

Graphical Screen Design

CRAP

(Contrast, repetition, alignment, proximity)

Grids

An essential tool for graphical design

Other important graphical screen design concepts

Visual consistency

Visual relationships

Visual organization

Legibility and readability

Appropriate imagery

Navigational cues

Familiar idioms

James Tam

The Squint Test

Used to determine what stands out or what elements appear to belong together



James Tam

CRAP: An Important Tool For Graphical Screen Design

Contrast

- Make different things even more different
- Brings out dominant elements & mute lesser elements

Repetition

- Consistency
- Repeat conventions throughout the interface to tie elements together

Alignment

- Visually associate related elements by lining them up

Proximity

- Group related elements
- Separate unrelated elements

James Tam

Contrasting Contrast

Laura Mathews

1953 Kevalk Drive
Santa Rosa, California 95405
707-507-1254

Related Skills

Excellent working knowledge of laboratory tests and their significance in oncology care through working in a clinical laboratory, reinforced while providing patient care. Assisted with bone marrow biopsy and aspiration, lumbar puncture, paracentesis, thoracentesis, and intrathecal chemotherapy administration. Promoted self-care skills and adaptation of the client to their disease and particular treatment program.

Extensive experience with at-home care of sick and cancer patients, including IV line maintenance, pain management, understanding of medicare reimbursement and social service referrals.

Education

1990 Associate in Science Nursing, High Honors
Santa Rosa Junior College, Santa Rosa, California

Experience

1992-present Registered Nurse for Home Health Plus, Visit Division. At-home care of patients with multiple health problems, sick, and cancer patients.

1990-present Registered Nurse for Memorial Hospital Oncology Unit, Santa Rosa, California. Managed the care of 4-5 oncology patients. Assumed lead nurse responsibilities. Assisted with new RN orientation. Assisted with procedures administered chemotherapy, assessed for side effects of chemotherapy and disease process.

1985-1986 Nurse's Aide for Mendocino Coast District Hospital, Fort Bragg, California. Assisted with patient care in Med-Surg and Obstetrical settings.

1985-1986 Lab Assistant for Mendocino Coast District Hospital, Fort Bragg, California. Computer skills while inputting data, cultured lab specimens.

Personal Statement

Previous work experience in a fast-paced, high-stress environment has fine-tuned my organizational skills. My experiences have made me comfortable with oncology patients and their families. Supervisors value my organizational skills, eagerness to learn and assume responsibilities, and my dedication to my job.

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From "The Non-Designers Design book by Robin Williams

James Tam

Repetition

Mickey Mouse

- Walt Disney Studios
Anaheim, California
58 years old, no children

Employment

- Walt Disney Studios
- Various television studios

Education

- Walt Disney Studios

Favorite Activities

- Driving steamboats
- Roping cattle

Favorite Quote

- Everybody can't be a duck.

From "The Non-Designers Design book by Robin Williams

James Tam

Alignment

<p>Honor Form</p> <p>Heresy rheumatic starry offer former's dodder, Violate Huskings, an wart hoppings darn honor form.</p> <p>Violate lift wetter fodder, oiled Former Huskings, hoe hatter repetition for bang furry retch--an furry stenchy. Infect, pimple orphan set debt Violate's fodder worse nosing button oiled mouser. Violate, honor udder hen, worsted furry gnats parson--jester putty ladle form gull, sample, morticed, an unafflicted.</p> <p>Tarred gull</p> <p>Wan moaning Former Huskings nudist haze dodder setting honor cheer, during nosing.</p> <p>"Violate! sorted dole former, 'Watcher setting darn fur? Denture nor yore canned gat retch setting darn during nosing? Germ pup otter debt cheer!"</p> <p>"Arm tarred, Fodder." resplendent Violate warily.</p>	<p>"Watcher tarred fur?" aster stenchy former, hoe dint half mush symphony further gull.</p> <p>Feeder pegs</p> <p>"Are badger dint doe mush woke disk moaning! Ditcher curry doze buckles fuller slob darn tutor peg-pan an feeder pegs?"</p> <p>"Yap, Fodder. Are fetter pegs."</p> <div style="background-color: black; width: 100px; height: 100px; margin: 10px auto;"></div> <p>"Ditcher mail-car caws an swoop otter caw staple?" "Off curse, Fodder. Are mulct oiler caws an swapped otter staple, fetter checkings, an clammed upper larder inner checking-horse toe gadder</p>
<p>Honor Form</p> <p>Heresy rheumatic starry offer former's dodder, Violate Huskings, an wart hoppings darn honor form.</p> <p>Violate lift wetter fodder, oiled Former Huskings, hoe hatter repetition for bang furry retch--an furry stenchy. Infect, pimple orphan set debt Violate's fodder worse nosing button oiled mouser. Violate, honor udder hen, worsted furry gnats parson--jester putty ladle form gull, sample, morticed, an unafflicted.</p> <p>Tarred gull</p> <p>Wan moaning Former Huskings nudist haze dodder setting honor cheer, during nosing.</p> <p>"Violate! sorted dole former, 'Watcher setting darn fur? Denture nor yore canned gat retch setting darn during nosing? Germ pup otter debt cheer!"</p> <p>"Arm tarred, Fodder." resplendent Violate warily.</p>	<p>"Watcher tarred fur?" aster stenchy former, hoe dint half mush symphony further gull.</p> <p>Feeder pegs</p> <p>"Are badger dint doe mush woke disk moaning! Ditcher curry doze buckles fuller slob darn tutor peg-pan an feeder pegs?"</p> <p>"Yap, Fodder. Are fetter pegs."</p> <div style="background-color: black; width: 100px; height: 100px; margin: 10px auto;"></div> <p>"Ditcher mail-car caws an swoop otter caw staple?" "Off curse, Fodder. Are mulct oiler caws an swapped otter staple, fetter checkings, an clammed upper larder inner checking-horse toe gadder oiler aches, an wen darn tutor vestibule guarding two peck oiler bogs</p>

From "The Non-Designers Design book by Robin Williams

James Tam

Proximity

CD ROMs
CD ROMs
Children's CDs
Educational CDs
Entertainment CDs
Laser discs
Educational
Early learning
Language arts
Science
Math
Teacher Tools
Books
Teacher tools
Videos
Hardware &
Accessories
Cables
Input devices
Mass storage
Memory
Modems
Printers & supplies
Video and sound

