Interaction Design

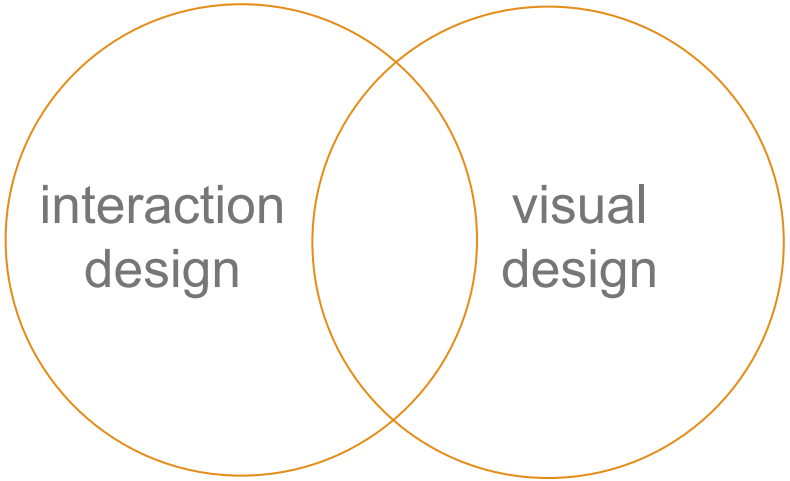
CS377E Spring 2016

Jenny Oja Mailhot, Julie Stanford, and James Landay

what is interaction design?

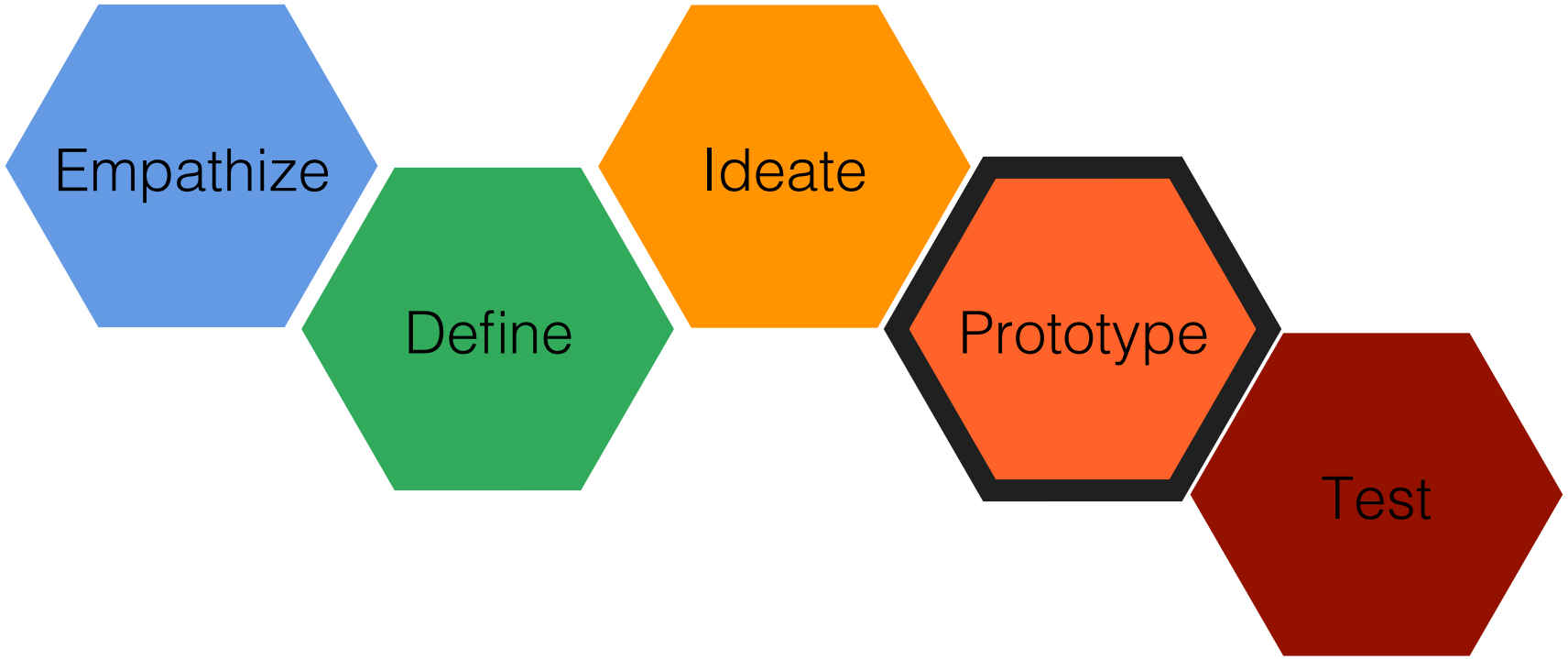
the practice of designing interactive digital products, environments, systems, and services

