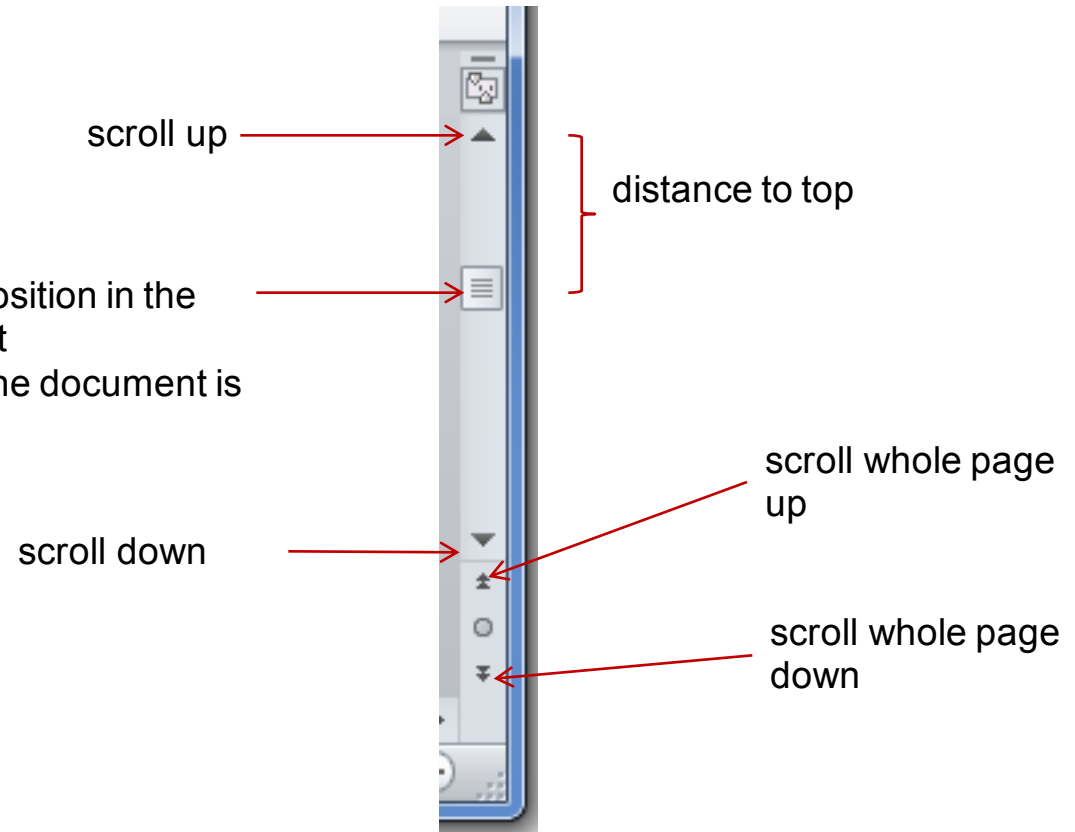
# Techniques for simplicity (cont'd)