From "The Non-Designers
Design book by Robin
Williams

CD ROMs

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Children's CDs
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Entertainment CDs
Laser discs

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Early learning
Language arts
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Math

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Books
Teacher tools
Videos

Hardware & Accessories

Cables
Input devices
Mass storage
Memory
Modems
Printers & supplies
Video and sound

James Tam

Grids

Horizontal and vertical lines to locate window components

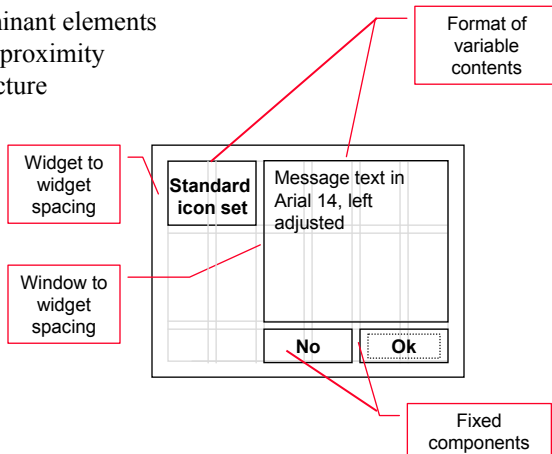
- Aligns related components

Organizes the display:

- Contrast to bring out dominant elements
- Grouping of elements by proximity
- Show organizational structure
- Alignment

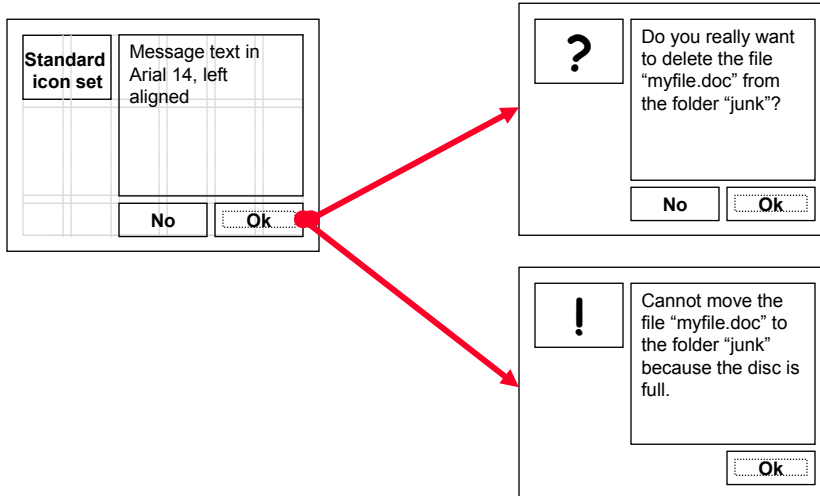
Provides consistency

- Location
- Format
- Repetition
- Organization



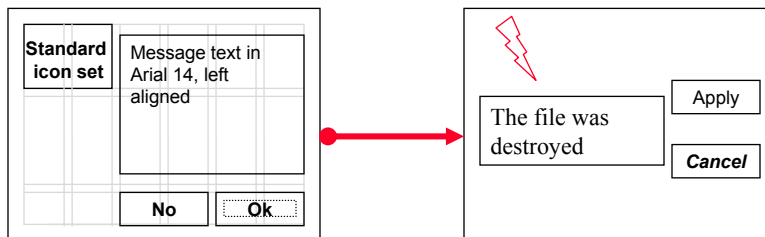
James Tam

Using A Grid: Consistent



James Tam

No Grid: Inconsistent



James Tam

Another Grid Example

Two-level Hierarchy

- Indentation
- Contrast

Logic of organizational flow

Grid for Form Type 1

Heading 1

Label Text field

Label Combo1

Label Large multiline text field

Heading 1

Check box Check box

Check box Check box

Apply Cancel

Note Sender

Send to

Name Saul Greenberg

Email saul@cpsc.ucalgary.ca

Message

Hi Saul
Let's get together for lunch,
Perhaps tomorrow?
Judy

Instructions

Type Normal mail

Include attachments

Carbon copy

Apply Cancel

Alignment connects visual elements in a sequence

Grouping by white space

James Tam

Visual Consistency: Internal Consistency

- Unless there is a compelling reason all elements of the same program follow the same rules and conventions
- Application specific grids can be used to enforce this

Doh!

Format AutoShape

Colors and Lines Size Position Picture Text Box Web

Fill

Color: No Fill

Transparency: 0% 100%

Line

Color: Style: Dashed: Weight: 1 pt

Connector: Arrows

Begin style: End style: Begin size: End size:

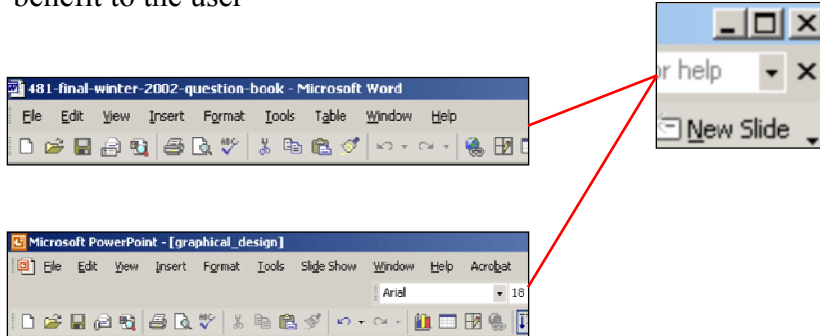
Default for new objects

OK Cancel Properties

James Tam

Visual Consistency: External Consistency

- Follow interface and platform style conventions
- Use grids that are platform (e.g., Windows) and widget (e.g., Java Swing) specific
- Deviate from these conventions only when there is a clear benefit to the user



James Tam

External Consistency Violated

The screenshot displays a web interface for 'LIGANDFIT', a cancer research project. The interface is divided into several sections:

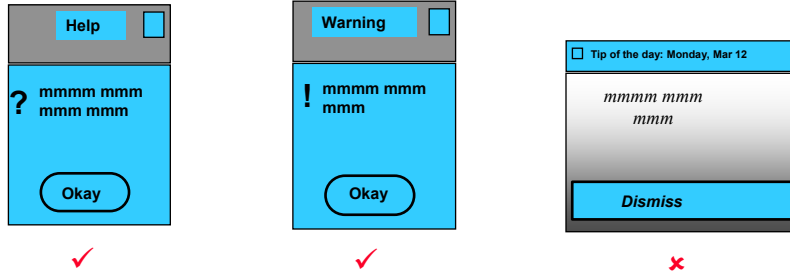
- Primary Task Information:** Displays the project name 'LIGANDFIT' and 'CANCER RESEARCH PROJECT, PHASE II'. It includes a description: 'LigandFit helps scientists to characterize therapeutic targets and identify and assess drug candidates by performing automated docking of flexible ligands to a protein's binding site.' Below this, it shows 'Task CPU Time: 3 hrs 7 mins 27 secs' and a 'Task Execution Progress' bar at 57%.
- Member Information:** Shows 'Name: JimmyT', 'Total Points: 889891', and 'Total CPU Time: 5 years: 132 days: 15 h: 25 m: 23 s'. A link 'View your scores and rewards' is provided.
- Device Information:** Shows 'Overall Performance' with a score of 100. It lists 'Processor' (100), 'Memory' (185), and 'Network'. A comparison device is listed as 'High-end Desktop System'.

The interface includes a 'Learn about this Project' link and a 'View your device list' link. The footer features the 'UNITED DEVICES' logo and the text 'Primary task is executing...'.

The UD agent © United Devices: <http://www.grid.org/projects/cancer/>

James Tam

A Tool For Ensuring Consistency: Mumble Text



James Tam

Structure Is Difficult To Ascertain

sometimes be more a nuisance than a benefit. This was found to be the case in my own investigation of potential change display mechanisms summarized in Chapter 5 and published as Tam, McCaffrey, Maurer, and Greenberg (2000). During this study, many test participants expressed a desire for useful abstractions that combine rudimentary change information into one higher-level conceptual change. For example, one participant noted while watching the animated replay of a class name being shown, "...I don't need to see each and every character being typed just to see a name change!" Of course, care must be taken to make these abstractions understandable, e.g., by using already familiar representations or notations. This minimizes the cost of acquiring information while maximizing its benefits due to the added structure and organization.

Based upon my previous findings (to be discussed in Chapter 5), I add a third dimension, *persistence*, to Gutwin's classification. *Persistence* refers to how long the information is displayed (Figure 4.1 side pane). The display of information is *permanent* if it is always visible and *passing* if it only appears for a certain period. We noticed how study participants frequently complained when important information disappeared off the screen. Conversely, they also indicated that screen clutter might occur with the mechanisms that constantly displayed all changes. Thus, there's a need to classify change information according to how long it should stay visible.

With permanent persistence, the effort needed to find changes i.e., the acquisition cost is low because the information is always there. Ideally, a person merely has to shift their gaze over to see the information. Because people can become accustomed to the occurrence of workspace events, they can also ignore things that do not interest them and pay closer attention to things that are of interest (Gutwin 1997).

With passing persistence, information about changes is presented only for a limited duration. This is useful when the information applies only to a specific portion of the project (artifact or group of artifacts) being viewed, or when the change information otherwise becomes irrelevant. This is quite an important point for us. The matrix in Figure 4.1 suggests that these dimensions can be combined, giving eight possibilities. For example, a literal, situated and passing display of changes is depicted in Figure 4.2a. The figure shows an animation of a changed circle (by using a 'replay' technique) where the circle literally retraces the path that it took as it was moved. It is situated because the animation occurs in the same place that the change actually happened. The persistence is 'passing' because once an animation has replayed a change, the information is gone. Figure 4.2b shows two other examples within a concept map editor. The first illustrates the symbolic, situated and permanent octant, where color value (shades of gray) is used to indicate changed 'Jim' and 'Jack' nodes. Thus, it is symbolic because changes are mapped to a gray scale value, situated because the shading is applied directly to the node that was changed, and permanent because the color values are always on. Figure 4.2c also portrays an example of the symbolic, separate, and passing octant, where a person can raise a node's change details in a pop-up as a text description by mousing-over the node. Thus it is somewhat separate as the information appears outside the changed node, it is symbolic as it uses the text to describe the changes, and passing because the pop-up disappears when the person moves the mouse off the node (not quite on the node).

In summary, these three dimensions provide the designer with a means of classifying change information. I now turn to other display issues, where we need to represent the change information in an easily understood and readily accessible fashion.

James Tam

Structure Is Difficult To Ascertain: Don't Impose An Explicit Structure

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James Tam

Structure Is Implied With White Space

With permanent persistence, the effort needed to find changes i.e., the acquisition cost is low because the information is always there. Ideally, a person merely has to shift their gaze over to see the information. Because people can become accustomed to the occurrence of workspace events, they can also ignore things that do not interest them and pay closer attention to things that are of interest (Gutwin 1997).

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James Tam

Relationships Between Screen Elements

- Using white space (negative proximity) vs. forcing an explicit onscreen structure (e.g., the use of bounding boxes)

No structure

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

x

Explicit structure

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

x

Implicit structure

Mmmm:

Mmmm:

Mmmm:

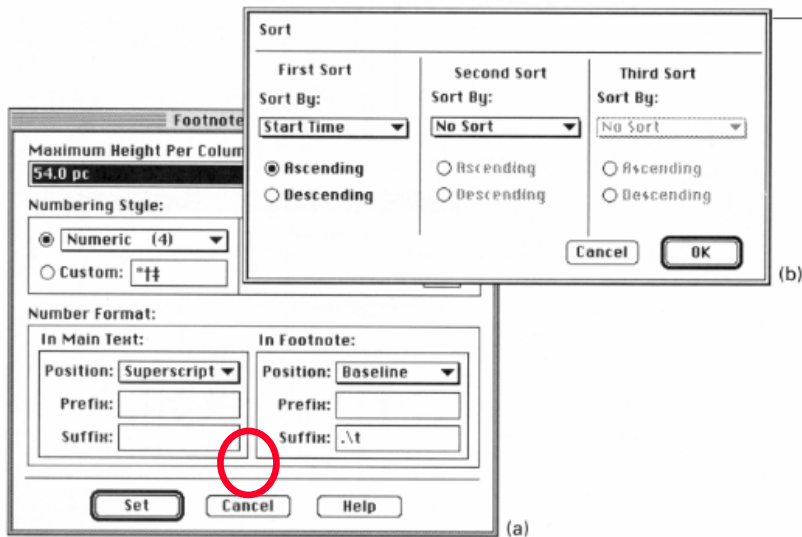
Mmmm:

Mmmm:

✓

James Tam

Examples Of Explicit Structure



An Example Of Poor Presentation

- Problems:

- What Are The Input Fields?
- What Is Output Only?