interaction design vs. visual design

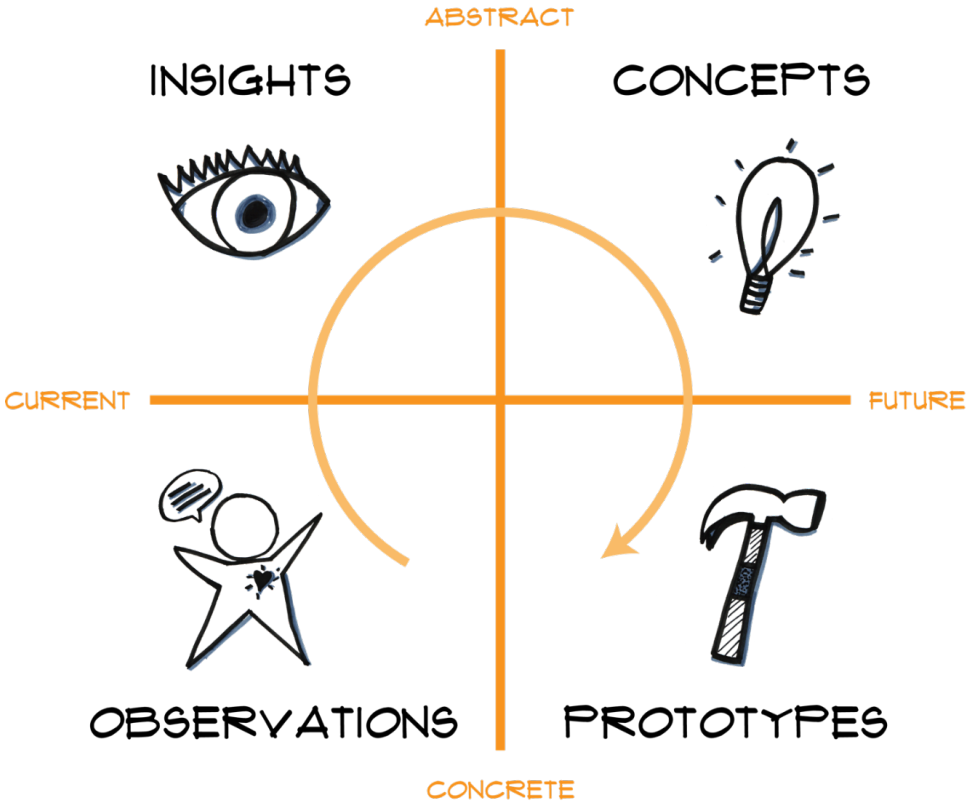


interaction design includes any aspects of the design that impact usability

where does it fit in the process?

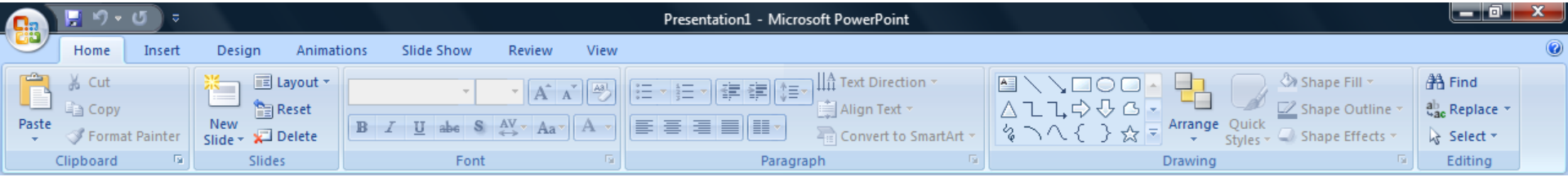


where does it fit in the process?



interaction design principles

80/20 rule



Ribbon in Microsoft Office 2007

A high percentage of effects in any large system are caused by a low percentage of variables. Also know as Pareto's Principle. – *Universal Principles of Design*

"Users use 20% of the features 80% of the time."

12:29
>>DIRECT ACCESS<<
POPCORN
BEVERAGE
START
BAKED POTATO
FROZEN ENTREE
PIZZA
REHEAT
POWER LEVEL
KITCHEN TIMER
MULTI STAGE COOKING
COOK MEAT BY WEIGHT
DEFROST BY WEIGHT
TIMED DEFROST
1
2
3
4
5
6
7
8
9
CLOCK
0
STOP/ RESET
SANYO

80/20 rule: CS247 microwave redesign

removed unnecessary buttons

only functionality to increase time

most important buttons larger

80/20 rule: cross-platform design

affordance

actionable properties between the world and an actor

introduced to the design field by Don Norman

affordance

what are the affordances?