## ■ Combine elements

### □ Let elements play multiple roles, e.g.

- Scroll bar
- Title bar

- current position in the document
- how big the document is



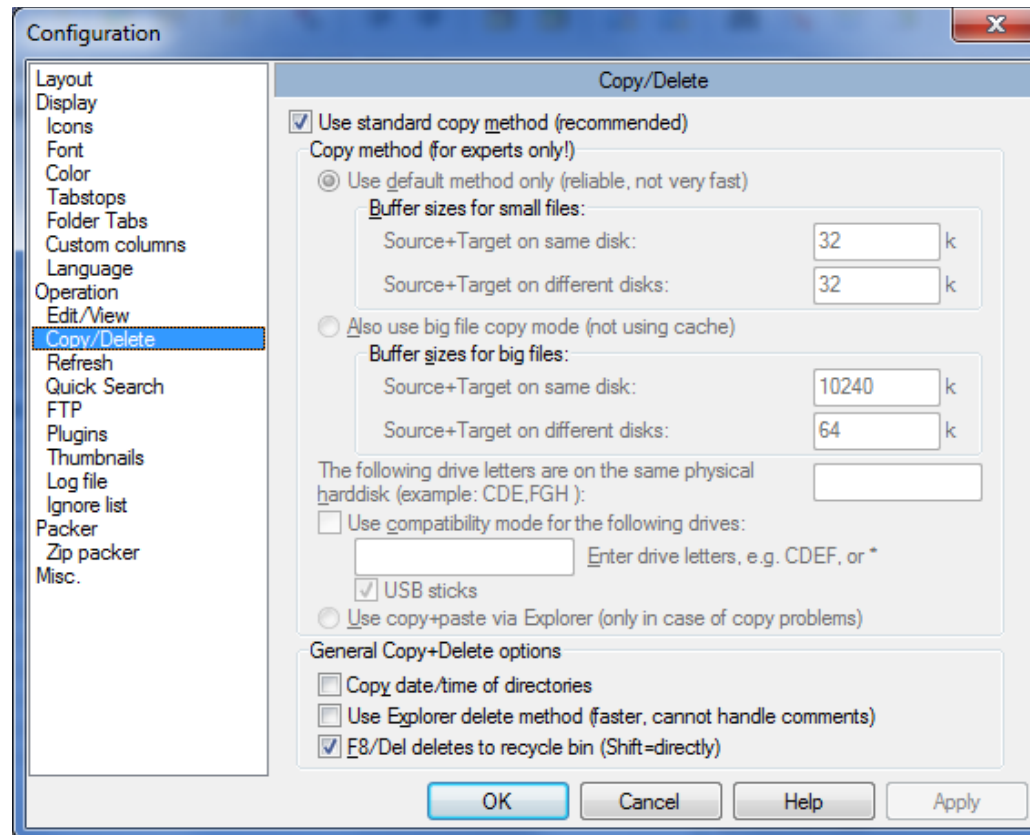


# White space

- Leads the eye
- Provides symmetry and balance through its use
- Allows eye to rest between elements of activity
- Used to promote simplicity, elegance, class, refinement
  - margins to draw eye around design
  - don't crowd controls together

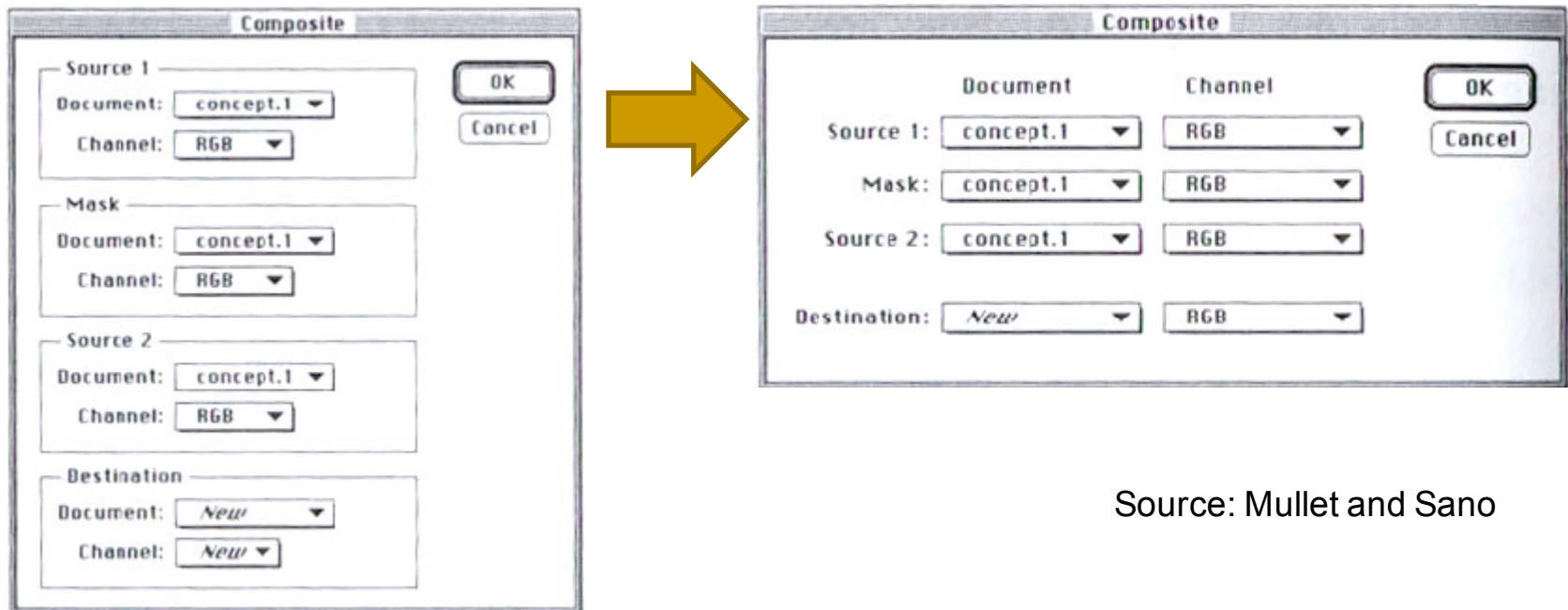
# White space (cont'd)

