

HEURISTIC EVALUATION

CS 77 + CS 147

Scott Klemmer and Michael Bernstein

Heuristic evaluation is a
hill-climbing technique

Heuristic evaluation
gives you terms
for intuitive ideas

it is a suite of unit tests for user interfaces

Multiple ways to evaluate

Empirical Assess with real users

Formal Models and formulas to calculate measures

Automated Software measures

Critique Expertise and heuristic feedback

When to get design critique?

- **Before user testing.** Don't waste users on the small stuff. Critique can identify minor issues that can be resolved before testing, allowing users to focus on the big issues.
- **Before redesigning.** Don't throw out the baby with the bathwater. Critique can help you learn what works and what should change.
- **When you know there are problems, but you need evidence.** Perhaps you've received complaints from customers or found yourself stumbling around your own site. Critique can help you articulate problems and provide you with ammunition for redesign.
- **Before release.** Smooth off the rough edges.

Begin Review with
a Clear Goal

Heuristic Evaluation

- Developed by Jakob Nielsen
- Helps find usability problems in a design
- Small set (3-5) of evaluators examine UI
 - independently check for compliance with usability principles (“heuristics”)
 - different evaluators will find different problems
 - evaluators only communicate afterwards
 - findings are then aggregated
- Can perform on working UI or sketches

Ten Design Heuristics

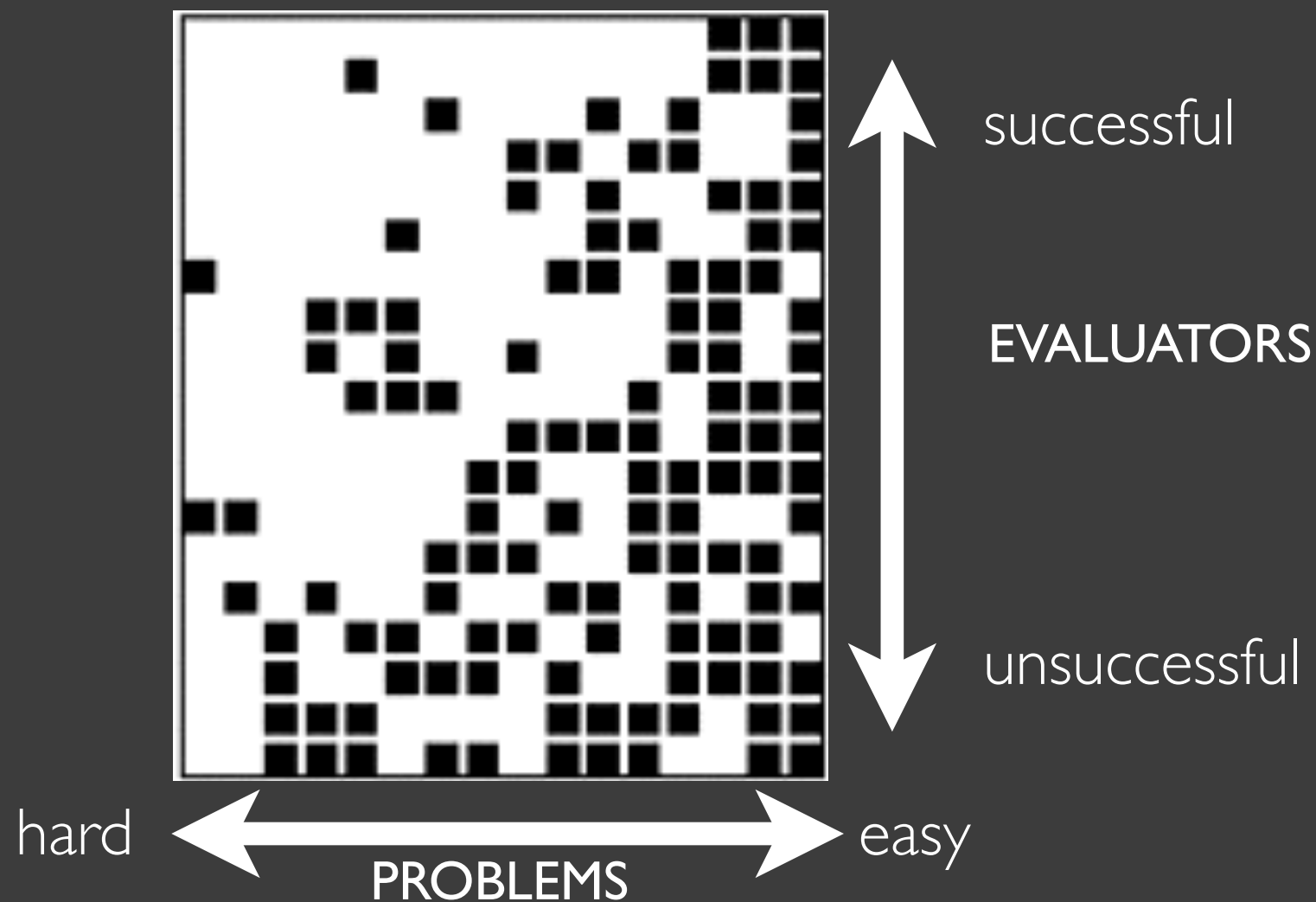
- Show system status
- Familiar metaphors & language
- Control & freedom
- Consistency
- Error prevention
- Recognition over recall
- Flexibility & efficiency
- Aesthetic & minimalist design
- Recognize, diagnose, & recover from errors
- Help

Evaluators' Process

- Step through design several times
 - Examine details, flow, and architecture
 - Consult list of usability principles
 - ..and anything else that comes to mind
- Which principles?
 - Nielsen's "heuristics"
 - Category-specific heuristics from e.g., design goals, competitive analysis, existing designs
- Use violations to redesign/fix problems

Why Multiple Evaluators?

- No evaluator finds everything
- Some find more than others



Decreasing Returns

- Caveat: graphs for a specific example

problems found

benefits / cost

Heuristic Eval: Cost-effective

- In one case: benefit-cost ratio of 48
 - estimated benefit \$500,000; cost \$10,500
 - value of each problem ~\$15K
 - how might we calculate this value?
 - in-house -> productivity; open market -> sales
- Severe problems found more often
- Single evaluator achieves poor results
 - only finds 35% of usability problems
 - 5 evaluators find ~ 75% of problems

Heuristics vs. User Testing

- Heuristic Evaluation often faster
 - 1-2 hours each evaluator
- HE results come pre-interpreted
- User testing is more accurate (by def.)
 - takes into account actual users and tasks
 - HE may miss problems & find “false positives”
- Valuable to alternate methods
 - find different problems
 - don't waste participants

Phases of Heuristic Evaluation

- 1. Pre-evaluation training:** give evaluators needed domain knowledge and information on the scenario
- 2. Evaluation:** individuals evaluate and then aggregate results
- 3. Severity rating:** determine how severe each problem is (priority). Can do first individually and then as a group
- 4. Debriefing:** review with design team

How-to: Heuristic Evaluation

- At least two passes for each evaluator
 - first to get feel for flow and scope of system
 - second to focus on specific elements
- If system is walk-up-and-use or evaluators are domain experts, no assistance needed
 - otherwise might supply evaluators with scenarios
- Each evaluator produces list of problems
 - explain why with reference to heuristic or other information
 - be specific and list each problem separately

How-to: Heuristic Evaluation

- Why separate listings for each violation?
 - risk of repeating problematic aspect
 - may not be possible to fix all problems
- Where problems may be found
 - single location in UI
 - two or more locations that need to be compared
 - problem with overall structure of UI
 - something is missing
 - ambiguous with early prototypes; clarify in advance
 - sometimes features are implied by design docs and just haven't been "implemented" – relax on those

Severity Rating

- Independently estimate after review
- Allocate resources to fix problems
- Estimate need for more usability efforts
- Severity combines
 - frequency
 - impact
 - persistence

Severity Ratings

- 0 - don't agree that this is a usability problem
- 1 - cosmetic problem
- 2 - minor usability problem
- 3 - major usability problem; important to fix
- 4 - usability catastrophe; imperative to fix

Severity Ratings Example

- *Issue*: Unable to edit one's weight
- *Severity*: 2
- *Heuristics violated*: User control and freedom
- *Description*: when you open the app for the first time, you have to enter your weight, but you cannot update it. It could be useful if you mistyped your weight, or if one year or two after the first use of the app, your weight has changed.

Debriefing

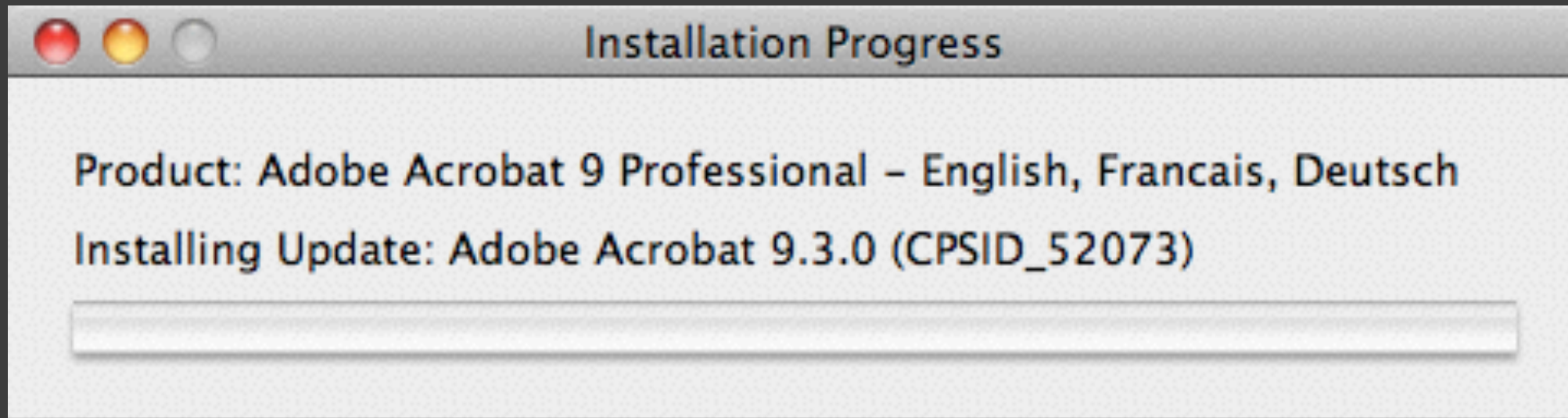
- Conduct with evaluators, observers, and development team members
- Discuss general characteristics of UI
- Suggest potential improvements to address major usability problems
- Dev. team rates effort to fix
- Brainstorm solutions

The Heuristics

Show System Status

1 / 10

Show:Time



- Feedback depends on response time
 - < | s: just show outcome
 - ~ | s: feedback that activity is underway
 - >> | s: Show fractional progress; time

Show: Space

You are currently using 7488 MB (99%) of your 7498 MB.

Last account activity: 0 minutes ago at this IP (75.210.243.152). [Details](#)

Stanford University HCI Group Mail view: standard | [turn on chat](#) | [older version](#) | [basic HTML](#) [Learn more](#)

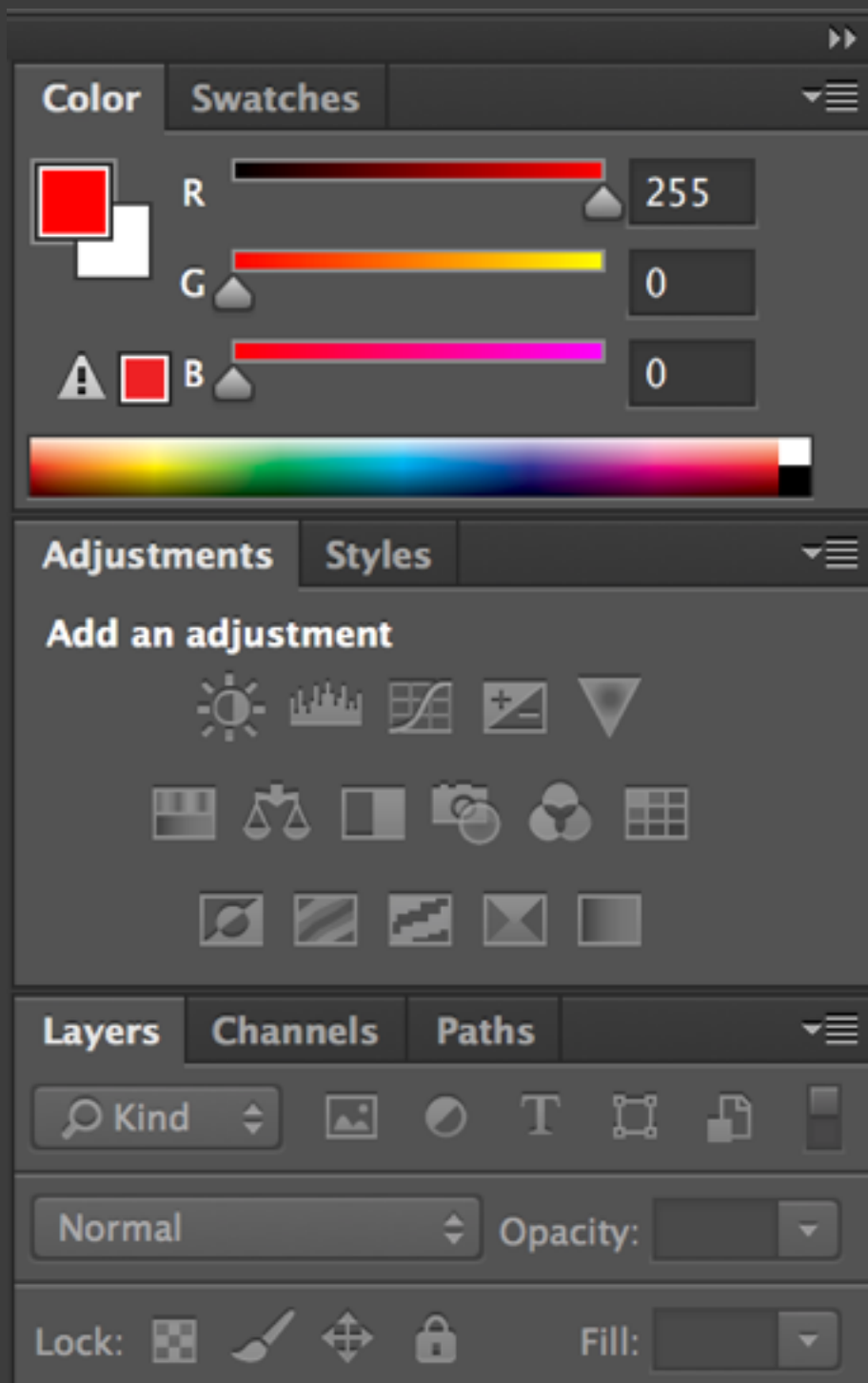
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Powered by 

