Project Status

Looking Forward

3c: Usability Testing Check-In due Today
   - Changes from Inspection
   - Changes from First Usability Test
3d: Usability Testing Review due Thursday 2/23

Other Assignments

Reading 4 Posted, Due Friday 2/24
(you should engage before that if you can)
Exam

In-Class
Next Tuesday 2/21

Mostly short answer, some long answer

Content drawn from lecture and readings

Compilation of the lecture slides is posted

Q&A scheduled Monday at 1:30 in CSE 403
Testing and Patterns

Wizard of Oz and Low Fidelity Testing

Remote Usability Testing

Controlled A/B Experiments

Patterns
SILK (1996)

Migrate to Prototype, Storyboard-Based Programming
DENIM (2000)

Early Stage, Multiple Levels of Details, Sketching, Pen Interaction
SUEDE (2000)

Low-Fidelity Is Not Just About Ink
Topiary (2004)

Location Awareness, Wizard of Oz
Activity Designer (2008)

ActivityDesigner
Activity-Based Prototyping of Ubicomp Applications

Yang Li & James Landay
Computer Science & Engineering
University of Washington
Intel Research Seattle
January 2008

Long-Lived Activities
FrameWire (2010)
Testing and Patterns

Wizard of Oz and Low Fidelity Testing

Remote Usability Testing

Controlled A/B Experiments

Patterns
Remote Usability Testing

Conferencing-based testing
Use tools like video conferencing, instant messaging, and screencasting to test with a remote participant

Semi-automated remote testing
Automatic logging and some analysis of usage

Controlled online A/B experiments
Carefully measure results of showing different versions to different sets of live customers
Semi-Automated Remote Usability

Now available through a variety of services

Loop11        UserZoom
TryMyUI        Validately
Userlytics     WhatUsersDo
Usertesting.com YouEye

Unlikely you need to bake your own

Some include mobile testing
Crowds for automated testing in build processes

http://www.nngroup.com/articles/unmoderated-user-testing-tools/
Semi-Automated Remote Usability

Move usability testing online

- participants access the “lab” via web
- answer questions & complete tasks in “survey”
- records actions or screens for playback
- can test many people completing many tasks

Analyze data individually or in aggregate

- playback individual sessions
- find general problem areas
- if needed, look closely with traditional methods
Semi-Automated Remote Usability

Please refer to the website below for the following:

1. Find a flat panel monitor that costs less than $1200. Please try to accomplish this task without using the search function.
   - I was able to complete the task.
   - I was not able to complete the task.
   - I think that I was able to complete the task, but I'm not sure.

ACME Computers

LCD Flat Panel Displays

- **Mitsubishi 18IN LCD PANEL**
  - $3.460.00
- **Compaq 18IN TFT 28MM 1280X1024**
  - $3.839.00
- **IBM 18IN/18.0V ANALOG TFT**
  - $4.099.00
Semi-Automated Remote Usability

1. Find a flat panel monitor that costs less than $1200. Please try to accomplish this task without using the search function.

<table>
<thead>
<tr>
<th>Task</th>
<th>Response(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was able to complete the task</td>
<td>90%</td>
</tr>
<tr>
<td>I was not able to complete the task</td>
<td>10%</td>
</tr>
<tr>
<td>I think that I was able to complete the task, but I'm not sure</td>
<td>0%</td>
</tr>
</tbody>
</table>

Response Times
Fastest: 00:00:28
Median: 00:00:41
Average: 00:00:48.4
Slowest: 00:01:14

2. What is the price of the monitor you just found?

Short Freeform
$1129
Semi-Automated Remote Usability
WebQuilt: Visual Analysis

Goals

- link page elements to actions
- identify behavior/navigation patterns
- highlight potential problems areas

Interactive graph based on web content

- designers can indicate expected paths
- color code common usability interests
- filtering to show only target participants
- use zooming for analyzing at varying granularity
WebQuilt: Visual Analysis
WebQuilt: Visual Analysis
WebQuilt: Visual Analysis
Testing and Patterns

Wizard of Oz and Low Fidelity Testing

Remote Usability Testing

Controlled A/B Experiments

Patterns
Controlled A/B Experiments

Many names for it

A/B tests or Control/Treatment

Randomized Experimental Design

Controlled experiments

Split testing

Parallel flights

(this section mostly due Ronny Kohavi)
Controlled A/B Experiments

Example: Amazon Shopping Cart Recommendations

Add an item to your shopping cart
Most sites show the cart

At Amazon, Greg Linden had idea to show recommendations based on cart items

Controlled A/B Experiments

Evaluation

Pro: cross-sell more items
Con: distract people from checking out

Highest Paid Person’s Opinion:
Stop the project

Simple experiment run:
Wildly successful

Marketplace: Solitaire vs Poker

Experiment run in Windows Marketplace / Game Downloads
Which image has the higher clickthrough? By how much?

A: Solitaire game

B: Poker game
Marketplace: Solitaire vs Poker

Experiment run in Windows Marketplace / Game Downloads

Which image has the higher clickthrough? By how much?

