



Principles of Good Screen Design





Goals of Well Designed Screen

- Reflect needs & capabilities of users
- Fits display hardware constraints
- Utilizes capabilities of software
- Helps achieve business functions/objectives





Areas of Consideration for Good Screen Design

- Human
- Hardware
- Software





Good Screen Design: Human

- Apply test for good design
- Organize screen elements
 - clearly
 - meaningfully
- Present information
 - distinctively
 - simply
 - meaningfully





Good Screen Design: Hardware & Software

- Compatibility with capabilities
- Use of toolkits and style guides
- Use of display features





Common Problems in Screen Design

- Unclear labels
- Poorly worded information
- Misleading graphic/type emphasis
- Misplaced information requests






Common Problems

in Screen Design (2)

- Perception that information requested is not relevant or applicable
- Cluttered appearance
- Poor presentation quality







Common Problems in Visual Interface Design

-- Howlett (1995)

experiences at Microsoft

- Visual inconsistency
 - screen detail presentation
 - with operating system
 - Lack of restraint in use of design features
 - Overuse
 - 3-D presentations
 - bright colors
- 



Common Problems in Visual Interface Design

-- Howlett (1995)

experiences at Microsoft

- Poorly designed icons
- Bad typography
- Metaphor design
 - too overbearing
 - too cute
 - too literal





User Wish List for Screen Design

- Orderly, clean, clutter-free appearance
- Obvious meaning
 - what is being shown
 - what user is supposed to do
- Relationships clearly indicated
 - options
 - labels
 - data



User Wish List for Screen Design

- Plain simple language
- Information located where expected
- Ease of discovery
 - what is in system
 - how to use system
- Disaster proof
 - clear indication of an action that makes permanent change in data or system





User Wish List

- Simplicity
- Clarity
- Understandability





Screen Test for Good Design

- Can all screen elements
be identified by cues
other than
by reading the words
that make them up?





Screen Meaning and Purpose

- Each and every screen element
 - » every control
 - » every icon
 - » each color
 - » each message
 - »
- Must ...
 - have meaning to screen users
 - serve a purpose in performing tasks





Organizing Screen Elements

- For ease of recognition and focus
- For visual clarity
 - consistency
 - composition
 - ordering
 - presentation
 - grouping and alignment





Organizing Screen Elements: Consistency

- To real-world experience
- Within system
 - operating procedures
 - component look and feel
 - component locations
- Across all systems
- Deviate when benefits user





Why consistency

- Aids learning
 - conceptual learning
 - transfer training
- Inconsistency
 - distracts
 - confuses
 - hides meaningful variations






Organizing Screen Elements: Composition

- Starting point
- Navigation
- Visually pleasing





Navigation

- Assist
 - alignment and grouping of elements
 - line borders
 - Direct attention
 - focus and emphasis
 - sequential placement
 - Tabbing in logical order
 - Location of command buttons
- 



Visually Pleasing Composition

- Balance
- Symmetry
- Regularity
- Predictability
- Sequentiality





Visually Pleasing

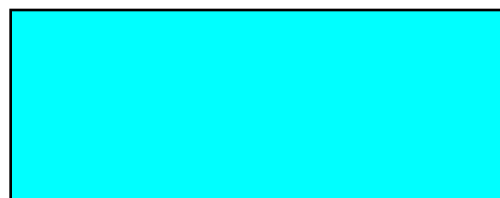
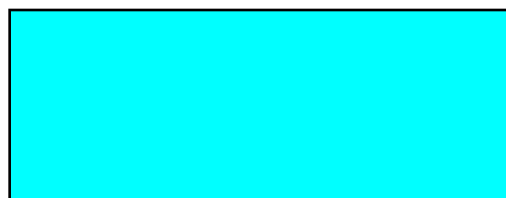
Composition (2)

