Designing the Rich Web Experience

Principles and patterns for rich interaction design on the web

Bill Scott Yahoo! Ajax Evangelist b.scott@yahoo.com

background



DRAG AND DROP

Desktop applications have long used dra interfaces to simplify user interaction. the simplest interfaces for enabling vo support drag and drop. Just register an JavaScript object as a draggable and ar

CINEMATIC EFFECTS personal or commercial use. Sabre Airline

When actions are no longer occurring j required to clue the user on what has t transitions can communicate change it Rico provides several cinematic effects :

Rico has been tested on IE 5.5, IE 6, Firefox 1.0x/Win, Camino/Mac, Firefox 1.0x/Mac. Currently there is no Safari or Mac IE 5.2 support. Support will be provided in a near future release for

application space.

OPEN SOURCE

code produced at Sabre.

BROWSER SUPPORT

The library is a fully object-oriented

the library to extend the excellent

Rico is provide free and open-source

(Apache 2.0 License) for either your

JavaScript library. Recently we refactored

prototype. is effort from the Ruby on Rails

Solutions retains the copyright on the Rico

BEHAVIORS

Take some raw HTML and sprinkle in so Rico you can get an Accordion component Laszlo. Just nest some DIVs and with or an accordion. And the latest behavior connect an Html table up to a stream o

automatically called during table scrolling. The result is now Html tables can hold an unlimited amount of data scrolled into view on the fly as needed! More behaviors are planned!

Auto Complete Calendar Picker

Module Tabs

Navigation Tabs

Developer Network Home Help

Breadcrumbs

Fly-out Menus

Horizontal Bar Hub and Spoke Left Navigation

- Tabs

▶ Faceted Navigation

Design Pattern Library Yahoo! Developer Network > Design Pattern Library

Pagination Item Pagination

EXPLORE DATA

Search Pagination

▶ ORGANIZE DATA

GIVE FEEDBACK

Architecture Review Rating an Object Writing a Review

▶ PERFORM ACTION

CUSTOMIZE

 Drag and Drop Drag and Drop Modules

Drag and Drop Objects ▶ In Page Editing

CALL ATTENTION

Sliders

IMPROVE READABILITY

Ratings & Reviews

Review Architecture

GROUP RELATED ITEMS

▶ ORGANIZE SCREEN/PAGE

YAHOO! DEVELOPER NETWORK

Welcome to the Yahoo! Design Pattern Library. We are very happy to be sharing our library with the design and development community. This is our first drop of what we hope to be a monthly release cycle for the publication of patterns. In many cases we have bundled the patterns with pointers to related code from the Yahoo! User Interface Code Library. We hope this is a useful resource and look forward to your feedback.

What's a Pattern?

A pattern describes an optimal solution to a common problem within a specific contex

Travel > Guides > North Amer

ica > United States > New York

lew York City > Things to do

Recent Patterns



AP Reuters | AFP | USATOD

Cargo Ship Blocks Sue

International Observers

- Dall Chaus Divida Ame

Module Tabs

Breadcrumbs

The user needs to enter an User needs to navigate item into a text box which potentially large quantities of could ambiguous or hard to information efficiently, remember and therefore has without becoming lost. the potential to be mis-typed

hotos Opinion Local News Odd I

Navigation Tabs

The user needs to navigate The user needs to navigate through one or more stacked through a site to locate panes of content without content and features and refreshing the page have clear indication of their current location in the site.

Results Page: 1 2 3 4 Next

Search Pagination

The user needs to view a set of search results ranked by relevance that is too large to easily display within a single



Rating an Object

A user wants to quickly leave their opinion on an object, with minimal interruption to any other task flow they are involved in.

Thursday, Febr ∀ Weather

Search

Drag and Drop Module:

The user needs needs re-arrange the layout of modules on a web page directly with the mouse.



Object Pagination

The user needs to view items from a potentially set of sorted data that y not be easy to display a single page.



Writing a Review

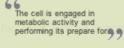
User wants to share her opinion with others about object (place, person, t in greater detail than a simple rating.





National Mapping -

Fab Facts, Landforms



Civil War Battles

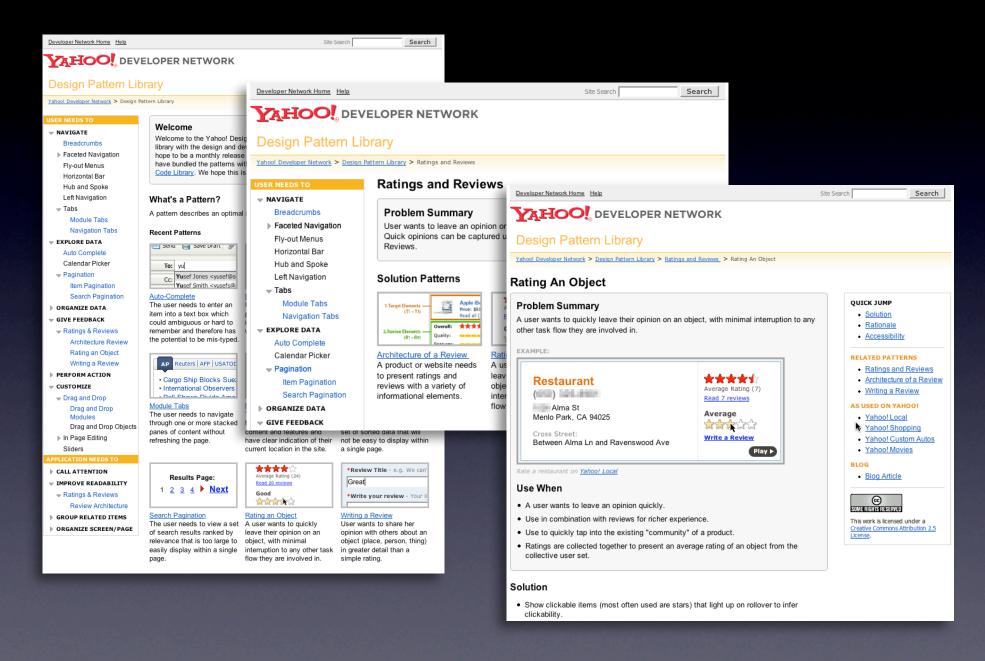
Add Website to Project



掛 Create a new Project



developer.yahoo.com/ypatterns

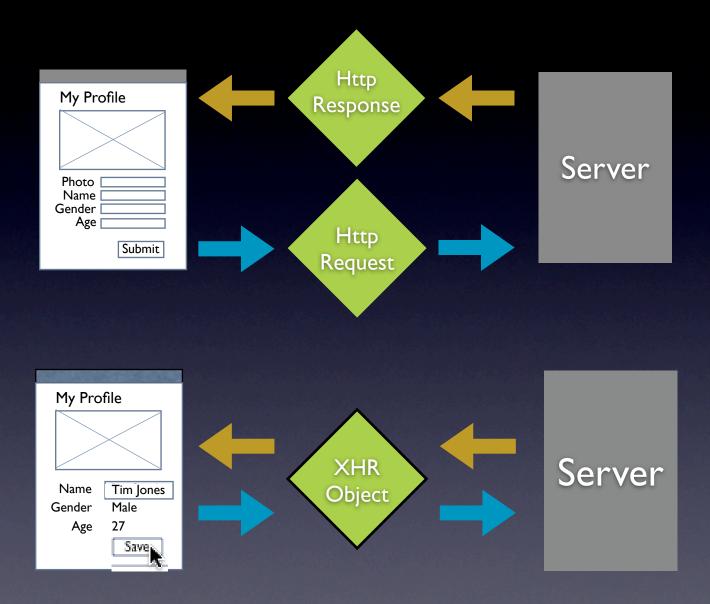




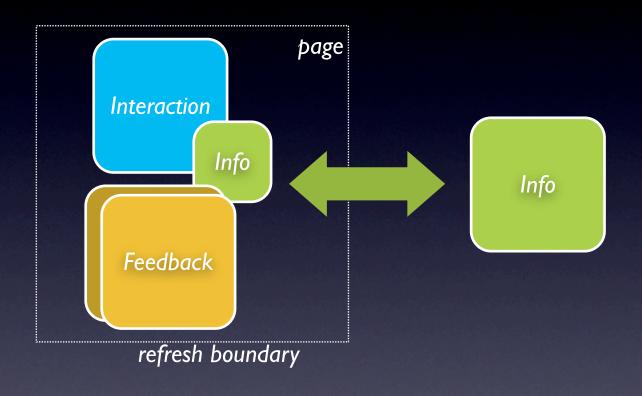
rich patterns

Drag and Drop. Drag and Drop Modules. In Page Editing. In Page Custom Editing. Direct State Editing. Grid Cell Editing. Inline Custom Editing. Inline Tag Editing. Popup Custom Editing. Slide-out Custom Editing. Inline Text Editing. Persistent Portals. Inline Reordering. Indication. Busy Indication. Cursor Busy. In Context Busy. In Context Progress. Inline Status. Auto Complete. Balloon Error Tip. Deferred Content Loading. Dynamic Goal. Narrowing Choices. Refining Search. Live Search. Dynamic Filter. Invitation. Cursor Invitation. Drop Invitation. Tool Tip Invitation. Hover Invitation. Detail Zoom. Opacity Focus. Configurable Module - Faceplate. Configurable Module - Flip It. Configurable Module - Inline Configure. Configurable Module - Slide Out Drawer. Slide Out. Flip. Opacity Fade. Endless Scrolling. Expandable Paging Boundary. Fresh Content. Hover Detail. In Place Drill Down. Inline Assistant. Inline Validation. Validate Then Suggest. On Demand Refresh. Periodic Refresh. Resizable Modules. Scrolling Modules. Auto Save. In Context Tools. Remembered Collection. Remembered Preferences. Auto Form Fill. Rating an Object. Transition. Brighten Transition. Cross Fade Transition. Dim Transition. Expand Transition. Fade In Transition. Fade Out Transition. Flip Transition. Move Transition. Self-Healing Transition. Collapse Transition. Slide Transition. Rich Internet Object. Available. Selected.