A: Solitaire game

A is 61% better

B: Poker game
Never Underestimate Solitaire

SIX CHIX

OUR COMPUTERS ARE DOWN, SO WE HAVE TO DO EVERYTHING MANUALLY...

BY RINA PICCOLO
Never Underestimate Solitaire

Activision Acquires Candy Crush Maker King Digital For $5.9 Billion

by Motive igers

Activision's purchase price for the game maker is a premium to its current price but a discount to its recent IPO price.

King Digital Entertainment, the company behind popular Facebook games such as Candy Crush, seems to have decided that being a publicly-traded entity isn't all it's cracked up to be. King announced late Monday that it is being acquired by Activision Blizzard, the maker of popular console and PC games such as Call of Duty, for $5.9 billion.

The purchase price of $18 a share amounts to a premium of about 16% over the recent closing price for King's stock ($15.82), but it's about 20% lower than the price at which the company went public in March. At that...
Checkout Page

*Conversion rate* is the percentage of visits that include a purchase.

Which version has a higher conversion rate?

Example from Bryan Eisenberg’s article on clickz.com
Checkout Page

Conversion rate is percentage of visits that include purchase

Which version has a higher conversion rate?

Example from Bryan Eisenberg’s article on clickz.com
Checkout Page

Conversion rate is percentage of visits that include purchase

Coupon Code decreases by factor of 10
Office Online Feedback

Feedback A puts everything together, whereas feedback B is two-stage: question follows rating.

Feedback A just has 5 stars, whereas B annotates the stars with “Not helpful” to “Very helpful” and makes them brighter.

Which one has a higher response rate? By how much?
Feedback A puts everything together, whereas feedback B is two-stage: question follows rating.

Feedback A just has 5 stars, whereas B annotates the stars with “Not helpful” to “Very helpful” and makes them brighter.

Which one has a higher response rate? By how much?

B gets more than double response rate.
Another Feedback Variant

Call this variant C. Like B, also two-stage.

Which one has a higher response rate, B or C?

C
Another Feedback Variant

Call this variant C. Like B, also two-stage. Which one has a higher response rate, B or C?

C outperforms B by a factor of 3.5
Office Online

Clicks on revenue generating links (red links)
Office Online

Clicks on revenue generating links (red links)

A gets many more clicks
Office Online

Clicks on revenue generating links (red below)

B gets more revenue
Examples Where Data Is Wrong

If something is “amazing,” find the flaw!

If you have a mandatory birth date field, and people think it’s unnecessary, you will find lots of 11/11/11 or 01/01/01

If you have an optional drop down, do not default to the first alphabetical entry, or you will have lots of: jobs = Astronaut

Traffic to doubled between 1-2am Nov 6, 2011 for many web sites, relative to same hour week prior
Proposal: New Offers module below Shopping

Control

Treatment
Experiment Results

Ran A/B test for 12 days on 5% of MSN US visitors
Experiment Results

Ran A/B test for 12 days on 5% of MSN US visitors

Clickthrough:
Page views per person-day:
Experiment Results

Ran A/B test for 12 days on 5% of MSN US visitors

Clickthrough: decreased 0.49%

Page views per person-day: decreased 0.35%
Experiment Results

Ran A/B test for 12 days on 5% of MSN US visitors

Clickthrough: decreased 0.49%
Page views per person-day: decreased 0.35%

Value of click from home page: X cents
Net = Expected Revenue –
   Value Per Click * Direct lost clicks –
   Value Per Click * Lost Due to Decreased Views
Experiment Results

Ran A/B test for 12 days on 5% of MSN US visitors

Clickthrough: decreased 0.49%

Page views per person-day: decreased 0.35%

Value of click from home page: X cents

Net = Expected Revenue –
Value Per Click * Direct lost clicks –
Value Per Click * Lost Due to Decreased Views

Net was negative (in millions of dollars), offers module did not launch
ONLINE PLATFORMS
AS THE FUTURE OF RESEARCH

JEFFREY “LYTE” LIN
jlin@riotgames.com | @RiotLyte
Sunglasses are an important accessory for reducing damage from the Sun.
CATEGORY 1: FUN FACTS

“Nautilus’ joke makes him swim through air. He’s weird like that.”
CATEGORY 2: POSITIVE BEHAVIOR

“Players perform better if you give them constructive feedback after a mistake.”
OPTIMUS PRIME

EXPERIMENTAL DESIGN

C1 C2 C3

CATEGORY 3: NEGATIVE BEHAVIOR

“Players who verbally abuse their teammates lose 16% more games.”
OPTIMUS PRIME

EXPERIMENTAL DESIGN

C1  C2  C3  C4

CATEGORY 4: SELF-REFLECTION

“Who will be the most sportsmanlike player in this game?”
CATEGORY 5: GAMEPLAY TIPS

“Hold down the ALT key while casting an ability to cast it on yourself.”
OPTIMUS PRIME

EXPERIMENTAL DESIGN

LOCATIONS

LOCATION 1: Loading Screen
LOCATION 2: In-Game
LOCATION 3: Both
LOCATION 4: None (Control)
OPTIMUS PRIME

