

# CSE 440: Introduction to HCI

User Interface Design, Prototyping, and Evaluation

Lecture 14:  
Patterns

James Fogarty  
Alex Fiannaca  
Lauren Milne  
Saba Kawas  
Kelsey Munsell

Tuesday/Thursday  
12:00 to 1:20



# Today

## Course Progress

Mockups Due Friday

Exam Tuesday

Report, Website, Presentations After Break

Reading 5 Posted

## Patterns

Peer Critique of Usability Testing Results

# Limitations of 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

How about we step through a larger example



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### Product Highlights

CD

May 2001

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Catalog 493 045

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<b>\$8.25</b>	<b>\$10.70</b> Media Mail	<a href="#">dazzyliz</a> (1205) ★	SEALED NEW BMG	<a href="#">More info...</a>
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<b>\$8.84</b>	<b>\$11.29</b> Media Mail	<a href="#">steveeq1</a> (82) ★		<a href="#">More info...</a>
<b>\$9.00</b>	<b>\$11.45</b> Media Mail	<a href="#">saint.timothy</a> (18) ★	Great shape...first class ship	<a href="#">More info...</a>

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Weezer  
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**Pinkerton**  
(CD, 1996)  
Weezer  
**\$6.00**  
(Save \$10.95)



**All Killer No Filler**  
**[ECD]**  
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Sum 41, Sum 41  
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<p><b>Weezer (2001)</b> Weezer, Weezer (Music) CD, Release Year: 2001 Seller: <a href="mailto:naojia@hotmail.com">naojia@hotmail.com</a> (35) Condition: Like New • Notes: Perfect condition</p> <p><a href="#">Move to WishList</a> • <a href="#">Remove from Cart</a> • <a href="#">Find another one</a></p>	<p>Item: \$8.30 Media Mail: \$2.45 <a href="#">(Change Shipping Method)</a></p>
<b>TOTAL: \$10.75</b>	

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Subtotal: \$10.75

Total Merchandise: \$8.30  
Total Shipping: \$2.45  
**TOTAL: \$10.75**

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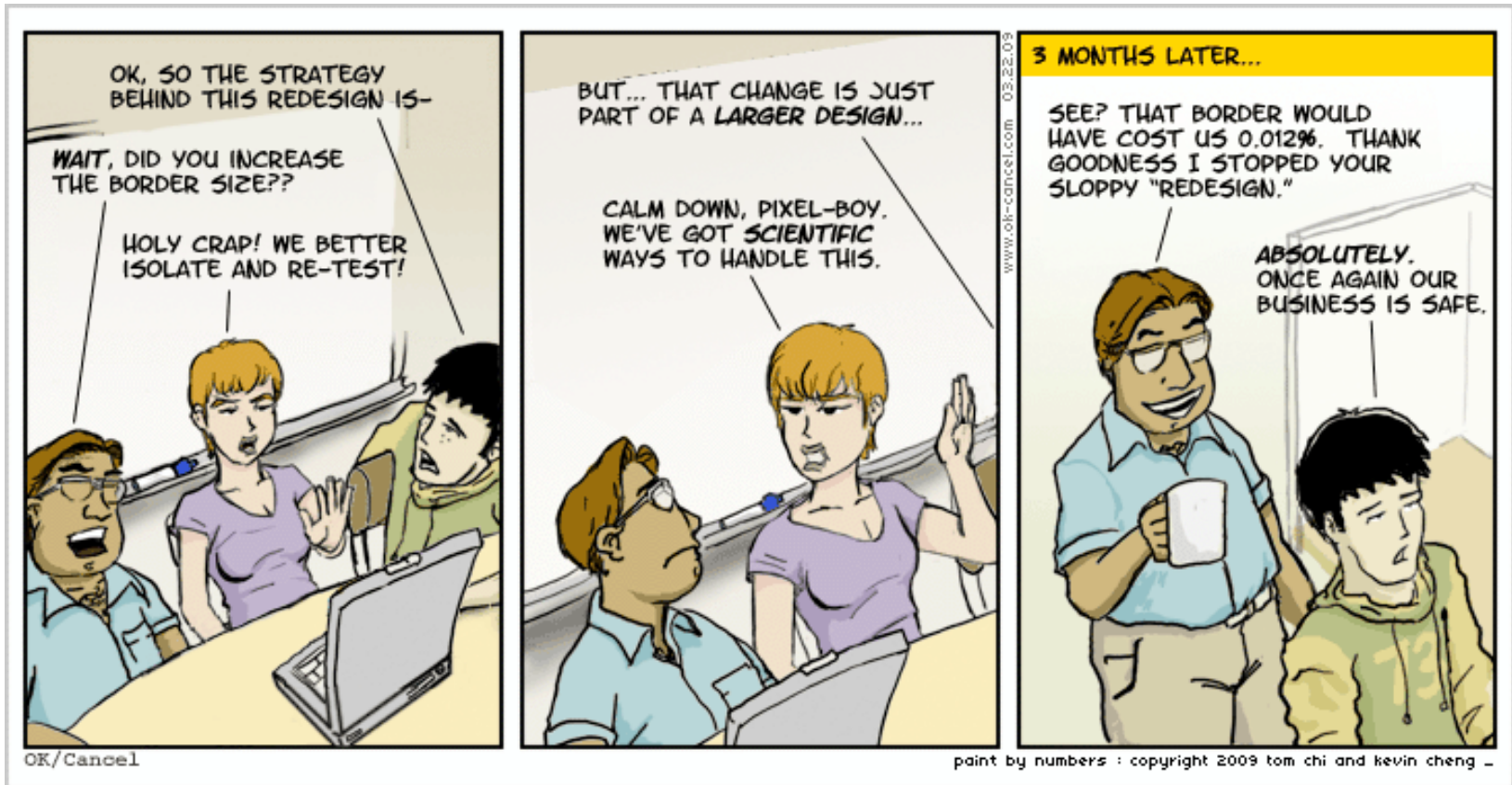
**MasterCard** ending with 0155  
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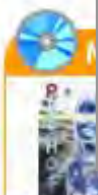
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<b>\$8.25</b> Buy!	\$10.70 Media Mail	<a href="#">dazzyliz</a> ★ (1205)	SEALED NEW BMG	<a href="#">More info...</a>
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# • Where am I in the site?

- "Home > Music" are LOCATION BREAD CRUMBS
- TAB ROW says "Music"
- Album cover, "Product Highlights", and CD cover



Actual items for sale may vary from this image.

Product Highlights

**CD**  
May 2001  
List Price: **\$18.97**  
28 minutes  
UPC 606949-30452-2  
Geffen Records  
Catalog 493 045

Compare our Prices!

Half.com	\$6.99
CDNOW	---
AlphaCraze	\$ 15,66
CDUniverse	\$ 15,69

Sell yours now!

we also

74 items in stock

[More info...](#)

[More info...](#)

[More info...](#)

[More info...](#)

>> [View all Like New Items](#)

17 items in stock

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](#)

- \$8.25 **Buy!** \$10.70 Media Mail [dazzyliz \(1205\)](#) ★ SEALED NEW BMG [More info...](#)
- \$8.30 **Buy!** \$10.75 Media Mail [naojia@hotmail.com \(35\)](#) ★ Perfect condition [More info...](#)

Very Good Sorted by Price

Price	Total Price	Seller (Rating)	Seller Comments	
\$8.00 <b>Buy!</b>	\$10.45 Media Mail	<a href="#">lucidsky (14)</a> ★	perfect	<a href="#">More info...</a>
\$8.84 <b>Buy!</b>	\$11.29 Media Mail	<a href="#">steveeq1 (82)</a> ★		<a href="#">More info...</a>
\$9.00 <b>Buy!</b>	\$11.45 Media Mail	<a href="#">saint.timothy (18)</a> ★	Great shape...first class ship	<a href="#">More info...</a>

# • Can I trust these sellers?

- Who am I buying from?
- Are they reputable?
- What about shipping?