Show: Change



Show: Action



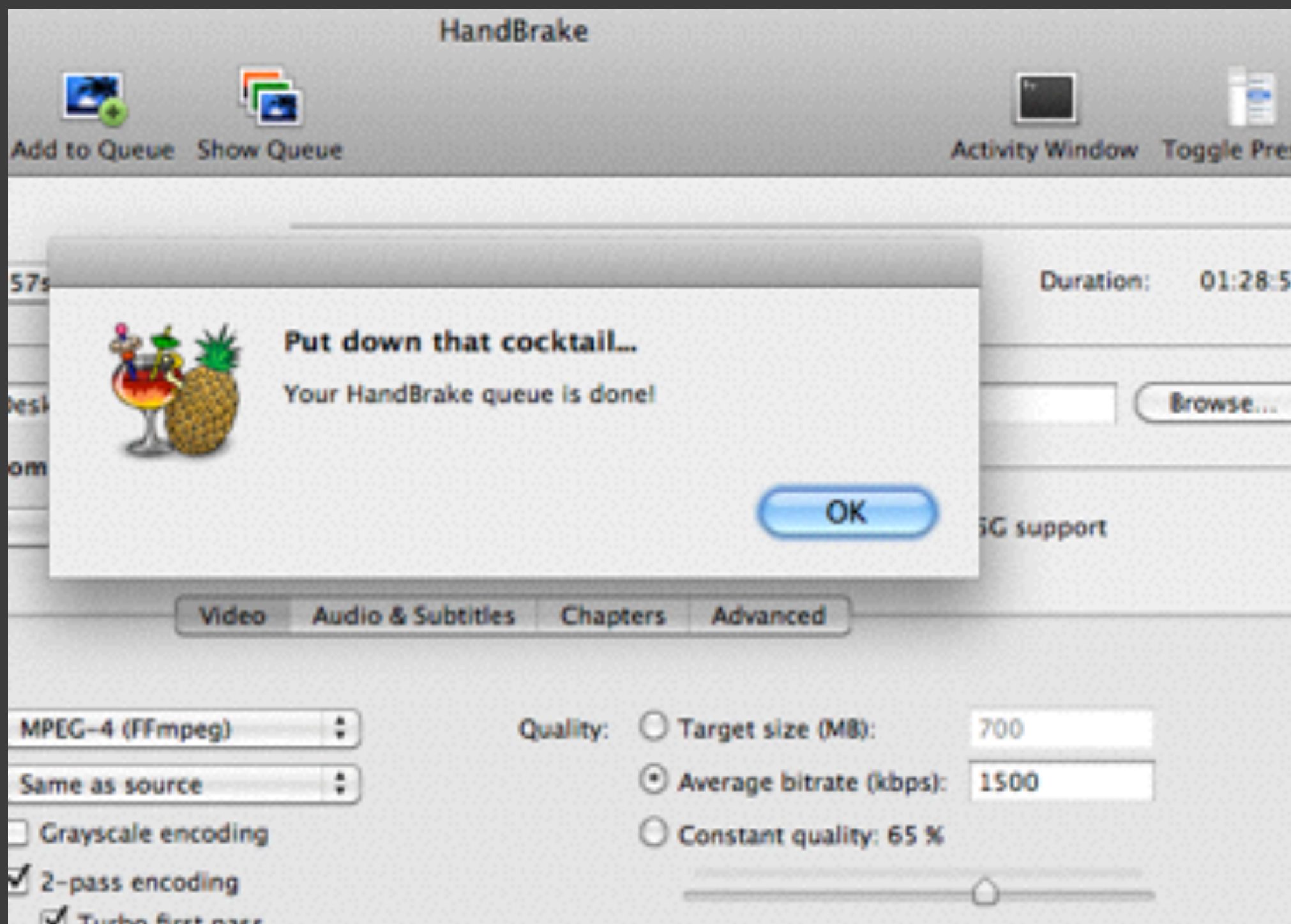
Show: Next steps

Important Message

Thank you! Your message was sent to the seller and a copy was sent to the e-mail address on your account. The seller will respond to you directly via e-mail.

[Back to Member Profile](#)

Show: Completion



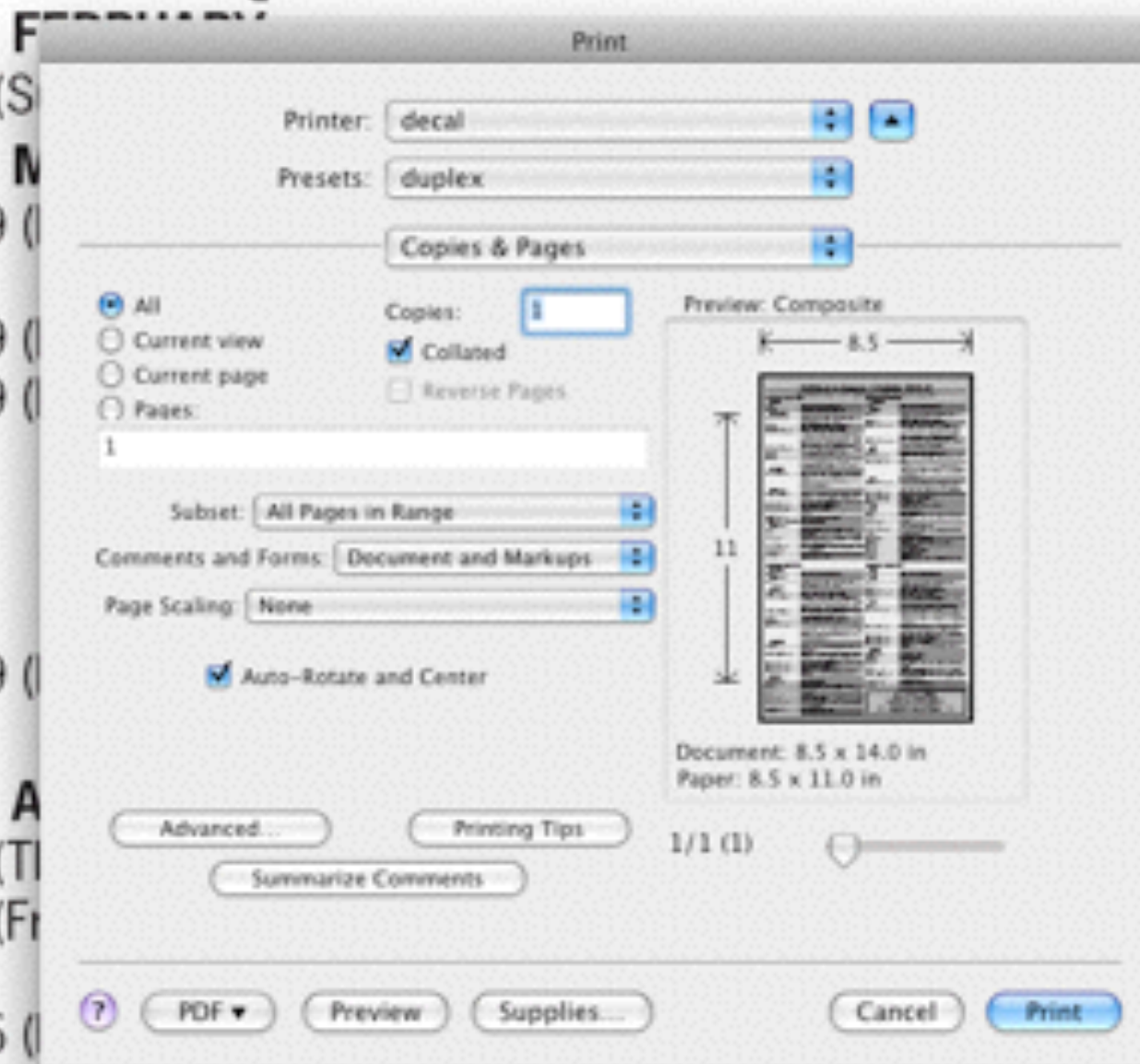
Familiar Metaphors & Language

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Familiar Metaphors

at the University Registrar's web site: http://registrar.stanford.edu/academic_calendar/

SPRING QUARTER



class; last day to adjust units on a variable-unit c
Students may withdraw from a course until the

Familiar Language

Direct Loan Servicing

ACCOUNT QUESTION CENTER | FORMS

Electronic Bill Presentment and Electronic Correspondence for the William D. Ford Federal Direct Loan (Direct Loan) Program

Services you are already enrolled in:

Electronic Correspondence

You already are enrolled in this service that enables you to receive your Direct Loan correspondence electronically. If you wish to cancel enrollment for this service, [click here](#).

Services you are not eligible for:

Electronic Bill Presentment

Your account is not eligible for participation in Electronic Bill Presentment because either you already are enrolled in our Electronic Debit Account, your account is in an inactive status such as paid in full, or your account is greater than 210 days delinquent.

Familiar Categories

The image shows a screenshot of the CIBT Visa Application form. The form is titled "Visas" and "Passport". The main heading is "Need a Visa". The form includes fields for "Citizenship:", "State of Residence:", "Destination:", "Purpose of Travel:", and "Account #:". A dropdown menu is open for "State of Residence:", showing a list of states and territories. The "State of Residence:" field is highlighted with a red box. The dropdown menu is also highlighted with a red box. The list of states includes: Select One, Alabama, Alaska, Arizona, Arkansas, California, Northern, California, Southern, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Guam, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, and New Jersey.

Visas **Passport**

Need a Visa

Citizenship:
[Not a U.S. Citizen?](#)

State of Residence:

Destination:

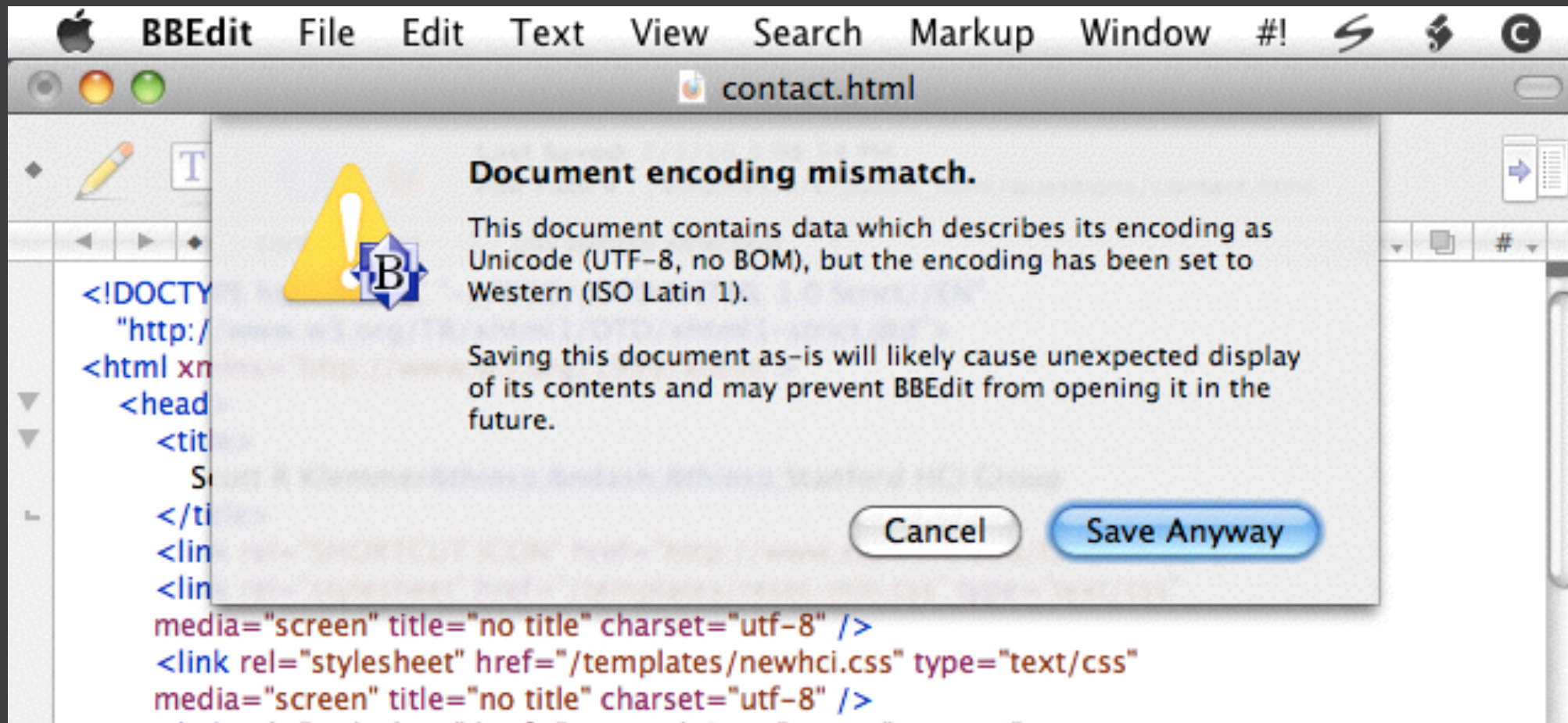
Purpose of Travel:
[Multiple Destinations](#)

Account #:

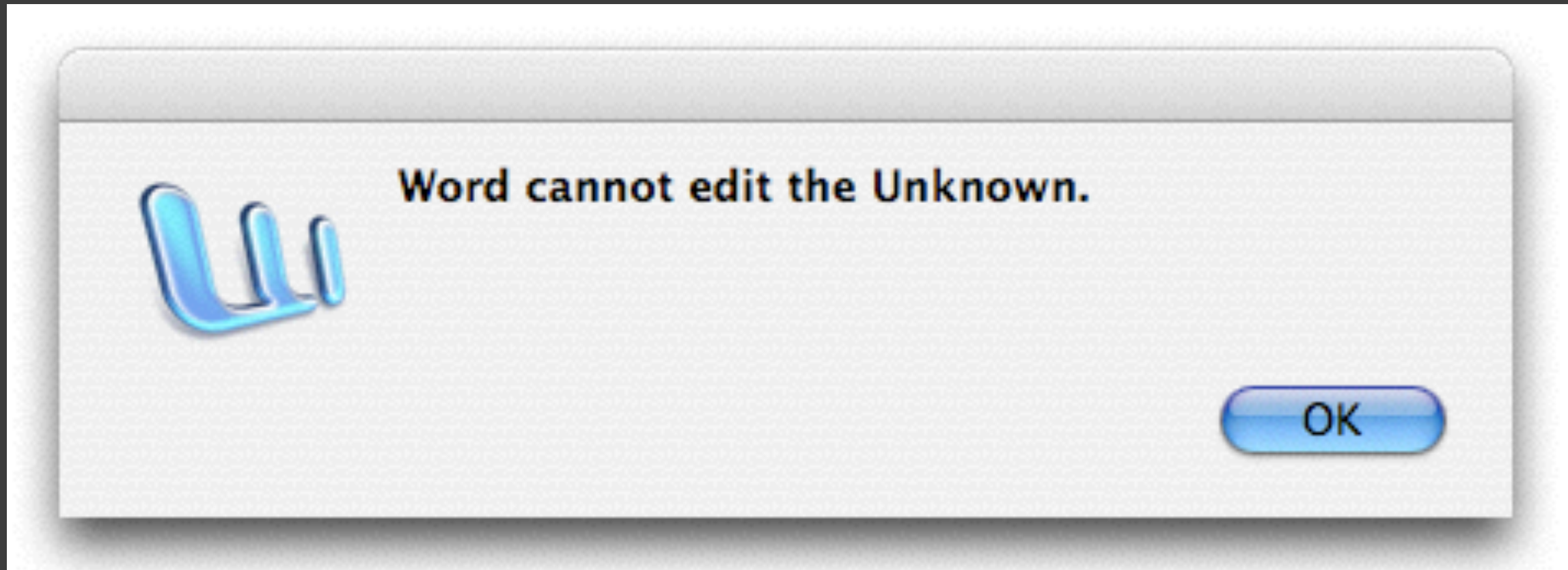
CIBT
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Familiar Choices



Consider corner cases



User Control & Freedom

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Freedom to Undo

(All prices are in US Dollars)

UIST '09: The 22nd Annual ACM Symposium on User Interface Software and Technology ([Event Details](#))

Secure connection Personal Information Agenda **Merchandise** Checkout Confirmation

	Amount	Quantity	Subtotal
Extra Demo Reception ticket	\$40.00	<input type="text" value="1"/>	
Extra Banquet Ticket	\$90.00	<input type="text"/>	
Extra copies of the proceedings	\$45.00	<input type="text"/>	
			Total So Far: \$0.00
			Recalculate Total

[Continue](#) ▶

[Terms of Use](#) [Contact Info](#)

(All prices are in US Dollars)

Freedom to Explore

← Prev 7 Tue 1/28 N/A Wed 1/29 N/A Thu 1/30 \$493 **Friday, Jan 31 from \$493** Sat 2/01 N/A Sun 2/02 \$490 Mon 2/03 \$426 Next 7 →

Flight information			Lowest	Refundable
11:05 PM SJC	→	7:21 AM JFK <small>(Next day)</small>	\$493	\$981
<small>3h 17m layover</small>				
10:38 AM JFK	→	11:43 AM BOS		
<small>Total trip time: 9h 38m</small>				

Flight 670
View seats
Duration: 5h 16m

Flight 518
View seats
Duration: 1h 5m

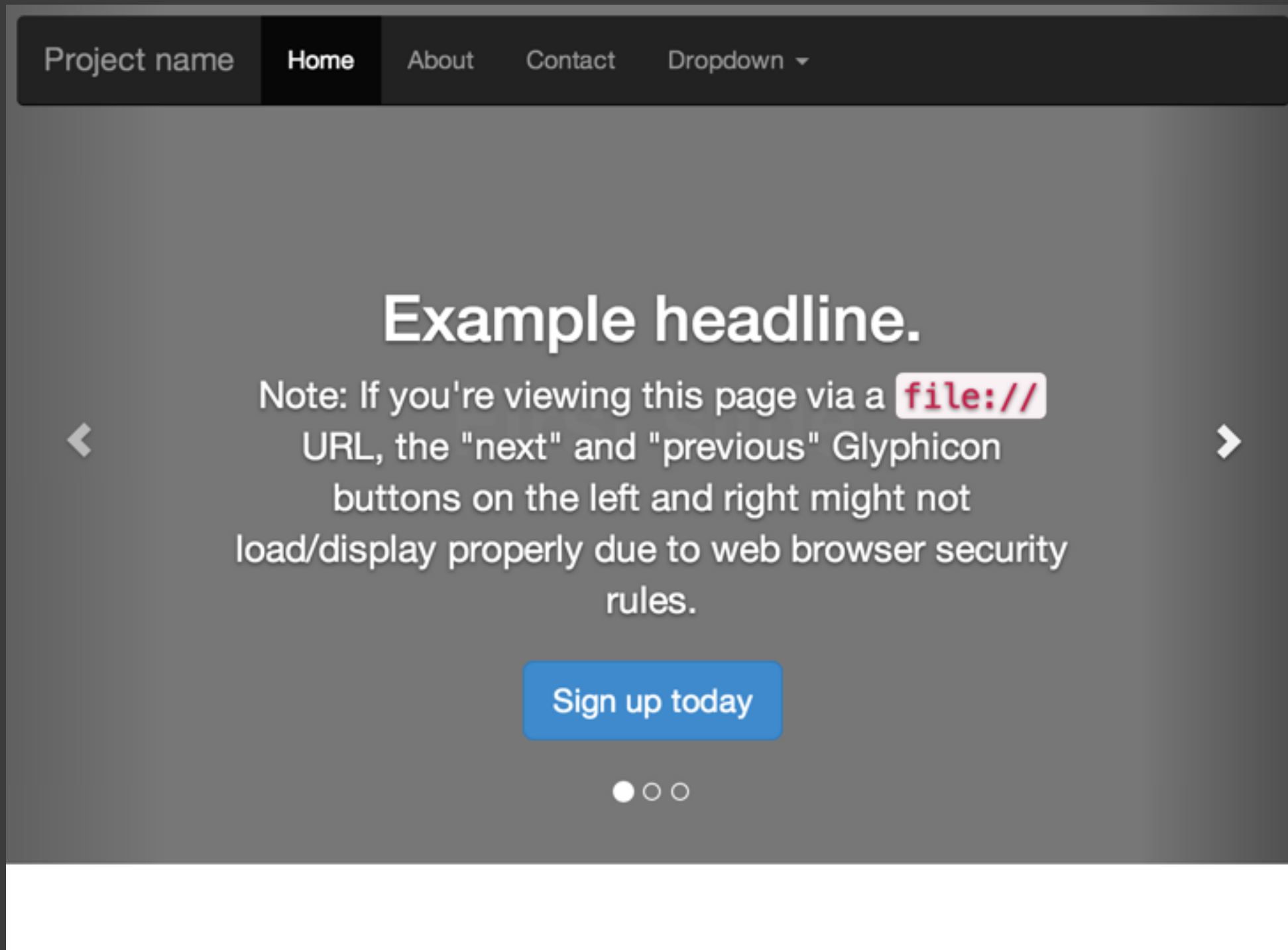
Consistency & Standards

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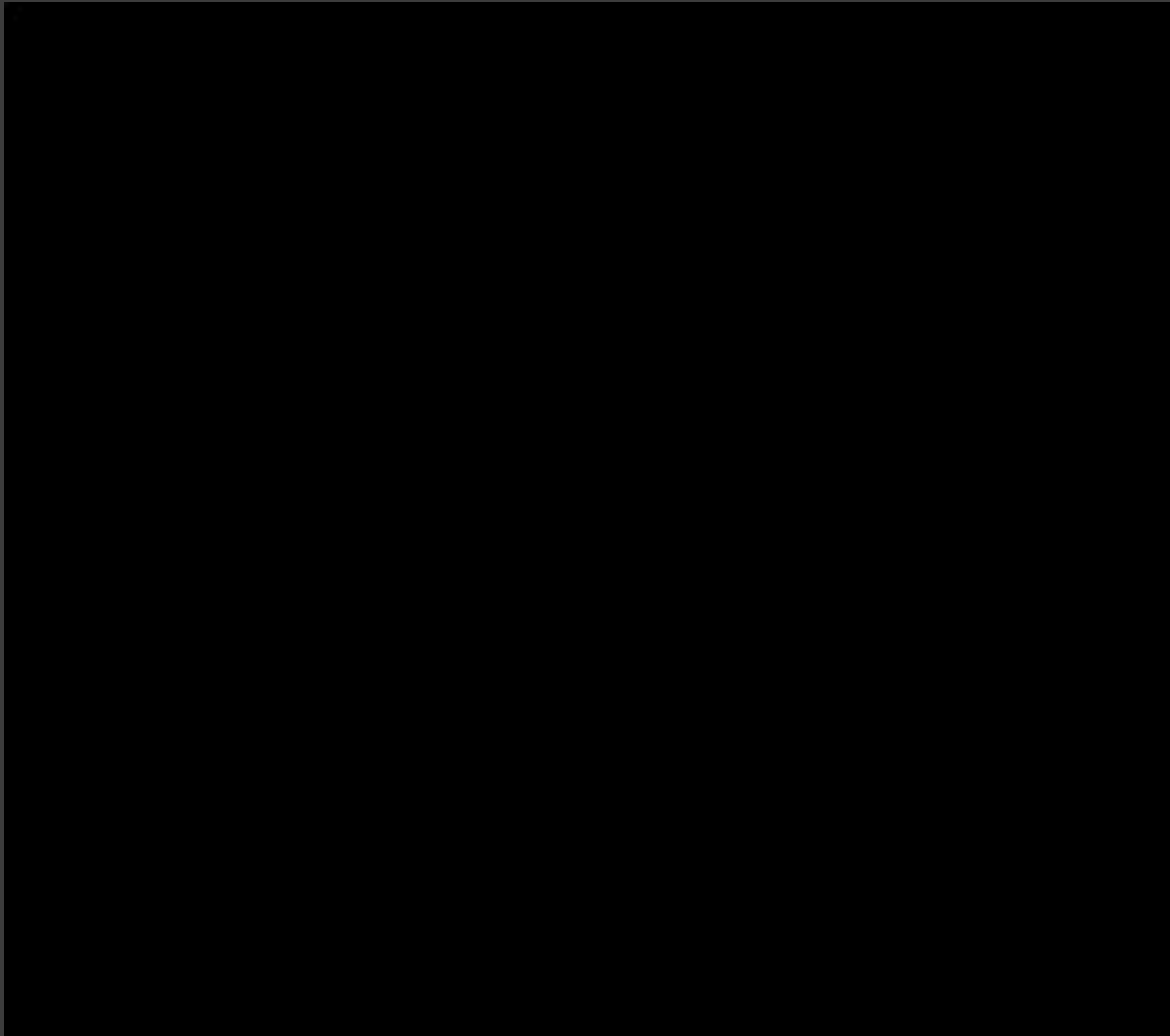
Consistent Layout



Consistent Layout



Consistent Layout



Consistent Names

Send an email

Please provide the requested information below to contact us by email. Your inquiry will be forwarded to our Customer Service Team for resolution. Our goal is to respond and resolve your inquiry within 24 hours.

Privacy and Security

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* Indicates required fields.

Topic*

Internet and Data Products

Subtopic*

- ✓ ----- Please Select -----
- Mobile Office
- Mobile Web
- National Access
- Bluetooth Technology
- Broadband Access
- Blackberry/PDA Smartphone
- Wireless Sync

Question or Comment (line)

2000

Consistent Choices

```
Terminal — sudo — 80x53

=====
Trusted Storage Recovery Script v1.0.9
=====

Please choose a language:

    e: English
    j: Japanese (日本語)

>: e

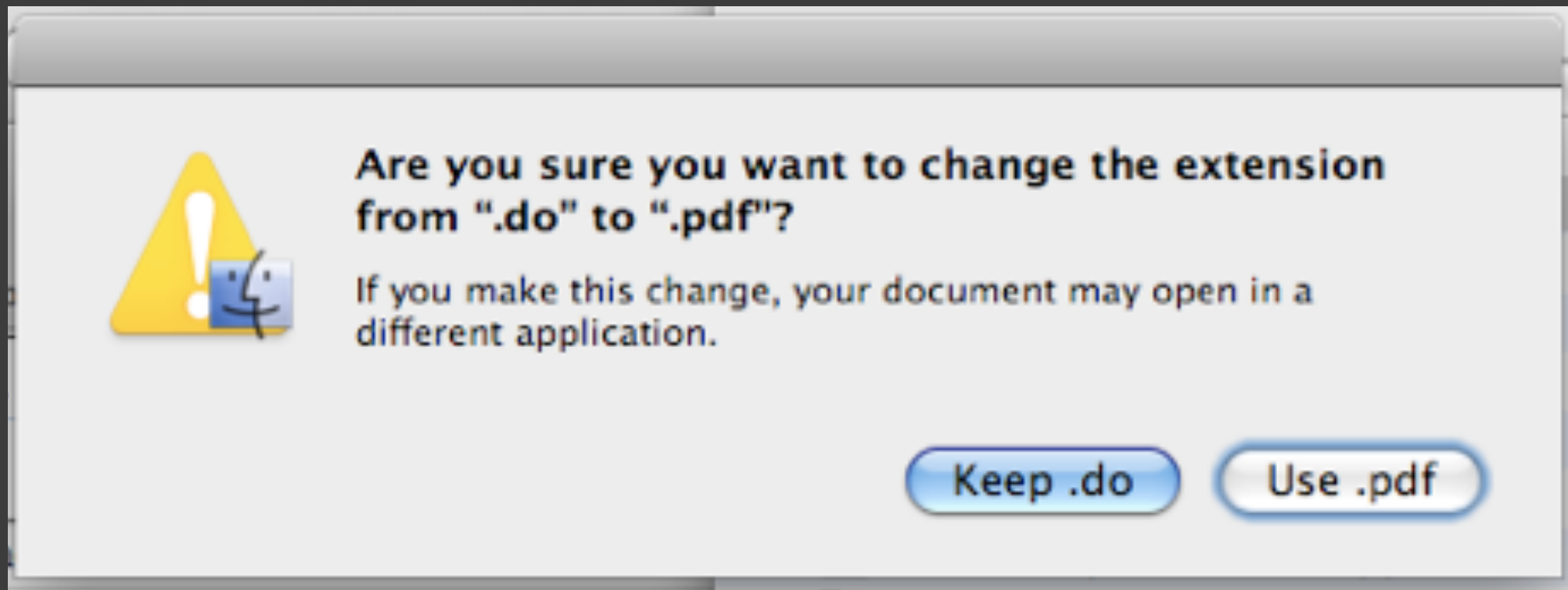
DISCLAIMER:

WARNING: Run at your own risk and make sure that ALL Adobe
products are closed and not running before you proceed further.

This tool has been developed to upgrade the licensing service
and repair a license file for Adobe Acrobat 8 and 9, and
Creative Suite 3 and 4 products.

Do you wish to c [REDACTED]
open applications? [y/n]: █
```