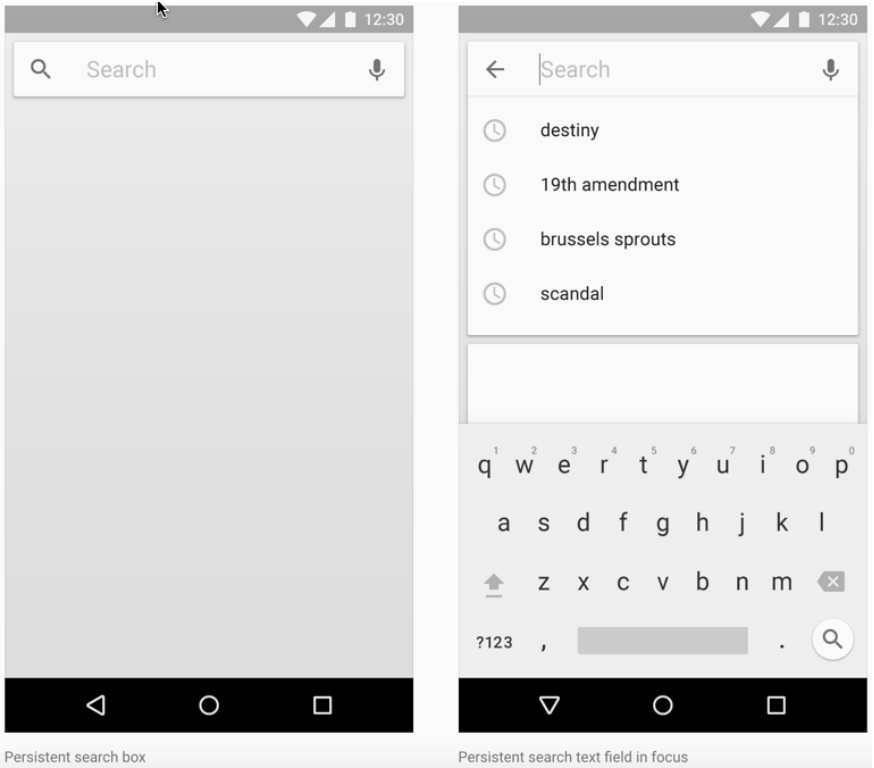
consistency

The usability of a system is improved when similar parts are expressed in similar ways.

But do not compromise clarity or usability for consistency.

- Universal Principles of Design

consistency: design patterns

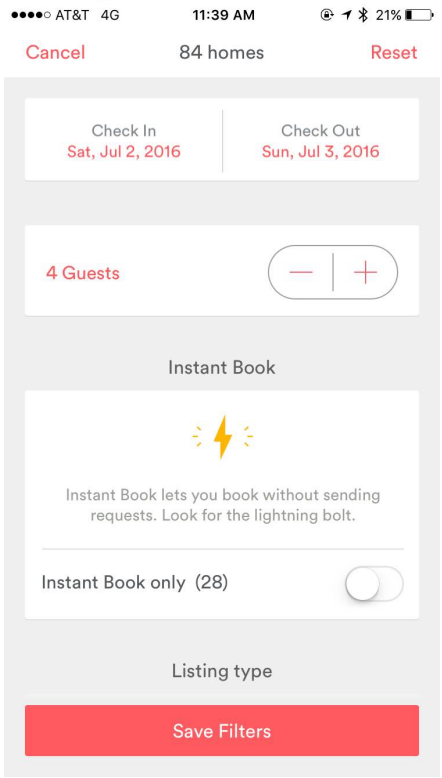


Google Material Design pattern: search

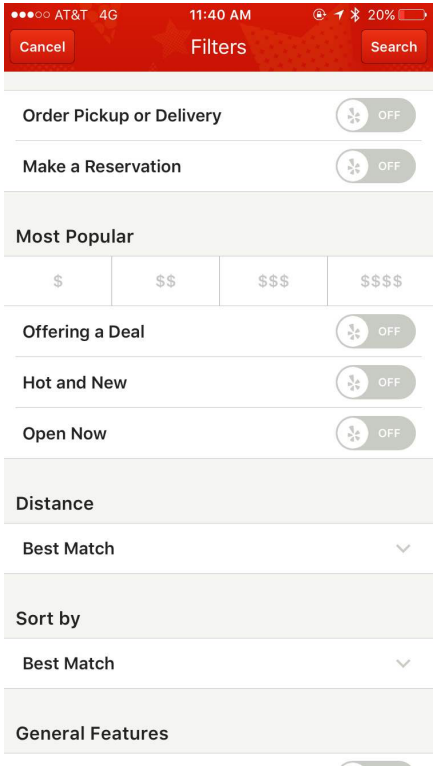
Design patterns are conventions and best practices.

"A formal way of documenting a solution to a common design problem." - *Wikipedia*