- Crowded dialog example
  - Controls are tightly packed together
  - Lack of margins between texts/labels



# White space (cont'd)

- Put labels in the left margin with white space leading and highlighting them
- Put labels on left of the controls, not above



Source: Mullet and Sano

# Consistency

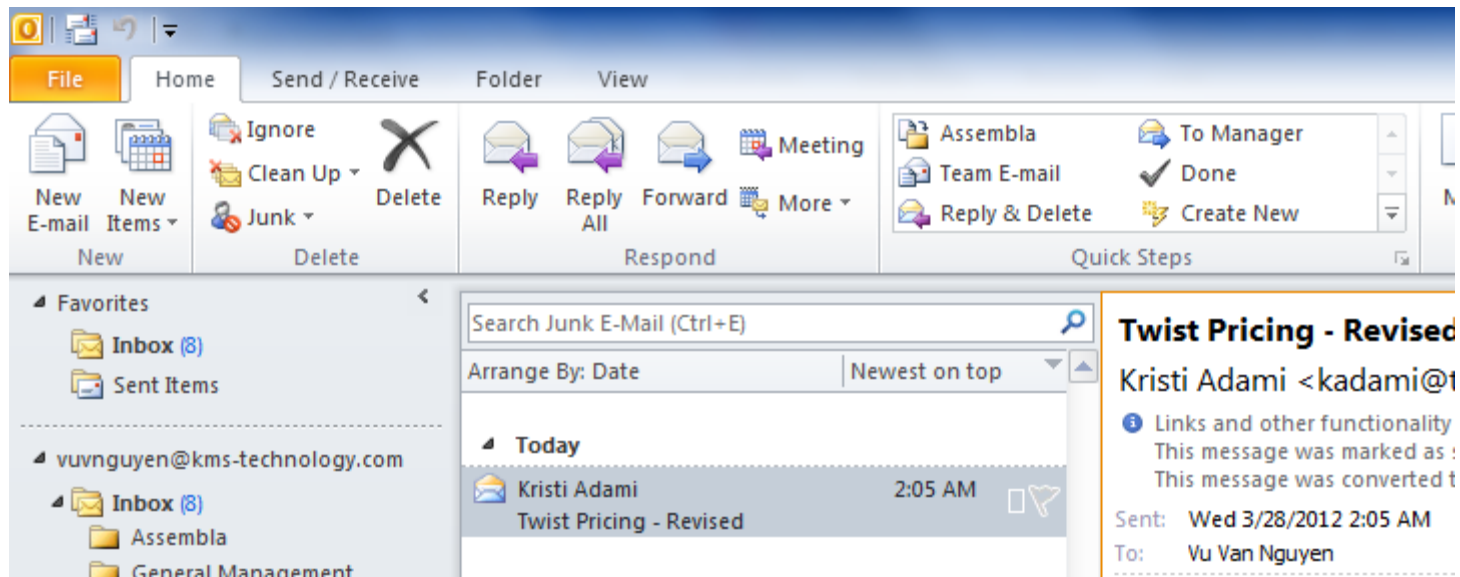
- Similar things should work similarly
- Different things should look different
- Consistency types
  - Internal: within the system
    - elements follow same conventions and rules
  - External: across different systems
    - follow platform and interface style conventions
  - Metaphorical: reflecting real-world objects
    - A print icon is a metaphor of the printer