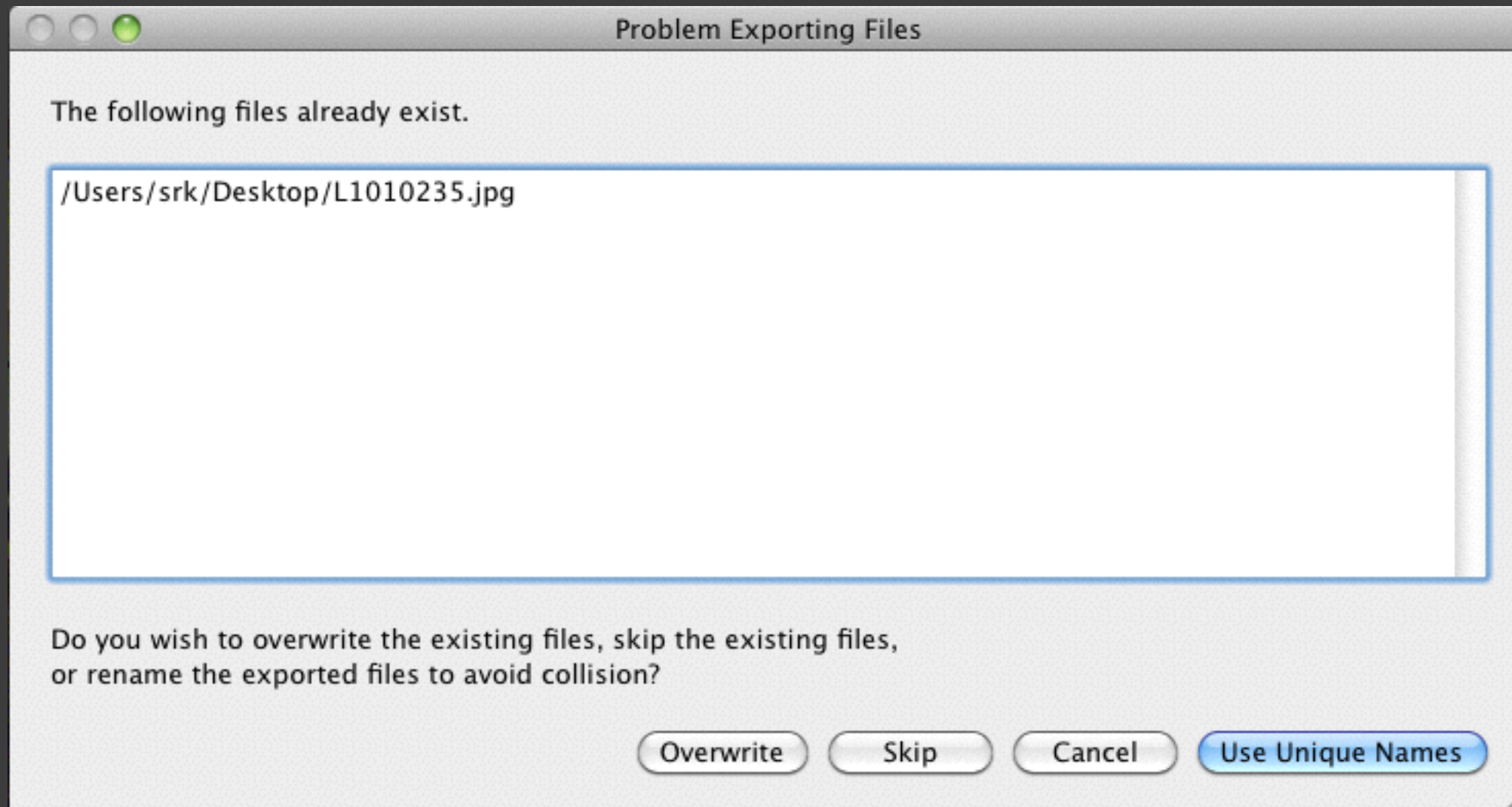
Clearer Choices...



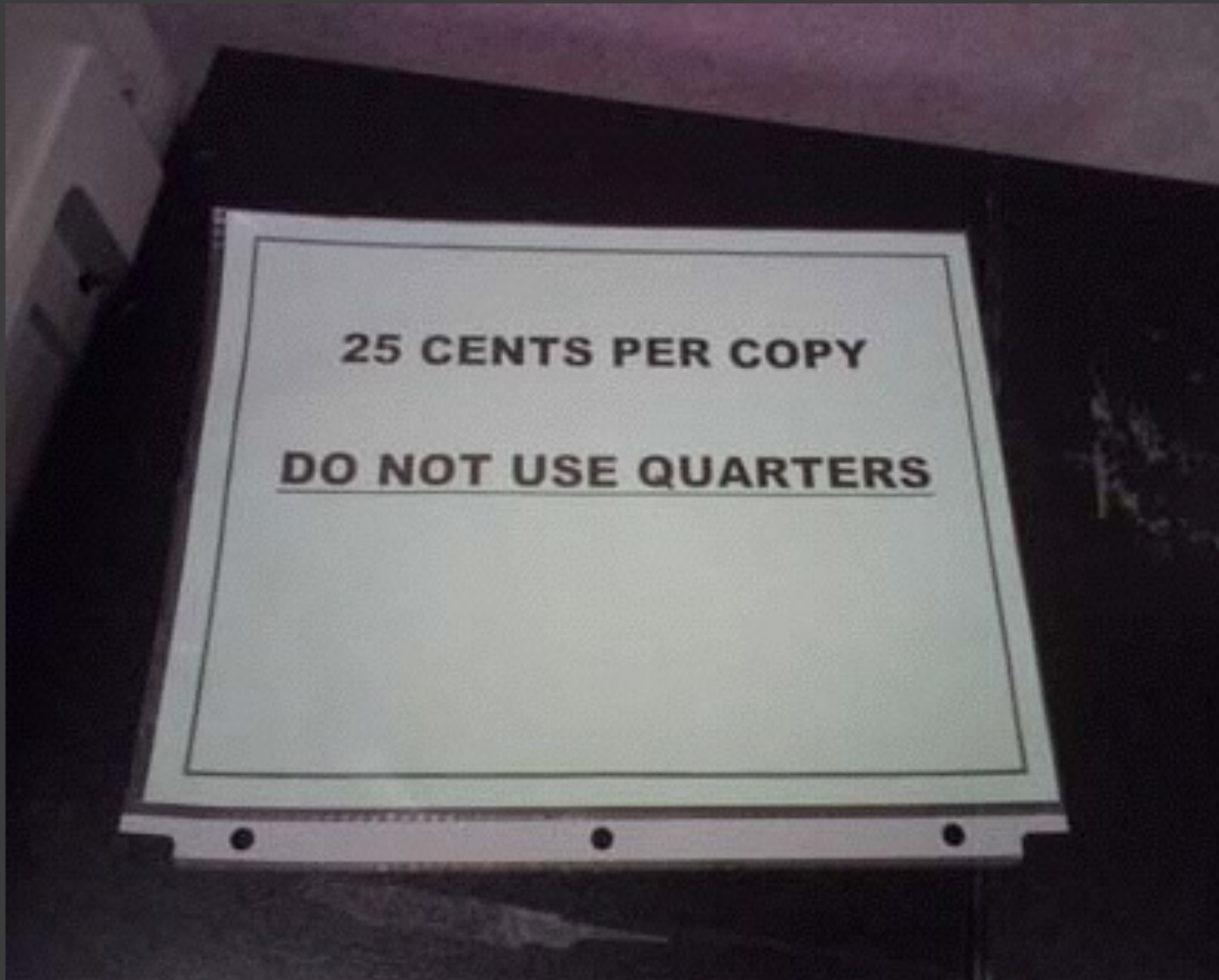
Error Prevention

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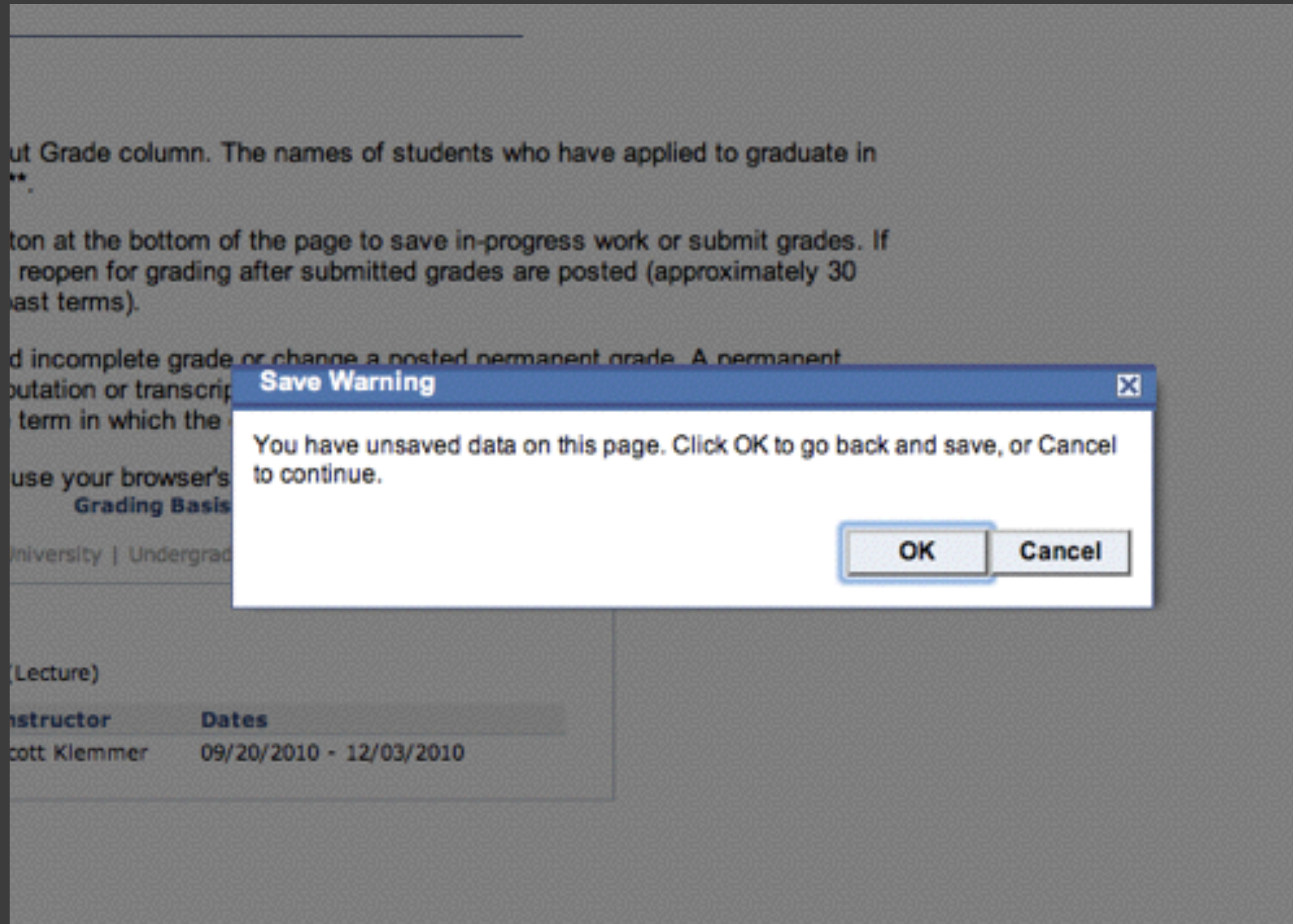
Prevent Data Loss



Prevent Painful Paths



Prevent Misinterpretation



Prevent Bad input

Gates Information Network

Groups Classrooms Offices Events

Event

Title

Classroom

Date

Start Time

End Time

Webpage

Date:

January 2014

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Prevent Unnecessary Constraints

Olsen on

You must select a catalog to begin your search.