- Causes:

- Bad alignment
- Poor choice of colors to distinguish labels from editable fields

Form Title -- (appears above URL in most browsers and is used by WWW search)	Background Color:	
Q&D Software Development Order Desk	FFFFFD	
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)	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!		
<input type="button" value="Prev Tab <<"/>		<input type="button" value="Next Tab >>"/>

Webforms

James Tam

Another Example: No Regard For Order And Organization

Advanced FAX Settings

Axtiva Communication Center

Speaker setting

On On until connect Off

Wait 45 seconds for connection

Retry after 60 seconds Number of retries 3

Resolution

Fine Standard

Maximum transmit rate: 14400 bps

Paper size: Letter (8 1/2 x 11 in)

Use custom editor: xe C:\Phoenix\Fax_inst.wii

IBM's Axtiva Communication Center

James Tam

Yet Another Example: A Haphazard Layout

The screenshot shows a web form for 'xbugtool 2.0 Beta 2' with a server name 'elmer-bb.Corp'. The form is cluttered with various controls:

- Navigation:** Buttons for 'Load', 'Store', 'Submit', 'View', 'Print', 'Reset', 'Props', 'Gen. Help', 'Update lists', 'Mode: Edit', and 'Create'.
- Form Fields:** 'Bug ID', 'Category', 'Subcategory', 'Resp Mgr', 'State', 'Priority' (1-5), 'Severity' (1-5), 'Bug/Rfc' (bug, rfc), and 'Responsible Engineer'.
- Text Areas:** 'Synopsis', 'Keywords', 'Description', 'Work around', 'Suggested fix', 'Comments', and 'Public summary'.
- State Triggers:** A list of buttons including 'Evaluation', 'Commit to fix in rel...', 'Fixed in releases...', 'Integrated in releases...', 'Verified in releases...', 'Closed because', 'Incomplete because', 'Root cause...', and 'Fix affects docs'.
- Other Fields:** 'Duplicate of:', 'Patch id:', 'History:', 'Generic SVR4 problem?' (no, yes), 'Dispatch operator', 'Evaluator', 'Commit operator', 'Flagger', and 'Interest list'.

Haphazard layout from Mullet & Sano page 105

James Tam

Repairing A Haphazard Layout

The screenshot shows a cleaner, more organized web form for 'Bugtool' with a 'Report' button and 'View', 'Props', 'Help' menu items. The form is structured as follows:

- Navigation:** 'Report', 'View', 'Props', 'Help', 'Mode: Create', 'Edit'.
- Form Fields:** 'Bug ID', 'Type' (Bug, RFE), 'Category' (XView), 'Subcategory' (library), 'Release' (1.0), 'Priority' (1-5), 'Severity' (1-5), 'States' (Submitted).
- Text Areas:** 'Synopsis', 'Keywords', 'Pub Summary', 'See also', 'Interest List'.
- Table:** A table with columns: 'Description', 'Work Around', 'Suggested Fix', 'Comments', 'Evaluation'.
- Form Fields:** 'Root Cause' (documentation-confusing), 'Same as:', 'Resp Mgr' (none), 'Resp Engr' (none), 'Flags' (Fix Affects Documentation, Generic SVR4 Problem), 'Hook 1', 'Hook 2'.

Repairing a haphazard layout from Mullet & Sano page 105

James Tam

Spatial Tension

The screenshot shows a financial website with a navigation menu on the left, a main content area with news and financial forums, and a mini portfolio on the right. The layout is dense and somewhat cluttered, with overlapping text and a lack of clear visual hierarchy.

Navigation Menu (Left):

- Symbol Lookup
- Departments
- Investments
- Portfolio, quotes, advice, mutual funds
- Home & Mortgage
- Shop, qualify & apply, affordability, refinance
- Insurance
- Get quotes, auto risk, insurance planner
- Banking & Credit
- Credit reports, online banking, loans
- Retirement
- Get started, develop a plan, IRAs
- Life Events **New**
- College, wedding, parenting, retirement
- Taxes
- TurboTax Online, FREE TurboTax trial
- Saving & Spending
- Save money, downsize debt

News Section:

Stocks sacked
 U.S. stocks were slammed for beefy losses Wednesday as investors, voicing extreme displeasure with Tuesday's minimal interest-rate cut by the Federal Reserve, dumped holdings across a broad swath.
[FULL STORY](#)

Today on Personal Finance

- [Home buying?](#) Prepare yourself with QuickenMortgage planning tools.
- [Stock of the Week](#): Transaction Network Services.

Financial Forums

- [Quicken Poll: Would impeachment proceedings push the US into a recession?](#)

Personal Finance Q&A

- [Should I consolidate my debts?](#)

[Click here for quick answers to your personal finance questions.](#)

Mini Portfolio

No alerts for your symbols.