EXPERIMENTAL DESIGN

COMPLETE EXPERIMENTAL DESIGN:

24 TIPS ACROSS 5 CATEGORIES

3 FONT COLORS

3 LOCATIONS + 1 OVERALL CONTROL

= 217 UNIQUE CONDITIONS
EVERY GAME OF LEAGUE OF LEGENDS GOT A RANDOM TIP, LOCATION & FONT COLOR
(10% OF GAMES GOT NOTHING TO ACT AS CONTROLS)
OPTIMUS PRIME RESULTS

TIP: “X% of players punished by the Tribunal improve their behavior and are never punished again”

FONT: White
LOCATION: Loading Screen

COMPARSED TO CONTROL GAMES

INCREASE

DECREASE

Verbal Abuse | Offensive Language | Reports/Game
6.35% | 5.89% | 4.11%
HOW DO **FONT COLORS** INTERACT WITH TIP CATEGORIES?
OPTIMUS PRIME RESULTS

TIP: "Teammates perform worse if you harass them after a mistake."

FONT: Red
LOCATION: Loading Screen

INCCREASE

INCREASE

COMPARSED
TO
CONTROL
GAMES

DECREASE

Negative Attitude: 8.34%
Verbal Abuse: 6.22%
Offensive Language: 11.00%

*Optimus data from 11/2012
OPTIMUS PRIME RESULTS

TIP: “Teammates perform worse if you harass them after a mistake.”
FONT: White
LOCATION: Loading Screen

INCREASE

NEGATIVE ATTITUDE: 0.55%
VERBAL ABUSE: 2.48%
OFFENSIVE LANGUAGE: 1.28%

DECREASE

8.34%
6.22%
11.00%

*Optimus data from 11/2012
OPTIMUS PRIME RESULTS

TIP: “Players who cooperate with their teammates win X% more games.”

FONT: Blue
LOCATION: Loading Screen

INCREASE

COMPARED TO CONTROL GAMES

DECREASE

Negative Attitude: 5.13%
Verbal Abuse: 3.64%
Offensive Language: 6.22%

*Optimus data from 11/2012
OPTIMUS PRIME RESULTS

TIP: “Players who cooperate with their teammates win X% more games.”

FONT: Red

LOCATION: Loading Screen

*Optimus data from 11/2012
ONLINE PLATFORMS
AS THE FUTURE OF RESEARCH

JEFFREY “LYTE” LIN
jlin@riotgames.com | @RiotLyte
Data Driven Methods Not Just Online

1999
Made from cardboard, the first Netflix mailer weighs more than an ounce. But with only 100,000 customers, reducing material and shipping costs is not yet a priority for the company.

2000
Thick paper replaces cardboard. DVDs are inserted and removed from the top rather than the side.

2000
Full-color printing is introduced. Top-loading is abandoned in favor of side-loading, which is judged more convenient.
Data Driven Methods Not Just Online

2000
Customers are asked to peel off a sticker to reveal Netflix’s return address. The design is eventually deemed too complex.

2000
Made from plastic instead of paper, this mailer is cheaper, but it sometimes inflates when transported on airplanes.

2001
An airhole (the black dot on the left side of the mailer) is added to prevent the package from inflating.

2001
Netflix returns to paper because it’s easier to recycle. Foam padding is added to reduce breakage.
Data Driven Methods Not Just Online

2001
Foam padding is dropped because the benefits don’t justify the cost. The company gives top-loading another try.

2001
Marking a return to side-loading, this mailer is a direct ancestor of the one the company uses today.

2003
Instead of sealing the entire top and bottom, Netflix introduces a circular sticker, affixed only on the top.

2004
A window shows the disc bar code. Speculation is that this enables storing discs in mailers prior to shipping.
Limitations of Data Driven Testing

Drives hill-climbing, but not overall design

A design may be better, but is it good?

Impossible for new designs to compete

Can be difficult to scale to many features

Now we step through a larger example
Red Hot Price for the Chili Peppers' New CD: $11.88!

Evolving after the popularity of *Californication*, the Chili Peppers release a new album featuring the hit song "By the Way".

<table>
<thead>
<tr>
<th>In-Stock Now!</th>
<th>Our Price</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weezer</strong>, Weezer</td>
<td>$6.99</td>
<td>$18.97</td>
</tr>
<tr>
<td><strong>Bock-a-Doo Dolls</strong></td>
<td>$9.00</td>
<td>$18.98</td>
</tr>
<tr>
<td><strong>The Slim Shady LP</strong>, Eminem</td>
<td>$2.98</td>
<td>$18.97</td>
</tr>
<tr>
<td><strong>Echoes</strong>, Pink Floyd</td>
<td>$11.54</td>
<td>$24.97</td>
</tr>
<tr>
<td><strong>18</strong>, Moby</td>
<td>$10.99</td>
<td>$18.98</td>
</tr>
</tbody>
</table>

**In-Stock Now!**

<table>
<thead>
<tr>
<th>Movie</th>
<th>Our Price</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monster's Ball (DVD)</strong></td>
<td>$11.25</td>
<td>$24.99</td>
</tr>
</tbody>
</table>