Room | Careers United States | Change Your Country

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Investor Relations

Notice of Webcast and Conference Call for Cengage Learning

Cengage Learning will host a webcast and conference call to discuss the results for the fiscal year ended June 30, 2010 on:

Monday, September 13, 2010
9:00 A.M. (Eastern Time)

CENGAGE brain.com

buy the way you want and save

Textbooks



BUY RENT ACCESS

eBooks Textbook Rentals

Recognition Over Recall

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Recognition: Avoid codes

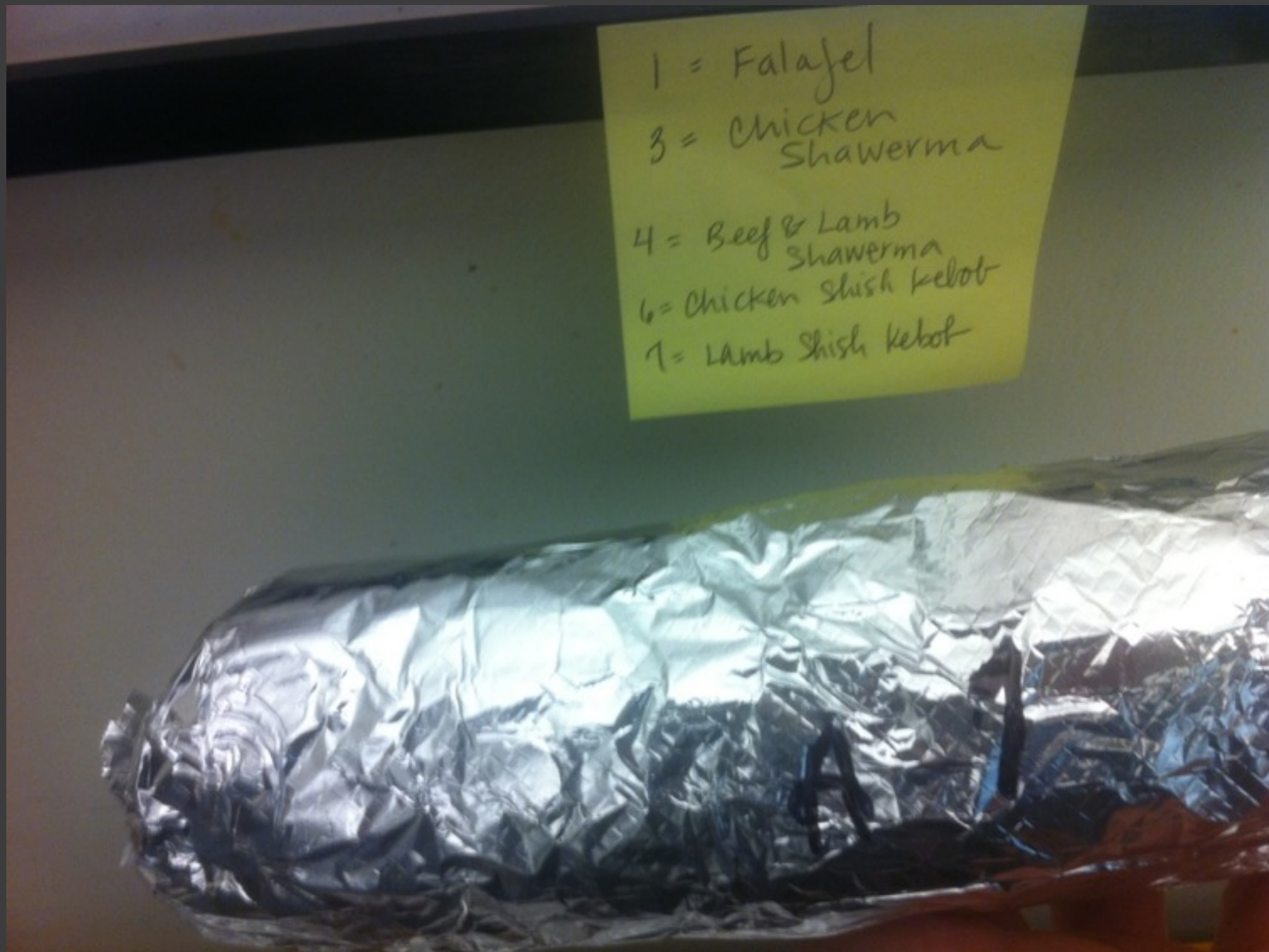
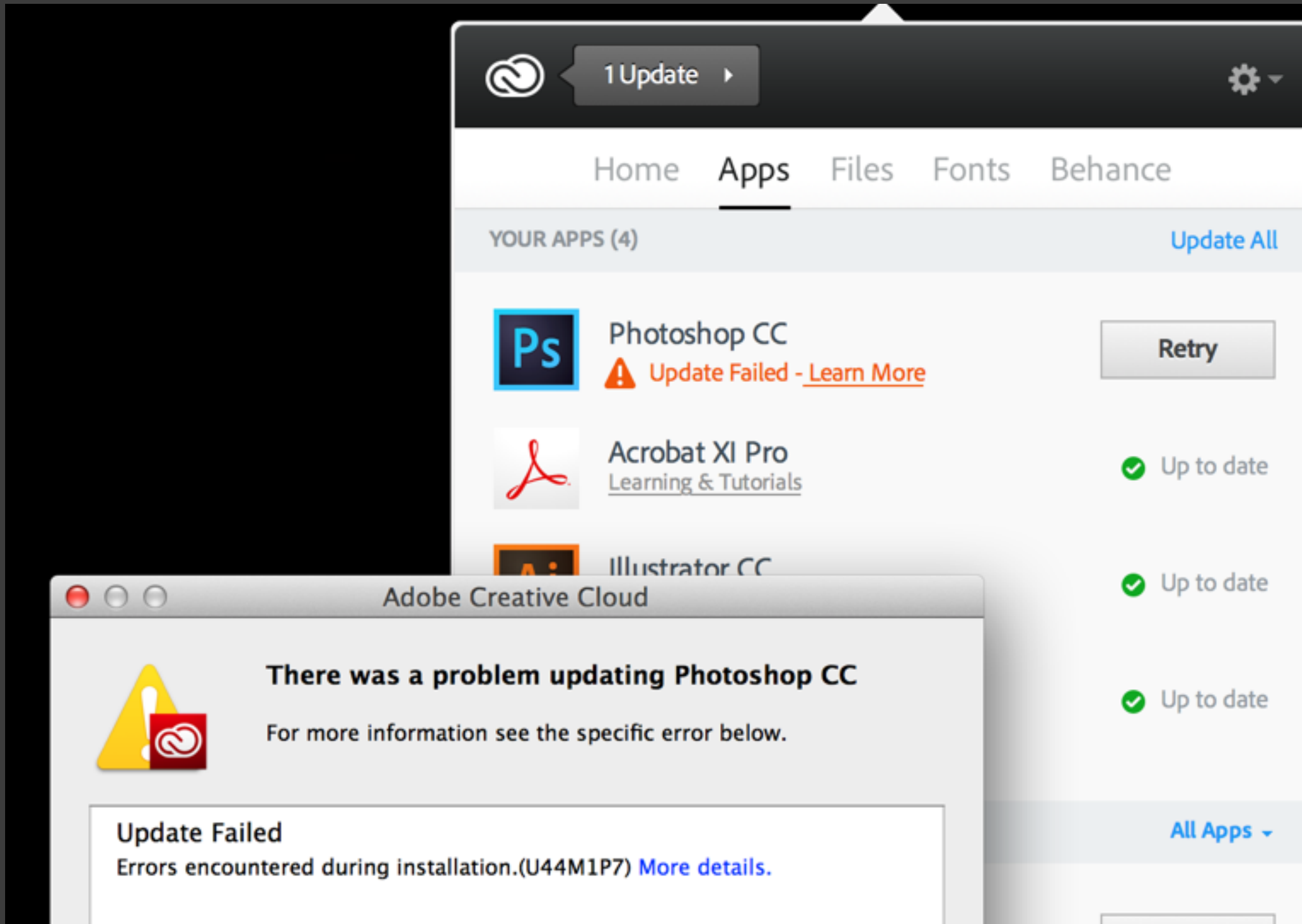
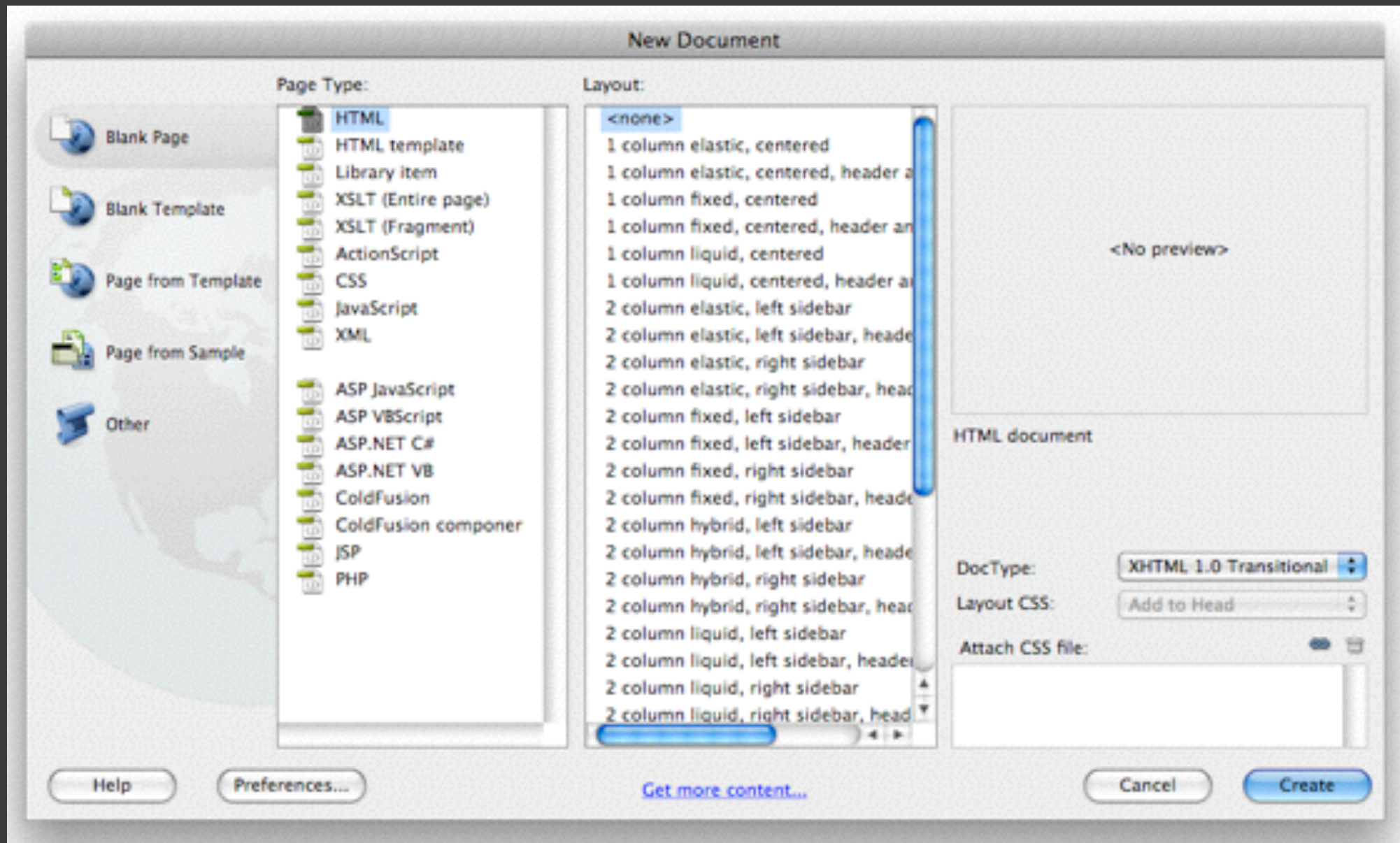