classic model. rich model.



interaction. feedback. information.



interaction + feedback + information = richness

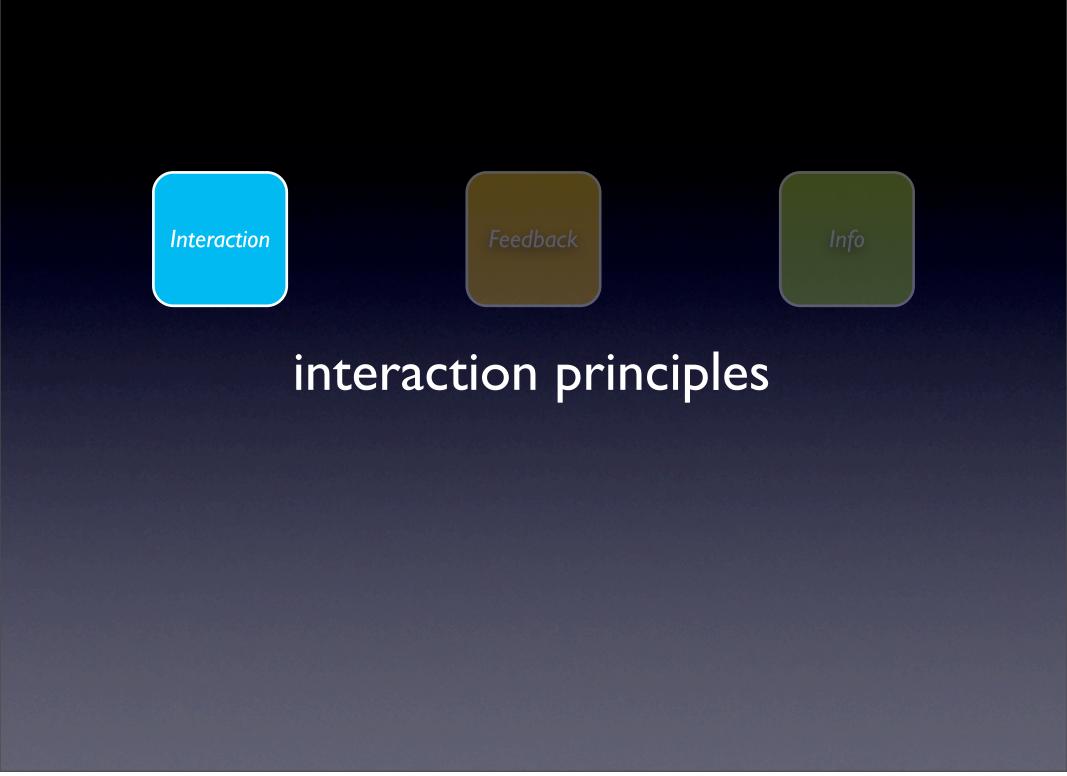


 Interaction

 Feedback

 Info

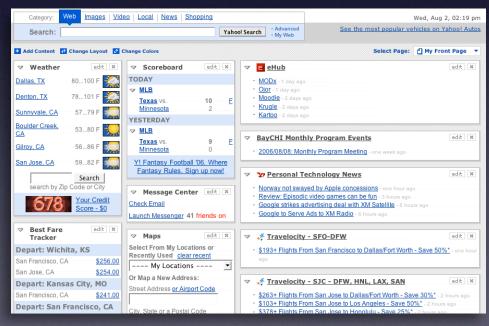
design principles for richness



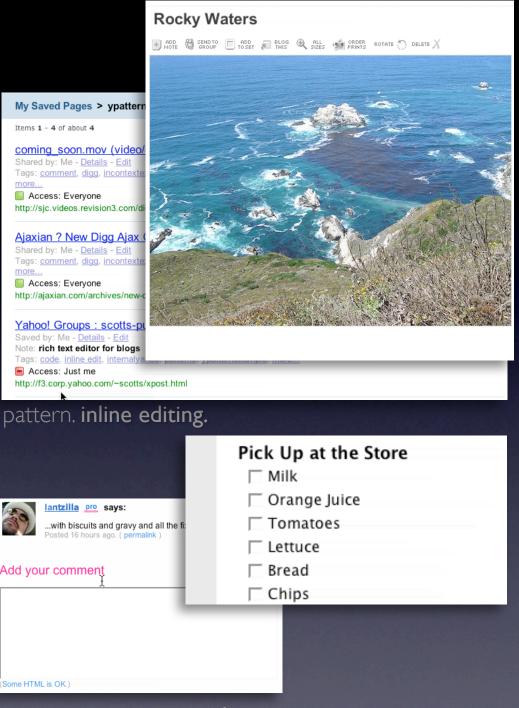
principle. make it direct.



pattern. in-page action.



pattern. drag & drop.



pattern. in-context tools.

make it direct

Inline Editing

Use inline forms where possible Use lightweight popups for ancillary information



State park near our new home in San Jose (next to Milpitas)

SAVE

OF

CANCEL

Scheduled Items

Wed 11/23/05 (day 1) - Yosemite Natl Pk, Yosemite National Park



From \$97.00 to \$146.00 per night. •Reserve Now

S559-252-4848

Yosemite Natl Pk, CA 95389

United States

In the valley of Yosemite National Park

Notes: [Eak]

Tags: [₺₫₺]

Dates: [Add]

Wed, Nov 23rd - Fri, Nov 25th [Ed &]



\$\left\{ \cdot +1 209 372 1000 \right\}

Wawona Rd

Yosemite National Park, CA 95389

United States

This breathtaking and spectacular sight is located on Highway 41 just north of Wawona, and just south of the Valley Floor. This popular spot

is the most photographed view of the valley. It received



Shared at 4:49 PM PST Email - IM - Delete

Ajaxian ? New Digg Ajax Comment System

Shared by: Me - Details - Edit

Tags: comment, digg, incontextexpandpatte..., inlinepageeditpatter..., ratinganobjectpatter...,

Access: Everyone

My Sav

Items 1 -

comin

Shared Tags: c

more...

Acce

http://sid

http://ajaxian.com/archives/new-digg-ajax-comment-system - My cached copy

Yahoo! Groups : scotts-pub Post Message

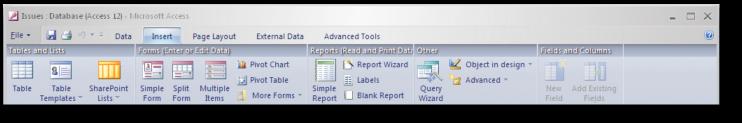
Saved by: Me - <u>Details</u> - <u>Edit</u> Note: **rich text editor for blogs**

Tags: code, inline edit, internalyahoo, patterns, ypatternexample, more...

Access: Just me

http://f3.corp.yahoo.com/~scotts/xpost.html

Saved on February 16, 2006 Email - IM - Delete



make it direct

In-context tools

Same as context menus Only good for single objects Can actually slow you down

Complete: Internet Strategy Group Talk - Webcast - Sep. 14 (Th)

Add an Item



Open Explore

Search...

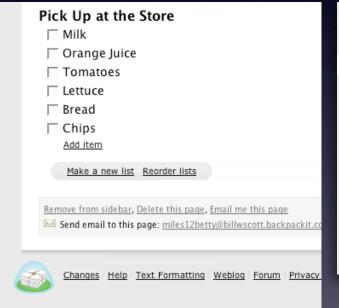
Form<u>a</u>t... Eject

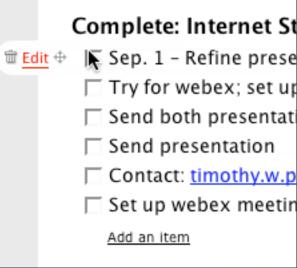
Create Shortcut Rename

Properties 1 4 1

Cu<u>t</u> ⊆opy

Sharing and Security... Scan with AVG Free







National Mapping - F... http://www.ga.gov.au...



National Mapping - F... http://www.ga.gov.au...



National Mapping - F... http://www.ga.gov.au...



National Mapping - F... http://www.ga.gov.au...



Volcano World - The ... http://volcano.und.e...



Hawai'i Volcanoe... http://www.nps.gov/a...



National Mapping - F... http://www.ga.gov.au...



Copy of Plateau - Wi... http://en.wikipedia....



Copy of Gobble Image... http://beta.teachers...



Copy of Gobble Image... http://beta.teachers...

National Mapping - F... http://www.ga.gov.au...



Copy of Gobble Image... http://beta.teachers...



Copy of Alaska Volca... http://www.avo.alask...

make it direct

In-context tools

Same as context menus Only good for single objects Can actually slow you down Watch out for hover & cover



Three-dimensional Ca... http://volcano.und.n...



Three-dimensional Ca... http://volcano.und.n...