**Just Released: The Royal Tenenbaums for $18.45**

Wes Anderson (*Rushmore*) directs a motley crew of talented actors in this hysterical comedy about the rise and fall of an eccentric family.
**Redeeming a Gift Certificate or Coupon?**

**Shopping Cart**

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weezer (2001) Weezer, Weezer (Music)</td>
<td>$8.30</td>
<td>Like New</td>
<td>Perfect condition</td>
</tr>
<tr>
<td></td>
<td>Media Mail: $2.45</td>
<td>(Change Shipping Method)</td>
<td></td>
</tr>
</tbody>
</table>

**Gift Certificates and Coupons**

Redeeming your Half.com Gift Certificate or Coupon is easy. Just enter your Claim Code in the box to the right and click "Redeem".

**Proceed to Checkout**
Checkout

Enter your User ID and Password.

Are you a \textit{half.com} user having trouble signing in? \texttt{Get help now}.

\textbf{eBay User ID}

You can also use your registered email.

\textbf{eBay Password}

\texttt{Forgot} your password?
Learn how to \texttt{protect your account}

\texttt{Secure Sign In} or \texttt{Register Now}

\texttt{Keep me signed in on this computer unless I sign out. Learn more}.

\texttt{Having problems signing in? Get help now}

For more information about sign in, visit \texttt{sign in help}.
Step 1 - Choose Shipping Address

Ship my order to:

Jason Hong
387 Soda Hall Computer Science UC Berkeley
Berkeley, CA 94720

OR

Enter a new shipping address:

Name
Street address
City
State
ZIP code
Country

Use This Address

Save Changes
Quick Flow Checkouts

CSE440 - Autumn 2007
User Interface Design, Prototyping, and Evaluation

Order Summary

Seller: naojia@hotmail.com (35)
Condition: Like New • Notes: Perfect condition

<table>
<thead>
<tr>
<th>Item:</th>
<th>$8.30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Mail:</td>
<td>$2.45</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>$10.75</td>
</tr>
<tr>
<td>Total Merchandise:</td>
<td>$8.30</td>
</tr>
<tr>
<td>Total Shipping:</td>
<td>$2.45</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>$10.75</td>
</tr>
</tbody>
</table>

**Ship to**

*Jason Hong*
387 Soda Hall Computer Science UC Berkeley
Berkeley, CA 94720

[Edit / Change Shipping Address]

**Bill to**

*MasterCard* ending with 0155
Expires 11/2003
Zipcode: 94709

[Edit / Change Billing]

Use this shipping and billing information as my Speedy Checkout settings.

[Place my order!]
Testing in a Larger Design

OK, so the strategy behind this redesign is-
WAIT, did you increase the border size??

HOLY CRAP! WE BETTER ISOLATE AND RE-TEST!

But... that change is just part of a larger design...

CALM DOWN, PIXEL-BOY. WE'VE GOT SCIENTIFIC WAYS TO HANDLE THIS.

3 MONTHS LATER...

SEE? THAT BORDER WOULD HAVE COST US 0.012%. THANK GOODNESS I STOPPED YOUR SLOPPY "REDESIGN."

ABSOLUTELY. ONCE AGAIN OUR BUSINESS IS SAFE.
Goodbye, Google

Part 1 of 2 (here’s Part 2)

Today is my last day at Google.

I started working in–house at Google almost three years ago. I built a team from scratch. I was fortunate to hire a team of very talented designers. We introduced Visual Design as a discipline to Google. And we produced amazing work together. I’m very proud of my team, and I wish them well. They have a lot of challenging work ahead. But for me, it’s time to move on.

Do I have something else lined up? Yes. That will be covered in Part 2. So I’m not leaving just to leave. But I’m not going to sugarcoat the reasons for my departure either. The scale at which Google operates was an early attractor for me. Potential to impact millions of people? Where do I sign? Unfortunately for me, there was one small problem I didn’t see back then.

When I joined Google as its first visual designer, the company was already seven years old. Seven years is a long time to run a company without a classically trained designer. Google had plenty of designers on staff then, but most of them had backgrounds in CS or HCI. And none of them were in high-up, respected leadership positions. Without a person at (or near) the helm who thoroughly understands the principles and elements of Design, a company eventually runs out of reasons for design decisions. With every new design decision, critics cry foul. Without conviction, doubt creeps in. Instincts fail. “Is this the right move?” When a company is filled with engineers, it turns to engineering to solve problems. Reduce each decision to a simple logic problem. Remove all subjectivity and just look at the data. Data in your favor? Ok, launch it. Data shows negative effects? Back to the drawing board. And that data eventually becomes a crutch for every decision, paralyzing the company and preventing it from making any daring design decisions.

Yes, it’s true that a team at Google couldn’t decide between two blues, so they’re testing 41 shades between each blue to see which one performs better. I had a recent debate over whether a border should be 3, 4 or 5 pixels wide, and was asked to prove my case. I can’t operate in an environment like that; I’ve grown tired of debating such minuscule design decisions. There are more exciting design problems in this world to tackle.