Photo by Scott Klemmer; taken at Stanford HCI lunch

Recognition: Avoid codes

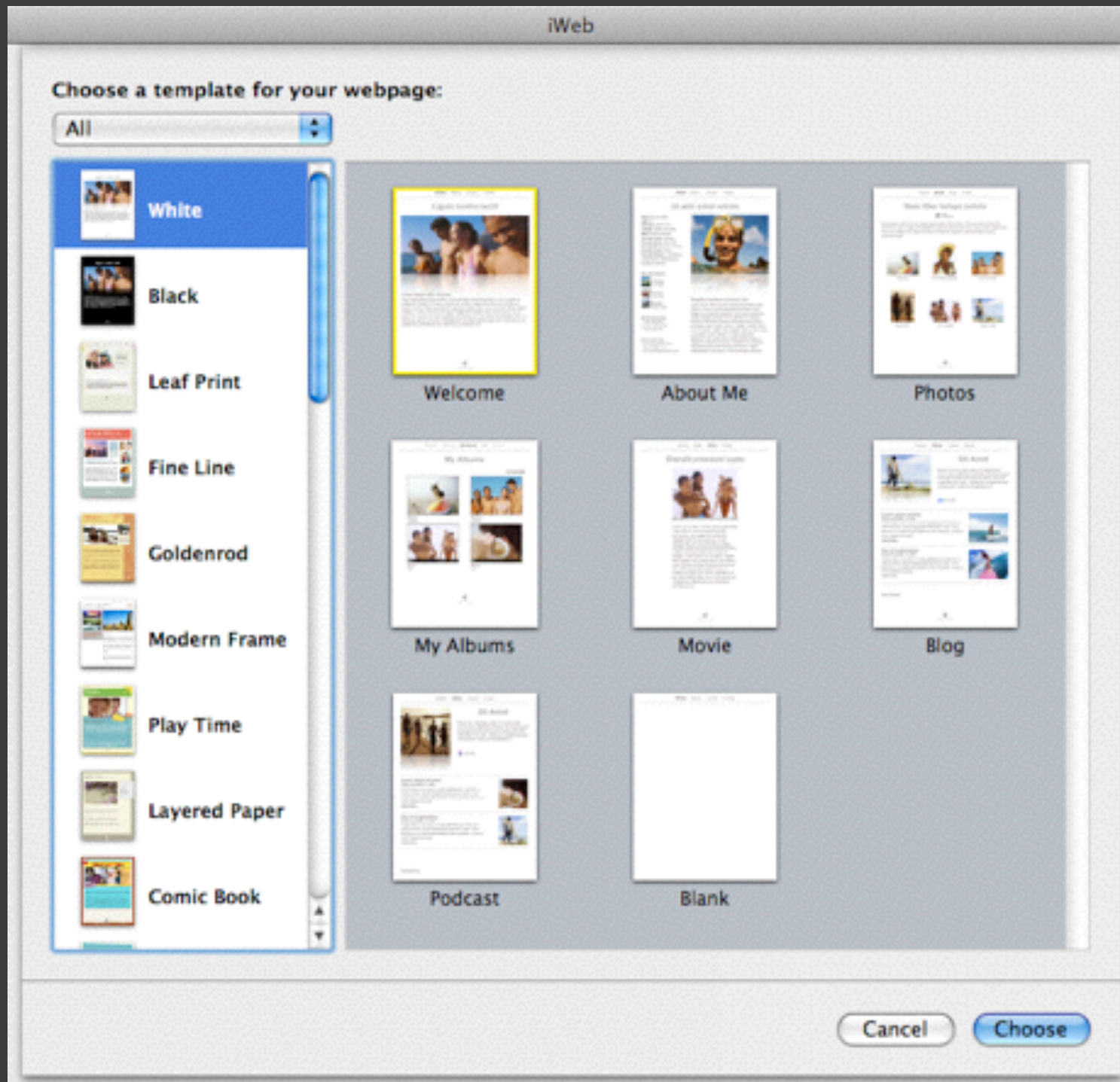


Recognition with previews



Adobe Dreamweaver New Document dialog

Recognition with previews

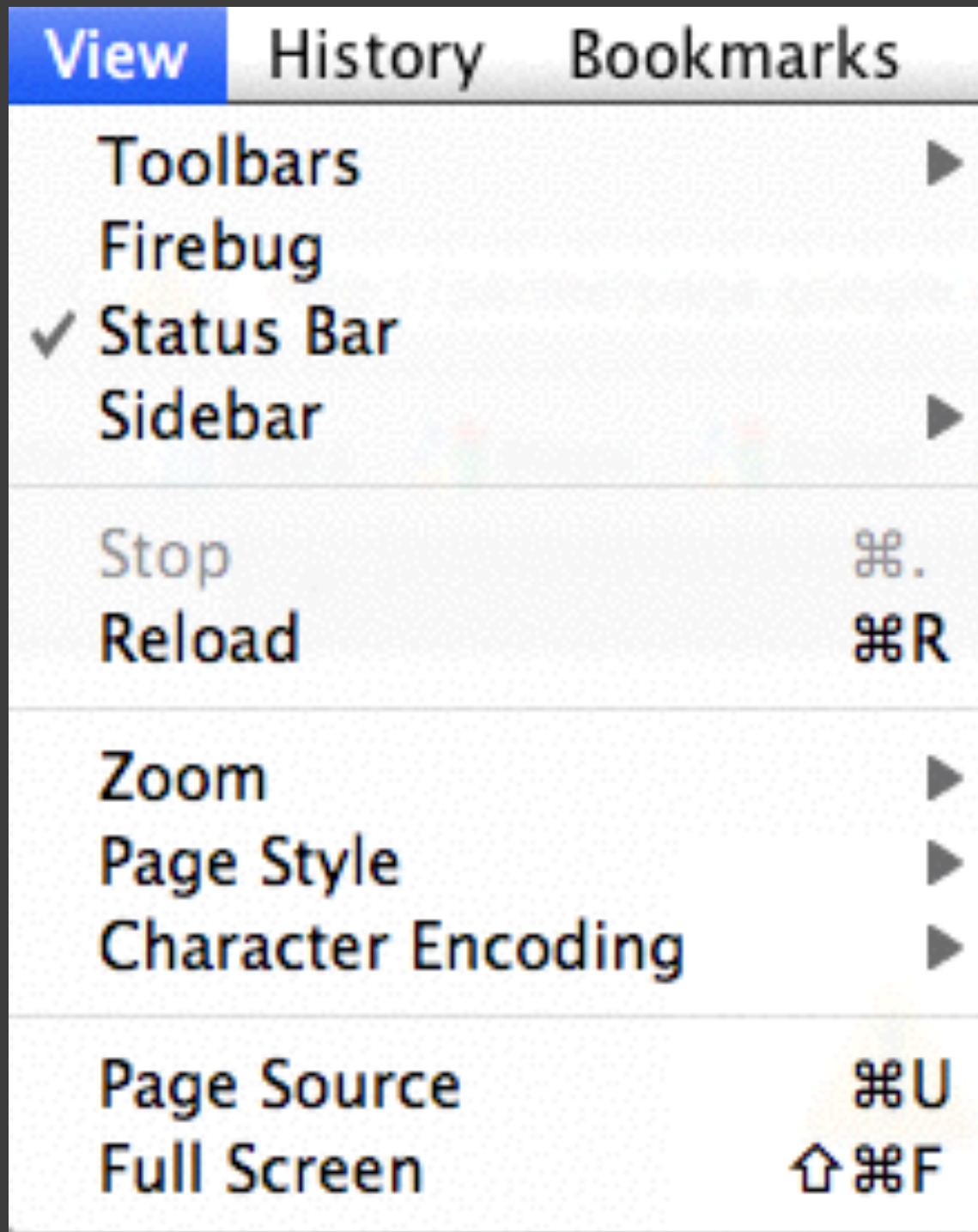


Apple iWeb Choose a template dialog

Flexibility & Efficiency

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Flexible shortcuts



Flexible defaults with options

```
// Getter/Setter functions for all properties in the
class
function get_name() {
    return $this->
}
function set_name($r
    $this->name = $
}
function get_experie
    return $this->e
}
function set_experie
    $this->experier
}
function get_lang()
    return $this->
}
function set_lang($r
    $this->lang = $
```

education (variable)
experience (variable)
get_education (function)
get_experience (function)
get_lang (function)
get_name (function)
lang (variable)
name (variable)
output (function)
Programmer (function)
set_education (function)

Flexible proactivity

Advance Program Available: IS&T/SPIE Electronic Imaging Inbox | X

SPIE Meetings to srk show details 12:50 PM (0 minutes ago) Reply

Images are not displayed.
[Display images below](#) - Always display images from SPIE-Meetings@reply.spie.org

To view this email as a web page, go [here](#).

IS&T/SPIE Electronic Imaging Advance Program

- View the [Advance Program Online](#)
- Download the [Advance Program](#) (PDF)

Attend IS&T/SPIE Electronic Imaging. Hear the latest developments in imaging science and technology in these program tracks:

- 3D Imaging, Interaction, and Measurement
- Imag
- Imag
- Digita
- Multir
- Visua

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In addition to marking this message as spam, Stanford University HCI Group Mail can attempt to automatically unsubscribe you from **SPIE Meetings**, by sending an unsubscribe request on your behalf. [Learn more](#).

Your Ele

- More than 800 presentations in 23 conferences

Flexibility: Recommendations

Customers Who Bought This Item Also Bought



Don't Make Me Think,
Revisited: A Common ...

> Steve Krug

★★★★★ (5)

Kindle Edition

\$27.89



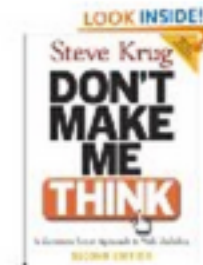
Emotional Design: Why We
Love (or Hate) ...

Don Norman

★★★★★ (38)

Kindle Edition

\$10.49



Don't Make Me Think: A
Common Sense Approach

...
> Steve Krug

★★★★★ (406)

Kindle Edition

\$16.00



Universal Principles of
Design, Revised and ...

> William Lidwell

★★★★★ (56)

Kindle Edition

\$16.50

Flexibility: keep it relevant

Customer Discussions

This product's forum **Related**

Discussion	Replies	Latest Post	health
No discussions yet			

Ask questions, Share opinions, Gain insight

Start a new **Active discussions in related forums**

Topic:

Discussion	Replies	Latest Post
<input type="checkbox"/> toys USPS Carriers smoke in their trucks		
<input type="checkbox"/> toys NO harm in second hand smoke		
<input type="checkbox"/> health Male circ		
<input type="checkbox"/> home improvement BEST PERFORMING REPLACEMENT TOILET??		o
<input type="checkbox"/> toys Will these resellers now honor returns on the Zhu Zhus?		o
<input type="checkbox"/> health fat and sl		
<input type="checkbox"/> home improvement Several Sunset and Lowes Home Improvement Books RECALLED		
<input type="checkbox"/> health Does cher		
<input type="checkbox"/> toys lollipop haters are disgusting		
<input type="checkbox"/> home improvement Quiet Bedroom Fan		
<input type="checkbox"/> health Why are Americans still struggling with obesity?	1901	3 hours ago
<input type="checkbox"/> health Why do you read or post to these forums? Honestly.	260	20 hours ago

Search Customer Discussions

Flexibility: keep it relevant



System information Board bar: each board is a set of columns User logo

FileMatrix Monday, July 14, 2003 (195) 9:00:53 PM (756) RAM 306.4 MB (511.5 MB)

Work Column File Viewer MPLs SystemTools Tools Sites Favorites Help Register

Main (1) Documents (2) Pictures (3) Videos (4) Music (5) Books (6) Kits (7) Downloads (8) Favorites (9) Backup (10)

Programs (11) This (12) CD (13) ...

21 22 23 ...

The fixed attribute determines how the column content moves to left / right

Active column

Fix Weld Thumb Part SysL Fix Weld Thumb Part SysL

Loc Hyst Prev Load Loc Hyst Prev Load

Thumbs are displayed when the "Thumb" is pressed

Inactive file

FileMatrix\

Files are sorted by type: directories, links, programs, documents

Active file

Media player

FILEMATRIX

File viewer: text, pictures, movies

Drag up or down to change the height of the viewer

Information about active partition, directory, file, link target

File size = 3.3 MB

Files 25 Encrypted 0 SelNum 0 SelSz 0 B TotalSz 3.5 MB PartSz 6.8 GB(30.4 GB) PartAttr CEQRpSSf

Index 13 Sz 1.6 KB (0 B) Attr A HL 1 SC 0 Title E:\Program Files\FileMatrix>Edit.lnk Mod Sunday, May 18, 2003 (138); 11:28:58 PM (84)

Desc "The target program is used by the "Edit" function"

Type P Sz 196.0 KB (0 Attr A Title E:\Program Files\Windows NT\Accessories\wordpad.ex Mod Thursday, August 2

Locate Search Recycle Delete Close viewer MPL Options 30 3 3 3 3 6 Name High

Current file "E:\Program Files\FileMatrix>Edit.lnk". [Double LMB] = Run ([Ctrl] = automove to left; [Shift] = autoopen to right; [Alt] = autohold). [RMB] = View. [MMB] = Edit. [LMB + Drag] = File-drag menu. [RMB + Drag] = Set with source path. Dr

Set the number of columns, for each board

Set the height of thumbs

Quickly change to a new set of colors

Toolbar

The hint bar shows hints for controls over which the mouse is moved

Aesthetic & Minimalist Design

8 / 10

Our ancestors



Video Sonic Labs Inc

Electronics Repair & Installation Authority

1 877 900 HDTV (4388)



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[About Us](#)

6:28:45PM

We Repair &
Service All Make
Model
HDTV Experts

PLASMA/LCD

LCD, LCOS, DLP
Projections TV

Projectors

VISIT OUR NEW LOCATION IN
FABULOUS LAS VEGAS

[Click Here To Visit Our](#)

ON-LINE STORE

[Need Installation? Click Here](#)

INSTALLATION

Factory Authorized
Service Center For



Address & Hours
of Operations

LOCATION#1

Monday To Friday
10:00AM to 6:00PM
Saturday

Minimalism: above the fold

The screenshot displays the top portion of The Weather Channel website. At the top left is the logo and a button to 'Add a Location'. On the right, there are links for 'United States (English)', temperature units ('°F °C'), and 'Sign In'. A horizontal navigation bar contains links for 'Weather', 'Lifestyle', 'Social', 'Maps', 'Video', 'News', and 'TV'. Below this is a search bar with the placeholder text 'Search Zip, City or Place (Disney World)' and a 'SEARCH' button. A secondary navigation bar includes links for 'Local', 'National Forecast', 'Severe Weather', 'Alerts', 'Hurricane Central', 'Safety & Preparedness', and 'Farming'. A large banner for the TV show 'LIFEGUARD! SOUTHERN CALIFORNIA' is featured, with the text 'THURSDAYS at 9/8c' and 'DIVE IN TO A NEW ORIGINAL SERIES'. Below the banner is a breadcrumb trail: 'Home > Weather > San Francisco, CA 94110 Weather'. To the right of the breadcrumb are icons for 'RSS', 'Share', 'Email', 'Bookmark', and 'Print'. The main heading is 'San Francisco, CA (94110) Weather', with a 'SHARE' button to its right. Below the heading is the update time: 'Updated: Mar 12, 2012, 9:05am PDT'. A 'SOCIAL' section with a 'NEW!' badge invites users to 'See what people are saying about the weather in San Francisco'. A horizontal menu allows users to view forecasts for 'Today', 'Hourly', 'Tomorrow', 'Weekend', '5 day', '10 day', 'Monthly', and 'Map'. A red alert box contains a map and the text: 'More Wintry Weather for Mountain West. Rain and snow will fall over the next five in the Pacific Northwest and Mountain West. See what type of precipitation your area will get and when. More Details. Winter Weather Update'. Below the alert is an 'ALERT' section for a 'Special Weather Statement' with links for 'Map', 'Safety and Awareness Tips', and 'Desktop Alerts', and an 'ALL ALERTS' button with a notification count of '2'. On the right side, there is a large blue advertisement for a Citi ThankYou Premier credit card, featuring the card image and the text: 'Earn unlimited ThankYou® Points with no expiration date.'

Minimalism: signal-to-noise

RELIABLE COPIER SERVICE

Office Equipment Computers Equipment Supplies Other Items

[Checkout](#) [Account](#) [Search](#) [Store Front](#) [Product List](#) [Basket Contents](#)

Reliable accepts Visa, Mastercard, American Express and Discover Card

International Orders Shipped via U.S.P.S. Only !

Code	Product	Quantity	Price/Ea.	Total
TZS145	Brother 3/ 4" Extra Strength Super Adhesive White on Clear Industrial Tape TZS145 TZ-S145	1	\$13.95	\$13.95
				Total: \$13.95

Ship To:

First Name:

Last Name:

Email Address:

Phone Number:

Fax Number:

Company:

Address:

City:

State/Province:

Other State/Province:

Zip/Postal Code:

Country:

Bill To (If Different):

First Name:

Last Name:

Email Address:

Phone Number:

Fax Number:

Company:

Address:

City:

State/Province:

Other State/Province:

Zip/Postal Code:

Country:

Basket Contents

Qty	Product	Price
1	Brother 3/ 4" Extra Strength Super Adhesive White on Clear Industrial Tape TZS145 TZ-S145	\$13.95
		Subtotal \$13.95

[Shipping Options?](#)
[Checkout](#)
[Recently Visited Items](#)

Please complete the following optional questions

Comments

How did you find us?

Rate our server speed:

[Continue](#)

Minimalism: signal-to-noise

What information were you primarily looking for during your visit?

- How to get started with AdWords
- Ad approvals and policy help
- Customer support contact information
- Billing or payment help
- Account settings help
- Campaign management help
- Ad performance help
- Google Analytics or conversion tracking help
- Other reason (please specify):

Did you find the information you were looking for?