- Economy
- Unity
- Proportion
- Simplicity
- Groupings



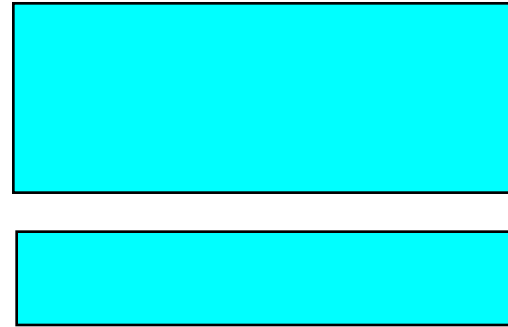
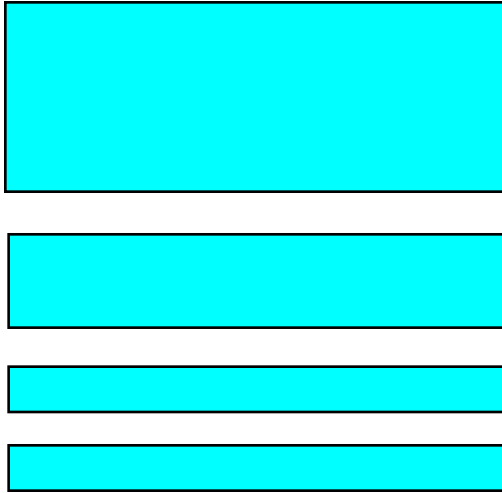


Balance





Instability



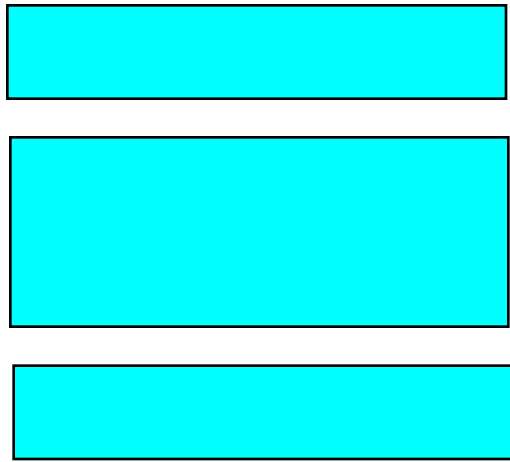
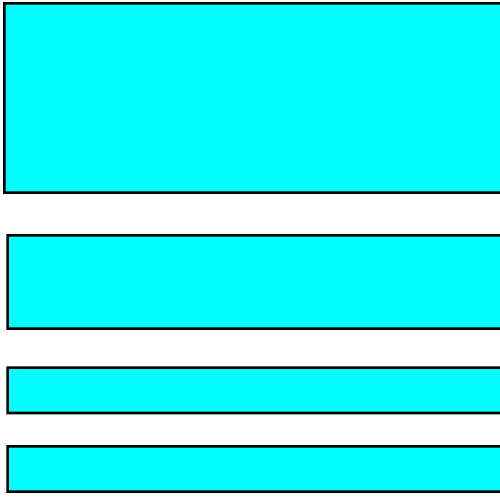


Symmetry





Asymmetry





Sequentiality (vs. Randomness)

Eye Attracted to:

- Brighter element
- Isolated element
- Graphics before text
- Saturated colors
- Dark areas
- Big element
- Unusual shape





Economy

- Limit use
 - styles
 - display techniques
 - colors
- Use minimum display elements to convey message






Unity

- Together 'ness'
 - seen as one thing
- Similar design for related information
 - size, shape, color
- Leave less space between elements relative to space at margins
 - white space





Groupings

- Functional groupings
 - Spatial groupings
 - Evenly space controls within a grouping
 - Visually reinforce groupings
- 




Visual Groupings

- Utilize perceptual principles
 - proximity
 - closure
 - similarity
 - matching patterns





Visual Organization Creates Functional Groupings

- Proximity: 0000 0000 0000
 - Similarity: AAABBBCCC
 - Closure: [] [] []
 - Matching patterns: >> <>
- 



Combine Visual Organization Principles in Logical Ways

- Proximity & similarity:

AAA BBB CCC

- Proximity & closure:

[] [] []

- Matching patterns & closure

() < > { }





Combine Visual Organization Principles in Logical Ways (2)

- Proximity and ordering:

1234

1

5

2

6

5678

3

7

4

8





Avoid Visual Organization Principles that Conflict

- Proximity opposing similarity:

AAA

ABB

BBC

CCC

- Proximity opposing closure:

] [

] [

] [





Avoid Visual Organization Principles that Conflict (2)

- Proximity opposing ordering

1357	1	2
	3	4
2468	5	6
	7	8





Grouping Using Borders

- Use line borders to:
 - focus attention
 - guide eye through screen
- Limits
 - 3 line thicknesses
 - 2 line styles
- Consistent line height & length





Grouping by Background

- Can use contrasting background
 - background should still be in ‘background’
 - 25% grey screening
 - higher contrast for components needing attention





Amount of Information Presented

- Proper amount for task
 - Too little is inefficient
 - Too much is confusing
- All needed information for action or decision on one screen
 - Should not have to remember from one screen to the next
- Restrict density level to about 30%