# Consistency (cont'd)

## ■ Example

- ❑ Ctrl + F on many Windows applications
- ❑ Ctrl + F on MS Outlook

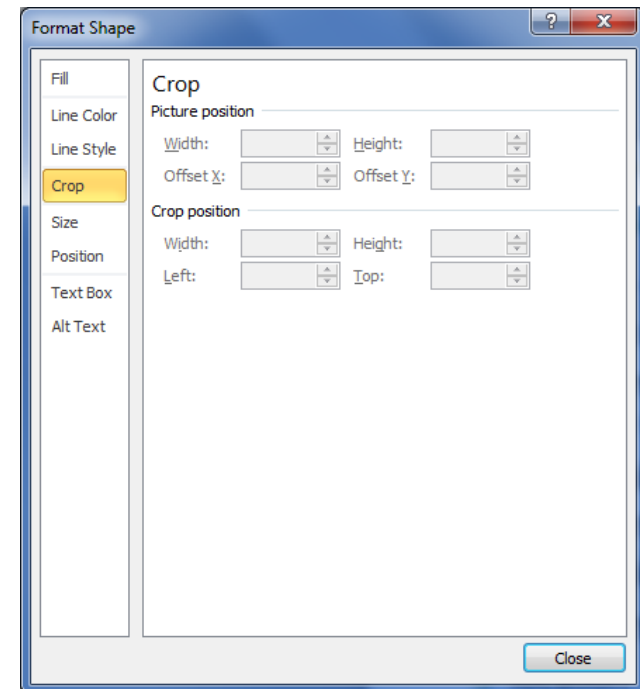


# Organization

- Grid system
- Grouping of items
- Order of items
- Alignment of items
- Arrangement between items

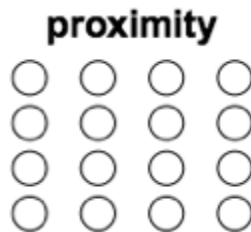
# Grid system

- Grid is an essential tool for graphical design
  - A uniform grid (a grid with equal-width columns) is one effective way to achieve both alignment and balance
- Horizontal and vertical lines to locate window components
  - aligns related components
- Consistency
  - location
  - format
  - element repetition



# The Gestalt principles of grouping

- Discovered in the 1920s by the Gestalt school of psychologists
- Describe how early visual processing groups elements in the visual field into larger wholes
- **Proximity**
  - Elements that are closer to each other are more likely to be grouped together



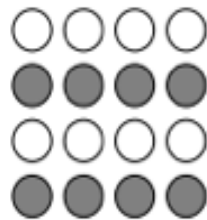
You see four vertical columns of circles, because the circles are closer vertically than they are horizontally.



# The Gestalt principles of grouping (cont'd)

- **Similarity:** Elements with similar attributes are more likely to be grouped
- **Continuity:** The eye expects to see a contour as a continuous object

**similarity**



You see four rows of circles, because the circles are more alike horizontally than they are vertically

**continuity**



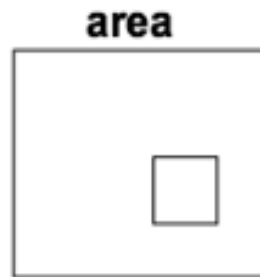
You primarily perceive this as two crossing lines, rather than as four lines meeting at a point, or two right angles sharing a vertex

# The Gestalt principles of grouping (cont'd)

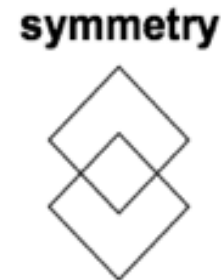
- **Closure:** The eye tends to perceive complete, closed figures, even when lines are missing
- **Area:** When two elements overlap, the smaller one will be interpreted as a figure in front of the larger ground
- **Symmetry:** The eye prefers explanations with greater symmetry



We see a triangle in the center although edges aren't complete



We see a small square in front of a large square rather than a hole



We perceive two overlapping squares, rather than three separate polygons

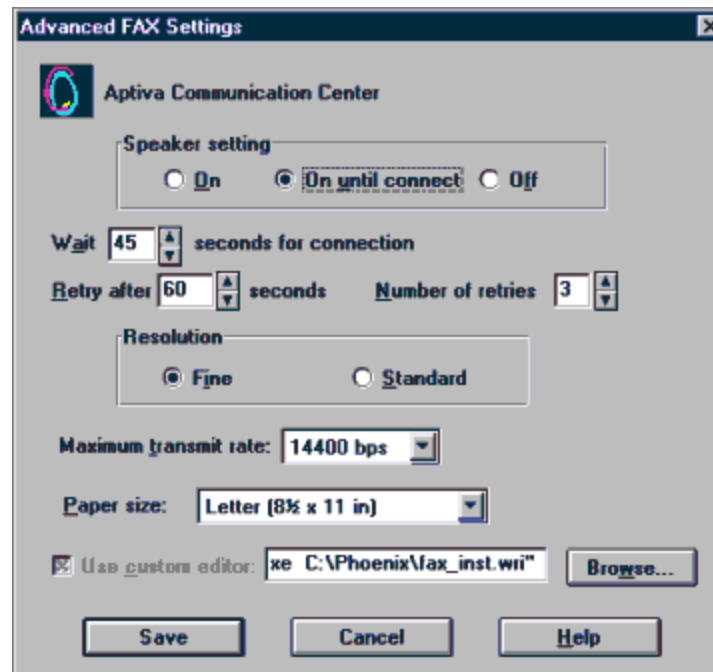
# The Gestalt principles of grouping (cont'd)

