i213 User Interface Design and Development

Professor Tapan Parikh School of Information, UC Berkeley Design implies balance between functional and aesthetic goals

Modern design implies rational, functional, information-oriented perspective

"A clear visual organization is essential for effective communication"

MODERN GRAPHIC DESIGN

SIMPLICITY WHITE SPACE ALIGNMENT BALANCE CONTRAST

"Perfection is achieved not when there is nothing more to add, but when there is nothing left to take away."

- Antoine de St-Exupery



<u>Approachable</u> – don't intimidate the user

<u>Recognizable</u> - are more easily recognized and remembered

Immediate - provide immediate cues about what to do

<u>Usable</u> - reduce the likelihood of user confusion or error



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ENEMIES OF SIMPLICITY

 Desk
 P Hallway

 In: 1
 Out

 In: 1
 Out

 In: 1
 In: 1

 In: 1
 <



Overly literal translation

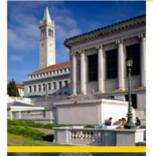
Gratuitous use of 3D

Excessive detail



http://dribbble.s3.amazonaws.com/users/4604/screenshots/292708/push.png

ENEMIES OF SIMPLICITY







Web mash-up project reveals New Deal's legacy across California

Craigslist to establish first endowed faculty chair in new media

More news: Chemical exposure cost | Parasite morphs ant

Campus Events 🕨

Critic's Choice highlights

Conference: 'Many Faces of a Face,' seventh International conference on neuroesthetics 1/19

Recital: Gil Shaham, violin 1/20

Men's Swimming: Cal Invitational 1/21

Today's events >



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Campus Map Interactive | Standard

A TOUR

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<u>
Current students</u>
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HOW TO ACHIEVE SIMPLICITY

Reduction Regularization Combination

REDUCE A DESIGN TO ITS ESSENCE

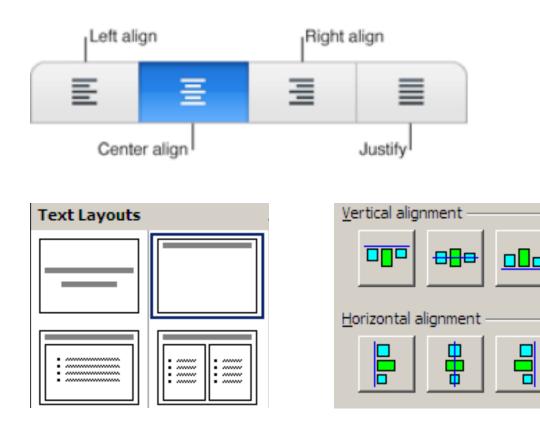


http://2experts.expertsdesign.netdna-cdn.com/wp-content/uploads/2009/12/photoshop-free-psd-files2/17-zoom-icons.jpg

Determine the essential elements

Examine each element, and ask yourself whether its needed. If it isn't, then remove it

Even if it is, try to remove it, and see if the design remains coherent



Use regular geometric forms and muted colors wherever possible

If similar forms are required, make them as close to identical as possible

Limit variation in font size, type

Make sure elements *intended* to stand out are <u>not</u> regularized

Find ways for screen components to play multiple roles clearly and succinctly





Review the role played by each element in the design

Look for places where multiple components are doing the same thing

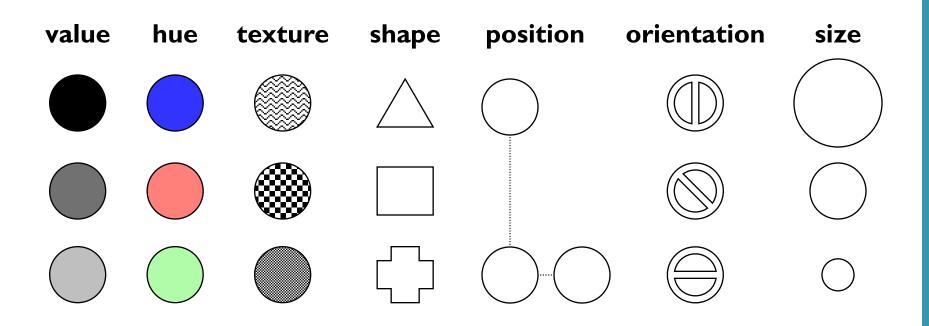
See whether an element's role could be performed by an adjacent component, possibly with some minor changes