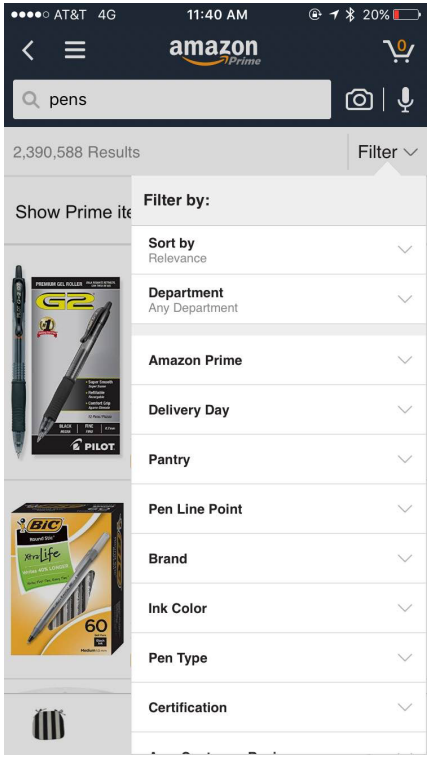
consistency: filter patterns



airbnb



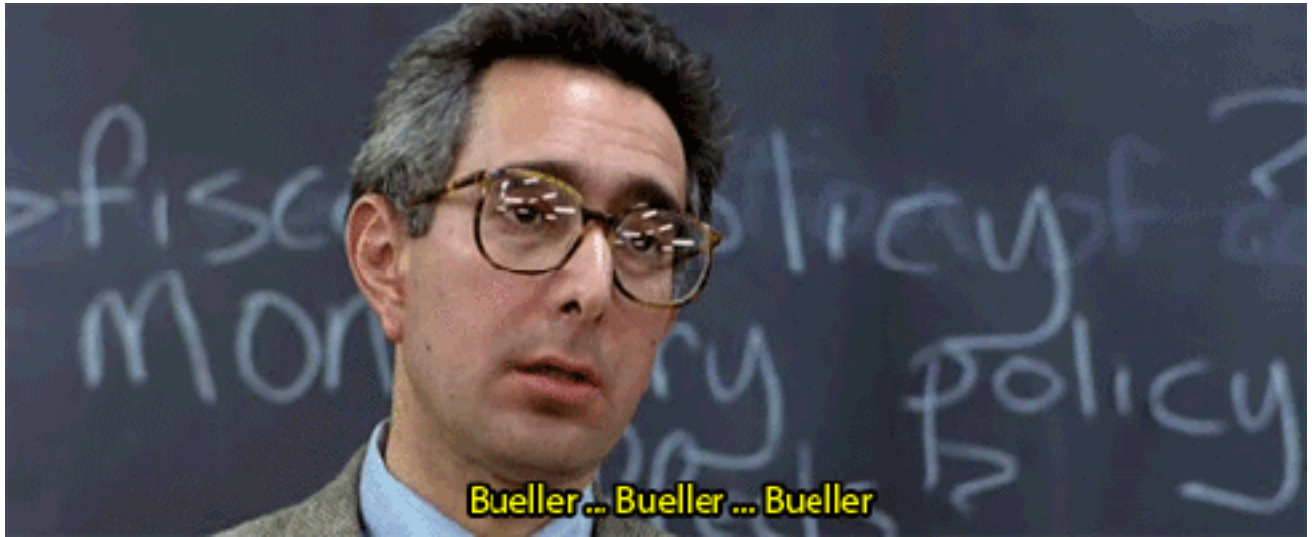
yelp



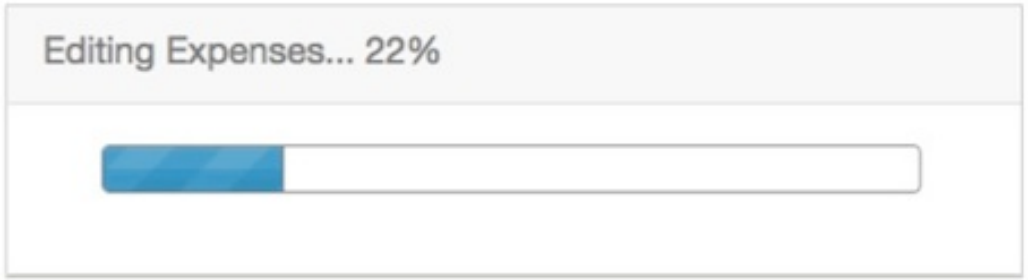
amazon

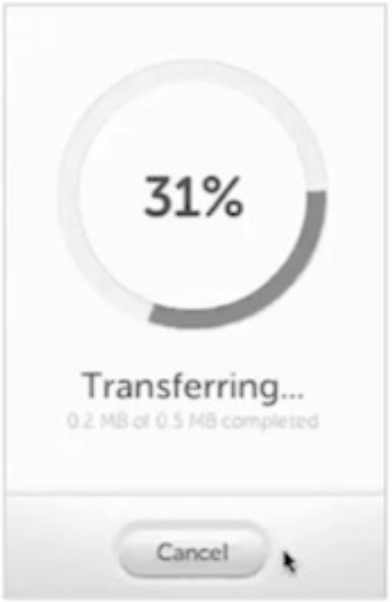
feedback

- indication that something has happened
- every action should have some acknowledgment of that action