No, I found none of it	I found part of it	Yes, I found all of it
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

During your past visit, you browsed this help center page: <https://adwords.google.com/support/aw/bin/answer.py?hl=en&answer=177673>

Thinking about this page specifically, how helpful was the information on the Help Center page you saw, for the purpose of your visit? :

Not at all helpful	Not very helpful	Somewhat helpful	Very helpful	Extremely helpful
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How clear was the information on this page (<https://adwords.google.com/support/aw/bin/answer.py?hl=en&answer=177673>)?

Not at all clear	Not very clear	Somewhat clear	Very clear	Extremely clear
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate the amount of information on this page (<https://adwords.google.com/support/aw/bin/answer.py?hl=en&answer=177673>):

Too little information	Just enough information	Too much information	I'm not sure
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Minimalist Login

Your personal domain management dashboard is only a few seconds away!

Ordering a domain is fast and easy!

Sign in with your email address and iWantMyName password or enter a new one if you are not a customer yet:

What is your email address?

My email address is:

Do you have an iWantMyName password?

- Yes, I'm a returning customer and have a password.
- No, I'm a new customer.

Enter password:

Type it again:

I accept the [Terms and Conditions](#)

[Continue \(secure connection\) »](#)

[Forgot your password?](#)

With an iWantMyName account

- Register domains in 90+ extensions
- Set up the best web services in one click
- Use free email with Google Apps & Gmail
- Purchase domains from your iPhone
- Manage DNS records in real-time

payments powered by
WorldPay



We accept Visa and MasterCard credit cards. We will send you an email invoice for every order. Please

only process your order after successful payment. Your order with iWantMyName is fully PCI standard compliant.

Minimalism: Redundancy

Round-Trip ? One-Way ? Multi-City ? AAdvantage Award ?

One-Way Flight Search

1. Where Do You Want to Go?

From: [City](#) or [Airport Code](#)
JFK
and airports within 0 Miles

To: [City](#) or [Airport Code](#)
SFO
and airports within 0 Miles

2. How Do You Want to Search?

Show Results By:

Price & Schedule
Number of Stops: None

Schedule
Show 10 flight results.
Number of Stops: None

3. When Do You Want to Go?

Departure Date
Month Day Morning

4. Number of Passengers

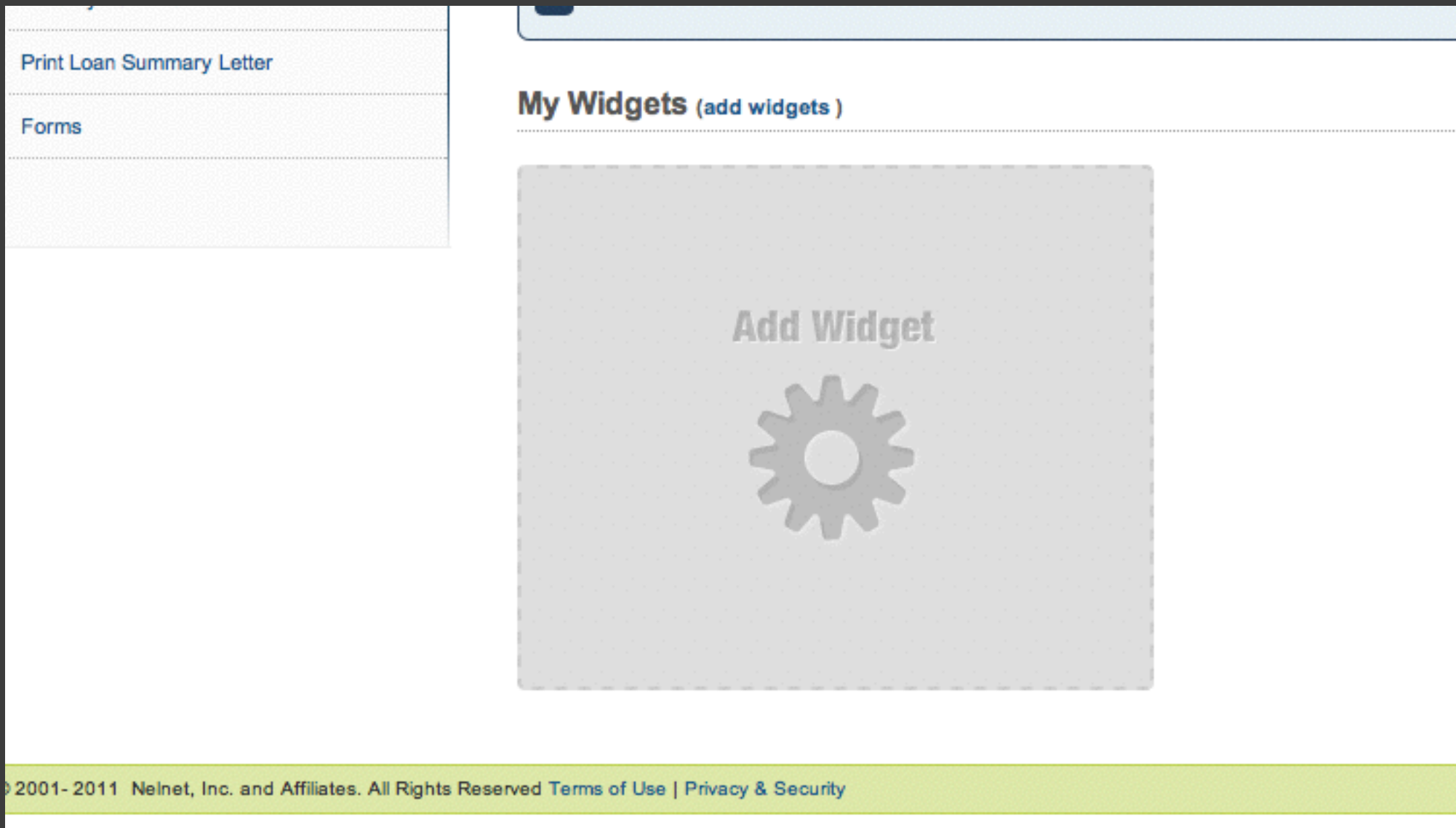
1 Adult (15-64)
0 Senior (65+)
0 Young Adult (12-14)
0 Child (2-11)
0 Infant in Seat (under 2)
(Maximum of 6 passengers per reservation)

[Children Under 15 Traveling Alone](#)
[Information Regarding Lap Infants](#)

5. What Is Your Cabin Service Preference?

Economy Business Class & Higher First/Premium

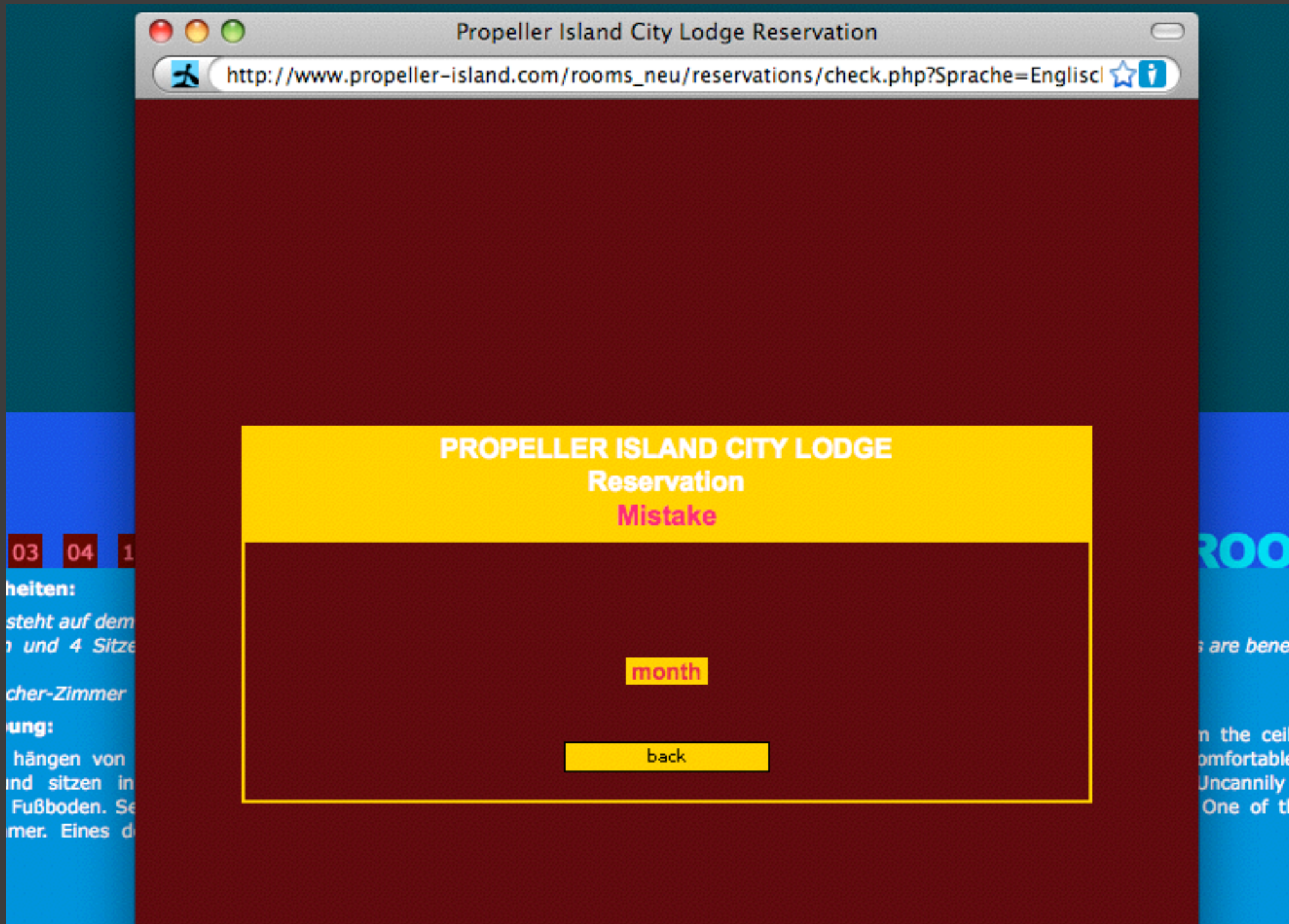
Minimalism: functionality



Recognize, Diagnose, & Recover from Errors

9 / 10

Errors: make problem clear



Errors: make problem clear

NASA IT Summit 2011 Registration Site [\(View Details\)](#)



The following errors were detected:

- You must fill out all required fields.

Please select which sessions you plan to attend:

Monday, August 15 -

General Session

KEYNOTE SPEAKER: Lynn Tilton, Chief Executive Officer, Patriarch Partners LLC

Date: 8/15/2011 8:00 AM - 9:15 AM (Pacific Time)

Location: Yerba 7-9

Mission IT Supporting Science & Engineering

Title: NASA Supercomputing and Its Impact on Agency Missions

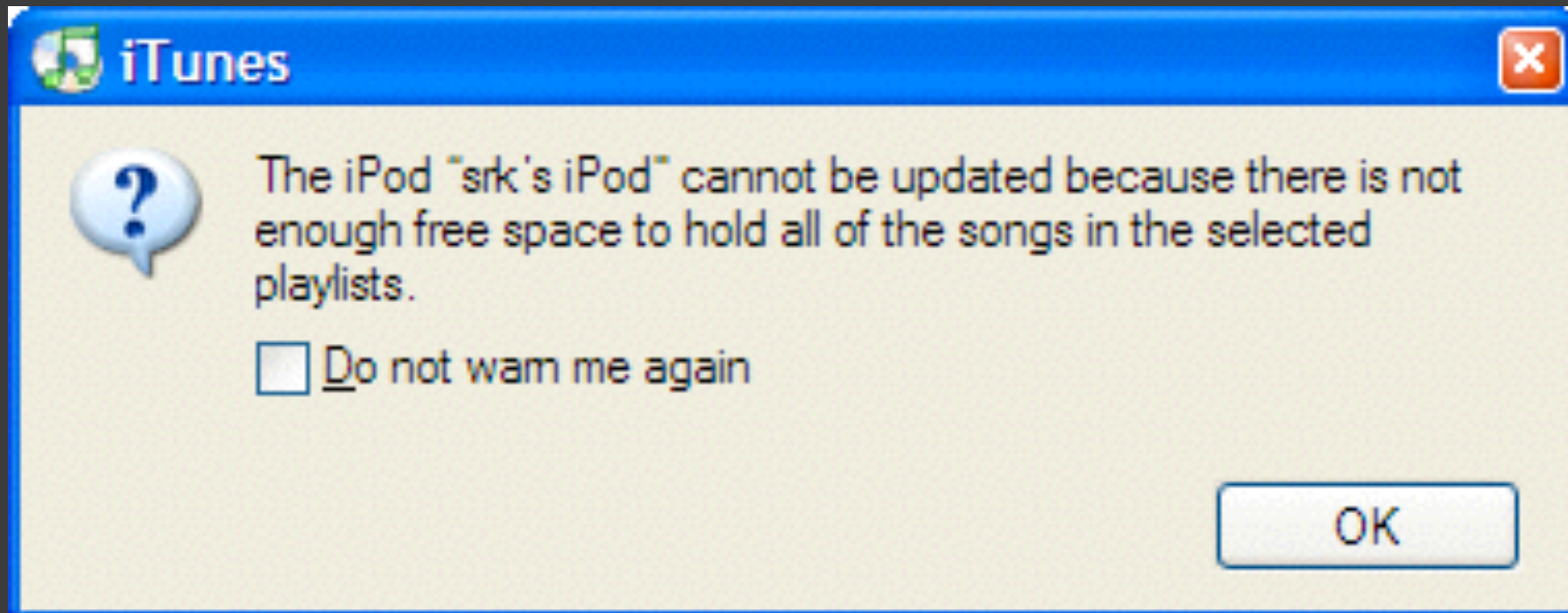
Speaker: Rupak Biswas, Ames Research Center

Date: 8/15/2011 9:45 AM - 10:45 AM (Pacific Time)

Location: Yerba 5-6

Waves of the Future

Errors: Provide a solution



Errors: propose an alternative

Round trip | One way | Multi-city Economy ▾

SFO San Francisco | BOS Boston +

📅 Tue, February 11 | 📅 Sat, February 15

Nonstop ▾ | Under \$100 ▾ | Airline ▾ | Times ▾ | More ▾ | Reset ★ | 📍 | 📊

San Francisco – Boston Tuesday, February 11

Sort by price ▾

No results found matching your criteria.
Remove individual filters above, or [clear all filters](#).