Combine redundant elements into a single, simpler unit



"Information consists of differences that make a difference"- Tufte

There are many ways to encode information along visual dimensions





Comparisons that a visual dimension affords

Nominal - Decide if two values are equal - All dimensions

Ordered - Decide relative ordering

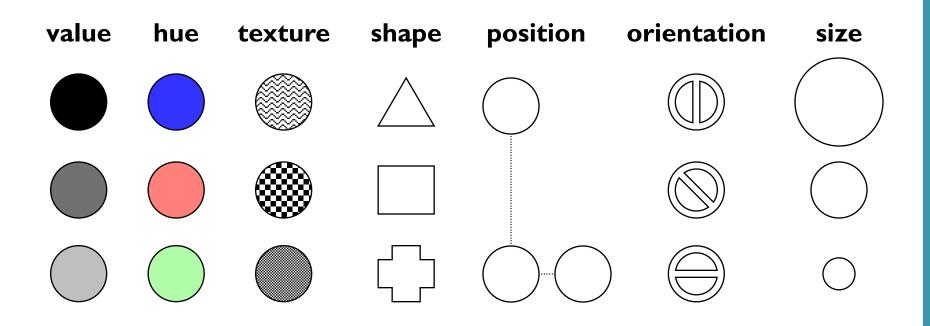
- Position, size, value, texture granularity
- Not orientation, hue, shape

Quantitative - Decide relative difference

- Position, size
- Not value, texture, orientation, shape, hue



<u>Nominal</u> - Decide if two values are equal <u>Ordered</u> - Decide relative ordering <u>Quantitative</u> - Decide relative difference



Length implies how much variation a dimension can support

Shape is very long – almost infinite variety

Position is long and fine-grained (but may be limited by screen size)

Orientation is very short (4 alternatives)

Others are in between (7-10 alternatives)

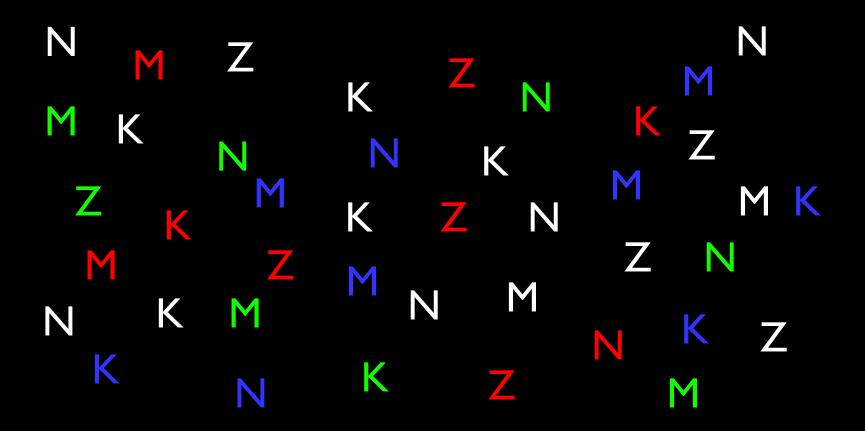
Differentiation - Distinguish relevant forms from background