- IBM logo



# Alignment

- Aligning elements horizontally and vertically
  - Improve the simplicity of a design
- Align text baselines



Source: Interface Hall of Shame

# Alignment (cont'd)

- Bad alignment
  - no flow, causing the eyes to zig-zag around the screen as the user attempts to locate a field of interest
- Poor contrast
  - cannot distinguish colored labels from editable fields
- Poor repetition
  - buttons do not look like buttons
- Poor explicit structure
  - blocks compete with alignment

The screenshot shows a web form with several sections and fields:

- Form Title:** Q&D Software Development Order Desk (appears above URL in most browsers and is used by WWW search)
- Form Heading:** Q&D Software Development Order Desk (appears at top of Web page in bold type)
- E-Mail responses to:** dversch@q-d.com (will not appear on)
- Alternate (for mailto forms only):** (empty field)
- Text to appear in Submit button:** Send Order
- Text to appear in Reset button:** Clear Form
- Background Color:** FFFBF0
- Text Color:** 000080
- Background Graphic:** (empty field)
- Mailto/CGI:** Radio buttons for Mailto and CGI (CGI is selected)
- Scrolling Status Bar Message (max length = 200 characters):** \*\*\*WebMania 1.5b with Image Map Wizard is here!\*\*\*
- Navigation:** << Prev Tab and Next Tab >>