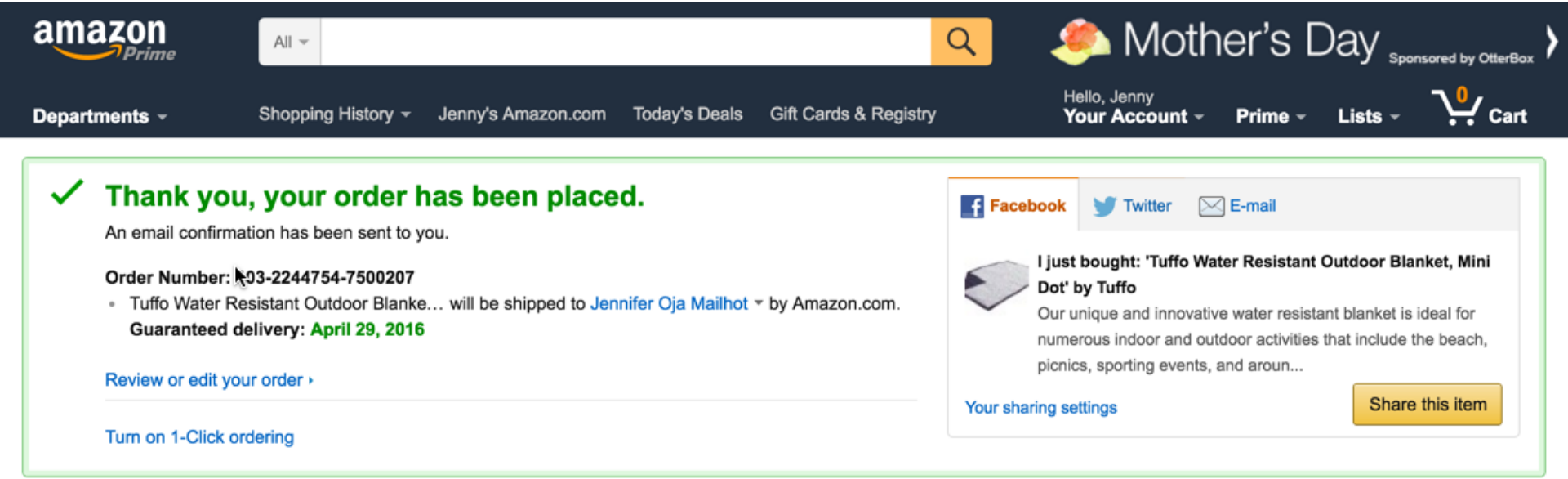


feedback: progress indicators





feedback: confirmation screens

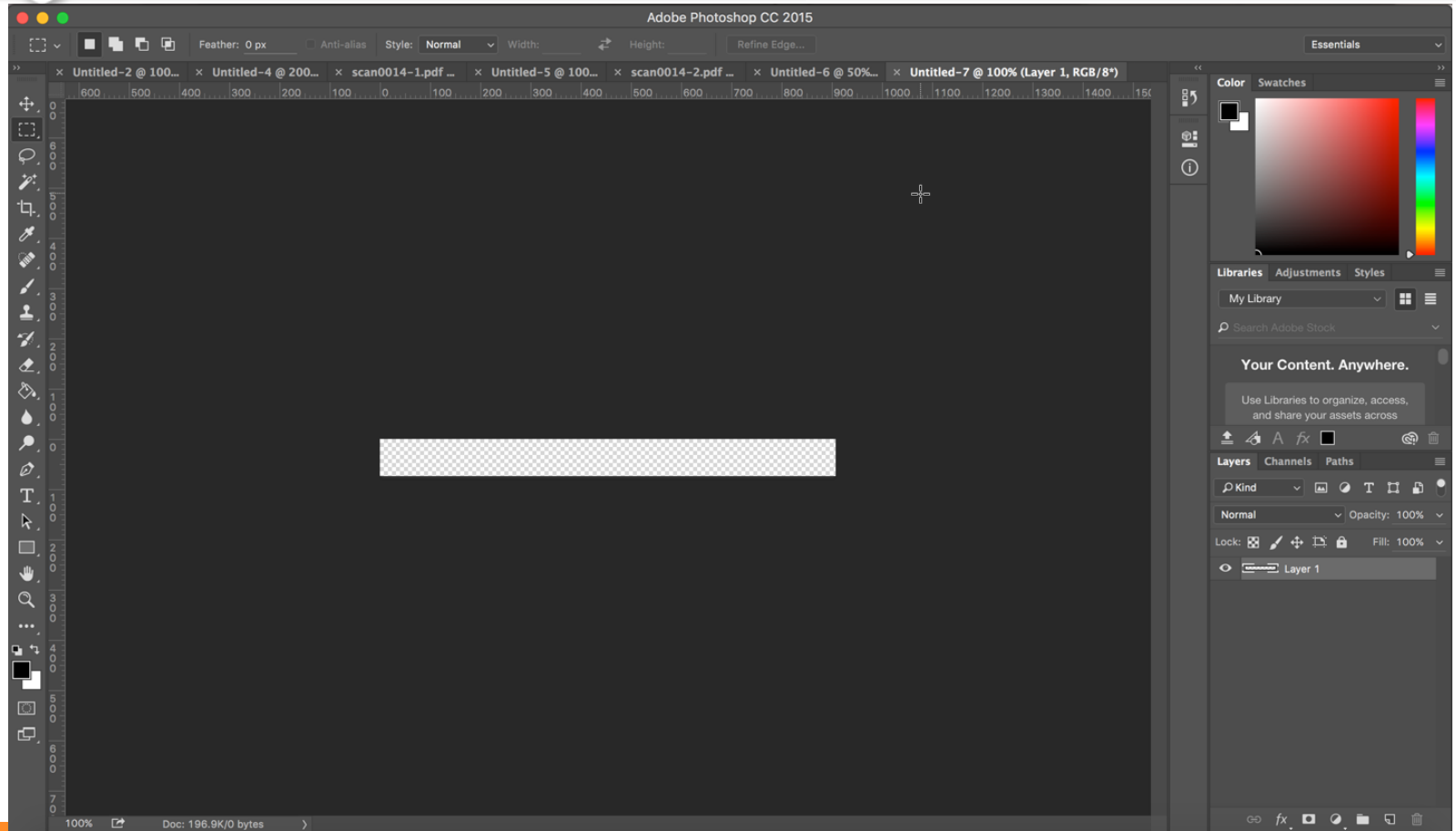


Fitts's Law

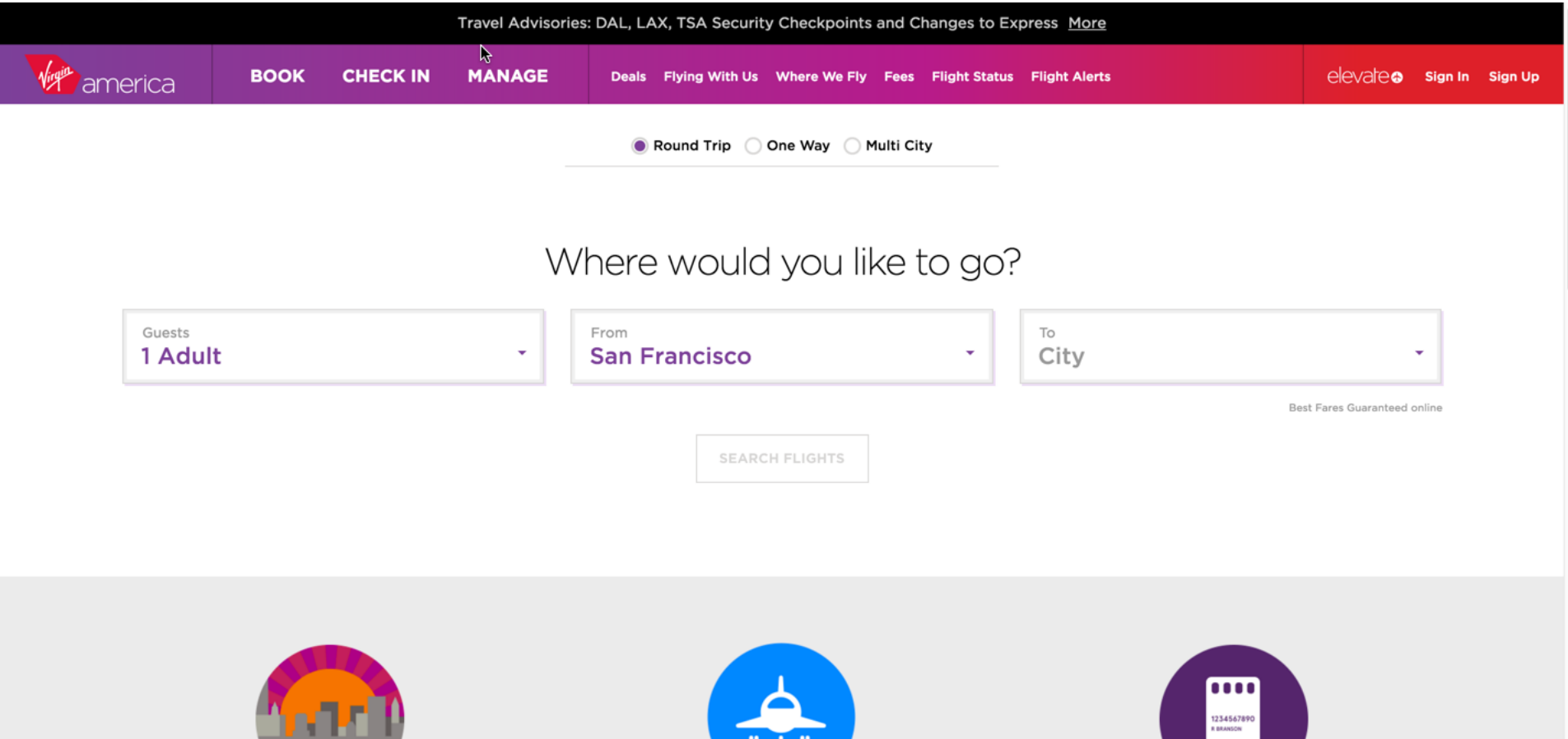
The time required to move to a target is a function of the target size and distance to the target. – Paul Fitts

A call to action button is usually large and eye-catching to make it faster and easier to click.