Home > Music

## Weezer

Weezer

Our best



Actual items for sale may vary from this image.

### Product Highlights

**CD**  
May 2001  
  
List Price: **\$18.97**  
28 minutes  
UPC 606949-30452-2  
Geffen Records  
Catalog 493 045

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](#)

### Like New

Sorted by **Price**

74 items in stock

Price	Total Price	Seller (Rating)	Seller Comments
\$7.75 <b>Buy!</b>	\$10.20 Media Mail	<a href="#">custodian46</a> ★ (149)	best buy <a href="#">More info...</a>
\$8.00 <b>Buy!</b>	\$10.45 Media Mail	<a href="#">stargaze13</a> (3)	Disk, case, and liner all in excellent c <a href="#">more...</a> <a href="#">More info...</a>
\$8.25 <b>Buy!</b>	\$10.70 Media Mail	<a href="#">dazzyliz</a> ★ (1205)	SEALED NEW BMG <a href="#">More info...</a>
\$8.30 <b>Buy!</b>	\$10.75 Media Mail	<a href="#">naojia@hotmail.com</a> ★ (35)	Perfect condition <a href="#">More info...</a>

>> [View all Like New Items](#)

### Very Good

Sorted by **Price**

17 items in stock

Price	Total Price	Seller (Rating)	Seller Comments
\$8.00 <b>Buy!</b>	\$10.45 Media Mail	<a href="#">lucidsky</a> ★ (14)	perfect <a href="#">More info...</a>
\$8.84 <b>Buy!</b>	\$11.29 Media Mail	<a href="#">steveeq1</a> ★ (82)	<a href="#">More info...</a>
\$9.00 <b>Buy!</b>	\$11.45 Media Mail	<a href="#">saint.timothy</a> ★ (18)	Great shape...first class ship <a href="#">More info...</a>

Home > Music

▶ Sell yours now!

## Weezer (2001)

[Weezer](#)

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...](#)

### Compare our Prices!

Half.com	<b>\$6.99</b>
CDNOW	---
AlphaCraze	\$ 15.66
CDUniverse	\$ 15.69



Actual items for sale may vary from this image.

### Product Highlights

CD

May 2001

List Price: **\$18.97**  
28 minutes  
UPC 606949-30452-2  
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<b>\$7.75</b> Buy!	\$10.20 Media Mail	<a href="#">custodian46</a> (149) ★	best buy	<a href="#">More info...</a>
<b>\$8.00</b> Buy!	\$10.45 Media Mail	<a href="#">stargaze13</a> (3)	Disk, case, and liner all in excellent c <a href="#">more...</a>	<a href="#">More info...</a>
<b>\$8.25</b> Buy!	\$10.70 Media Mail	<a href="#">dazzyliz</a> (1205) ★	SEALED NEW BMG	<a href="#">More info...</a>
<b>\$8.00</b> Buy!	Media Mail	<a href="#">@hotn</a> (35) ★	Perfect condition	<a href="#">More info...</a>

### Very Good

Sorted by Price

Price	Total Price	Seller (Rating)	
<b>\$8.00</b> Buy!	\$10.45 Media Mail	<a href="#">lucidsky</a> (14) ★	
<b>\$8.84</b> Buy!	\$11.29 Media Mail	<a href="#">steveeq1</a> (82) ★	
<b>\$9.00</b> Buy!	\$11.45 Media Mail	<a href="#">saint.timothy</a> (18) ★	Great shape...first class ship <a href="#">More info...</a>

- **The Fold**
  - Hmm, what's below here?

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](#)

### may we also suggest...

» People who bought "Weezer (2001)" also bought:



[Weezer \(1994\)](#) CD, Release Year: 1994  
Weezer  
Save \$6.97 - Best price: **\$5.00**



[Pinkerton](#) CD, Release Year: 1996  
Weezer  
Save \$10.95 - Best price: **\$6.00**



[Hybrid Theory](#) CD, Release Year: 2000  
Linkin Park  
Save \$11.68 - Best price: **\$6.29**

### About this album

#### Song List

1. Don't Let Go
2. Photograph
3. Hashpipe
4. Island In The Sun
5. Crab
6. Knock-Down Drag-Out
7. Smile
8. Simple Pages
9. Glorious Days
10. O Girlfriend

#### Album Credits

[Ken Allerdyce](#), Engineer  
[Ric Ocasek](#), Producer

- Impulse buy
  - PERSONALIZED RECOMMENDATIONS
- About this album
- Lots of unused space
- Still more info below...

2

#### Album Notes

Weezer: Rivers Cuomo (vocals, guitar); Brian Bell (guitar); Matt Sharp (bass); Patrick Wilson (drums). Recorded at Cello Studios, Los Angeles, California in December 2000. In 1994 Weezer burst onto the music scene, reaching platinum status with their debut, and in the process proving that there was still room in an airbrushed MTV world for unrepentant power pop played by decidedly non-airbrushed guys. Following a brief sojourn into semi-deconstructionism, 1997's PINKERTON, the four men who make up Weezer serve up a third offering, WEEZER 2001, returning to the sound and producer of their successful debut. Nowhere does producer Ric Ocasek define his trademark refined power pop style more than with Weezer. Unlike the immediate, obvious pop hooks of the string of singles on the first album, though, the songs on WEEZER 2001 may take a few listens to settle in. However, once the subtle-yet-undeniable refrains of such tracks as "Crab," "Don't Let Go," and first single "Hash Pipe" make their way into your skull, they're there to stay, as furious, fuzzy, layered guitars compliment Rivers Cuomo's raw, vulnerable vocals. While this disc clocks in at less than a half-hour long, it packs more hooky wallop than many double live albums.

#### Product Reviews

#### Editorial Reviews

##### Spin (01/01/2002)

Ranked #9 in Spin's Albums of the Year 2001  
Ranked #13 in AP's 25 Best Albums of 2001  
beast...Rolling Stone (6/7/01, p.110) - 4  
excellent tunes in less than half an hour  
Rivers Cuomo's shrink another hot tub...C  
observed power pop of their '94 debut, a

#### Customer Reviews

Rated 4.3 out of 5.0 by 29 raters.

» [Read Customer Reviews](#)

» [Rate this item](#)

- **Is this product any good?**
  - Editorial reviews
  - Customer reviews
  - **RECOMMENDATION COMMUNITY**

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People with similar tastes also enjoyed...



[Weezer \(1994\)](#)

(CD, 1994)  
Weezer  
**\$5.00**  
(Save \$6.97)



[Pinkerton](#)  
(CD, 1996)  
Weezer  
**\$6.00**  
(Save \$10.95)



[All Killer No Filler \[ECD\]](#)  
(CD, 2001)  
Sum 41, Sum 41  
**\$4.29**  
(Save \$8.68)

[Redeeming a Gift Certificate or Coupon?](#)

**Proceed to Checkout**   
Speedy Checkout

**Shopping Cart**

[Weezer \(2001\)](#) Weezer, Weezer (Music)  
CD, Release Year: 2001  
Seller: [naojia@hotmail.com](mailto:naojia@hotmail.com) (35)  
Condition: Like New • Notes: Perfect condition

[Move to WishList](#) • [Remove from Cart](#) • [Find another one](#)

Item: \$8.30  
Media Mail: \$2.45  
[\(Change Shipping Method\)](#)

**TOTAL: \$10.75**

**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".

**Redeem**

**Proceed to Checkout**   
Speedy Checkout

People with similar tastes also enjoyed...