Emphasis - Emphasize important aspects of the presentation

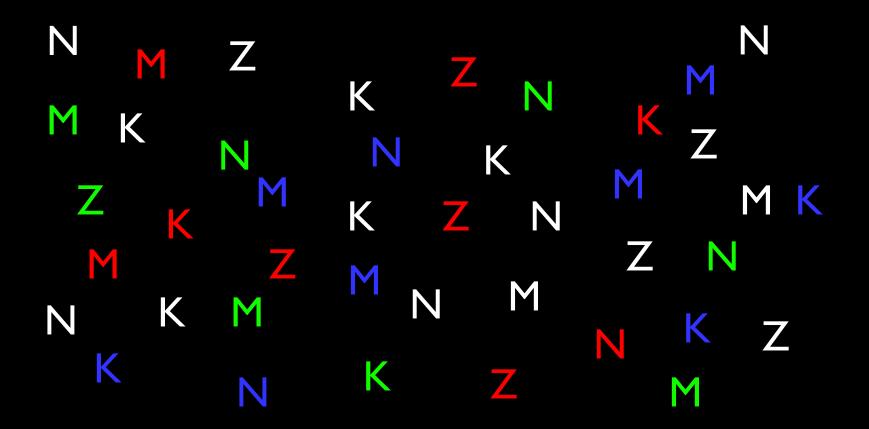
<u>Activity</u> - Guide the user's eye in a predictable way

Interest - Add excitement by juxtaposing very different elements

Can you find all the green letters?



Can you find all the M's?



Adapted from Rob Miller

Can observer quickly focus on one value, excluding all the others? Example: Find all the *blu*e marbles

Selective: position, size, orientation, hue, value, texture

Not selective: shape

Can variable be ignored when observer is more concerned with other variables?

Associative: position, shape, orientation, hue, texture

Not associative: size, value

Small size and value interferes with our ability to perceive position, shape, orientation, hue, texture

Can you find the green K on this page?

THE SQUINT TEST

Close one eye, and squint with the other What do you see? That is the structure that matters

Title: HCI Bibliography : Human-Computer Interaction / User Interface ...

Summary: The HCI Bibliography (HCIBIB) is a free-access bibliography on Human-Computer Interaction, with over 20000 records in a searchable database. ... Learn about HCI. ...

Keywords: HCI

URL: www.hcibib.org/

Size: 14k

HCI Bibliography : Human-Computer Interaction / User Interface ...

The HCI Bibliography (HCIBIB) is a free-access bibliography on Human-Computer Interaction, with over 20000 records in a searchable database. ... Learn about HCI. ... www.hcibib.org/ - 14k - Cached - Similar pages Can you distinguish the labels from editable fields? Use of color, text position does not provide sufficient contrast

Form Title (appears above URL in mos	t browsers and is used by WWW search	Backgound Color:
Q&D Software Development Order Desk	FFFBFO	
Form Heading (appears at t	op of Web page in bold type)	Text Color:
Q&D Software Development Order Desk	000080	
E-Mail respones 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	O Mailto
Send Order	Clear Form	i CGI
Scrolling Status	Bar Message (max length = 200 characters)	
WebMania 1.5b with Image Map Wizard	is here!!	
KK Prev Tab		Next Tab >>

white space

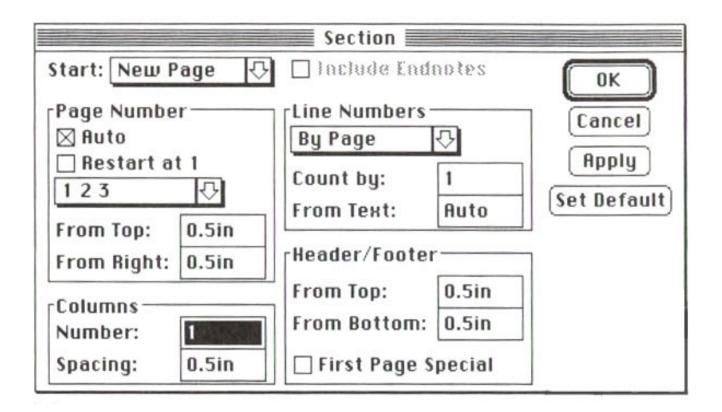
Use white space to group elements, instead of explicit lines