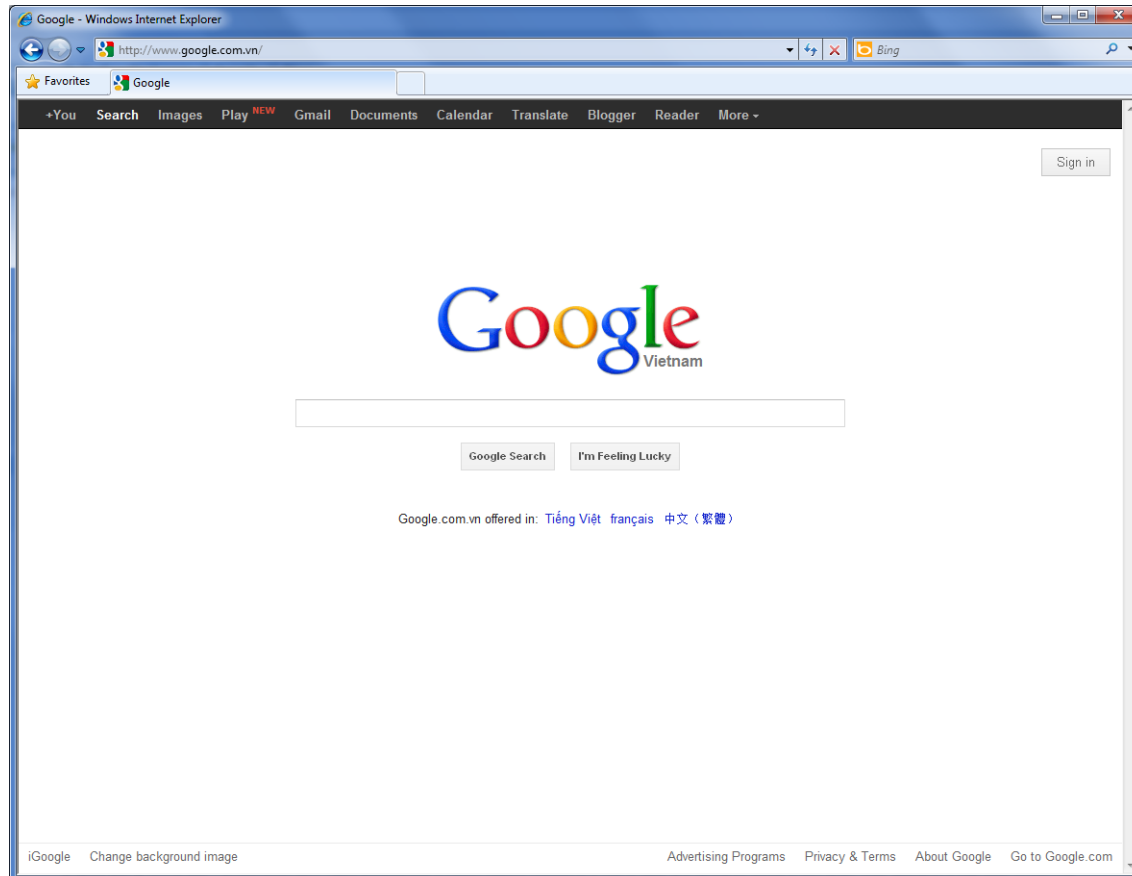
Source: Interface  
Hall of Shame

# Balance and symmetry

- Choose an axis (usually vertical)
- Distribute elements equally around the axis
  - Equalize both mass and extend

# Balance and symmetry (cont'd)

## ■ Example



# Economy of visual elements

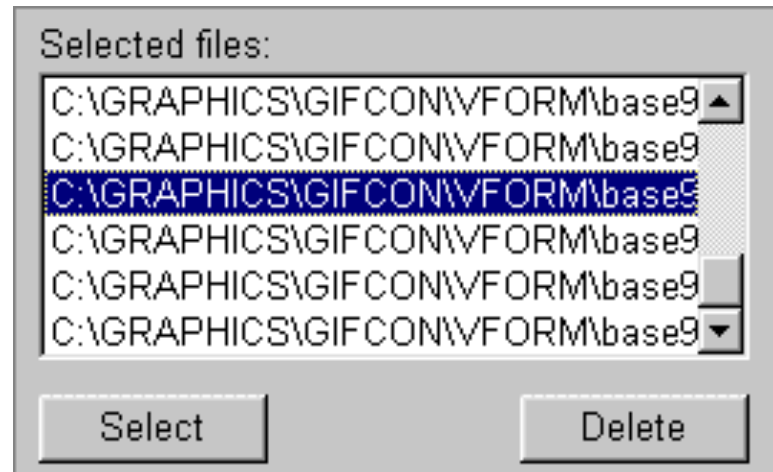
- Less is more - unless more is more...
- Minimize number of controls
- Include only those that are necessary
- Appropriately arrange the size, layout of controls, e.g., text fields, combo boxes, checkboxes
- Minimize clutter
  - so information is not hidden



# Economy of visual elements (cont'd)



Overuse 3D effects

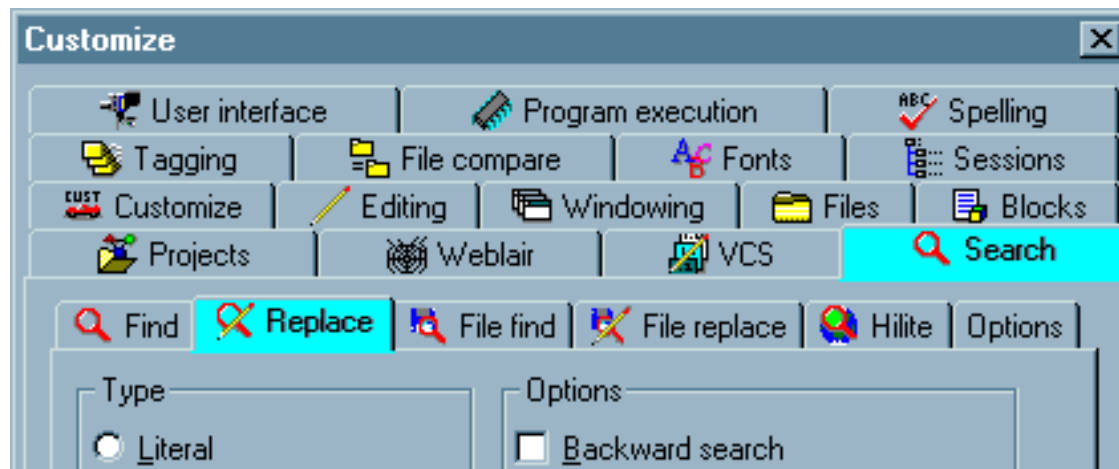


You know what to choose?