Recognize Errors



Reported Attack Page!

This web page at batmazgumruk.com.tr has been reported as an attack page and has been blocked based on your security preferences.

Attack pages try to install programs that steal private information, use your computer to attack others, or damage your system.

Some attack pages intentionally distribute harmful software, but many are compromised without the knowledge or permission of their owners.

[Get me out of here!](#)

[Why was this page blocked?](#)

[Ignore this warning](#)

Help (I need somebody)

10 / 10

Help learning with examples

← jQuery Codecademy

Modifying HTML Elements 1/14 ▾

having something like:

```
$p = $('p');
```

We'll want to pass in an entire HTML element in quotes:

```
$p = $("<p>I'm a new paragraph!</p>");
```

index.html script.js

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Result</title>
5     <script type='text/javascript' src='script.js'
6   ></script>
7   </head>
8   <body></body>
9 </html>
```

Help choices with examples

Sign up to receive e-mail from UPS and stay on top of the latest promotions, news, critical updates and announcements.

E-mail Options: ♦

- Send me the following UPS e-mail communications:
- New Product Announcements/Enhancements
 - Promotions and Offers
 - Newsletters
 - Service Updates / Regulatory Changes


Need more information?

[View Examples](#) 

- Remove me from UPS e-mail communications*

4 Payment Defaults

How will you pay for your shipping?

No Payment Default 

Note: After completing registration, you can change your payment defaults in Shipping Preferences.

5 Primary Role

Which of these statements best describes you? ♦

- I don't ship daily, but when I do, I want it to be quick and informative.
- I use ups.com daily and know several shortcuts to save time.
- I use ups.com to troubleshoot and to report on shipping activity.
- I focus on the big picture and monitor shipping operations performance.
- I prefer to use the web only when necessary. My job is easier without it.

You can manage the e-mail communications you receive from UPS. To receive the types of communications that are of interest to you, choose any of the following options:

New Product Announcements/Enhancements

Select **New Product Announcements/Enhancements** to keep up to date with new product announcements and enhancements to existing products.



Newsletters

Select **Newsletters** to receive the latest information, exclusive news, and feature stories.



Promotions and Offers

Select **Promotions and Offers** to receive communications regarding available UPS promotions and special offers that best suit your business needs.

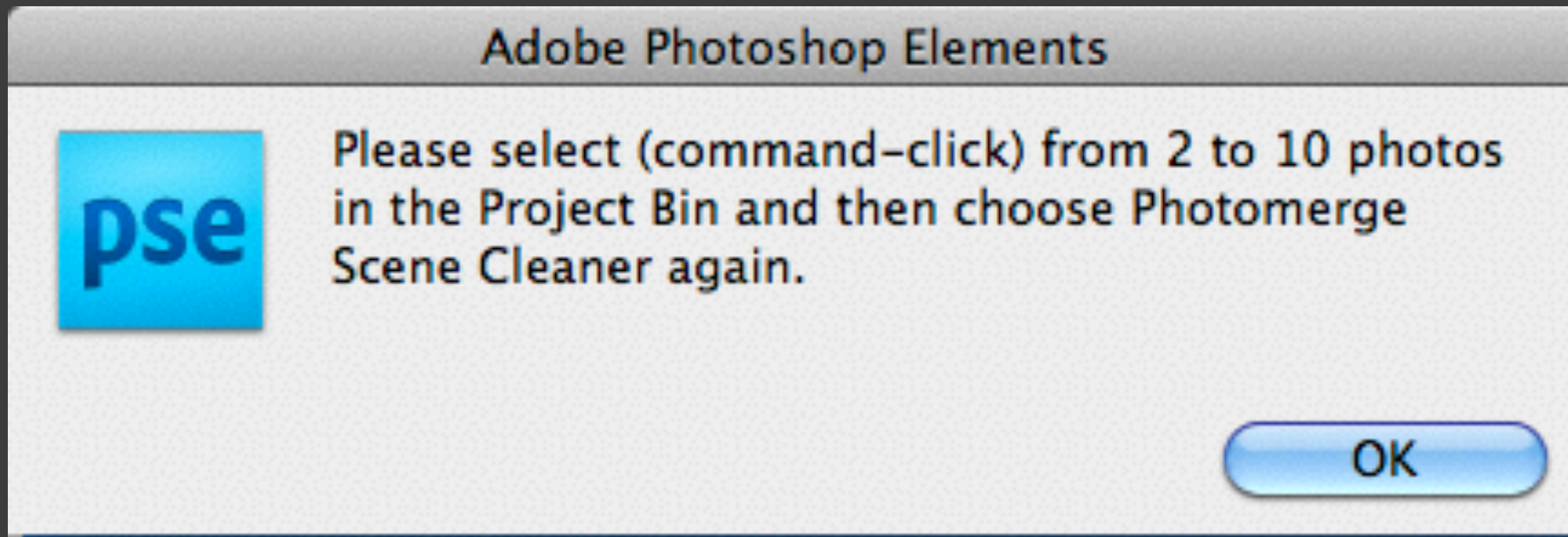


Service Updates/Regulatory Changes

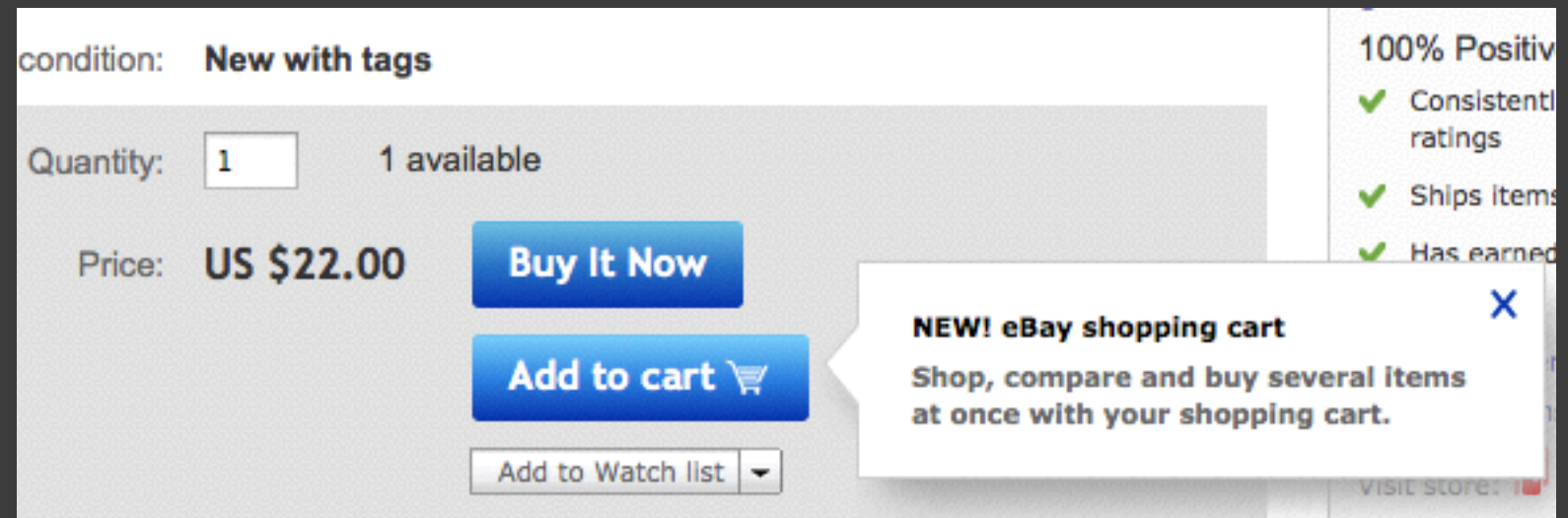
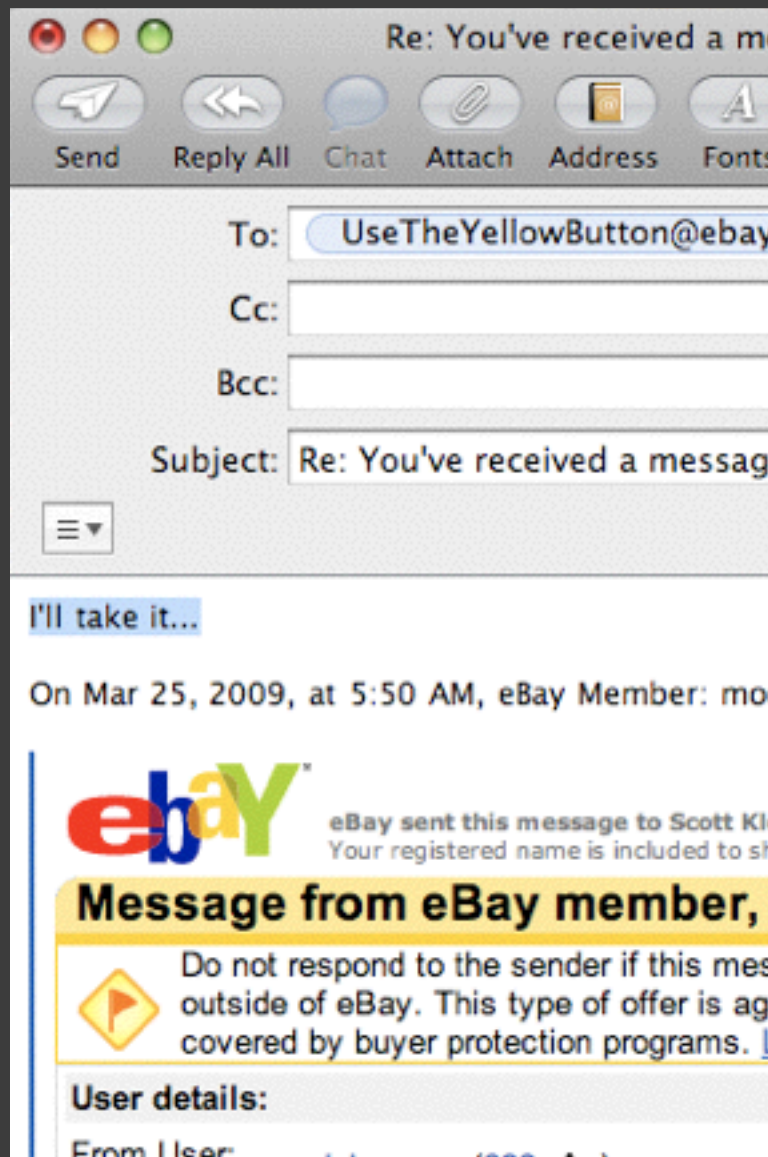
Select **Service Updates/Regulatory Changes** to receive alerts about service changes or announcements of proposed regulatory changes.





Help show the steps



Help point things out



Help provide more information



Your VSP insider to eye health, eyewear fashion & trends

Are you sure you want to unsubscribe from VSP's EnVision newsletter? You'll miss out on:

- Eye health and eyecare tips,
- The latest trends in eyewear fashion,
- Fun contests, promotions, and more!



To continue your subscription, click cancel:

Just curious, why are you unsubscribing?

- I receive too many e-mails.
- I'm not interested in eye health and eyecare information.
- I don't recall subscribing to this newsletter.

Enter your e-mail address to unsubscribe:

Help provide more information



Your VSP insider to eye health, eyewear fashion & trends

Are you sure you want to unsubscribe from VSP's EnVision newsletter? You'll miss out on:

- Eye health and eyecare tips,
- The latest trends in eyewear fashion,
- Fun contests, promotions, and more!

To continue your subscription, click cancel:

Just curious, why are you unsubscribing?

I receive too many e-mails.

Wait - You can change the frequency!

Monthly Every other month Quarterly

I'm not interested in eye health and eyecare information.

I don't recall subscribing to this newsletter.

Enter your e-mail address to unsubscribe:

Help clearly

Please Accept the TurboTax License Agreement X

Just one more thing before you get started (our lawyers made us do it).

I have read and agree to the terms of the license agreement. [View agreement.](#)

Cancel **Continue**

[Add more personal information to your bill](#)

[Yes, I want to be reminded by SMS if I forget my username and password](#)


I agree that Telekom Deutschland GmbH can use my data to contact me by e-mail, mail, telephone SMS or MMS, to provide me with advice, information and for market research purposes.

Please carefully read the [Terms & Conditions and pricing](#), [Data Privacy](#) and [Right of Withdrawal](#) notices before purchasing HotSpot


*) Please complete all mandatory fields.

back **proceed**


Help clearly

 **GitHub** Share review ×


CLASS B The terms of services are fair towards the user but they could be improved.

 **You don't grant any copyright license to github** [Discussion](#)

"We claim no intellectual property rights over the material you provide to the Service. Your profile and materials uploaded remain yours. However, by setting [...] your repositories to be viewed publicly, you agree to allow others to view and fork your repositories."

 **Changes can happen any time, sometimes without notice** [Discussion](#)

"GitHub reserves the right to update and change the Terms of Service from time to time without notice." Fortunately, the privacy policy benefits from a special clause: changes to the privacy policy will be notified to you, but there is no delay.

 **You shall defend and indemnify GitHub** [Discussion](#)

"You shall defend GitHub against any claim, demand, suit or proceeding made or brought against GitHub by a third party alleging that Your Content, or Your use of the Service in violation of this Agreement, infringes or misappropriates the intellectual property rights of a third party or violates applicable law, and shall indemnify GitHub for any damages finally awarded against, and for reasonable attorney's fees incurred by, GitHub in connection with any such claim, demand, suit or proceeding; provided, that GitHub (a) promptly gives You

Help share what others know

```
2
3 # Annotations in the Codex IDE
4
5
6 # Creating a nested hash
7
8 choices = Hash.new { |h,k| h[k] = {} }
9
10
```


Creating a Nested Hash

Total Count 75 Project Count 17

```
new do |var0, var1|
  var0[var1] = {}
end
```

Projects: cassandra fakeweb fog jruby

```
4 "a string".split("\n").to_s|
5
6
7
```



Function to_s has appeared 12 times and split has appeared 29 times, and they've appeared 0 times together.

Heuristic evaluation is a
hill-climbing technique

Heuristic evaluation
gives you terms
for intuitive ideas

it is a suite of unit tests for user interfaces