I can’t fault Google for this reliance on data. And I can’t exactly point to financial failure or a shrinking number of users to prove it has done anything.
Testing and Patterns

Wizard of Oz and Low Fidelity Testing

Remote Usability Testing

Controlled A/B Experiments

Patterns
Red Hot Price for the Chili Peppers' New CD: $11.88!
Evolving after the popularity of Californication, the Chili Peppers release a new album featuring the hit song "By the Way."

Weezer, Weezer

Gutterflower, Goo Goo Dolls
Our Price: $9.00  List Price: $18.98

The Slim Shady LP, Eminem
Our Price: $2.98  List Price: $18.97

Echoes, Pink Floyd
Our Price: $11.54  List Price: $24.97

18, Moby
Our Price: $10.99  List Price: $18.98

Just Released: The Royal Tenenbaums for $18.45
Wes Anderson (Rushmore) directs a motley crew of talented actors in this hysterical comedy about the rise and fall of an eccentric family.

In-Stock Now!
• What site is this?
  – Logo in top-left corner denotes the site
  – Another logo at top-right to reinforce
  – examples of SITE BRANDING
• What kind of site is this?
  – Shopping cart icon
  – Tab row content & categories on left
  – Prices in content area
  – UP-FRONT VALUE PROPOSITION
  – example of PERSONAL E-COMMERCE
What can I do here?
- Welcome for new visitors
- Tab row / Search on top
- “Categories”
- Prices
- Examples of OBVIOUS LINKS
**Most important info visible without scrolling**

**ABOVE THE FOLD**
Weezer (2001)

Our best price: $6.99
List Price: $18.97 (Save: $11.98)

Find out more...
Full product info, Product Reviews

Not ready to buy?
Add to your Wish List, Preorder this item, May we also suggest...

Like New Sorted by Price

<table>
<thead>
<tr>
<th>Price</th>
<th>Total Price</th>
<th>Seller (Rating)</th>
<th>Seller Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7.75</td>
<td>$10.20 Media Mail</td>
<td>custodian46 (149)</td>
<td>best buy</td>
</tr>
<tr>
<td>$8.00</td>
<td>$10.45 Media Mail</td>
<td>stargaze13 (3)</td>
<td>Disk, case, and liner all in excellent c</td>
</tr>
<tr>
<td>$8.25</td>
<td>$10.70 Media Mail</td>
<td>dazzyliz (1205)</td>
<td>SEALED NEW BMG</td>
</tr>
<tr>
<td>$8.30</td>
<td>$10.75 Media Mail</td>
<td><a href="mailto:naoolia@hotmail.com">naoolia@hotmail.com</a> (35)</td>
<td>Perfect condition</td>
</tr>
</tbody>
</table>

Very Good Sorted by Price

<table>
<thead>
<tr>
<th>Price</th>
<th>Total Price</th>
<th>Seller (Rating)</th>
<th>Seller Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$8.00</td>
<td>$10.45 Media Mail</td>
<td>lucidsky (14)</td>
<td>perfect</td>
</tr>
<tr>
<td>$8.84</td>
<td>$11.29 Media Mail</td>
<td>steveq1 (82)</td>
<td></td>
</tr>
<tr>
<td>$9.00</td>
<td>$11.45 Media Mail</td>
<td>sainttimothy (18)</td>
<td>Great shape...first class ship</td>
</tr>
</tbody>
</table>

Standard shipping (USPS Media Mail) for this item is $2.30.

About this album:
- Song List
- Album Credits
- Album Notes
- Editorial
- Customer Reviews

About the Artist:
- Other Works

Spread the Word:
- Write a Review
- Email a Friend
• What site am I at?
  – Logo in upper-left reinforces brand, can click to go to home
  – Same font, layout, color scheme also reinforces
  – examples of SITE BRANDING (E1)
• Where am I in the site?
  – “Home > Music” are LOCATION BREAD CRUMBS
  – TAB ROW says “Music”
  – Album cover, “Product Highlights”, and CD cover
• Can I trust these sellers?
  – Who am I buying from?
  – Are they reputable?
  – What about shipping?
The Fold

- Hmm, what’s below here?
- Impulse buy
- PERSONALIZED RECOMMENDATIONS
- About this album
- Lots of unused space
- Still more info below…
• Is this product any good?
  – Editorial reviews
  – Customer reviews
  – RECOMMENDATION

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People with similar tastes also enjoyed...

**Weezer (1994)**
- Weezer
- **$5.00**
- (Save $6.97)

**Weezer (2001)**
- Weezer, Weezer (Music)
- CD, Release Year: 2001
- Seller: naoria@hotmail.com (35)
- Condition: Like New • Notes: Perfect condition
- Item: **$8.30**
- Media Mail: **$2.45**

**Gift Certificates and Coupons**

Redeeming your Half.com Gift Certificate or Coupon is easy. Just enter your Claim Code in the box to the right and click "Redeem".
- **What site am I at?**
  - Logo in upper-left
  - Colors, layout, font
  - examples of SITE BRANDING
• Where am I in the site?
  – Last link clicked was “Buy!”
  – “Shopping Cart” and “Proceed to Checkout” reinforce that this is “the right page”
  – SHOPPING CART
- Cross-selling
  - Possibly a pleasant surprise
  - Impulse buy
  - CROSS-SELLING & UP-SELLING
• What am I going to buy?
  – Easy to remove
  – Easy to move to wishlist
• How much will it cost?
  – Shipping costs there, no nasty surprises
• SHOPPING CART
• What can I do?
  – “Proceed to Checkout”
  HIGH VISIBILITY ACTION BUTTON
  – Visually distinct
  – 3D, looks clickable
  – Repeated above and below fold
Checkout

Enter your User ID and Password.