# Economy of visual elements (cont'd)

## ■ Tabs

- ❑ excellent means for factoring related items
- ❑ but can be overdone



Source: Interface Hall of Shame

# Legibility and readability

- Characters, symbols, graphical elements should be easily noticable and distinguishable

*Whenever your local SMS Administrator sends you an actual software Package, the SMS Package Command Manager will appear (usually at network login time) displaying the available Package(s). The following screenshots display scenes similar to what you will see when you receive an actual SMS Package.*

*To start the demonstration, click the "OK HERE" button of the screen.*

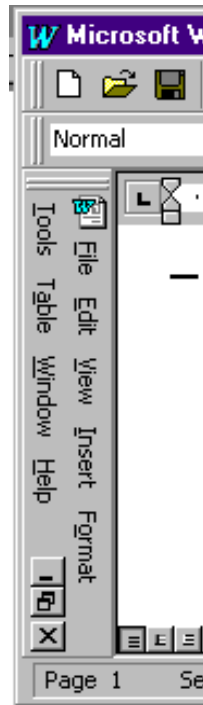
If you wish to add/change network information, please select one of the following options.

- ☒ I WANT TO CONNECT TO AN EXISTING TIME & CHAOS WORKGROUP OR MODIFY THE CONNECTION SETTINGS.
- ☐ I WANT TO BUILD A BRAND NEW WORKGROUP.

Source: Interface Hall of Shame

# Legibility and readability (cont'd)

- Text orientation is difficult to read
  - Don't try too hard to harm your neck



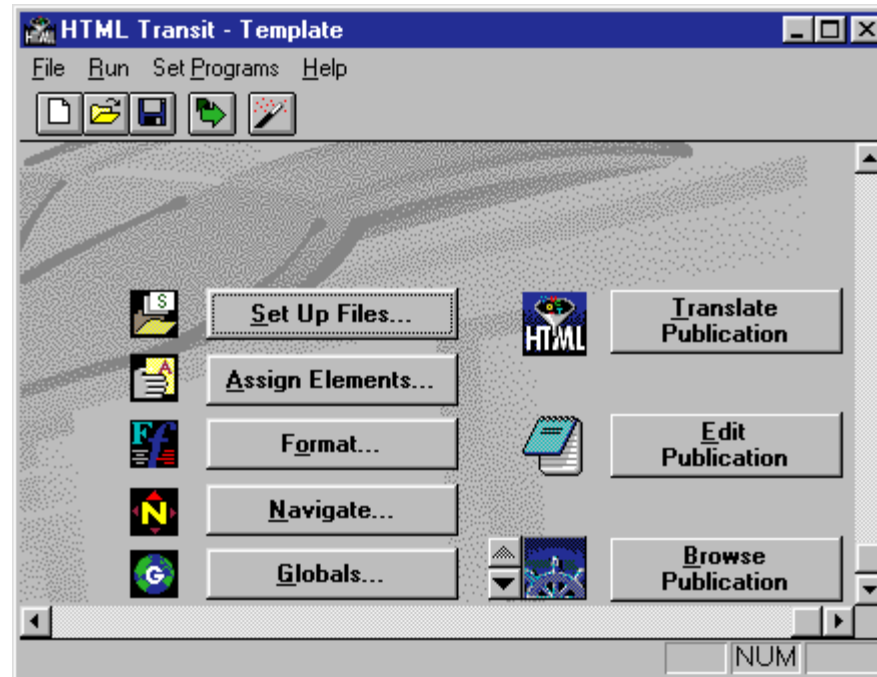
Source: Interface Hall of Shame

# Imagery

- Signs, icons, symbols
  - right choice within spectrum from concrete to abstract
- Meaningful icon design are hard!
  - except for most familiar, always label them
- Consistent and relevant image use
  - identifies situations, offerings, etc.
- Avoid 'eye candy' unless it supports a message
- Motion attracts attention
  - useful if important, otherwise distracting