Make sure to leave a margin

Scale composition to make sure neither positive or negative space dominate

Usually should be centered

Do not crowd controls together - creates tension and inhibits scanning

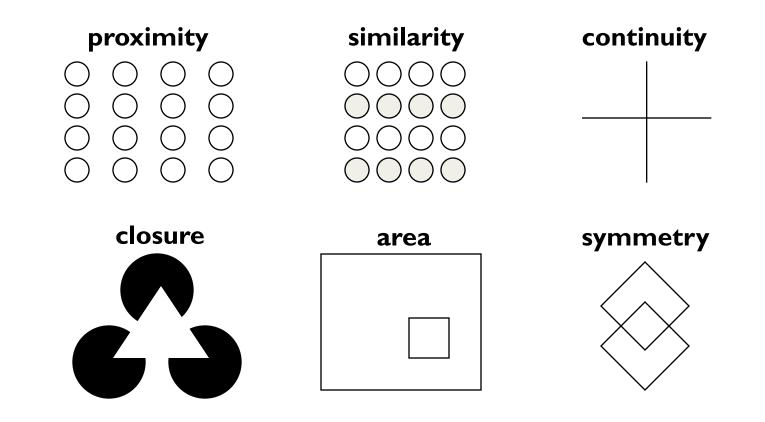


USE WHITESPACE TO GROUP ELEMENTS

- Source 1	OK
Document: concept.1 🔻	<u> </u>
Channel: RGB 🔻	Cancel
Mask	
Document: concept.1 🔻	
Channel: R6B 🔻	
- Source 2	
Document: concept.1 🔻	
Channel: RGB 🔻	
- Destination	
Document: New 🔻	
Channel: New 💌	

		Comp	osite		
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Source 1:	concept.1	-	RGB	•	Cancel
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Source 2:	concept.1	•	RGB	•	
Destination:	New	•	RGB	•	

How visual perception constructs a gestalt (whole) out of individual elements





Choose an axis (usually vertical)

Make sure the visual weight of elements on each side are approximately equal

Symmetric layouts are implicitly balanced and aesthetically pleasing

Asymmetric layouts are harder to balance, but can increase tension and activity



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Either left- or right-justify your labels

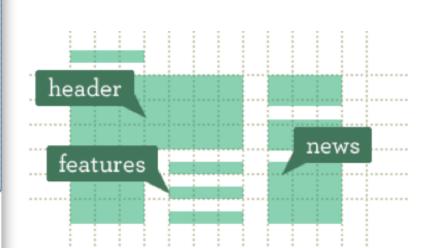
Try to align your controls on the left and the right

Align controls and labels on the same baseline



Regular grids are helpful for achieving both balance and alignment

· Google Image Result	KT - Latest Headlines A	TED TED Conferen	Google Image Result Ad	dictomatic: Inhale Press	This PASSWORD INDIA 200
	Forms * Images * (Resize - Cools - D Vi	
	cebook Messag ()	Google Reader (2)			
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The Grid Syste	The ultimate resource in grid systems.		d each designer can look for personal style. But one must		Search
Articles	Tools	Books	Templates	Blog	Inspiration
Applying Divine Proportion to Your Web Designs This article explains what is the Divine proton and what is the Full of Thirds and describes how you can apply both of them effectively to your designs. 01.Dec.2000	Syncotype Syncotype is a simple tool to help align your text to a baseline grid. Enter your Ine height and offset in patels in the Syncotype control box and click "Syncotype if to overlap a baseline grid in red. 01.Dec.2008	The Typographic Grid We consider this to be the academic part hos to 'Chid Systems.' Nans Rudof Bosshard tackles a deeper understanding of the complex grid. 30.Nov.2008	InDesign 8.5×11 Grid System (12) Adobe InDesign file with a grid system for an 8.5×11* page that is divided into 12 columns and rows using the Rule of Thirds (Golden Ratio), Includes a 12pt baseline grid. 29.Nov.2008	UX Magazine A well designed collaborative site, with a very role grid structure, that focuses on user expanience. 02.Dec.2008	Ace Jet 170 AlsieOne Athletics BBDK Blanka Build Corporate Risk Watch David Airey Dirty Mouse Experimental Jetset Experimental Jetset Form Filty Five
The Grid: The Structure of Design Using a grid is one of those basic design principies. A grid is made up of vertical and horizontal lines and is the loundation of nearly every type of visual media. 28 Nov.2008	Phiculator Phiculator is a simple tool which, given any number, will calculate the corresponding number according to the golden ratio. 28.Nov.2008	Grid Systems Grid Systems provides a rich, easy-to-understand overview and step-by-step approach to typographic composition. 21.Nev.2008	InDesign 11×17 Grid System (12) Asobe InDesign file with a grid system for an 11%17 page that is divided into 12 columns and rows using the Rule of Thirds (Golden Rand). Includes a 12pt baseline grid. 29.Nev.2008	Doane Paper Utility Notebook A portatie notebook featuring a patent pending Grid-Lines stationery design that combines the benefits of grid and ruled lines onto a single sheet of paper. 28.Nev.2008	Grafik Magazine Grain Edit Graphic Hug Helio Muller Helvetica Film I Love Typography Lamosca magCulture Mark Boulton Minimal Sites Monocle Neubau Neubau
Grids: Order Out of Chaos Many of the pages that you de everyday hav a grid. You may not see it but its even, holding up the beingth, establishing structure, guiding the page elements. BR Nov 2008	Baseline Rhythm Calculator Generate a basic CSS shylaheet with the proper calculations for a consistent baseline. 21.Nov.2008	Grid Systems in Graphic Design The manual for graphic designers. Characteristication designers. Characteristication designers. Characteristication book is a must book as must	Photoshop 975px Grid System (12) Adobe Photoshop Iae with a grid system for a 975px wide page that is divided into 12 columes and rows using the Rule of Thres into 12 columes and rows using the Rule of Thres (Golden Ratio), Includes a 15px baseline grid. 28.Nev.2008	Replica Typeface Replica is a new typeface by Norm that was designed on a strict grid system. Available in the colouring weights: Reputar, table, Light, Light table, Bold and Bold Itable. 21.Nov.2008	OK-RM Robin Uleman SampsonMay Sohmid Today Sohnid Today Soulalis Soulalis Bubtraction Bubtraction Bwiss Legacy Thinking for a Living This Studio Toko Visuelle Xavier Encinas Year of the Shep