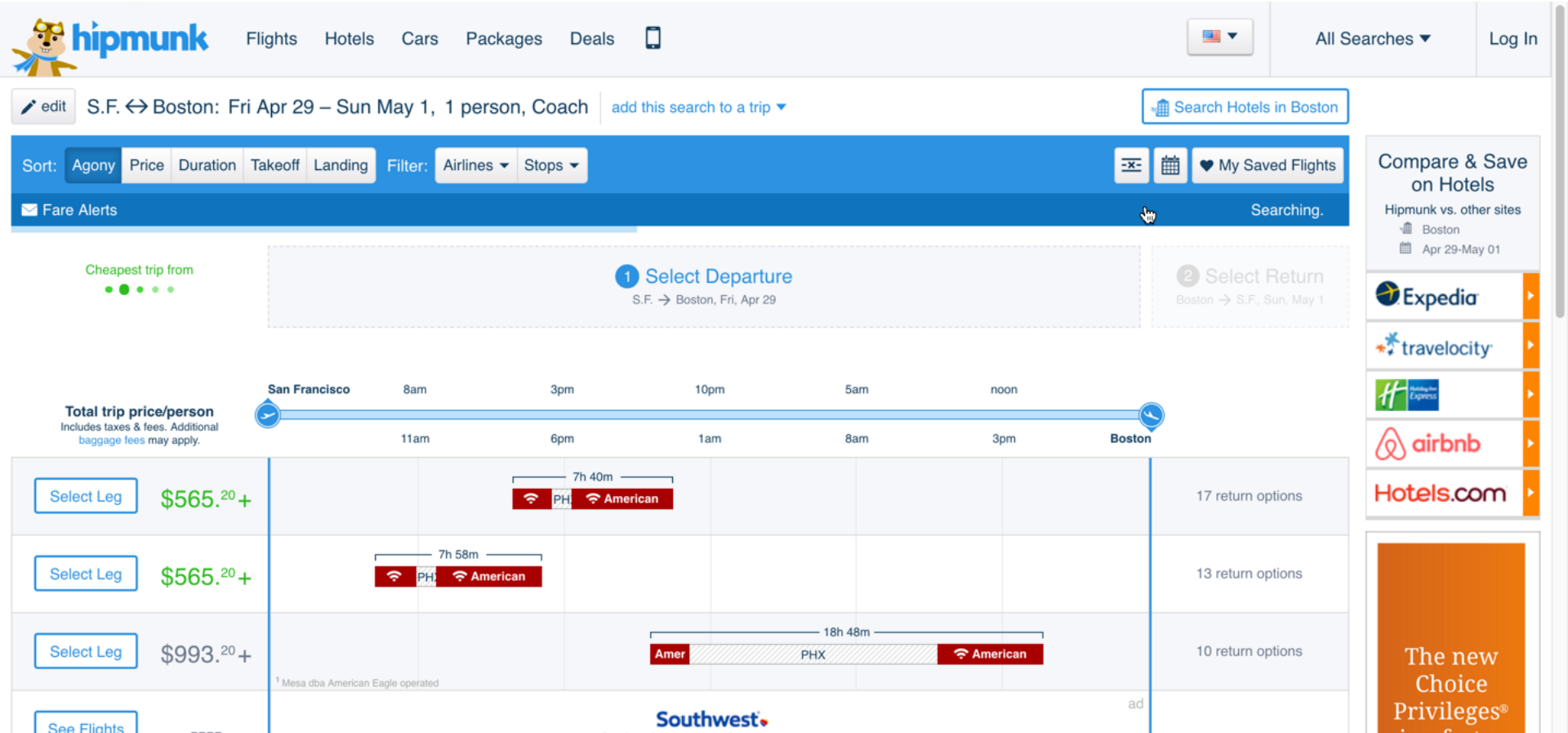
Fitts's Law: edges & corners are big targets



reducing clicks

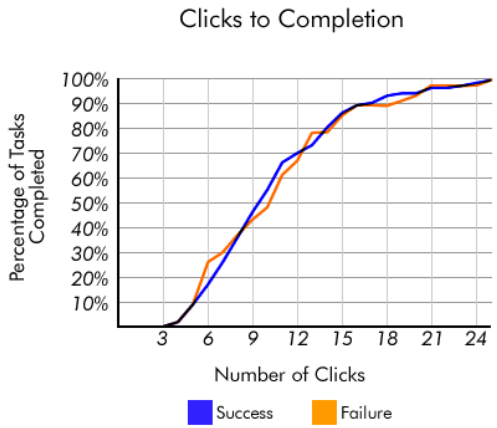


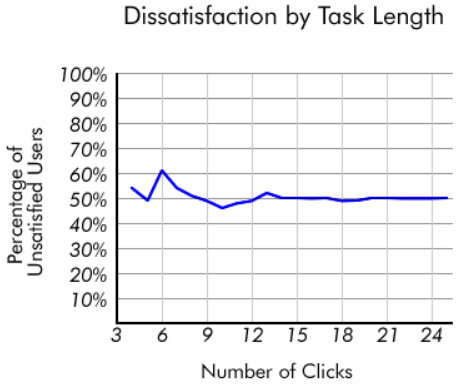
reducing clicks



Should all pages be accessible in 3 clicks?

UIE Group did a study to test the 3-click rule. They reviewed the data from a study where 44 users attempted 620 tasks.





Result: No, not all tasks need to be completed in 3 steps.

https://articles.uie.com/three_click_rule/

Should all pages be accessible in 3 clicks?

"What really counts here is ease of navigation...If you don't make the user think about the clicks, they won't mind having a few extra clicks." – Zoltan Gocza from UX Myths

source: http://uxmyths.com/post/654026581/myth-all-pages-should-be-accessible-in-3-clicks

Change Design

Preview Invitation | Save Draft | Continue

Enter Details

* Event Title: Event Title

* Event Type: Select One

* Host: Jenny Oja Mailhot

RSVP Style

Notifications

Hide Guest List

Guest Options

Gifting Options

structure and layout

visual hierarchy and reading order

Strong visual hierarchies guide visual & logical progression by showing what is important.