Weezer (1994)

(CD, 1994)

Weezer

**\$5.00**

(Save \$6.97)



Pinkerton

(CD, 1996)

Weezer

**\$6.00**

(Save \$10.95)



All Killer No Filler

[ECD]


(CD, 2001)

Sum 41, Sum 41

**\$4.29**

(Save \$8.68)

[Redeeming a Gift Certificate or Coupon?](#)

**Proceed to Checkout** 

**Speedy Checkout**

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[\(Change Shipping Method\)](#)

[Move to WishList](#) • [Remove from Cart](#) • [Find another one](#)

**TOTAL: \$10.75**

**Gift Certi**

Redeeming  
Claim Code

**Redeem**

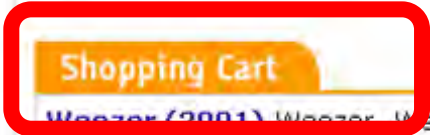
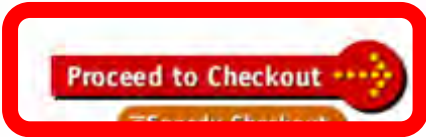
**Proceed to Checkout** 

**Speedy Checkout**

• **What site am I at?**

- Logo in upper-left
- Colors, layout, font
- examples of **SITE BRANDING**





[Redeeming a Gift Certificate or Coupon?](#)

People with similar tastes also enjoyed...



[Weezer \(1994\)](#)  
(CD, 1994)  
Weezer  
**\$5.00**  
(Save \$6.97)



[Pinkerton](#)  
(CD, 1996)  
Weezer  
**\$6.00**  
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[All Killer No Filler \[ECD\]](#)  
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[Weezer \(2001\)](#) Weezer Weezer (Music)

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Condition: Like New • Notes: Perfect condition

[Move to WishList](#) • [Remove from Cart](#) • [Find another one](#)

Item: \$8.30  
Media Mail: \$2.45  
[\(Change Shipping Method\)](#)

TOTAL: \$10.75

Gift Certi

Redeeming  
Claim Code

Redeem

• **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**



People with similar tastes also enjoyed...



**Weezer (1994)**

(CD, 1994)

Weezer

**\$5.00**

(Save \$6.97)



**Pinkerton**

(CD, 1996)

Weezer

**\$6.00**

(Save \$10.95)



**All Killer No Filler**

[ECD]

(CD, 2001)

Sum 41, Sum 41

**\$4.29**

(Save \$8.68)

[Redeeming a Gift Certificate or Coupon?](#)

**Proceed to Checkout**

**Speedy Checkout**

**Shopping Cart**

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[Move to WishList](#) • [Remove from Cart](#) • [Find another one](#)

Item: \$8.30

Media Mail: \$2.45

[\(Change Shipping Method\)](#)

**TOTAL: \$10.75**

**Gift Certi**

Redeeming  
Claim Code

**Redeem**

**Proceed to Checkout**

**Speedy Checkout**

• **Cross-selling**

- Possibly a pleasant surprise
- Impulse buy
- **CROSS-SELLING & UP-SELLING**

People with similar tastes also enjoyed...



**Weezer (1994)**  
(CD, 1994)  
Weezer  
**\$5.00**  
(Save \$6.97)



**Pinkerton**  
(CD, 1996)  
Weezer  
**\$6.00**  
(Save \$10.95)



**All Killer No Filler [ECD]**  
(CD, 2001)  
Sum 41, Sum 41  
**\$4.29**  
(Save \$8.68)

[Redeeming a Gift Certificate or Coupon?](#)

**Proceed to Checkout**

**Shopping Cart**

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Seller: [naojia@hotmail.com](mailto:naojia@hotmail.com) (35)  
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[Move to WishList](#) • [Remove from Cart](#) • [Find another one](#)

Item: \$8.30  
Media Mail: \$2.45  
[\(Change Shipping Method\)](#)

**TOTAL: \$10.75**

**Gift Certi**

Redeeming  
Claim Code

**Redeem**

**Proceed to Checkout**

- **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**

People with similar tastes also enjoyed...



**Weezer (1994)**  
(CD, 1994)  
Weezer  
**\$5.00**  
(Save \$6.97)



**Pinkerton**  
(CD, 1996)  
Weezer  
**\$6.00**  
(Save \$10.95)



**All Killer No Filler**  
**[ECD]**  
(CD, 2001)  
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Condition: Like New • Notes: Perfect condition

[Move to WishList](#) • [Remove from Cart](#) • [Find another one](#)

**Proceed to Checkout**   
Speedy Checkout

Item: \$8.30  
Media Mail: \$2.45  
[\(Change Shipping Method\)](#)

**TOTAL: \$10.75**

your

**Proceed to Checkout**   
Speedy Checkout

• **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](#) .

② Having problems signing in? [Get help now.](#)

For more information about sign in, visit [sign in help](#) .

Or sign in to eBay  
using:



## 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

[Register Now](#)

Keep me signed in on this computer unless I sign out. [Learn more](#).

② Having problems signing in? [Get help now.](#)

For more information about sign in, visit [sign in help](#).

Or sign in to eBay using:



- 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

**Use This Address**

OR

Enter a new shipping address:

Name

Street address

City

State

If U.S. Military, enter APO/FPO for City,

If U.S. Military, select AE, AP or AA from bottom of list for State.

ZIP code



Country

USA

**Save Changes**

Step 1 - Choose Shipping Address

Ship my order to:

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

Use This Address

OR

Enter a new shipping address:

Name

Street address

City

State

ZIP code

Country

If U.S. Military, enter APO/FPO for City,

Select State

If U.S. Military, select AE, AP or AA from bottom of

USA

Save Changes

- **What site?**

- Logo, layout, color, fonts

- **Where in site?**

- Checkout, step 1 of 3
- “Choose shipping address”
- **QUICK-FLOW CHECKOUT**





## Step 1 - Choose Shipping Address

Ship my order to:

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

Use This Address

OR

Enter a new shipping address:

Name

Street address

City

State

ZIP code

Country

If U.S. Military, enter APO/FPO for City,

Select State

If U.S. Military, select AE, AP or AA from bottom

USA

Save Changes

- **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

 Place my order!

Order Summary

**Weezer (2001)** Weezer, Weezer (Music)  
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!



Order Summary

Weezer (2001) Weezer, Weezer (Music)  
Seller: naojia@hotmail.com (35)  
Condition: Like New • Notes: Perfect condition

Ship to

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

[Edit / Change Shipping Address](#)

- **Last step of process**
  - Step 3, “Place Order”
  - “Place my order” button
- **TWO HIGH-VISIBILITY ACTION BUTTONS for fold**

Use this shipping and billing information for my speedy Checkout settings.





- **No nasty surprises**

- Can see order
- Total price is same as shopping cart
- **ORDER SUMMARY**

order!

Item:	\$8.30
Media Mail:	\$2.45
Subtotal:	\$10.75
Total Merchandise:	\$8.30
Total Shipping:	\$2.45
<b>TOTAL:</b>	<b>\$10.75</b>

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!**



- Easy to change shipping and billing
- Easy to save this info
  - Easier to setup info in context of specific task

order!