Default Portfolio

Symbol	Last	Change
Nasdaq	1693.84	-40.21
Dow	7842.62	-237.90
S&P 500	1017.05	-31.97
FMAGX	97.52	-2.94
INTU	46.56	+0.06
AOL*	111.62	-5.75

Updated: Wed, Sep 30, 17:54 EDT ET
 Nasdaq data delayed at least 15 mins
 Other data delayed at least 20 mins

* = News, H/L = 52 wk high/low

Coming Soon:
[Personalized Portfolios](#) | [Symbol Lookup](#) | [Most Active](#) | [Biggest Gainers/Losers](#)

Products & Promos

- [Quicken 99 is here!](#) **NEW**
- [Beyond.com](#) --The software center for all your business needs.
- [Sign up for our free](#)

The web site for Quicken: Web Centers/Personal Finance link

James Tam

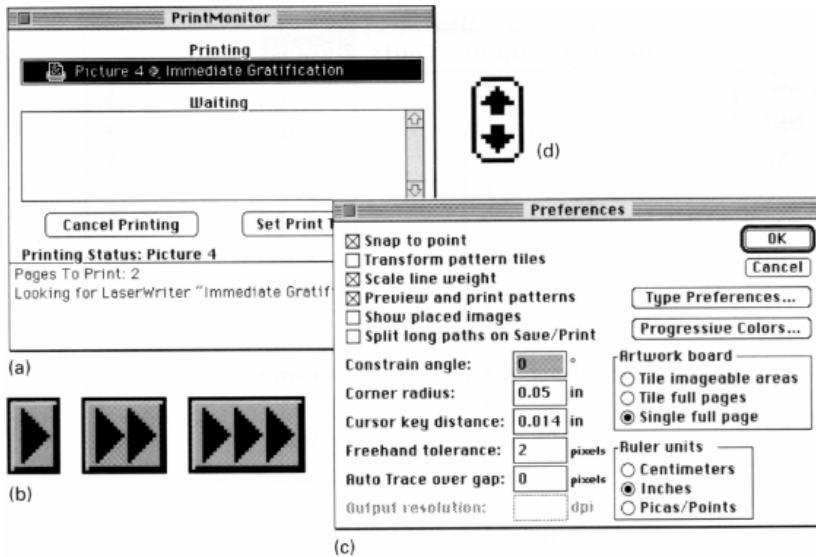
Spatial Tension

This screenshot is identical to the one above, but a large red bracket is drawn on the right side of the page, encompassing the Mini Portfolio table and the Products & Promos section. This bracket highlights the 'spatial tension' or cluttered layout of these elements.

The layout is so cramped that finding information is difficult

James Tam

More Examples Of Spatial Tension



Spatial Tension from Mullet & Sano page 72

James Tam

Overuse Of 3D: The Layout Looks Cluttered

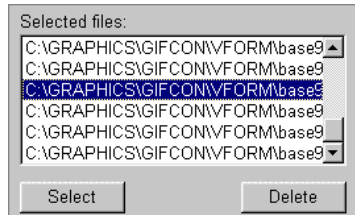


WebForms

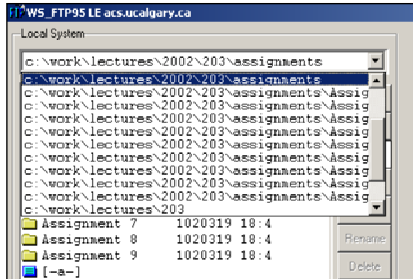
James Tam

Determining Relationships Between Screen Elements

- How do you choose when you cannot discriminate screen elements from each other?



GIF Construction Set

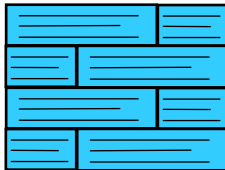


WS-FTP

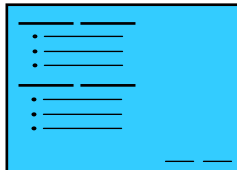
James Tam

Navigational Cues

- Provide initial focus
- Direct attention to important, secondary, or peripheral items as appropriate
- Assist in navigation through material



✗



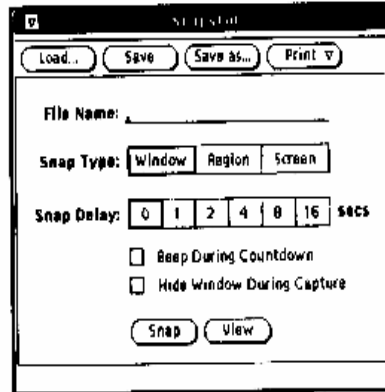
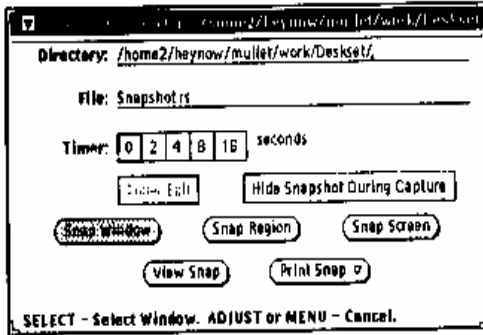
✓



✓

James Tam

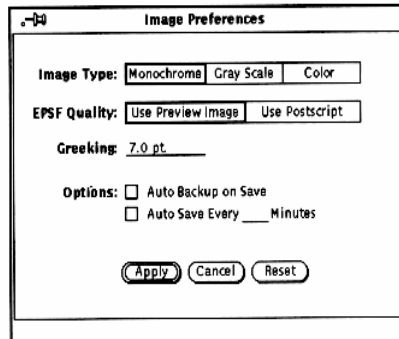
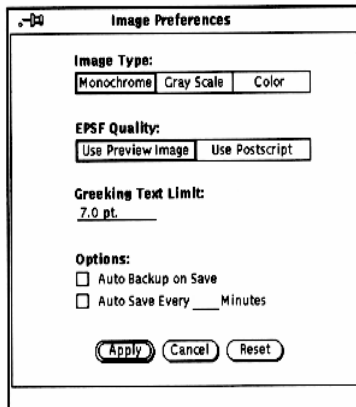
Re-Factoring An Interface



Redesigning a layout using alignment and factoring from Mullet & Sano Page 119

James Tam

The Importance Of Negative (White) Space

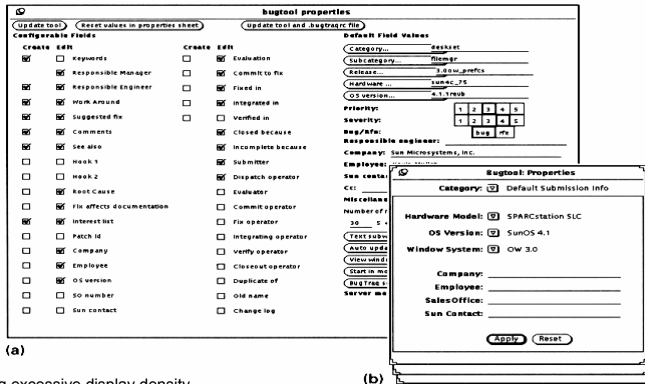


The importance of negative space from Mullet & Sano page 129

James Tam

Economy Of Visual Elements

- Minimize number of controls
- Include only those that are necessary
 - Eliminate, or relegate others to secondary windows
- Minimize clutter
 - So information is not hidden