Are you a half.com user having trouble signing in? Get help now.

eBay User ID
You can also use your registered email.

eBay Password
Forgot your password?
Learn how to protect your account

Secure Sign In or Register Now

Keep me signed in on this computer unless I sign out. Learn more.

Having problems signing in? Get help now.

For more information about sign in, visit sign in help.
- What if I don’t have a User ID?
- What if I forgot my password?
- SIGN-IN/NEW ACCOUNT options
Step 1 - Choose Shipping Address

Ship my order to:

Jason Hong
387 Soda Hall Computer Science UC Berkeley
Berkeley, CA 94720

OR

Enter a new shipping address:

Name
Street address
City
State: [Select State]
ZIP code
Country: USA

Save Changes
• What site?
  – Logo, layout, color, fonts

• Where in site?
  – Checkout, step 1 of 3
  – “Choose shipping address”
  – QUICK-FLOW CHECKOUT
• Note what’s different
  – No tab rows
  – No impulse buys
  – Only navigation on page takes you to next step

• This is a PROCESS FUNNEL
  – Extraneous info and links removed to focus customers
Order Summary

Seller: naojia@hotmail.com (35)
Condition: Like New • Notes: Perfect condition

- Item: $8.30
- Media Mail: $2.45
- Subtotal: $10.75
- Total Merchandise: $8.30
- Total Shipping: $2.45
- TOTAL: $10.75

**Ship to**

Jason Hong
387 Soda Hall Computer Science UC Berkeley
Berkeley, CA 94720

[Edit / Change Shipping Address]

**Bill to**

MasterCard ending with 0155
Expires 11/2003
Zipcode: 94709

[Edit / Change Billing]

Use this shipping and billing information as my Speedy Checkout settings.

[Place my order!]
- Last step of process
  - Step 3, “Place Order”
  - “Place my order” button
- **Two HIGH-VISIBILITY ACTION BUTTONS** for fold
• No nasty surprises
  – Can see order
  – Total price is same as shopping cart
  – ORDER SUMMARY
• Easy to change shipping and billing
• Easy to save this info
  – Easier to setup info in context of specific task

Edit / Change Shipping Address

Use this shipping and billing information as my Speedy Checkout settings.

Place my order!
Design Equals Solutions

Design is about finding solutions

Designers often reinvent

- Hard to know how things were done before
- Why things were done a certain way
- How to reuse solutions

One option is patterns

- But this is also why we point you at research
Design Patterns

Design patterns communicate common design problems and solutions

First used in architecture [Alexander]

How to create a beer hall where people socialize?

Somewhere in the community at least one big place where a few hundred people can gather, with beer and wine, music, and perhaps a half-dozen activities, so that people are continuously criss-crossing from one to another.
Somewhere in the community at least one big place where a few hundred people can gather, with beer and wine, music, and perhaps a half-dozen activities, so that people are continuously criss-crossing from one to another.
Using Design Patterns

Not too general and not too specific
use a solution “a million times over, without ever doing it the same way twice”

Design patterns are a shared language
for “building and planning towns, neighborhoods, houses, gardens, and rooms”

Beer hall is part of a center for public life
Beer hall needs spaces for groups to be alone
ALCOVES
A Web of Design Patterns

(8) Mosaic of Subcultures

(31) Promenade

(95) Building Complex

(90) Beer Hall

(33) Night Life

(179) Alcoves

(181) The Fire

Cities & Towns

Local Gatherings

Interiors
Web Design Patterns

Communicate design problems & solutions

how to create navigation bars for finding relevant content

how to create a shopping cart that supports check out

how to make e-commerce sites where people return & buy
NAVIGATION BAR (K2)

Problem: Customers need a structured, organized way of finding the most important parts of your Web site
NAVIGATION BAR (K2)

Solution diagram

Captures essence on how to solve problem
Pattern Groups

Patterns organized by group

- Site genres
- Navigational framework
- Home page
- Content management
- Trust and credibility
- Basic ecommerce
- Advanced ecommerce
- Completing tasks
- Page layouts
- Search
- Page-level navigation
- Speed
- The mobile web
PROCESS FUNNEL (H1)

Problem:

Need a way to help people complete highly specific stepwise tasks

Ex. Create a new account
Ex. Fill out survey forms
Ex. Check out
PROCESS FUNNEL (H1)
• What’s different?
  – No tab rows
  – No impulse buys
  – Only navigation on page takes you to next step

• What’s the same?
  – Logo, layout, color, fonts
Problem:

What if users need extra help?
FEATURED SYSTEM

Featured Dimension 4100

The Dimension 4100 desktop offers you amazing power and flexibility at a price that won't break your budget.