Item:	\$8.30
Media Mail:	\$2.45
Subtotal:	\$10.75
Total Merchandise:	\$8.30
Total Shipping:	\$2.45
<b>TOTAL:</b>	<b>\$10.75</b>

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: 94720

[Edit / Change Billing](#)

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

# Design Patterns

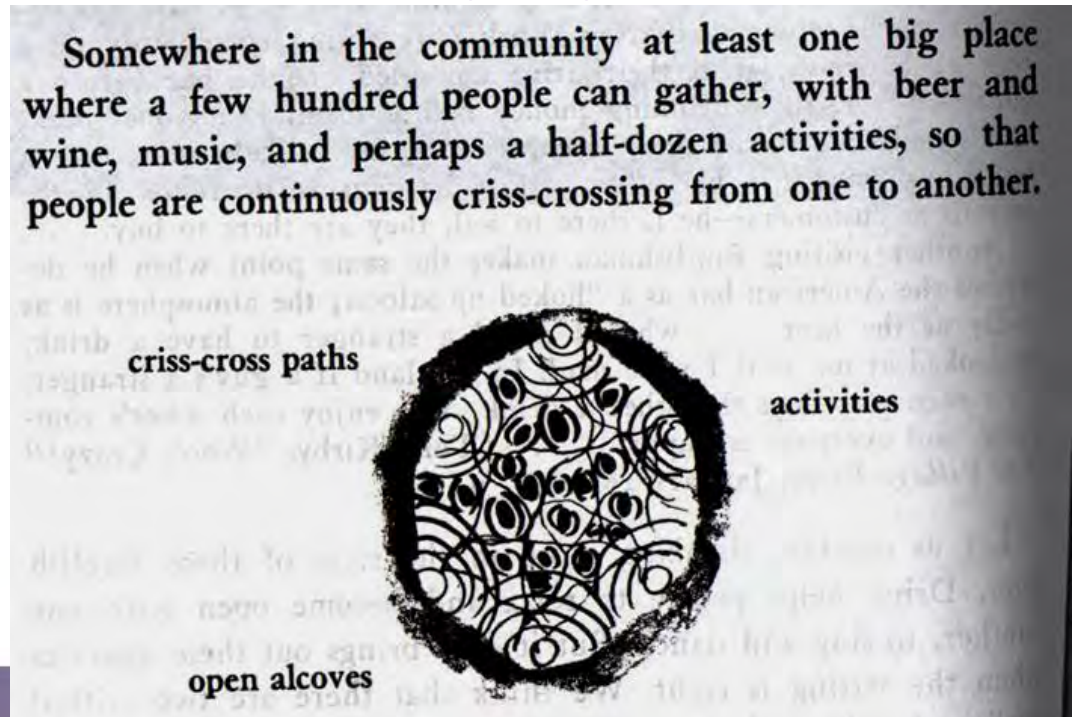
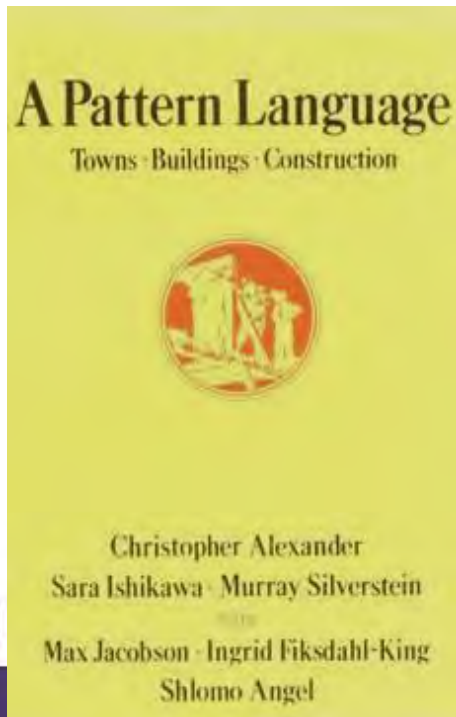
Design patterns communicate common design problems and solutions

# Design Patterns

Design patterns communicate common design problems and solutions

First used in architecture [Alexander]

How to create a beer hall where people socialize?





# Design Patterns

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.

**criss-cross paths**



**activities**

**open alcoves**

# 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”

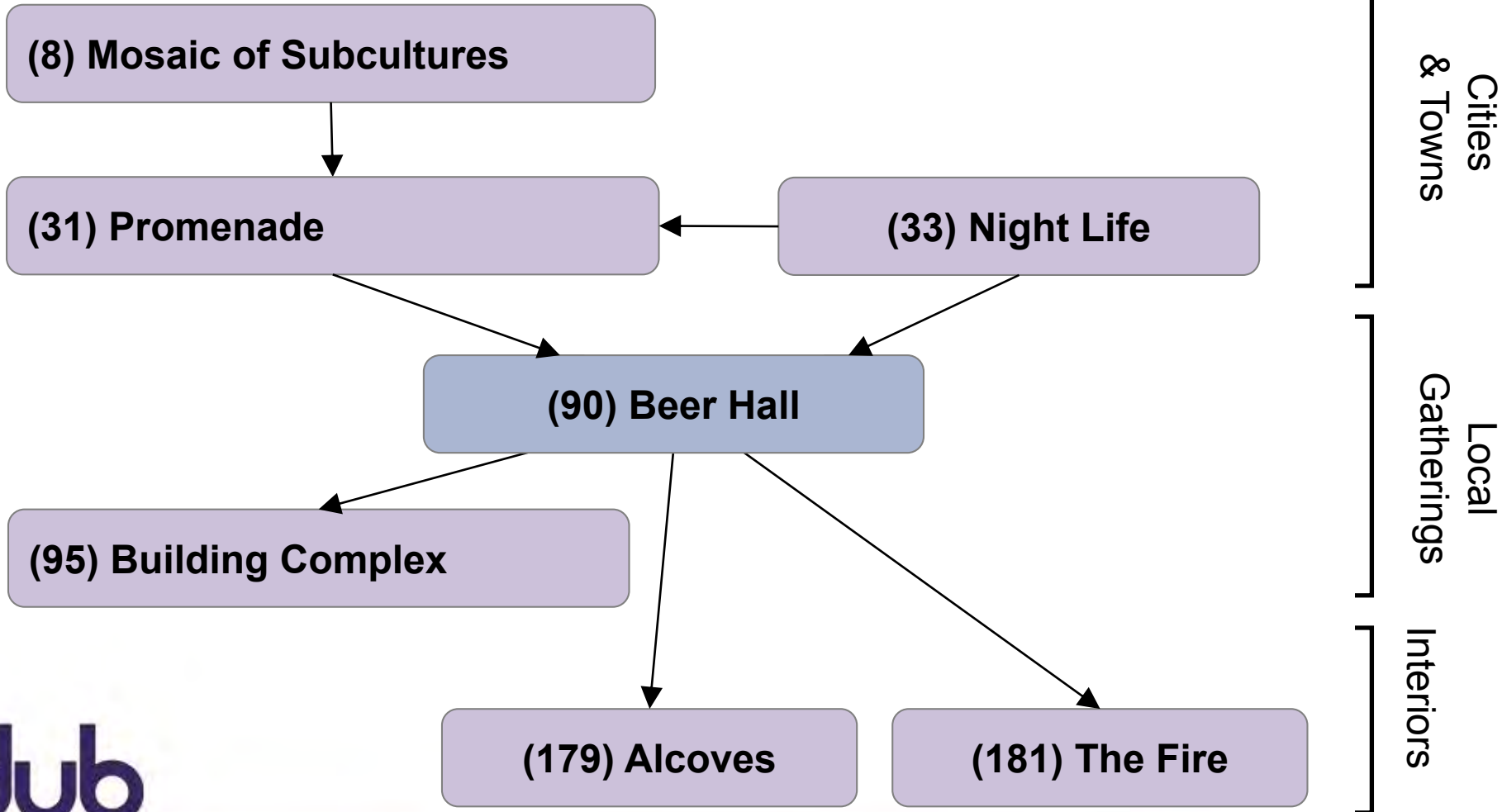
Design patterns are a shared language

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



# 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

The screenshot shows a website navigation bar with several highlighted sections:

- Top Navigation Bar:** A dark brown bar with the text "Group for User Interface Research" on the left and a menu of "Home", "Projects", "People", "Publications", and "Links" on the right.
- Left Sidebar:** A light brown sidebar containing the text "DENIM and SILK" and a list of links: "Download", "Documentation", "Support", "Research", "Publications", and "More Projects".
- Main Content Area:** A large white area with the heading "DENIM and SILK" and a small graphic of a notepad labeled "SILK".
- IBM Header:** A blue header with the IBM logo, "United States", a search bar, and a navigation menu: "Home", "Products & services", "Support & downloads", and "My account".
- Country Selector:** A blue box with the text "Select a country" and a dropdown menu for "Industries" with a "Go" button.
- Industry List:** A blue box listing industry categories: "Home / home office", "Small business", "Medium business", "Government", and "Education".
- Promotional Banner:** A white banner with a laptop image and the text "Buy today, ship today" and "If you need it fast, IBM can ship select PC models to you today when you buy by 8 p.m. Eastern, Monday-Friday, (U.S. only)".
- Product Highlights:** Three small product cards on the right side of the page, including "Title-up your product line", "e-business on demand", and "IBM Global Financing".

# NAVIGATION BAR (K2)

Solution diagram

Captures essence on how to solve problem



# Pattern Groups

## Patterns organized by group

- A** Site genres
- B** Navigational framework
- C** Home page
- D** Content management
- E** Trust and credibility
- F** Basic ecommerce
- G** Advanced ecommerce
- H** Completing tasks
- I** Page layouts
- J** Search
- K** Page-level navigation
- L** Speed
- M** 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)

The screenshot shows the Half.com website interface. At the top, there is a navigation bar with the Half.com logo, a promotional banner for 'Counting Crows: Hard Candy' with a 37% discount, and links for 'my account', 'cart', 'help', 'home', and 'sign in'. Below this is a category menu with buttons for Home, Books, Music, DVDs/Movies, Video Games, Computers & Software, Electronics, and Everything Else. A secondary navigation bar includes 'Gift Certificates', 'Wish List', 'Pre-Orders', 'Sell Your Stuff', and 'New Users'. A search bar is present with a dropdown menu set to 'All Categories' and a 'go' button.

On the left side, there is a section titled 'People with similar tastes also enjoyed...'. It features three product recommendations:

- Weezer (1994)**: (CD, 1994) Weezer, \$5.00 (Save \$6.97)
- Pinkerton**: (CD, 1996) Weezer, \$6.00 (Save \$10.95)
- All Killer No Filler [ECD]**: (CD, 2001)

The main content area is titled 'Redeeming a Gift Certificate or Coupon?'. It features a 'Proceed to Checkout' button with a 'Speedy Checkout' option. Below this is the 'Shopping Cart' section, which displays a single item:

<b>Weezer (2001)</b> Weezer, Weezer (Music) CD, Release Year: 2001 Seller: <a href="mailto:naotia@hotmail.com">naotia@hotmail.com</a> (35) Condition: Like New • Notes: Perfect condition	Item: \$8.30 Media Mail: \$2.45 <a href="#">(Change Shipping Method)</a>
<b>TOTAL: \$10.75</b>	

Below the cart, there is a 'Gift Certificates and Coupons' section with a 'Redeem' button. At the bottom right, there is another 'Proceed to Checkout' button with a 'Speedy Checkout' option.

# PROCESS

- **What's different?**

- No tab rows
- No impulse buys
- Only navigation on page takes you to next step

The screenshot shows the checkout process on half.com by eBay. The page is titled "Step 1 - Choose Shipping Address". It features a navigation bar with "Checkout" and "Shipping" steps. The main content area is divided into two sections: "Ship my order to:" and "Enter a new shipping address:". The "Ship my order to:" section contains a pre-filled address for Jason Hong at UC Berkeley and a "Use This Address" button. The "Enter a new shipping address:" section contains form fields for Name, Street address, City, State (a dropdown menu), ZIP code, and Country (USA), along with a "Save Changes" button. A "Secure Shopping" logo is visible in the top right corner.

- **What's the same?**

- Logo, layout, color, fonts

# PROCESS FUNNEL (H1)

Problem:

What if users need extra help?

# PROCESS FUNNEL (H1)

**Dell.com** About Dell Contact Search Support Order Status My Cart

HOME & HOME OFFICE

Computers Software & Accessories Service & Support Learning Center

Buy Online or Call 1-800-915-3355

Main | Desktops | Notebooks | Handhelds | Hot Deals!

## 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<sup>5</sup> Hard Drive
- 128MB SDRAM
- 32MB Nvidia GeForce2 MX 4X AGP 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.](#)

**Dimension 4100** Great Add-Ons For This System Price

Intel® Pentium® III processor at 933Mhz

**\$1,199**

As low as \$36<sup>4</sup> /46 pmts  
No payment for 90 days  
(Click or scroll for details)<sup>4</sup>

[Customize It](#)

E-Value Code 8V771-4100p1

Processor ? Intel® Pentium® III processor at 933Mhz

Keyboard ? QuietKey® Keyboard

Hard Drive ? 40GB<sup>5</sup> Ultra ATA-100 Hard Drive (7200 RPM)

Check any item(s) you wish to add to this system, then click Customize It.

3 Year On-Site Service Add \$99

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

[More Details](#)

Epson Stylus Color 880 Ink Jet Printer Add \$149

- A creative and versatile printer that features super fast print speeds.

[More Details](#)

Epson 640U Scanner Add

# CONTEXT-SENSITIVE HELP (H8)

**DELL**

Buy Online or Call 1-800-915-3355

Purchase Assistance

- Payment Solutions
- Tax & Shipping Info
- Secure Shopping Guarantee
- Privacy Policy

Recommended Systems

Click here for more Dimension 4100 recommended systems.

## FEATURED

### Featured Dimension 4100

Free Ground (3-5 day) Ship  
Click Here for Details.

Dimension 4100

Intel® Pentium® III processor  
933Mhz

**\$1,199**

As low as \$36<sup>4</sup> /45<sup>4</sup> pmts  
No payment for 90 days  
(Click or scroll for details)<sup>4</sup>

[Customize It](#)

E-Value Code  
8V771-4100p1

Processor ? Intel® Pentium® III processor at 933MHz

Keyboard ? QuietKey® Keyboard

Hard Drive ? 40GB<sup>5</sup> Ultra ATA-100 Hard Drive (7200 RPM)

Epson 640U Scanner Add

## Keyboards - Netscape

**LEARN MORE** Close

### Keyboards

Great Keyboard Choices to Suit Your Needs:

- Choose from standard-size and "space-saver" designs
- Ergonomic design for added comfort
- Hot Keys provide quick, one-touch access to frequently used programs and Web sites
- USB ports allow for quick and easy access to USB peripherals, such as digital cameras, scanners and joysticks

Dell™ Enhanced Performance Keyboard

**DELL GLOSSARY**  
Need a definition?  
Click on a term.

Keyboard Type	Dell™ QuietKey	Microsoft® Internet Keyboard, Dell Edition	Dell™ Enhanced QuietKey	Dell™ Enhanced Performance
<b>ZOOM!</b> For a closer look.				
<b>Benefits</b>	<ul style="list-style-type: none"><li>Quiet key response</li><li>Soft "rubberdome" touch</li></ul>	<ul style="list-style-type: none"><li>10 Hot Keys for easy access to your internet and e-mail</li><li>E-mail Hotkey</li></ul>	<ul style="list-style-type: none"><li>3 programmable keys</li><li>Soft "rubberdome"</li></ul>	<ul style="list-style-type: none"><li>7 programmable keys</li><li>Built-in 2 port USB HUB</li></ul>

speeds.