Howstuffworks "... http://www.howstuffw...



Internet Geography -... http://www.geography...



Dictionary image: vo... http://education.yah...



Web sites (21)



How Volcanoes Work http://www.geology.s...



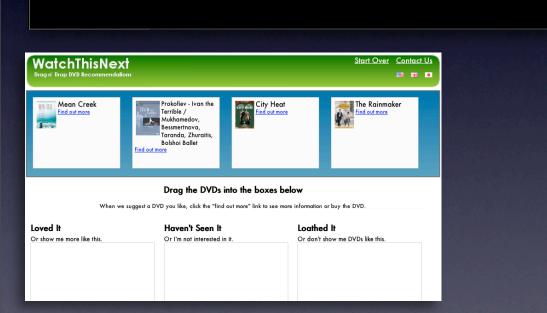


Howstuffworks "... http://www.howstuffw...

make it direct

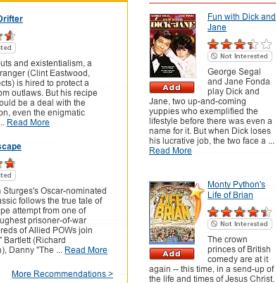
Featured Subgenre
CLASSIC COMEDIES

Perhaps the most controversial





Classics



Use Drag & Drop where appropriate

Not for simply setting an attribute Don't construct artificial visual constructs

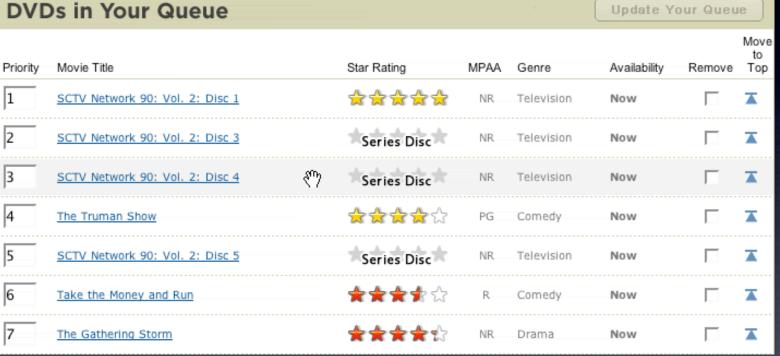
Pick Up at the Store

- RAG Chips
- DRAG Milk
- □ DRAG Bread
- ☐ ORAG Orange Juice2
- ☐ DRAG Tomatoes
- ☐ DRAG Lettuce

- What is spam?
- Can I transfer my message credits?
- How do I delete my HandyPay account?
- What if I didn't receive my full message package?
- I need to contact customer care regarding the Compose Text Message service.

make it direct





Use Drag & Drop where appropriate

Not for simply setting an attribute Don't construct artificial visual constructs Good for layout changes/re-organizing



Kilauea

Mauna Loa

Earthquakes

Other Volcanoes

Volcanio Hazard

Types
Lava
Zones

About HVO

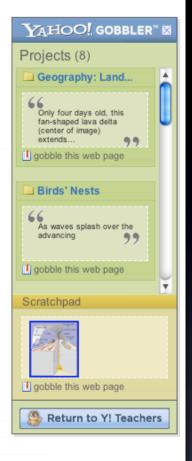
Volcanic Hazards

When Lava Enters the Sea: Growth & Collapse of Lava Deltas



Photograph by C. Heliker on November 12, 1992.

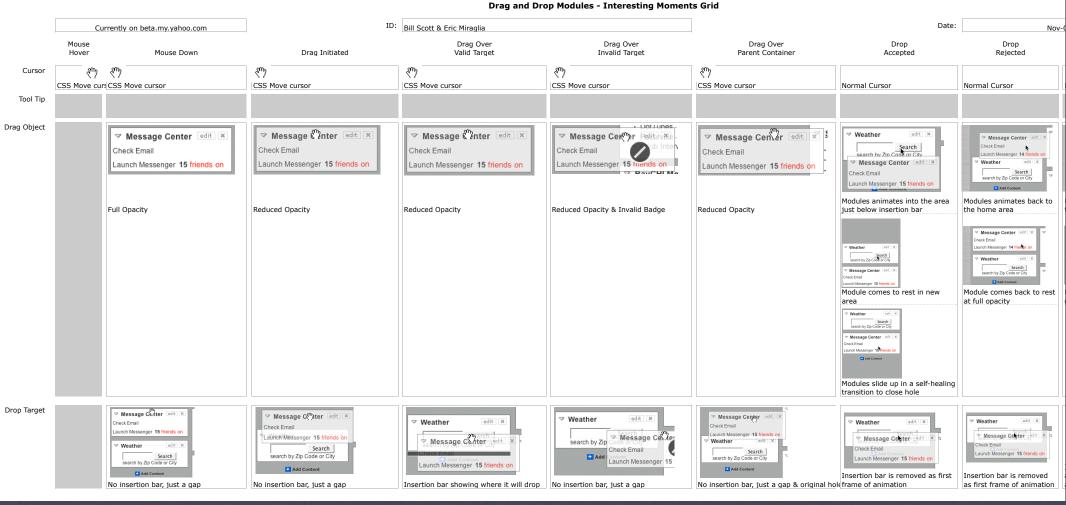
Only four days old, this fan-shaped lava delta (center of image) extends about 200 m into the ocean on the southeast coast of Kilauea Volcano, Hawai'i. The diffuse plume of white steam at the leading edge of the delta indicates that several small lava flows are pouring into the ocean. Countless deltas have formed



Use Drag & Drop where appropriate

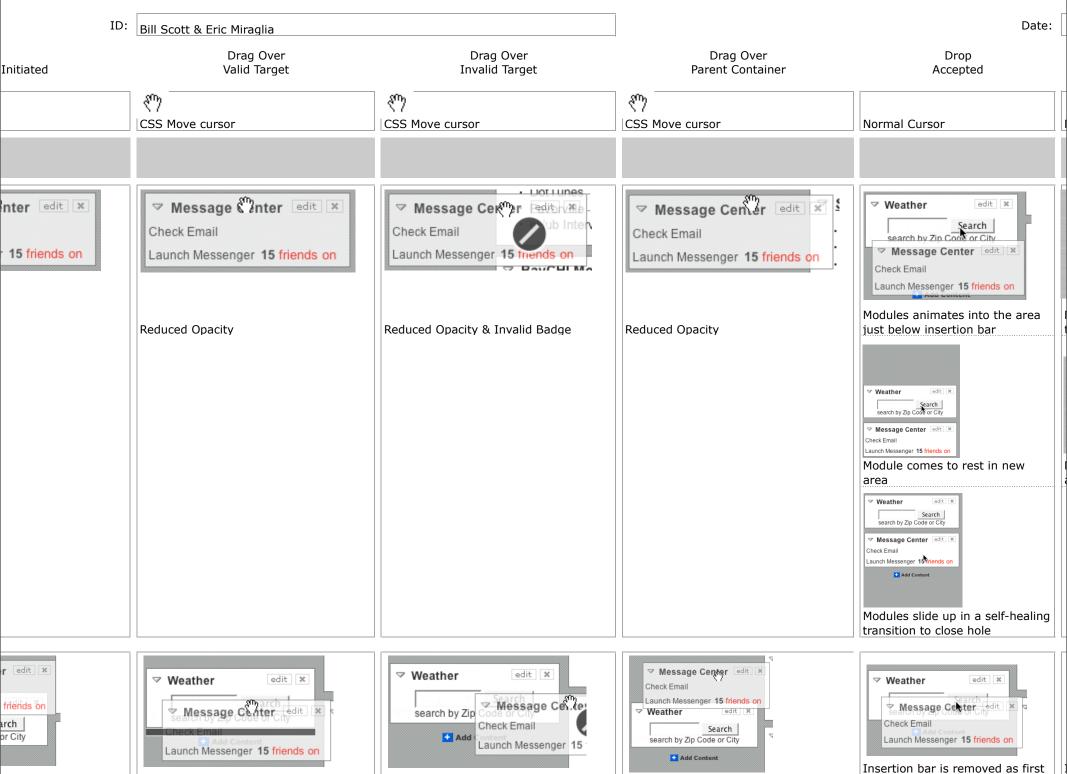
Not for simply setting an attribute Don't construct artificial visual constructs Good for layout changes/re-organizing Good for grabbing items