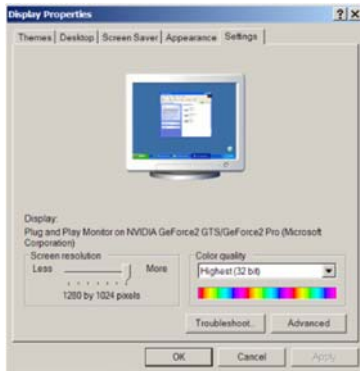


Repairing excessive display density
from Mullet & Sano Page 111

James Tam

Economy Of Visual Elements (Using Tabs)

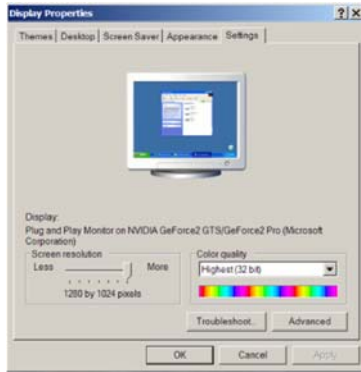
Excellent means for factoring
related items



James Tam

Economy Of Visual Elements (Using Tabs)

Excellent means for factoring related items



Windows display properties tab

But it can be overdone



MultiEdit 8.0

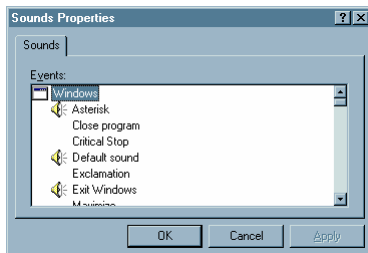


Website: Ottawa-Carleton Real Estate Board

James Tam

Economy Of Visual Elements (Using Tabs): 2

The unnecessary use of a tab



Microsoft Windows

James Tam

Legibility And Readability: The Effect Of Font Choice

Whenever your local SMS Administrator sends you an actual software Package, the SMS Package Command Manager will appear (usually at network logon 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 "CLICK HERE" button of the screen.

Legibility And Readability: The Effect Of Capitalization

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.

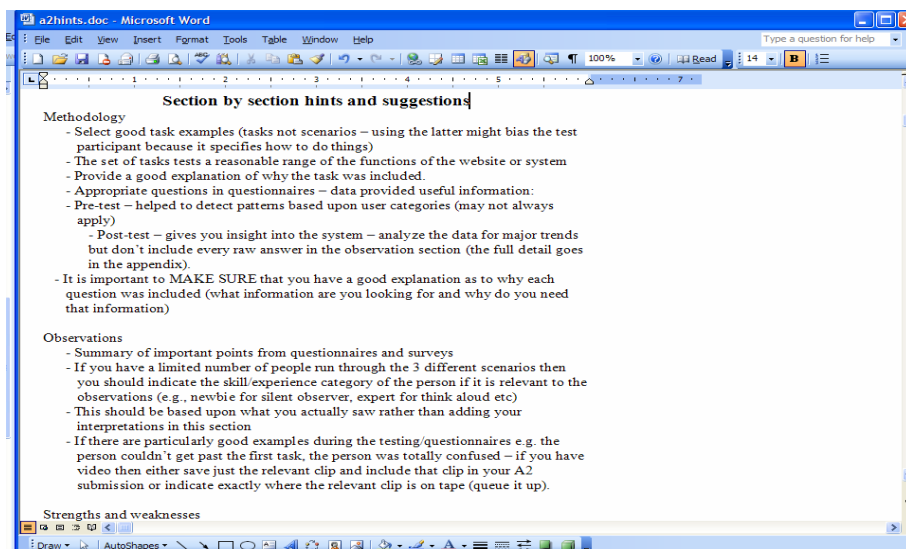
These choices must be really important, or are they?

Legibility And Readability: The Effect Of Capitalization (2)

THIS IS AN EXAMPLE OF TEXT THAT IS SHOWN ALL IN CAPITAL LETTERS AS YOU CAN PROBABLY TELL, THE LACK OF VARIATION IN HEIGHT MAKES IT SOMEWHAT MORE DIFFICULT TO READ. THIS WHOLE PARAGRAPH JUST GOES ON AND ON WITHOUT SAYING ANYTHING SIGNIFICANT. THE OTHER SIDE EFFECT OF ALL CAPITALS IS THAT SOME PEOPLE THINK THAT IT IS THE TEXT EQUIVALENT OF SHOUTING AT SOMEONE. ALSO OTHER PEOPLE MAY THINK THAT IT IS MORE SIGNIFICANT BECAUSE IT IS ALL IN CAPITALS. THAT IS PROBABLY WHY SOME PEOPLE DO IT – IN ORDER TO GIVE THE IMPRESSION THAT THEIR MESSAGE IS REALLY IMPORTANT. BUT AS YOU HAVE PROBABLY ASCERTAINED (ASSUMING THAT YOU HAVE EVEN READ THIS FAR) THAT PUTTING TEXT ALL IN CAP'S IS SIMPLY TOO PAINFUL TO READ.