[More Details](#)

# FLOATING WINDOWS (H6)



The screenshot shows the Netflix interface with a red header and navigation tabs. The 'Recommendations' tab is active, displaying 'NEW RECOMMENDATIONS'. Two movie cards are visible: 'Gladiator: Extended Edition' and 'Samurai Champloo (7-...'. A tooltip window is overlaid on the 'Gladiator' card, providing detailed information about the film.

**NETFLIX** Arthine van Duvne | Your Account

Browse Recommendations Friends Queue Buy DVDs Movies, act

Get Recommendations (636) Rate Movies Movies You've Rated (210)

## Recommendations

Movie suggestions based on your ra

### NEW RECOMMENDATIONS



**Gladiator: Extended Edition**  
(2000)

★★★★★  
Not Interested

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

★ Recommended based on 1 rating

**Add**



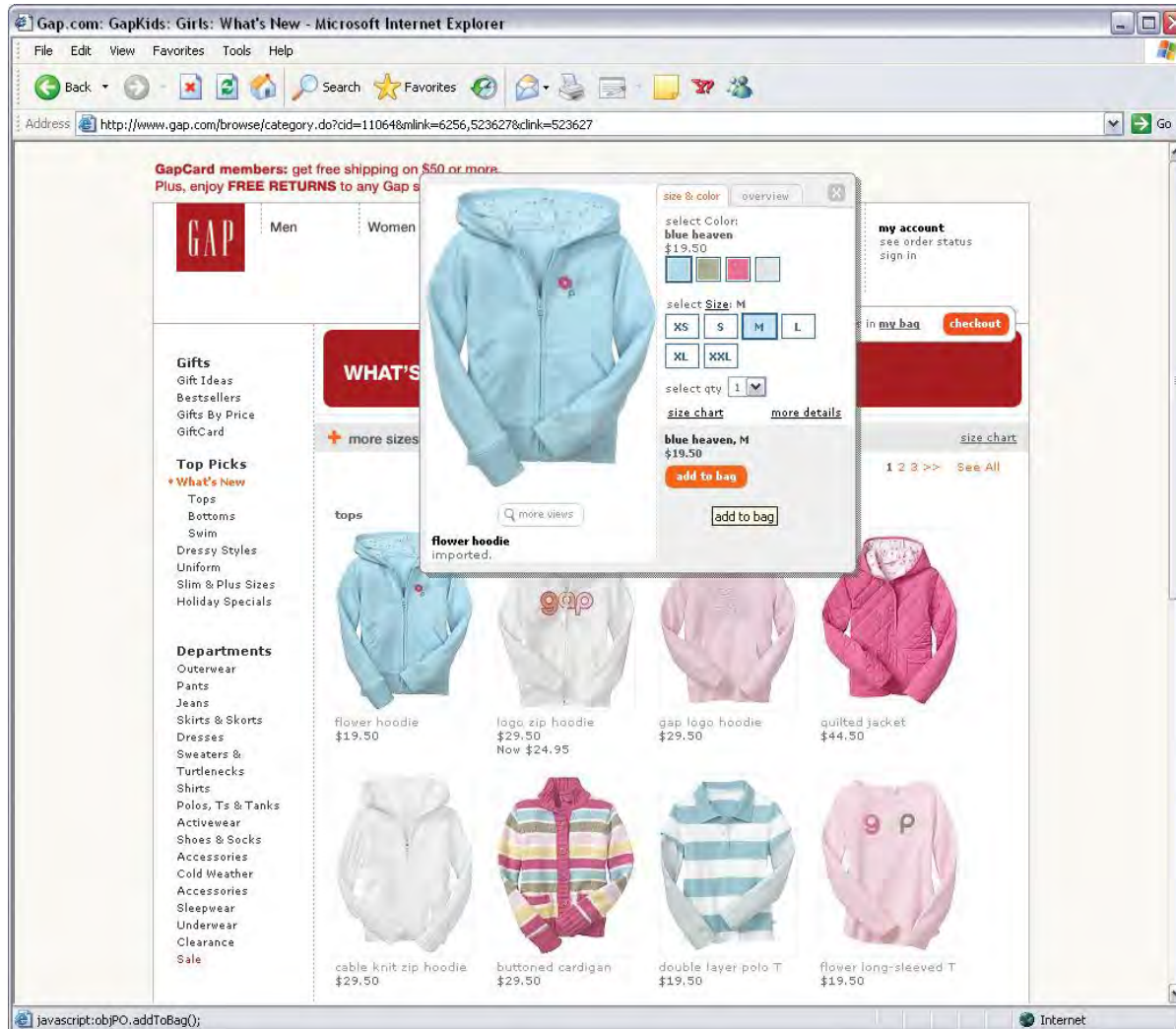
**Samurai Champloo (7-...**

★★★★★  
Not Interested

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](#)