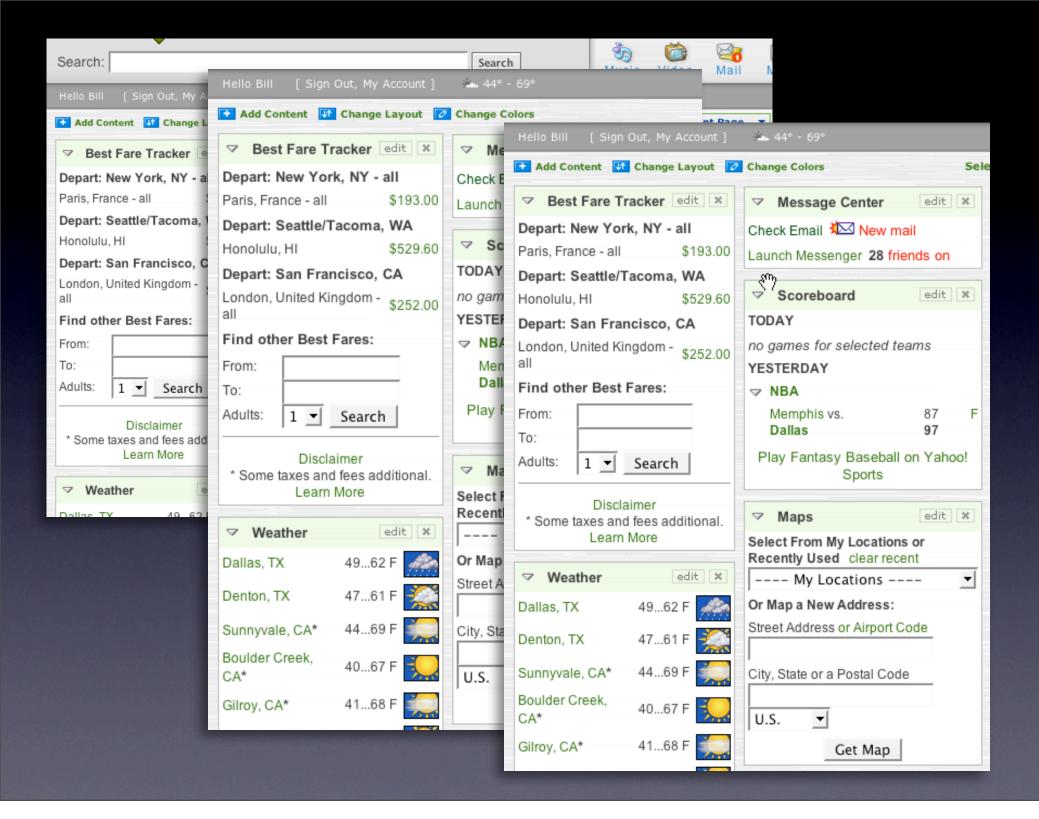
make it direct



Take care of the interesting moments

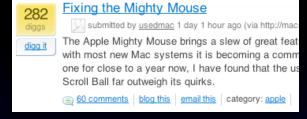
Drag and Drop Modules - Interesting Moments Grid





principle. keep a light footprint.

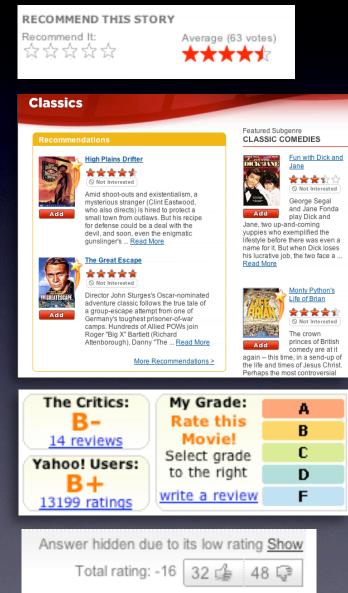
pattern. in page action.





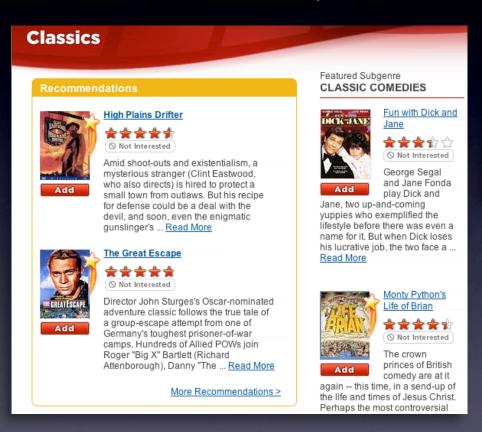
pattern. remembered collections.

pattern. rating an object.



Remove the "pain points"

Shorten the path Keep actions immediate and light Use hover, blur, focus; avoid heavy events





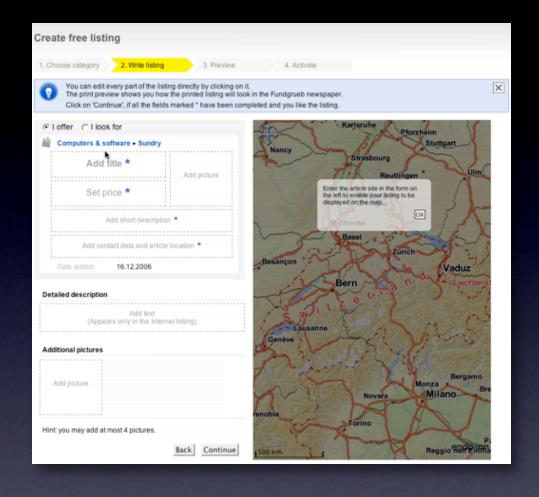
Fixing the Mighty Mouse

submitted by usedmac 1 day 1 hour ago (via http://mac

The Apple Mighty Mouse brings a slew of great feat with most new Mac systems it is becoming a comm one for close to a year now, I have found that the us Scroll Ball far outweigh its quirks.



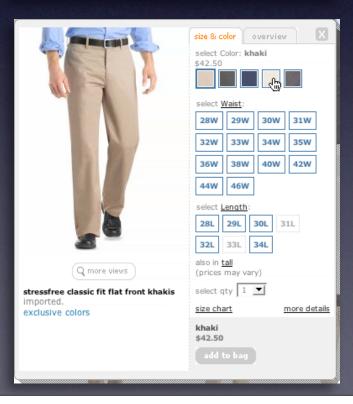
keep a light footprint



Design for engagement

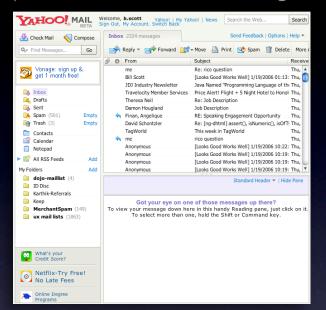
Use invitations & feedback Treat it like an impusle aisle Do it in context



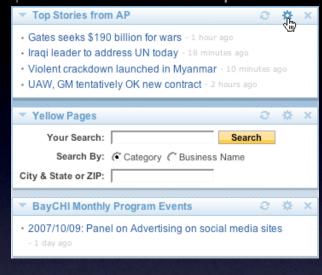


principle. cross borders reluctantly.

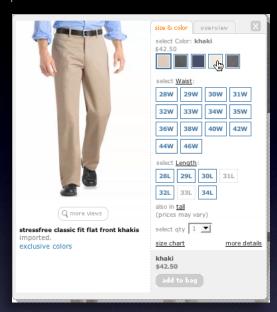
pattern. on-demand scrolling.



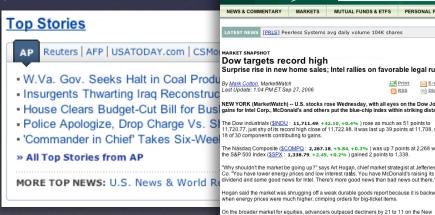
pattern, in-context expand.



pattern. inline assistant.

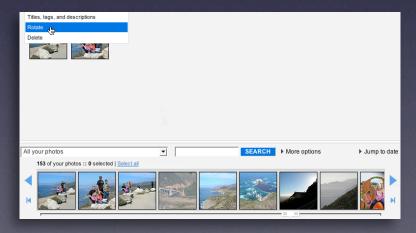


pattern. hover details.





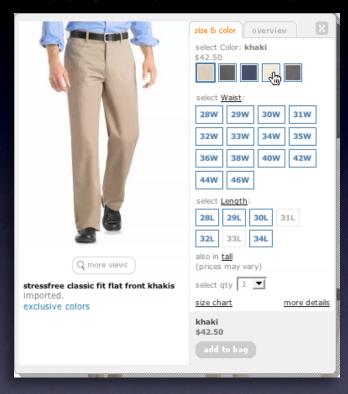
pattern. lightweight popup + lightbox.



cross borders reluctantly

Rethink process flows

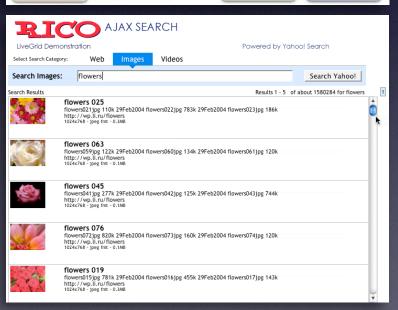
It's the user's mental model, not the page model Every page jump is a mental speed bump





cross borders reluctantly

Photo Click for info	Price	Bd/Ba Sq Ft	Address and Area Presented By	MLS # (Click for info)	More Photos (Click for view)	Virtual Tours (Click for view)
	\$1,750,000 Single Res	6+, 4+ 3700	14080 BEAR CREEK RD Boulder Creek, CA 95006 (San Lorenzo Valley) Schwarzbach Associates	<u>550701</u>	MULTI	TOUR
HEC	\$1,995,000 Single Res	6+, 4+ 5675	17617 MOUNTAIN CHARLIE RD LOS GATOS, CA 95033 (Unincorporated Los Gatos Mins) Almaden Oaks Realtors	608215	MULTI	
	\$2,286,000 Single Res	5, 4+ 4800	20930 PANORAMA DR Los Gatos, CA 95033 (Los Gatos Mtns) Alain Pinel Realtors	604907	MULTI	TOUR
	\$2,750,000 Single Res	5, 4+ 5000	155 LARITA DR Ben Lomond, CA 95005 (San Lorenzo Valley) Network Alliance Real Estate	616947	MULTI	
	\$2,777,000 Single Res	5, 4+ 5819	777 HAPPY VALLEY RD Scotts Valley, CA 95065 (Scotts Valley) Linda Burroughs Real Estate	616474	MULTI	TOUR
New Search << Previous Next >>						



Re-think paging

Use scrolling for "owned" data Watch out for dual scroll bar issue Hybrid of paging & scrolling



Lonely elephants baffled by post-Katrina life
Scientists study gorilla habitat
Some birds stay aloft up to 10 years
Inflation soaring high
Fed wants banks to come into compliance
Life after death - is there proof?

cross borders relunctantly

Bill, the following movies were chosen based on your interest in Animal Crackers

Something the Lord Made

X2: X-Men l

NETFLIX

Browse Recommondation Get Recommendations (869

> Recommend Movie suggestions bas

NEW RECOMMENDAT



Series) Not Into

Director S maturity r historical hip-hop st waitress a fight ... Re

Samura



Micah Laaker Name:

Networks: Yahoo

Silicon Valley, CA

Details: You have worked at Yahoo! since 2005.