- Intel® Pentium® III processor at 933MHz
- 40GB Hard Drive
- 128MB SDRAM
- 32MB Nvidia GeForce2 MX 4X A9P Graphics Card

Free Ground (3-5 day) Shipping with purchase of any new Dell Home System. Offer ends 4/23/01. Click here for details.

$1,199
As low as $35.42/mo.
No payment for 90 days
(Click or scroll for details)

E-Value Code
6V7I-14100p1a

Keyboard
- Quiet Key 80 Keyboard

3 Year On-Site Service
- With on-site service, you don't have to leave your home or ship your computer to us should you have a problem.

Add
$99

More Details

Epson Stylus Color 890
- Accurate and versatile printer that features super fast print speeds.

Add
$199

More Details
CONTEXT-SENSITIVE HELP (H8)
FLOATING WINDOWS (H6)


Fans of *Gladiator*’s original theatrical release will appreciate this extended version of the epic Ridley Scott film, packed with 17 extra minutes of action footage and gripping dialogue. Featuring a strong supporting cast and an Oscar-winning performance from actor Russell Crowe as the dauntless Roman general Maximus, this big-budget Best Picture winner became an instant classic -- and helped elevate its leading man to icon status.

**Starring:** Russell Crowe, Joaquin Phoenix  
**Director:** Ridley Scott  
**Genre:** Action & Adventure  
**MPAA:** R

**Samurai Champloo (2004)**

Director Shinichiro Watanabe mixes a maturity rarely found in anime with a historical Japanese setting and a funky hip-hop soundtrack. Fuu is a spacey waitress at a teahouse where a sword fight breaks out between Mugen, a wild warrior, and Jin, a ... Read More

**Recommended based on 1 rating**
FLOATING WINDOWS (H6)
PROCESS FUNNEL (H1)

Solution Diagram
Related Patterns

- (A1) E-Commerce
- (K3) Tab Rows
- (K4) Action Buttons
- (H1) Process Funnel
- (K2) Navigation Bars
- (H8) Context-Sensitive Help
- (I2) Above the Fold
- (K5) High-Viz Action Buttons
- (K12) Preventing Errors
- (K13) Meaningful Error Messages
Patterns Support Creativity

Patterns come from successful examples
sites that are so successful that lots of people
are familiar with their paradigms
interaction techniques/metaphors that work well
across many sites (e.g., shopping carts)

Not too general and not too specific
you need to specialize to your needs

Patterns let you focus on the hard,
unique problems of your design situation
Principles, Guidelines, Templates

Patterns help design without over-constraining

- unlike principles, patterns are not too general
- unlike guidelines, patterns discuss tradeoffs, show good examples, and tie to other patterns
- unlike style guides, patterns not too specific, can be specialized to a design
- unlike templates, patterns illustrate flows and relationships among different pages
Web Design Patterns

**Pattern Name and Number**

**Exemplar**

**Forces & Solution**

**Background**

**Problem Statement**

---

**BACKGROUND**

All Web applications that lead visitors through stepped tasks—personal e-commerce (A1), self-service government (A4), web apps that work (A10), and enabling intranets (A11)—need ways to help people succeed at completing the tasks.

**PROBLEM**

Customers often need to complete highly specific tasks on Web sites, but pages with tangential links and many questions can prevent them from carrying out these tasks successfully. People enjoy completing the tasks they start. Yet all kinds of distractions—including links that lead off the critical path, extra steps, and extra content—can inadvertently lead them away from accomplishing their goals. These diversions can have legitimate purposes, however, such as providing continuity, giving visitors opportunities to explore, providing instructions, or providing extra details. Striking a balance between these needs can be challenging.

However, it is always a viable solution because one choice may precede another, and not every page can hold all the information that customers might need at certain points.

**Exemplar**

Provide a Progress Bar to Let Customers Know How Much Farther They Have to Go. It is often not worth your time to go for a progress bar clickable because doing so may benefit customers. For example, a progress bar might indicate the status of a download or the amount of content still available to download.

**Forces & Solution**

Remove Unnecessary Links and Control While Reinforcing the Brand: Navigation links and content unrelated to the task at hand will reduce the chance of completing the task and making it more likely that your customers will fail their tasks. Remove all navigation bars (K2), tab bars (K6), and embedded links that help visitors reach their goals. Take out any content that is superfluous to the task.

**Background**

Reinforce the Web site brand to minimize any disorientation customers might feel from sudden changes in navigation options. Use the same colors, font, and logo throughout the Web site so that no one knows they're still on the same site.
Web Design Patterns
Pre-Patterns

Patterns require broad adoption and examples

Many version of the same basic idea
Shown successful in many contexts
That is what makes them patterns

This is challenging in novel domains

Pre-patterns are based in weaker evidence

Can help speed diffusion of techniques and results
Can help see relationships among ideas
UbiComp Pre-Patterns

Literature review

Button-up card sorting of lessons from literature
Cut down based on critique by other researchers

E13 - Notification on Access of Personal Data

Figure 1. AT&T Wireless Find Friends service notifies your friend if you ask for his or her location.