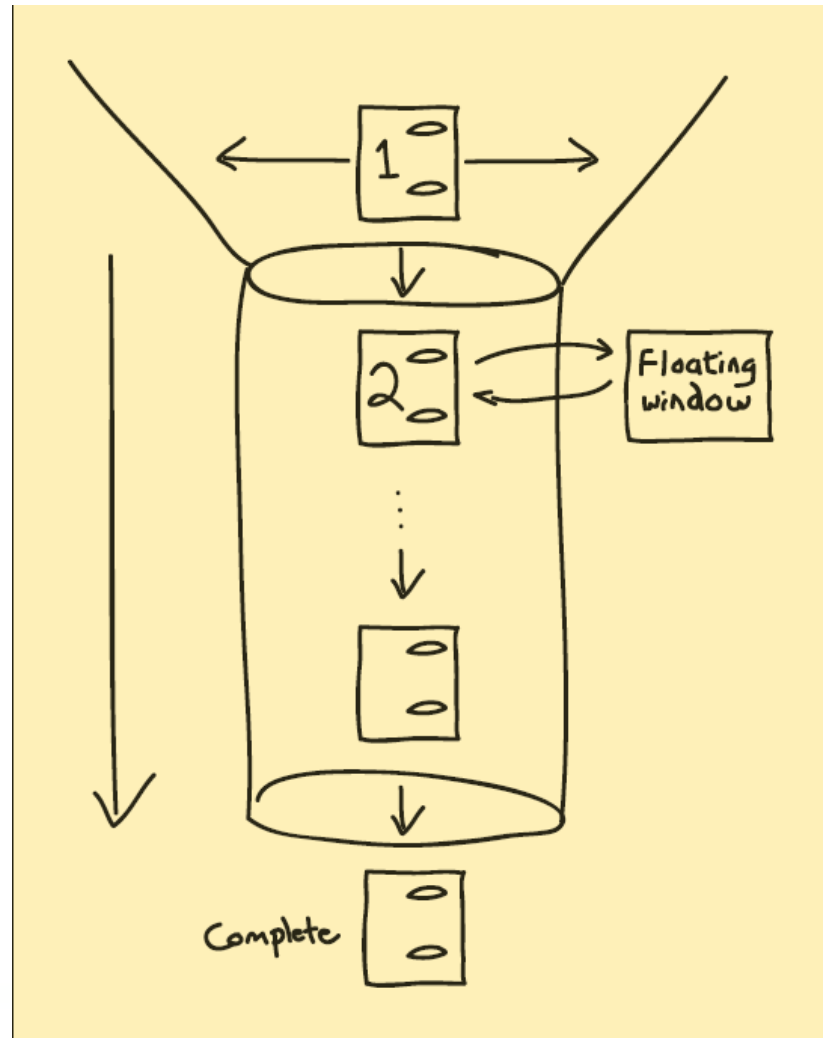
**Add All**

# FLOATING WINDOWS (H6)



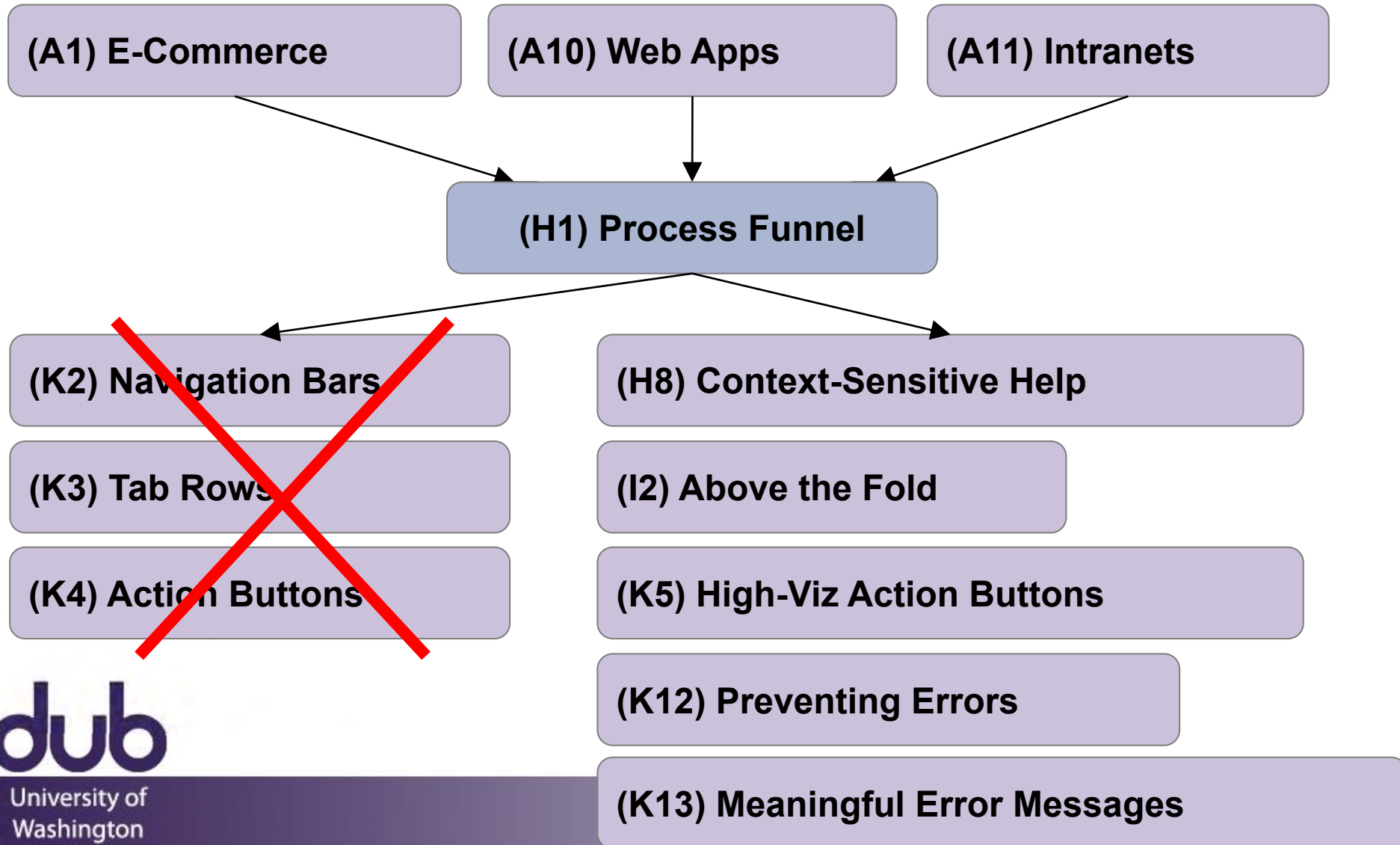
# PROCESS FUNNEL (H1)

## Solution Diagram





# Related Patterns



# 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

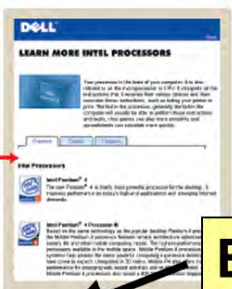
unlike templates, patterns illustrate flows and relationships among different pages

# Web Design Patterns

## Pattern Name and Number



**Figure H1.1**  
Dell uses a process funnel consisting of several logical steps that guide customers to quickly configure and purchase a personal computer. Information in a pop-up window shows additional details but keeps customers in the funnel so that they can continue to completion.



## Exemplar

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

required to Complete a Task • Customers too many steps. A process funnel is not a process, and a process funnel with more than eight steps is unmanageable. If there are more than eight steps, try to split the process into two or more separate process funnels, or try combining multiple steps into one page. However, this is not 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.

Provide a Progress Bar to Let Customers Know How Far They've Come • Showing a progress bar at the end of a process funnel tells customers how much farther they have to go to complete the task. It is often not worth your time to create a progress bar clickable because doing so may not benefit for customers.

## Forces & Solution

Remove Unnecessary Links and Content While Reinforcing the Brand • Removing links and content unrelated to the task at hand will reduce the clutter on the page, making it more likely that your customers will find the links they need for their tasks. Remove all NAVIGATION BARS (K2), TAB BARS (K3), BREADCRUMBS (K6), and EMBEDDED LINKS (K7), LEAVENING BUTTONS (K4) that help visitors reach their goals. Take out any content that is superfluous to the task.

Reinforce the Web site brand to minimize any disorientation customers might feel from sudden changes in navigation options. Use the same logo throughout the Web site so that no one is confused, and people know they're still on the same site.

## Background

### \* BACKGROUND

All Web applications that lead visitors through stepped tasks—PERSONAL E-COMMERCE (A1), SELF-SERVICE GOVERNMENT (A4), WEB APIS 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

## Problem Statement

where they are in the process funnel and how much farther they have to go.



# Web Design Patterns

## H1 PROCESS FUNNEL

**Use Pop-Up Windows to Provide Extra Information, without Leading Visitors Out of the Process Funnel** • Sometimes customers need additional information that you have not provided on a page, such as extra help or product details. Provide a link to a POP-UP WINDOW (H6) containing CLEAN PRODUCT DETAILS (F2) (see Figure H1.1), CONTEXT-SENSITIVE HELP (H8), or information from the FREQUENTLY ASKED QUESTIONS (H7) page, to make the extra information less intrusive. Your challenge is to implement this extra content without detracting from the main purpose.

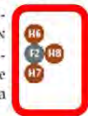
**Make Sure the Back Button Always Works** • Customers often use the **Back** button on browsers to modify answers they have typed in on previous pages. However, if the Web site is not implemented correctly, the information they have already entered may be lost when they hit the **Back** button, forcing them to type everything again. In the worst case, people get a cryptic error message saying that the posted information was lost. You can address this annoying problem by temporarily storing the information they type in on each page, redisplaying this information if customers hit the **Back** button, and then overriding the temporarily stored information on the page if it is changed.