[edit details.]

Micah is cruisin' for a snoozin.' Status:

Send Message

Poke Micah!

View Friends Remove Friend

Mahmoud Lababidi Name:

Networks: Washington, DC UF Alum '06

George Mason Grad Student '09

Google

How do you know Mahmoud Lababidi? Details:

Send Message

Poke Mahmoud!

View Friends

Remove Friend



Add

Chico and 2 luxury liner.

12 Angr

A guilty verdict means death -- but the jury's not about to let that spoil their day. Twelve men must decide the fate of an 18-year-old boy accused of fatally stabbing his father. Only one (Henry Fonda) wants to take the time to coolly deliberate ... Read More

DRAMA

See All Recommendations > >

Music & Musicals (10) Romance (10)

Helpful Tip

Seen any of these movies?

Use Overlays

For more information Replace page transition

When editing an individual, more complex item Be symmetrical Try not to disturb the page



CLASSICS









Prints & Gifts



View Cart



Settings



Help ▼

Search My Tag











All My Photos

Slideshow

Create -

Share -

Edit -

Prints & Gifts -

Drag photos into this tray and choose a task above.

Sort by: Date ▼



Sunset



Underneath



View from the Top



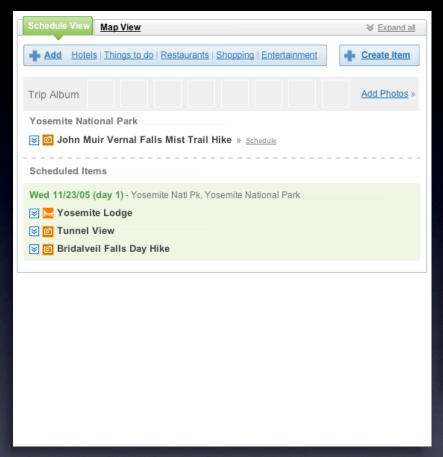






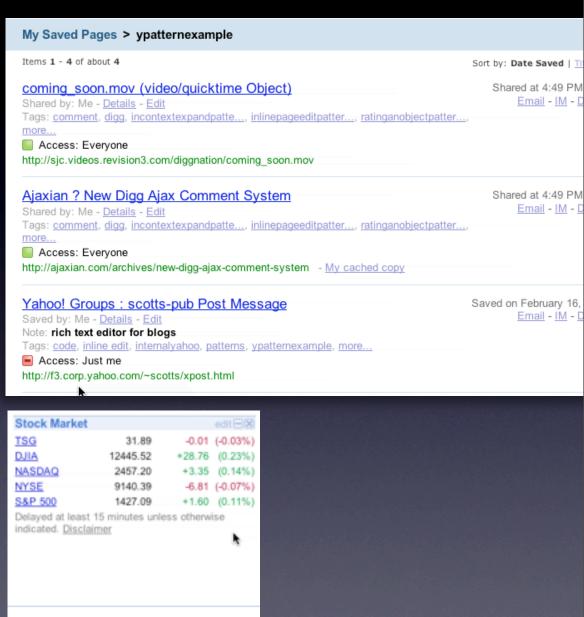


cross borders relunctantly



Use in-context expands

For editing part of a collection Need to see surrounding context For managing content modules



cross borders relunctantly

Use real-estate creatively

Use slideouts
Use in-place zoom
Remember the backstage

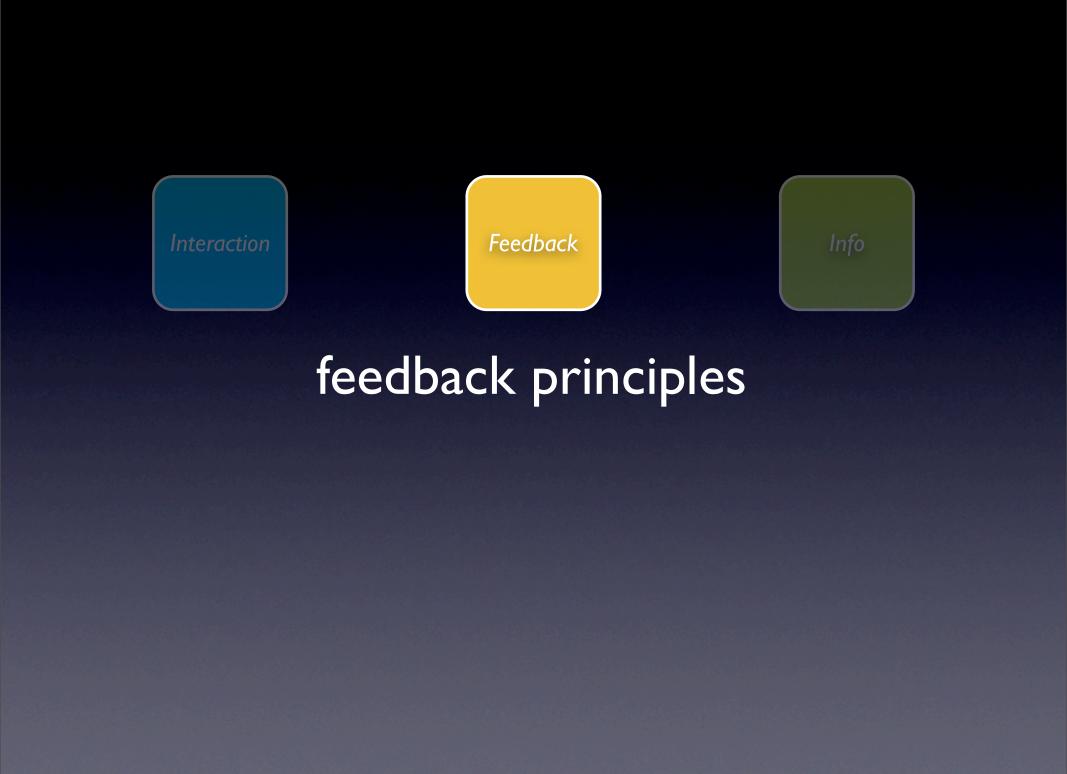




key principle

Interaction

prefer direct, lightweight, in-page interaction

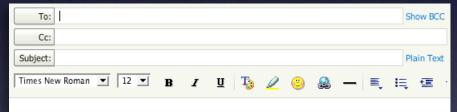


principle. give live feedback.

pattern. live suggest.

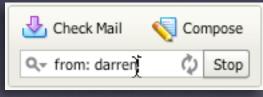


pattern. auto complete.





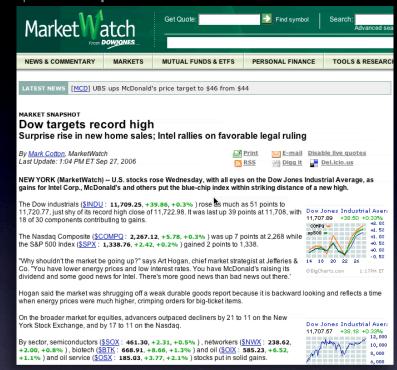
pattern. busy indicator.



pattern. live previews.

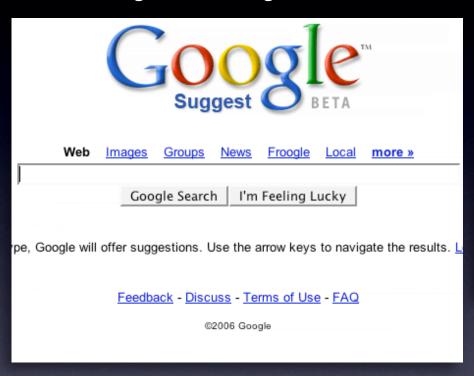
Find a domain name:	
www. billsportfolio.com	Search
(ex. widgetdesigns.com)	

pattern. periodic refresh.



Keep the goal in mind

Design for relevancy ls it narrowing or distracting





Instant Search BETA

Search the Web

Instant Search gives you answers as you type -- no more waiting!