Synopsis
Systems can provide feedback about what is being monitored and recorded.

Background
This pattern is part of providing appropriate privacy feedback to individuals.

Problem
How can systems provide feedback about what is being monitored, as well as the current state of the system?

Solution
There are at least two different times that notification can be used, during an access and afterwards.

Forces
A key design decision here is whether the person is simply notified or has choice over whether information is disclosed. There are plausible cases for each. For example, “always let my family know where I am”, but “let me choose whether to reveal my current location if a co-worker asks”. This is primarily an issue of trust and boundaries with other individuals.

Privacy Metrics also act as a form of notification. Notification can also be combined with unobtrusive displays to provide constant feedback.
Displaying people’s location • There are several different ways of displaying a person’s location. A straightforward approach is to simply show the location in text, for example “near corner of Euclid Ave and Hearst Ave” or “in Soda Hall”. Another approach is to show the data on a map, or possibly even an ACTIVE MAP (B1) that is constantly updated.

**BACKGROUND**
This pattern discusses services that allow people to find where their friends are while allowing those friends some level of privacy. This pattern is useful for GUIDES FOR EXPLORATION AND NAVIGATION (A5).

**PROBLEM**
People would like to know where their friends are, for impromptu communication and gatherings. At the same time, those people may not always want to be tracked.

**Managing privacy concerns** • There are many privacy concerns about find-a-friend applications due to the potential for abuse. This is not just the fear of “Big Brother,” but also so-called “Little Brother,” such as someone taking advantage of the system to keep track of potential rivals or others.

---

Figure 1. AT&T Wireless’ mMode service allows customers to add friends to a friend list, find out who is nearby, and call or send messages to them. Users can make themselves invisible whenever they want.

Figure 2. UC San Diego’s ActiveCampus project shows your friends’ location in real time. While useful, this visualization raises many privacy concerns.
# UbiComp Pre-Patterns

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<th>A – Ubiquitous Computing Genres</th>
<th>B – Physical-Virtual Spaces</th>
<th>C – Developing Successful Privacy</th>
<th>D – Designing Fluid Interactions</th>
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<td>Associating physical objects and spaces with information and meaning; location-based services; helping users navigate such spaces</td>
<td>Policy, systems, and interaction issues in designing privacy-sensitive systems</td>
<td>How to design for interactions involving dozens or even hundreds of sensors and devices while making users feel like they are in control</td>
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<td>Keeping Personal Data on Personal Devices (C15)</td>
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Patterns

When you see advice, consider its depth
  Result of an individual study / rant
  Pre-pattern based on some meta-analysis
  Established pattern

Be aware of misapplying patterns
  And be aware of anti-patterns
Touch and Microsoft Windows

2004

2012
Consistency vs. Specialization

Beware of simply copying a design language

  Consistency is your friend
  until it is not your friend

Not limited to platform-level decisions

  One “look” for your app
  Or targeted at each device
Dark Patterns

A Dark Pattern is an interface that has been carefully crafted to trick people into doing things, such as buying insurance with their purchase or signing up for recurring bills.

Disguised Ads

Ads that are disguised as other kinds of content or navigation, in order to get users to click on them.
Dark Patterns

A Dark Pattern is an interface that has been carefully crafted to trick people into doing things, such as buying insurance with their purchase or signing up for recurring bills.

Friend Spam

A site or game asks for your credentials, then goes on to publish content or send out bulk messages.
After Lawsuit Settlement, LinkedIn’s Dishonest Design Is Now A $13 Million Problem

HOPEFULLY, THIS WILL BE A LESSON TO OTHER COMPANIES WHO USE DARK UX PATTERNS TO TRICK THEIR USERS.

Anyone who has ever signed up, or even known anyone who has signed up, for LinkedIn has probably found themselves on the receiving end of dozens of follow-up emails, inviting you to “expand your professional network.” Even worse, they’re virtually impossible to opt-out of. It’s a scummy use of dark UX patterns by a company that should know better. Now, LinkedIn is going to be paying for it as part of a class-action lawsuit, to the tune of $13 million.

Presented in San Jose’s U.S. District Court, the key issue in Perkins v. LinkedIn is spam. Namely, during the user sign-up process, LinkedIn claims that it “will not store your password or email anyone without your permission.” Despite this, LinkedIn sends automated follow-up email reminders on a new user’s behalf to any contacts harvested from their webmail accounts, which are presented in such a way as to appear as if they came directly from the user.

Under California law, the sitting judge says has deemed this illegal. Consequently, if you were a member of LinkedIn’s “add connection” program between September 2011 and October 2014, you can submit a claim to the SCHMITT.
CSE 440: Introduction to HCI
User Interface Design, Prototyping, and Evaluation

Lecture 14:
Testing and Patterns

James Fogarty
Eunice Jun
David Wang
Elisabeth Chin
Ravi Karkar

Tuesday / Thursday
10:30 to 11:50