**Always Make It Clear How to Proceed to the Next Step** • Some Web pages are longer than can be displayed on a customer's Web browser. The problem is that people sometimes get lost if the critical ACTION BUTTON (K4), the one that takes them to the next step, is hidden below the fold. Place HIGH-VISIBILITY ACTION BUTTONS (K5) both high and low on the page, ensuring that at least one of the critical action buttons is visible without scrolling.

**Prevent Errors Where Possible, and Provide Meaningful Error Messages When Errors Do Occur** • People will always make errors. You can provide good customer support and sample input to help PREVENT ERRORS (K1), and provide MEANINGFUL ERROR MESSAGES (K1.3) when errors do occur.

### \* SOLUTION

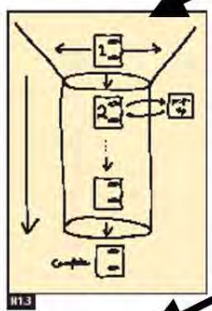
Minimize the number of steps required to complete a task, keeping them between two and eight. Remove unnecessary and potentially confusing links and content from each page, while reinforcing the brand to maintain a sense of place. Use pop-up windows to provide extra information, without leading people out of the process funnel. Make sure the **Back** button always works so that customers can correct errors. Make it clear how to proceed to the next step



## Bus Stops

Figure H1.3

A process funnel lets people complete their goals by breaking down complicated tasks into a small number of steps, using pop-up windows for detailed information, and reducing the number of links to only the critical ones, so that people are never distracted.



## PROCESS FUNNEL H1

## Solution Diagram

## Related Patterns

### \* CONSIDER THESE OTHER PATTERNS

Many kinds of Web sites use process funnels, including sites for PERSONAL E-COMMERCE (A1), SELF-SERVICE GOVERNMENT (A4), WEB APPS THAT WORK (A10), and ENABLING INTRANETS (A11). Customers use process funnels when they finalize purchases through QUICK-FLOW CHECKOUT (F1), when they create new accounts through SIGN-IN/NEW ACCOUNT (H2), and when they post new messages to a RECOMMENDATION COMMUNITY (G4), to name some examples.

- A1 A4
- A10 A11
- F1
- H2
- G4
- K2 K3
- K4 K5
- K4 K6 K7
- E1
- K1.2
- K1.3
- H5
- H8
- H7 H6
- I2 K5

Remove NAVIGATION BARS (K2), TAB ROWS (K3), irrelevant ACTION BUTTONS (K4), LOCATION BREAD CRUMBS (K6), and EMBEDDED LINKS (K7) to ensure that customers stay on their paths. However, keep strong site BRANDING (E1) so that customers still know where they are. Design process funnels to PREVENT ERRORS (K1.2), and provide MEANINGFUL ERROR MESSAGES (K1.3) when errors do occur.

Track your customers through PERSISTENT CUSTOMER SESSIONS (H5) to avoid problems with the **Back** button, and to save customer-entered information.

Move extra content, such as CONTEXT-SENSITIVE HELP (H8) and FREQUENTLY ASKED QUESTIONS (H7), to POP-UP WINDOWS (H6) to keep the main task page on the screen. Make the next action visible by keeping it ABOVE THE FOLD (I2) and by using HIGH-VISIBILITY ACTION BUTTONS (K5).

# 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 one 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 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 Mirrors](#) also act as a form of notification. Notification can also be combined with unobtrusive displays to provide constant feedback.

# UbiComp Pre-Patterns

## B6 • FIND A FRIEND



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.

### • 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.

**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.



Figure 2. UC San Diego's ActiveCampus project shows your friends' location in real time. While useful, this visualization raises many privacy concerns.

**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 "Fisher Brothers" individuals who



# UbiComp Pre-Patterns

<b>A – Ubiquitous Computing Genres</b>	<b>B – Physical-Virtual Spaces</b>	<b>C – Developing Successful Privacy</b>	<b>D – Designing Fluid Interactions</b>
Describes broad classes of emerging applications, providing many examples and ideas	Associating physical objects and spaces with information and meaning; location-based services; helping users navigate such spaces	Policy, systems, and interaction issues in designing privacy-sensitive systems	How to design for interactions involving dozens or even hundreds of sensors and devices while making users feel like they are in control
Upfront Value Proposition (A1) Personal Ubiquitous Computing (A2) Ubiquitous Computing for Groups (A3) Ubiquitous Computing for Places (A4) Guides for Exploration and Navigation (A5) Enhanced Emergency Response (A6) Personal Memory Aids (A7) Smart Homes (A8) Enhanced Educational Experiences (A9) Augmented Reality Games (A10) Streamlining Business Operations (A11) Enabling Mobile Commerce (A12)	Active Map (B1) Topical Information (B2) Successful Experience Capture (B3) User-Created Content (B4) Find a Place (B5) Find a Friend (B6) Notifier (B7)	Fair Information Practices (C1) Respecting Social Organizations (C2) Building Trust and Credibility (C3) Reasonable Level of Control (C4) Appropriate Privacy Feedback (C5) Privacy-Sensitive Architectures (C6) Partial Identification (C7) Physical Privacy Zones (C8) Blurred Personal Data (C9) Limited Access to Personal Data (C10) Invisible Mode (C11) Limited Data Retention (C12) Notification on Access of Personal Data (C13) Privacy Mirrors (C14) Keeping Personal Data on Personal Devices (C15)	Scale of Interaction (D1) Sensemaking of Services and Devices (D2) Streamlining Repetitive Tasks (D3) Keeping Users in Control (D4) Serendipity in Exploration (D5) Context-Sensitive I/O (D6) Active Teaching (D7) Resolving Ambiguity (D8) Ambient Displays (D9) Follow-me Displays (D10) Pick and Drop (D11)

# Patterns

When you see advice, consider its depth

Result of an individual study

Pre-pattern based on some meta-analysis

Established pattern

Be aware of misapplying patterns

And be aware of anti-patterns



# 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

# Dark Patterns

The screenshot shows a web browser window with the URL [https://www.fastcodesign.com/3051906/fast-feed/after-lawsuit-settlement-linkedin-dishonest-design-is-now-a-13-million-problem?utm\\_source=facebook](https://www.fastcodesign.com/3051906/fast-feed/after-lawsuit-settlement-linkedin-dishonest-design-is-now-a-13-million-problem?utm_source=facebook). The article is titled "After Lawsuit Settlement, LinkedIn's Dishonest Design Is Now A \$13 Million Problem" and is categorized under "EVIDENCE". The article text discusses how LinkedIn's design practices, which were used to trick users into signing up, are now a \$13 million problem. It mentions that users receive follow-up emails inviting them to "expand their professional network," which is a scammy use of dark UX patterns. The article also notes that LinkedIn is now paying for this as part of a class-action lawsuit.

**EVIDENCE**

## 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.

10 NOTES 5 PIN 108 PLUS 853 SHARE 1.2K TWEET 1.5K LIKE

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.

Photo: Bloomua via Shutterstock

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 get a payout.

**EVID3NCE**

WHAT THE SCIENCE HAS TO SAY ABOUT DESIGN, CREATIVITY, INNOVATION, AND VISUAL CULTURE.

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- 2 Will Flat Design Ever Die?
- 3 This Note-Taking System Turns You Into An Efficiency Expert
- 4 3 Radical Ideas To Totally Disrupt Air Travel
- 5 UI, UX: Who Does What? A Designer's Guide To The Tech Industry

# CSE 440: Introduction to HCI

User Interface Design, Prototyping, and Evaluation

Lecture 14:  
Patterns

James Fogarty  
Alex Fiannaca  
Lauren Milne  
Saba Kawas  
Kelsey Munsell

Tuesday/Thursday  
12:00 to 1:20