Why feel lucky when you can be right? With Instant Search, results instantly appear for Yahoo! Shortcuts and common searches. Give it a spin! Type in these examples below, or try your own searches:

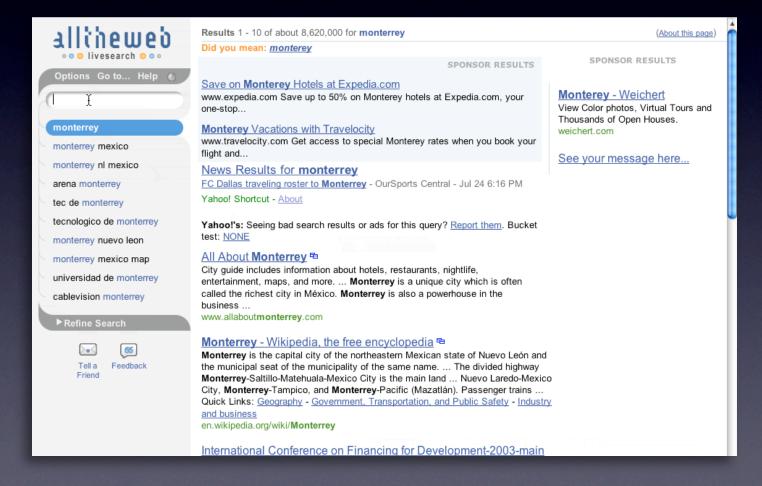
- · boston weather
- wikipedia
- nfl

- · 22 5th ave new york ny
- · san francisco coffee shops
- dmv

Keep the goal in mind

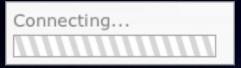
Design for relevancy

Is it narrowing or distracting?
Use feedback to boost confidence
Let the user iterate where possible



give live feedback

Shape user perceptionMake time pass faster Make application feel more responsive



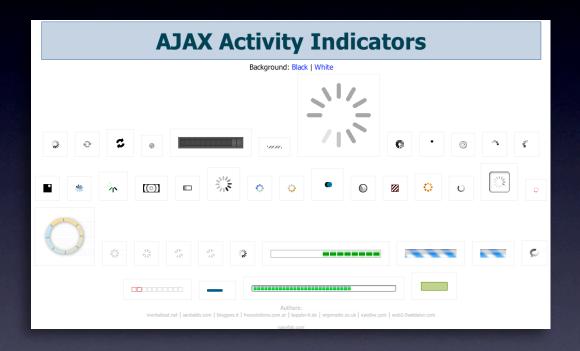


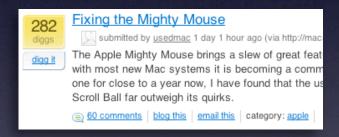
give live feedback



Prevent errors before-hand

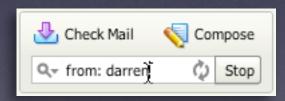
Ounce of preventive design worth pound of error-handling Look before you leap Use live-previews





Keep feedback focused

Use laws of proximity in context feedback Respect feedback bandwidth Avoid side-noise (periphial distractions)



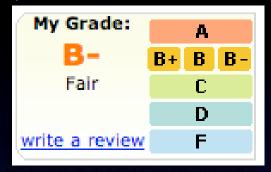


Use laws of proximity in context feedback Respect feedback bandwidth Avoid side-noise (periphial distractions)

Use nuance

principle. offer an invitation.

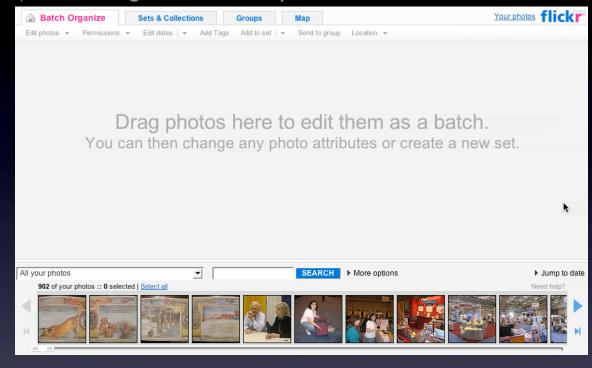
pattern. hover invitation.



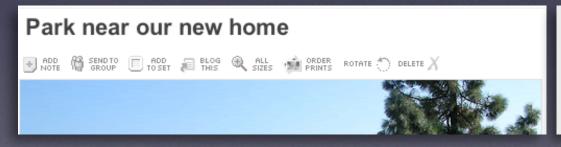
pattern. tour invitation.



pattern. drag invitation. drop invitation.



pattern. tooltip invitation + hover invitation + cursor invitation.



offer an invitation

Discoverability

No easy answer
Use the hover to reveal interaction
Use the familiar to teach the new
Tours are generally a band-aid
Can't flag all interactions



State park near our home in San Jose

Click to edit

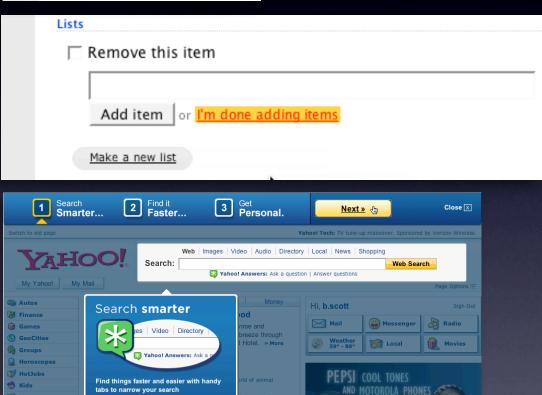
5 photos | Add a comment?

Photos are from 22 Oct 05.



Search the Web on any topic
 Click a tab to focus your search on Images, Video, Local and more

 Try Yahoo! Answers: A new place to ge real answers from real people



offer an invitation

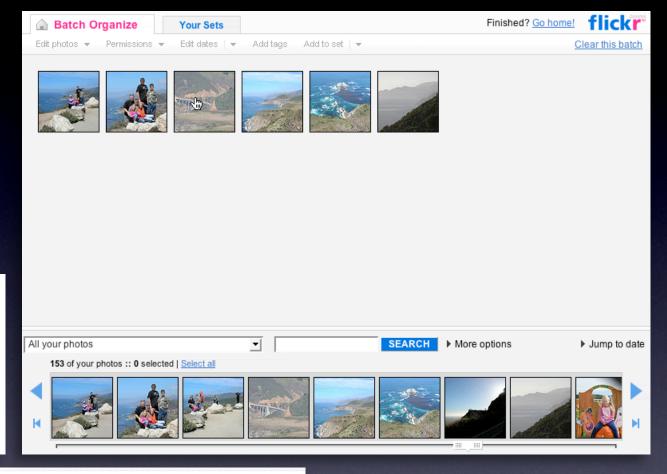
Bridge the new with the old

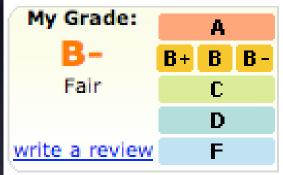
Hyperlinks as actions Reveal with hovers Drop down clues



	Pick Up at the Store
	☐ Orange Juice
	□ Tomatoes
	☐ Lettuce
	☐ Bread
	Chips
in the same of	
	Iantzilla pro says:with biscuits and gravy and all the fixins Posted 16 hours ago. (permalink)
Add your comment	
(Some HT)	ML is OK.)

offer an invitation





Park near our new home → ADD SENDTO TOSET FINE ALL SIZES ORDER ROTATE DELETE X ADD SENDTO TOSET FINE ALL SIZES ORDER ROTATE DELETE X

Make it inviting

Treat it as a welcome mat Use hover, cursor, tooltip, and page Keep the noise down To see a product preview in action, hover over the link below.

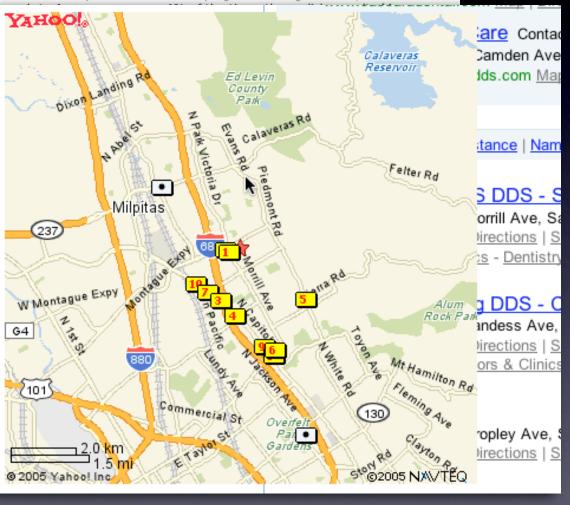
Forty Associates recently added product previews to their Web site as part of a small beta program. During the beta, visitors to

Associate sites who viewed a product preview clicked the purchase nearly 6% of the time.

Now we're opening the beta up to all Associates to furth through a product preview-enhanced link will receive a <u>testing product previews.</u>

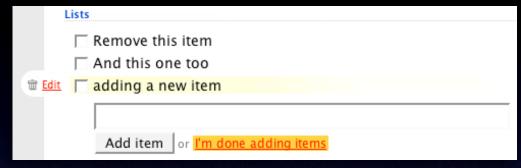
Don't worry if you don't already have Basic Display Proc process. <u>Click here</u> for answers to questions you might

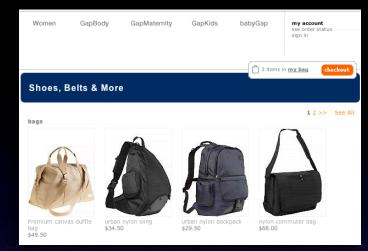
Keep actions out of itLet the user feel free to explore
Don't proselytize



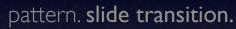
principle. show transitions.