James Tam

Use Capitalization Sparingly



The screenshot shows a Microsoft Word document with the following content:

Section by section hints and suggestions

Methodology

- Select good task examples (tasks not scenarios – using the latter might bias the test participant because it specifies how to do things)
- The set of tasks tests a reasonable range of the functions of the website or system
- Provide a good explanation of why the task was included.
- Appropriate questions in questionnaires – data provided useful information:
- Pre-test – helped to detect patterns based upon user categories (may not always apply)
 - Post-test – gives you insight into the system – analyze the data for major trends but don't include every raw answer in the observation section (the full detail goes in the appendix).
- It is important to **MAKE SURE** that you have a good explanation as to why each question was included (what information are you looking for and why do you need that information)

Observations

- Summary of important points from questionnaires and surveys
- If you have a limited number of people run through the 3 different scenarios then you should indicate the skill/experience category of the person if it is relevant to the observations (e.g., newbie for silent observer, expert for think aloud etc)
- This should be based upon what you actually saw rather than adding your interpretations in this section
- If there are particularly good examples during the testing/questionnaires e.g. the person couldn't get past the first task, the person was totally confused – if you have video then either save just the relevant clip and include that clip in your A2 submission or indicate exactly where the relevant clip is on tape (queue it up).

Strengths and weaknesses

James Tam

Legibility And Readability: Center Alignment



•It can be useful for providing additional contrast

- e.g., titles vs. the body of the text.



•So it should be used sparingly

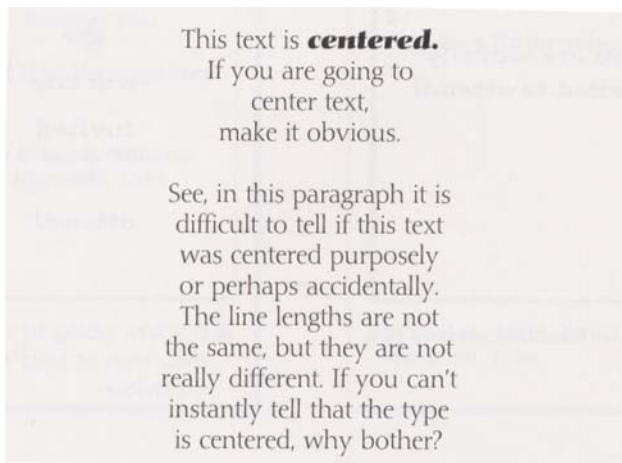
•It should also be used for a reason rather than as the default

James Tam

Legibility And Readability: Center Alignment



•If you are employing it to provide contrast then at least make it obvious



Legibility And Readability: Fonts And Font Effects

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

Text set in
Helvetica

TEXT SET IN
CAPITOLS

Text set in
Times Roman

Text set in
Braggadocio

Text set in
Courier



James Tam

Legibility And Readability: Fonts And Font Effects

(2)

Proper use of typography

- 1-2 typographical effects (typeface or typography) - 3 max
 - Font types, normal, italics, bold, underline
- 1-3 fonts sizes max

Large
Medium
Small

Large
Medium
Small

Readable

Design components to be
inviting and attractive

Design components to be
inviting and attractive



Unreadable

Design components to be
inviting and attractive

Design components to be
inviting and *attractive*



James Tam

Legibility And Readability: Fonts And Font Effects

(3)

- Typesetting
 - Point size
 - Word and line spacing
 - Line length
 - Indentation
 - Color

Readable

Design components to be inviting and attractive

Design components to be inviting and attractive



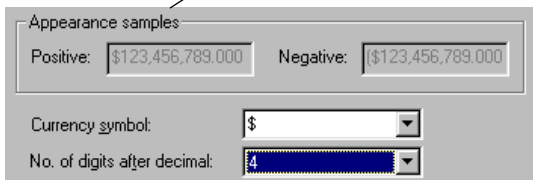
Unreadable: Design components to be easy to interpret and understand. Design components to be inviting and attractive



James Tam

Legibility And Readability: The Effect Of Color And Orientation On Text

Grayed-out example text hard to read.
Why not make it black?



Regional Preferences applet in Windows95

Text orientation makes it difficult to read



MS-Word James Tam

Using Imagery

Signs, icons, symbols

- Right choice within spectrum from concrete to abstract

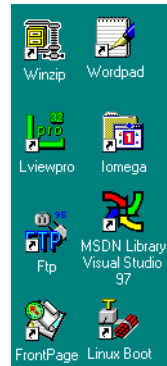


BOOZE!



Icon design *very* hard

- Except for most familiar, always label them

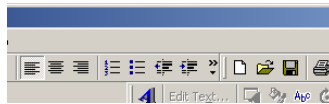


James Tam

Using Imagery (Continued)

Image position and type should be related

- Image “family”



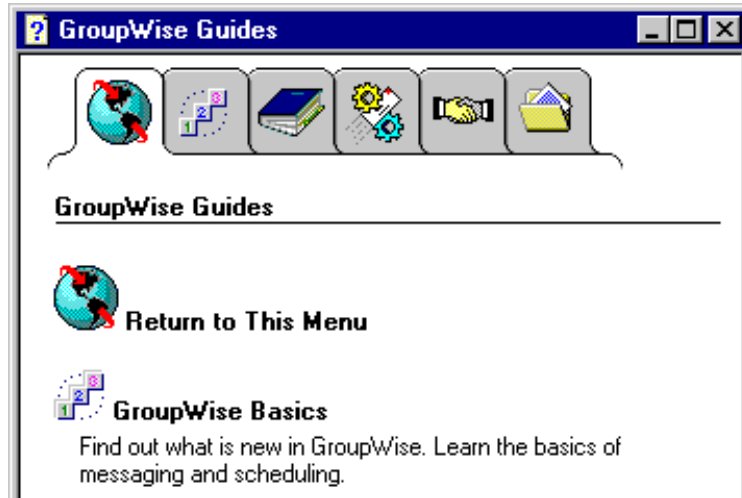
- Don't mix metaphors

Consistent and relevant image use

- Not gratuitous
- Identifies situations, offerings...