# Imagery (cont'd)

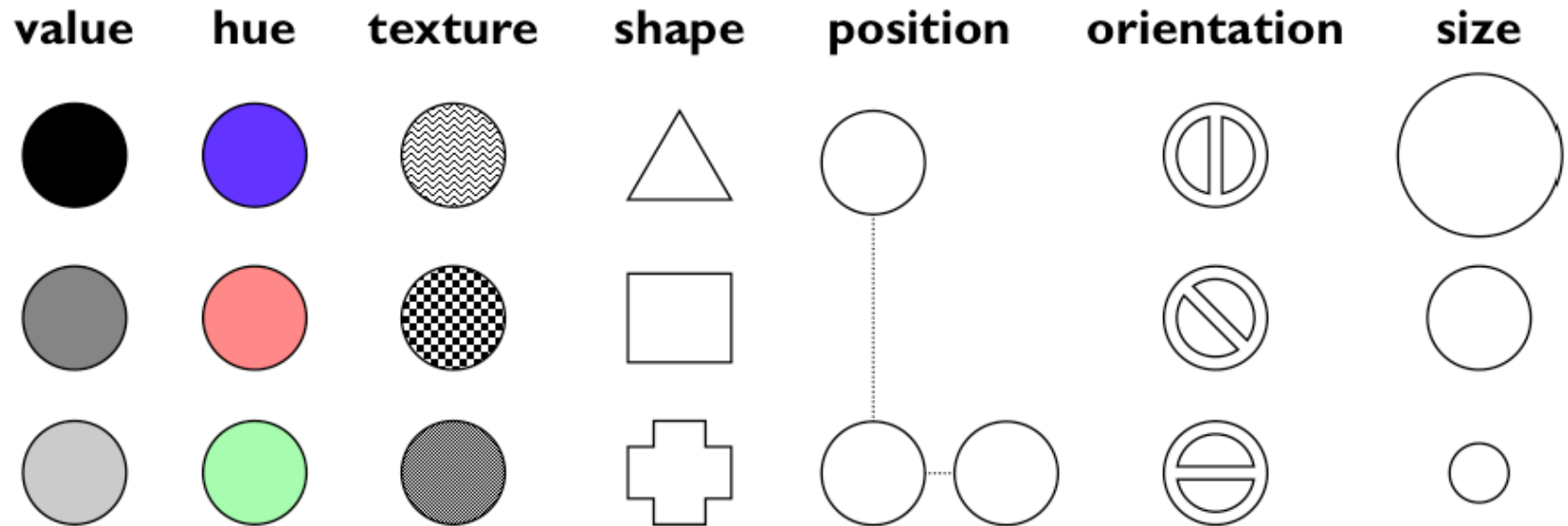
- Can you guess these icons?



Source: Interface Hall of Shame

# Color and contrast

- Contrast encodes information along visual dimensions



# Contrast problems

Form Title -- (appears above URL in most browsers and is used by WWW search engines)		Background Color:
Q&D Software Development Order Desk		FFFBF0
Form Heading -- (appears at top of Web page in bold type)		Text Color:
Q&D Software Development Order Desk		000080
E-Mail responses to (will not appear on Web page)	Alternate (for mailto forms only)	Background Graphic
dversch@q-d.com		
Text to appear in Submit button	Text to appear in Reset button	<input type="radio"/> Mailto
Send Order	Clear Form	<input checked="" type="radio"/> CGI
Scrolling Status Bar Message (max length = 200 characters)		
***WebMania 1.5b with Image Map Wizard is here!***		
<< Prev Tab		Next Tab >>

[Freejack's Fonts 1000 Fonts](http://www.web.idirect.com/~freejack/)  
<http://www.web.idirect.com/~freejack/>  
Collection of TrueType fonts from the net

[TrueType Font Archiv of Sadkins 100 Fonts](http://voyager.cns.ohiou.edu/~sadin/TrueTypeFontArchive/)  
<http://voyager.cns.ohiou.edu/~sadin/TrueTypeFontArchive/>  
Shareware and freeware fonts

[Fonts of alt.binaries 200 Fonts](http://www.gui.uva.es/~explores/fonts/)  
<http://www.gui.uva.es/~explores/fonts/>  
Shareware and freeware fonts from the alt

[California State University -Shareware Archive](http://coyote.csusm.edu/cwis/vfont/)  
<http://coyote.csusm.edu/cwis/vfont/>  
Many foreign fonts, some utilities, no for

Source: Interface Hall of Shame



# Summary

- Graphic design philosophies
- Design principles
  - Metaphor
  - Clarity and simplicity
  - Consistency
  - Organization/Alignment/Proximity/Grids
  - Legibility and readability
  - Color and contrast