Graphical Screen Design

CRAP - contrast, repetition, alignment, proximity

Grids are an essential tool for graphical design

Other visual concepts

- **Consistency**
- **Relationships**
- **Navigational cues**
- **Legibility and readability**
- **Appropriate imagery**
- **Familiar idioms**

The Plan: Cheese Sampler

CRAP

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Other visual concepts include

- Visual consistency
- Repetition
- Visual organization
- Contrast, alignment and navigational cues
- Visual relationships
- Proximity and white space
- Familiar idioms
- Legibility and readability
- Typography
- Appropriate imagery

Tool 1: CRAP for understanding

**Contrast**
- Make different things different
- Brings out dominant elements
- Mutes lesser elements
- Creates dynamism

**Repetition**
- Repetition throughout the interface
- Consistency
- Creates unit

**Alignment**
- Visually connects elements
- Creates a visual flow

**Proximity**
- Groups related elements
- Separates unrelated ones
Really????

People often focus on content. (Have you seen DanCo's web page?)

But over-focus just on beautiful
graphic design is just as bad.

And though not everyone is
a great graphic designer,

Everyone can CRAP.

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Tool 2: Make interface, tasks parallel

provide initial focus and main path
direct attention as appropriate to important secondary, or peripheral items as appropriate
order should follow a user's conceptual model of sequences

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Haphazard layout
(Matches system model) 
Database order
Evolution of system?
Tool 3: Guidelines and grids

Many (most?) UI toolkits support CRAP
- Hierarchical organization for grouping
- Grids for alignment
- Consistent look and feel for widgets
- Consistent font choices
- A "Look and feel" that matters

This is part of the answer to "why guidelines?"

Idioms

Familiar ways of using GUI components
- appropriate for casual to expert users
- builds upon computer literacy
- must be applied carefully in walk up and use systems
**Visual consistency (repetition)**

Internal consistency
- elements follow same conventions and rules
- set of application-specific grids enforce this

External consistency
- follow platform and interface style conventions
- use platform and widget-specific grids

Deviate only when it provides a clear benefit to user

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**Sometimes it’s okay to make exceptions**

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**Example: grids (alignment, repetition)**

Horizontal and vertical lines to locate window components
- aligns related components

Organization
- contrast for dominant elements
- element groupings by proximity
- organizational structure
- alignment

Consistency
- location
- format
- element repetition
- organization
Example: form organization

Grids help here too

Redesigning a layout using alignment and factoring

No grid, no peace

IBM's Aptra Communication Center
Grids by themselves won’t save you

**Terrible alignment**
- no flow
- poor contrast
- cannot distinguish colored labels from editable fields
- poor repetition
- buttons do not look like buttons
- poor explicit structure
- blocks compete with alignment

Webforms

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**Storytelling**

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**Mini-break**

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**Tool 4: appropriate widget choice**

Partly defined by style guidelines (e.g., Apple UI guidelines)

Radio/option buttons versus checkboxes  Gender: Male

Appropriate controls for data entry  Grade: ▼ 100

Combo boxes vs. list controls vs. sets of checkboxes

Task-appropriate widgets
- Color pickers
- Calendar widgets

Custom widgets...
Tabs: proximity power

- but can be overdone
- excellent means for factoring related items
- maybe you should make some choices?

Tool 5: Simplicity

minimize number of controls
- include only those that are necessary
  - eliminate, or relegate others to secondary windows
minimize clutter
- so information is not hidden
Excessive decoration of doooooom

Overuse of 3-d effects makes the window unnecessarily cluttered

Legibility and readability

Characters, symbols, graphical elements should be easily noticeable and distinguishable

Text set in Helvetica

Text set in Times Roman

Legibility and readability

Typesetting
- point size
- word and line spacing
- line length
- indentation and alignment
- color
- whitespace

Limited variety (consistency)
- Small number of fonts, styles, colors, fonts...
From whitespace to legibility

Legible imagery

Icon design very hard
- except for most familiar, always label them
- Fitts' law also thanks you for this

Image position and type should be related
- image "family"; toolbar groupings

Signs, icons, symbols
- right choice within spectrum from concrete to abstract

Icons: appropriate levels of abstraction

Illegible imagery

What do these images mean?
- no tooltips included
- one of the tabs is a glossary explaining these images! which one?
Refine your metaphors

Cheese sampled!

CRAP

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  - repetition
- visual organization
  - contrast, alignment and navigational cues
- visual relationships
  - proximity and white space
- familiar idioms
- legibility and readability
  - typography
- appropriate imagery