BREAKING ALL THE RULES

Advanced FAX Settings 🛛 🔀
Aptiva Communication Center
Speaker setting
O Dn O Dn Until connect O Off
Wait 45 a seconds for connection
Retry after 60 seconds Number of retries 3
Resolution
Fine O Standard
Maximum transmit rate: 14400 bps 🗾
Paper size: Letter (8½ x 11 in)
Use custom editor: xe C:\Phoenix\fax_inst.wri Browse
Save Cancel <u>H</u> elp

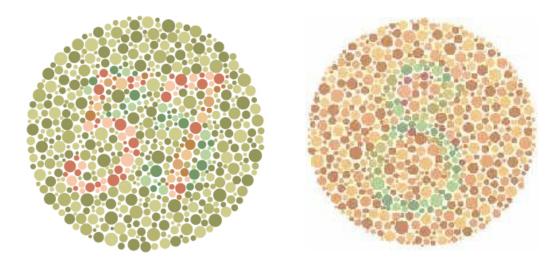
USING COLOR

Use a consistent palette

Avoid loud, saturated colors

Be aware of human limitations:

Color-blindness, visual perception







VS

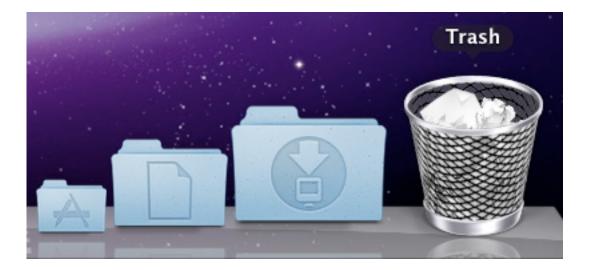


Source: Mullet and Sano, Designing Visual Interfaces

http://www.geekersmagazine.com/wp-content/uploads/2010/08/a_lot_of_iconsmaclconjpg_thumb.jpg

CHOOSING ICONS

If what you are trying to represent can be related to a concrete, tangible thing, use an icon. If used repeatedly, establish a convention, especially if one can be borrowed from the real world



Otherwise, especially if its an action or abstract process, use text Don't mix text, icons, symbols Problem-solving and communication, not personal expression, is the key to effective visual design for graphical user interfaces.

For next time

Keep working on Balsamiq proto

Heuristic evaluation next Tuesday