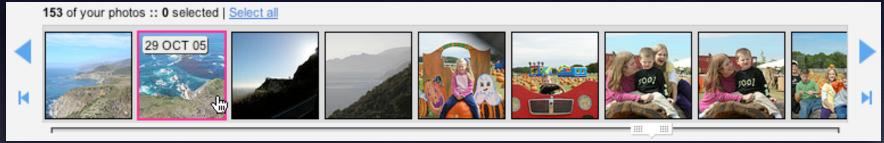
pattern. fade transition + self-healing transition.



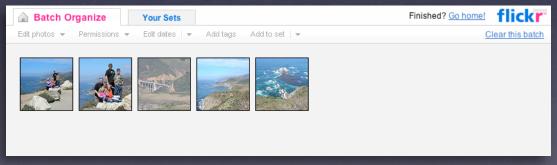


pattern. zoom box.

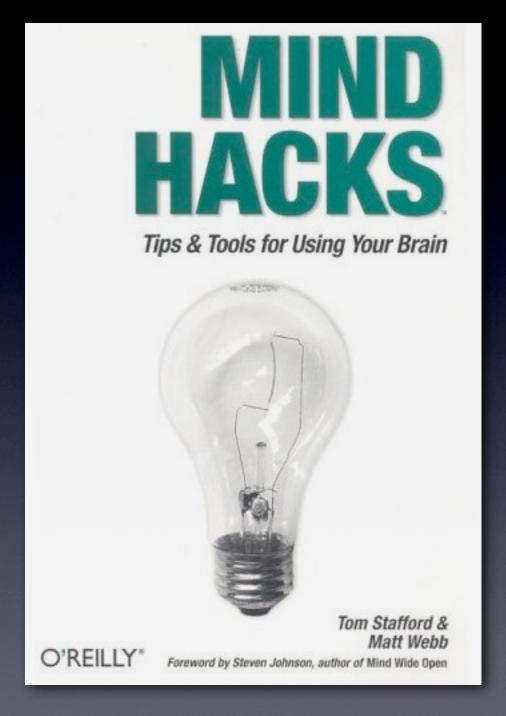




pattern. active spotlight.

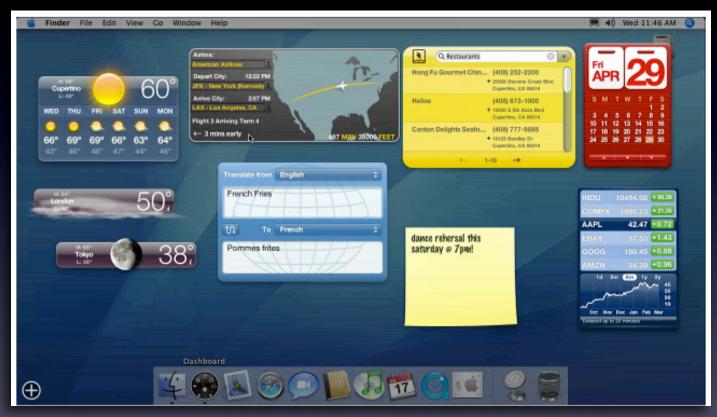


Speak to the brainUnderstanding attention processing

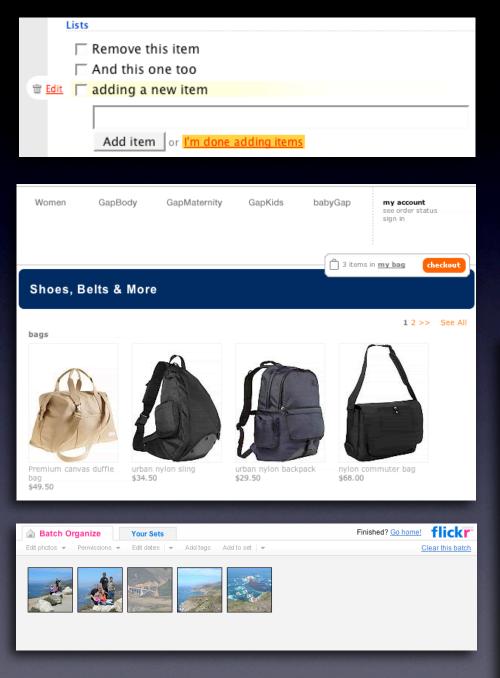


Speak to the brain

Understanding attention processing Sending the wrong message





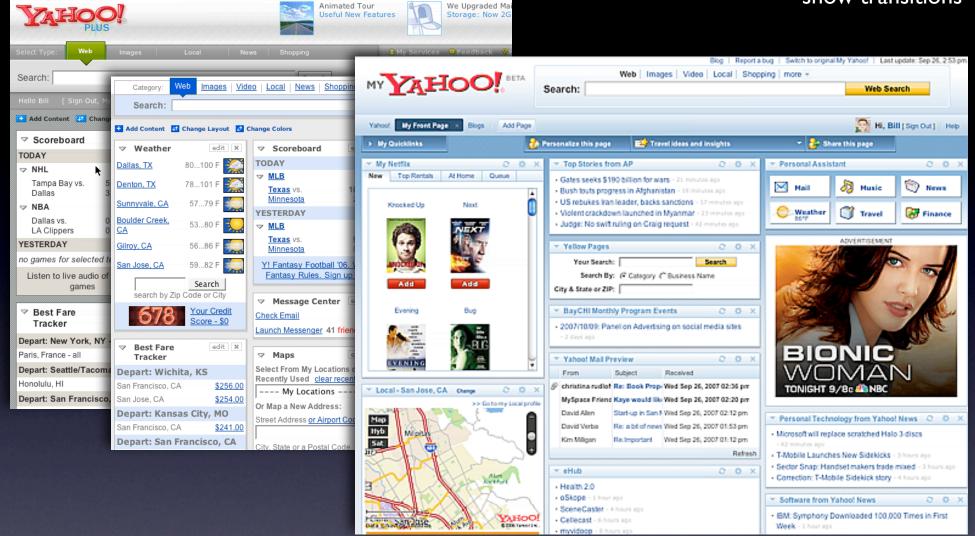


What you can communicate...

Speed up time Slow down interaction Show state change Show relationships between objects Focus attention







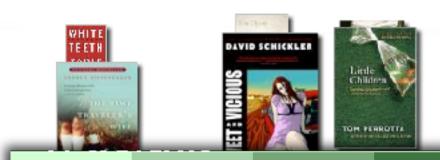
Keep it sane

"Cut it in-half" rule of thumb Use "contrast knob" approach Don't overuse

show transitions (anti-pattern)

Our Favorites for Summer (Re)Reading





AFI's 100 Years...100 Movies — 10th Anniversary Edition

A new decade, a new countdown. AFI reveals the 100 greatest movies of all time

About AFI Become a Member AFI Insiders





show transitions (anti-pattern)





Files / Editor







Terminal



Terminal: built right in.

OK, it's not very sexy. In fact, it's quite the opposite. But Coda is all about the little things that make your web development a squidgeon easier. If you need to SSH into a server and run some MySQL queries, or restart Apache, or debug some PHP in real time, there's only one way you're gonna do it: terminal. Coda's got a terminal one mouse click away.



egrep 'bellslwhistle' /usr/share/dict/web2

Features? Our terminal has 'em. Connect to a local shell or connect via SSH to a remote server. Put a Terminal in a split, or put a Terminal in its own tab. Copy and paste from the output, or scroll back into the buffer. It's a terminal! And it's convenient!

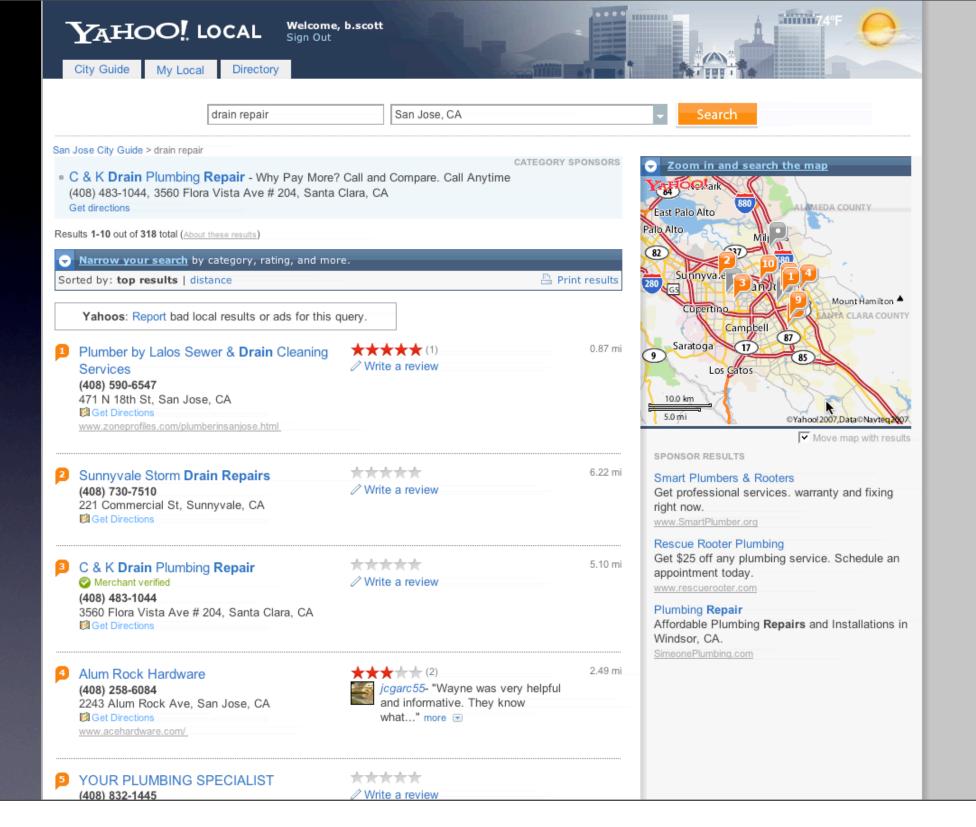
export CLICOLOR=1

Wait! There's kind of more! ANSI colors also work! You can also, via the preferences, change the font and background colors, or the terminal font itself. Unfortunately, you can't yet set the background to a picture of Arwyn. But e-mail us, we'll always consider it.