James Tam

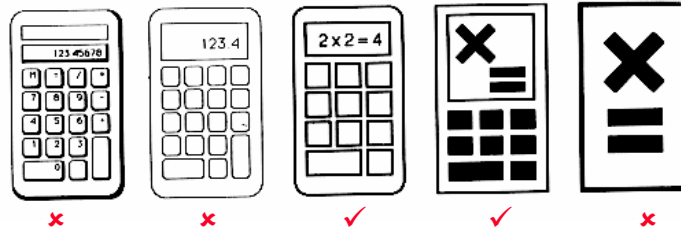
Why Icon Design Is Hard: An Example



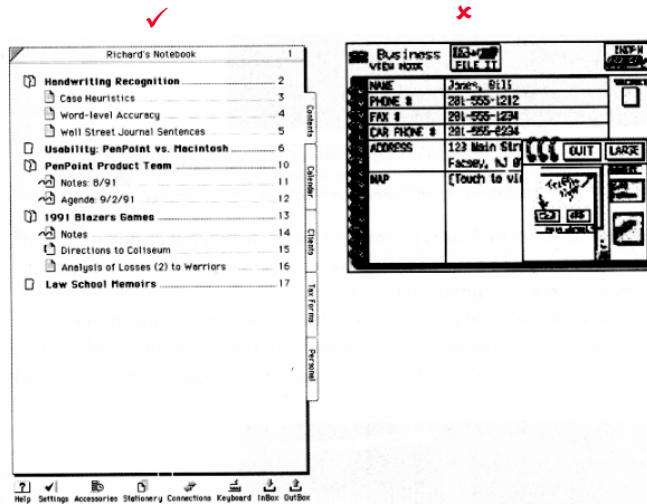
Novell GroupWise 5.1

James Tam

Icon Design: Use The Appropriate Level Of Detail



Interface Design: Use An Appropriate Level Of Detail



Refined vs excessive literal metaphors from Mullet & Sano page 25

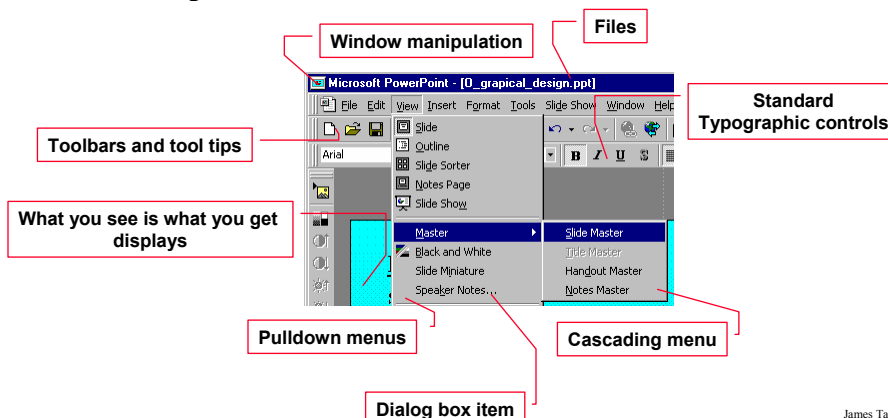
James Tam

Using 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

Some examples

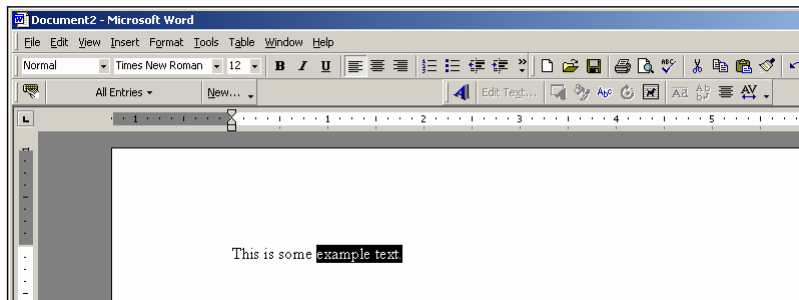


James Tam

General Points To Keep In Mind

1) What components *must* be in the display

- Provide the necessary visual affordances
- Categorizing functions
 - Direct manipulation for core activities
 - Buttons/forms/toolbar/special tools for frequent/immediate actions
 - Menus/property window for less frequent actions
 - Secondary windows for rare actions



James Tam

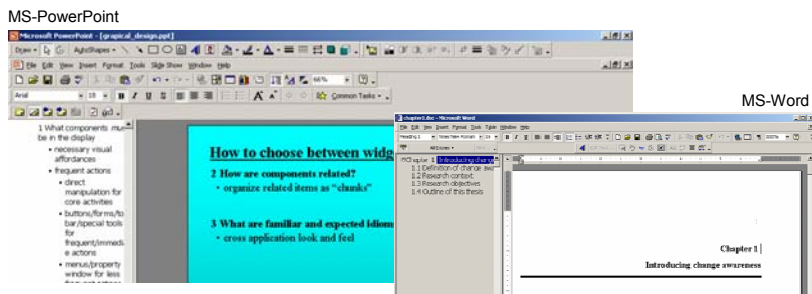
General Points To Keep In Mind (2)

2) How are components related?

- Organize related items as “chunks”

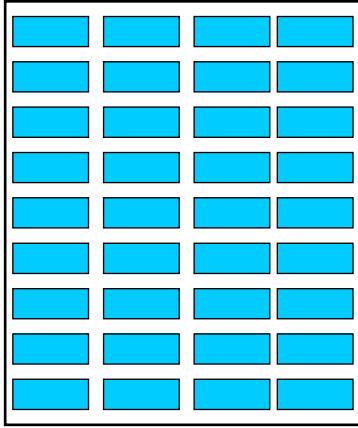
3) What are familiar and expected idioms?

- Cross application look and feel

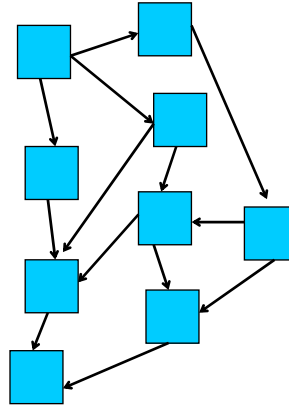


James Tam

Balance Between Too Many Controls On A Single Screen Vs. Too Many Screens



x

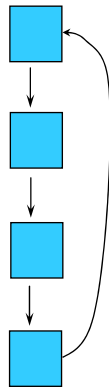


x

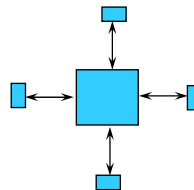
James Tam

Screen Design And Complexity

- How can window navigation and clutter be reduced?
 - Avoid long paths
 - Avoid deep hierarchies
 - Re-factor/combine functions



x



✓

James Tam

What You Now Know

Grids and C.R.A.P. are essential tools for graphical design

Important 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

James Tam