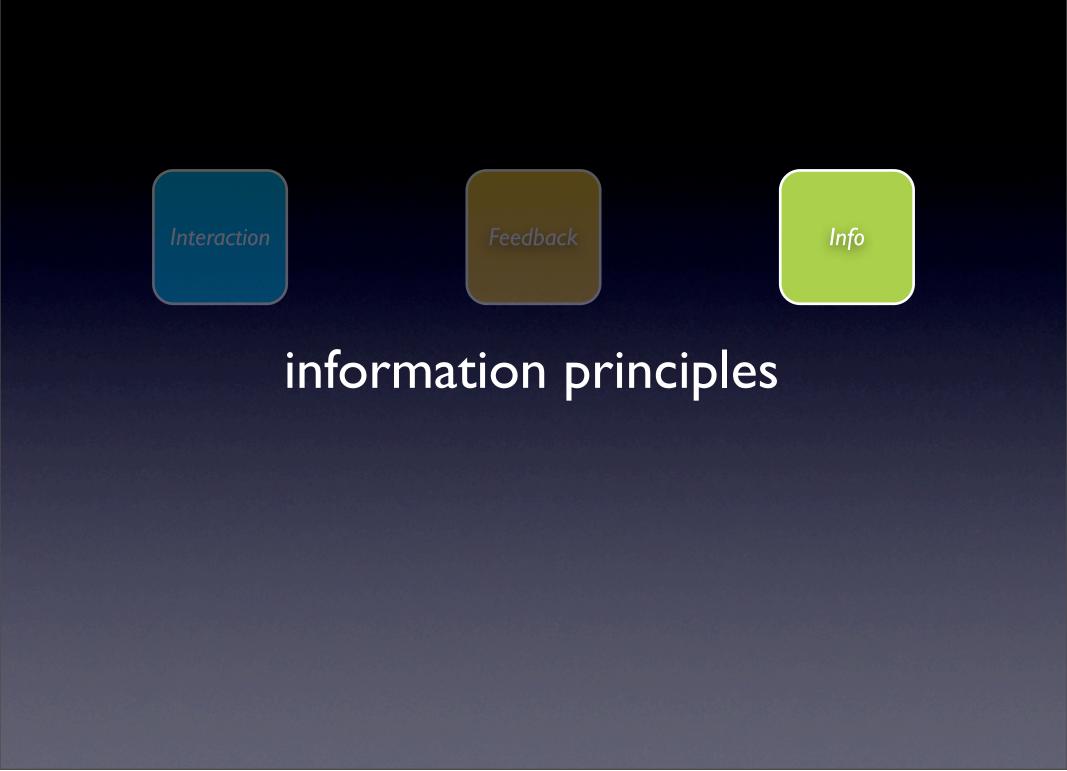




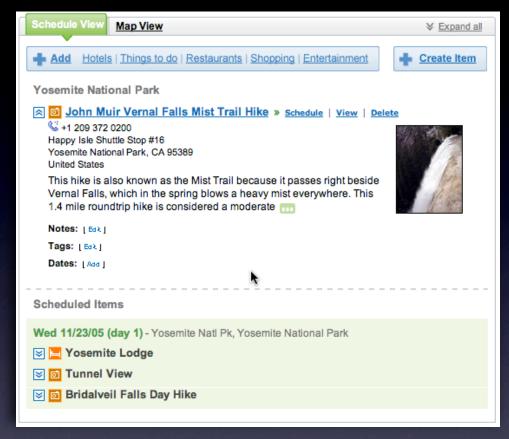




Provide invitations beforehand, transitions during, and feedback after interaction

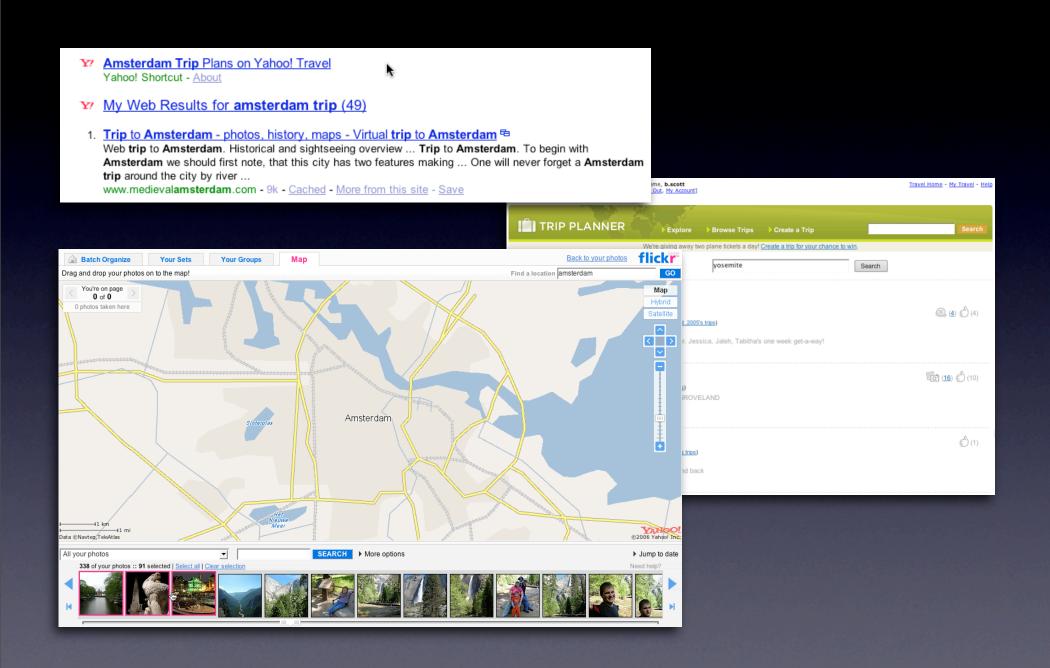


principle. think in objects.



pattern. shareable object.

think in objects



principle. tie information to interactivity.



pattern. multi-variate views.

tie information to interactivity

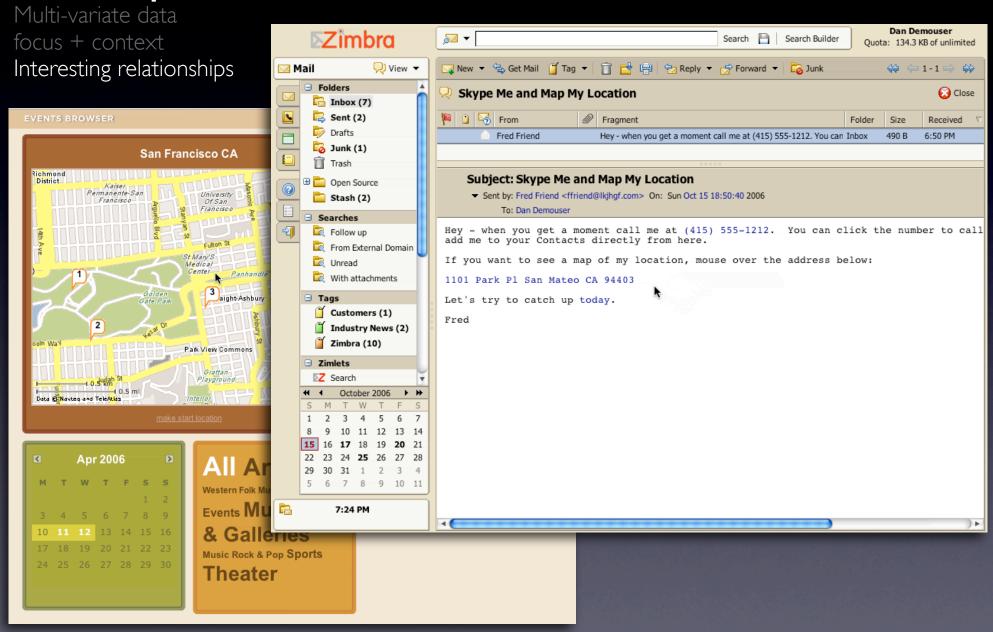
Think "deeper interaction"

Multi-variate data



tie information to interactivity

Think "deeper interaction"



Think in objects, tie information to interactivity

key principles for richness



Prefer direct, lightweight, in-page interactions



Provide invitations beforehand, transitions during and feedback after interaction

Info

Think in objects and tie information to interactivity

my blog. looksgoodworkswell.com this prez. billwscott.com/share/presentations/2007/yui/