Weak visual hierarchies provide little or no guidance about what is important.

source: http://52weeksofux.com/post/443828775/visual-hierarchy

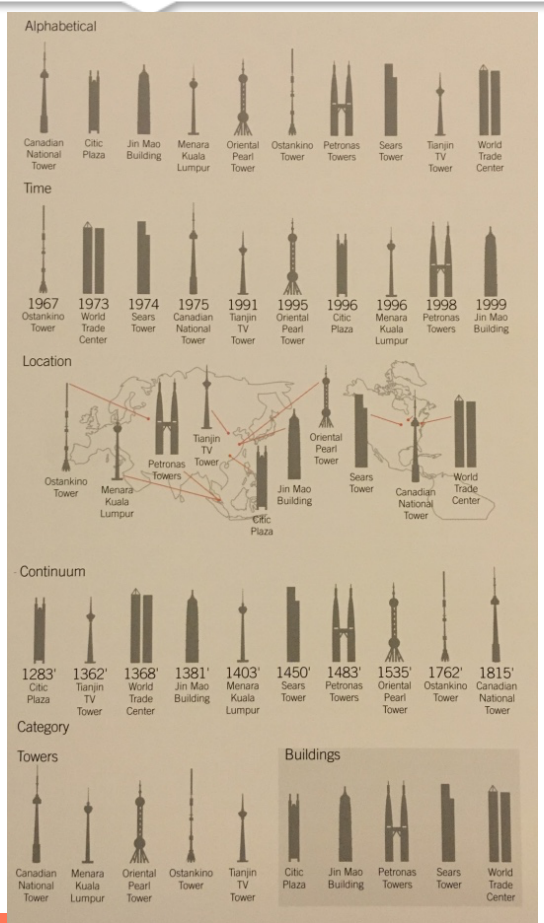
NETFLIX
Browse
Kids
DVD
Search
2
Jenny
NETFLIX ORIGINAL
KONG
KING OF THE APES
Watch Season 1 Now
He's the biggest hero the world has ever seen. But even Kong will need help to stop this army of high-tech beasts!
PLAY
+ MY LIST
Continue Watching for Jenny
EXPEDITION UNKNOWN
ANTHONY BOURDAIN PARTS UNKNOWN
NEW EPISODES
NBC
Parks and Recreation
MIDSOMER MURDERS
SLUGTERRA
PBS
THE MIND of a CHEF
NARRATED BY ANTHONY BOURDAIN

reading order pillars

1. size
2. color
3. layout
4. spacing
5. style

source: http://thenextweb.com/dd/2015/04/30/the-5-pillars-of-visual-hierarchy-in-web-design/#gref

5 ways to organize information (five hat racks)

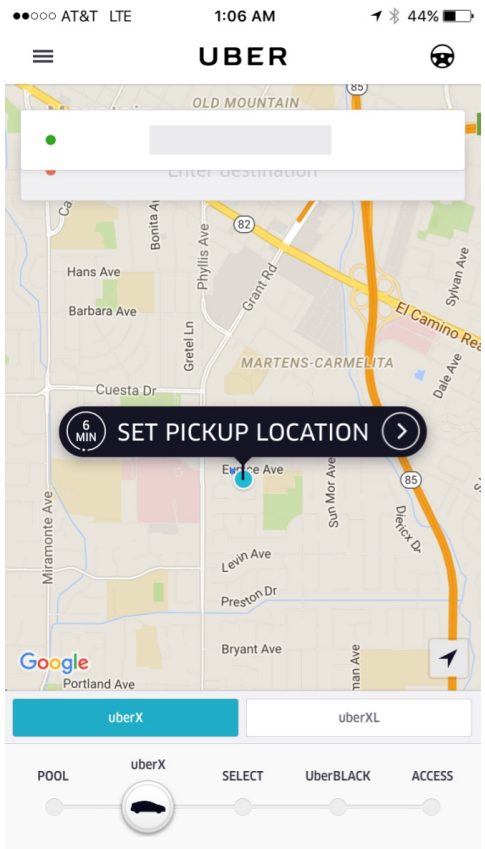


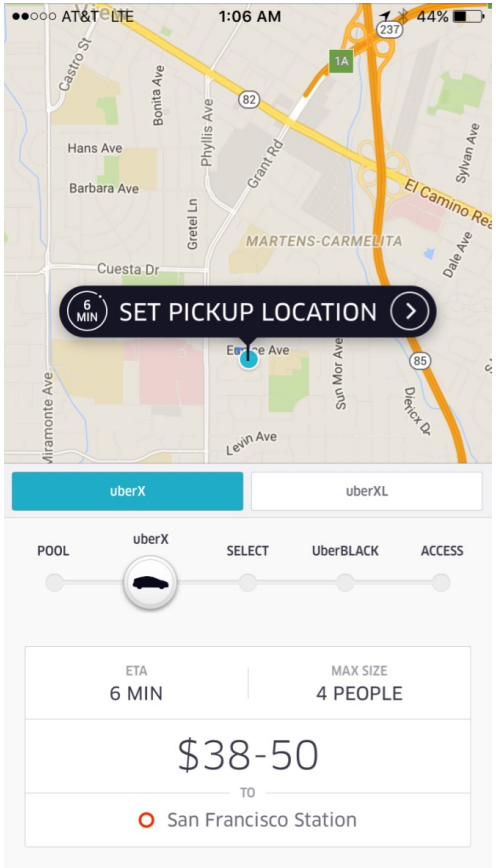
- category
- time
- location
- continuum
- alphabet

The fallback order is alphabetical order.

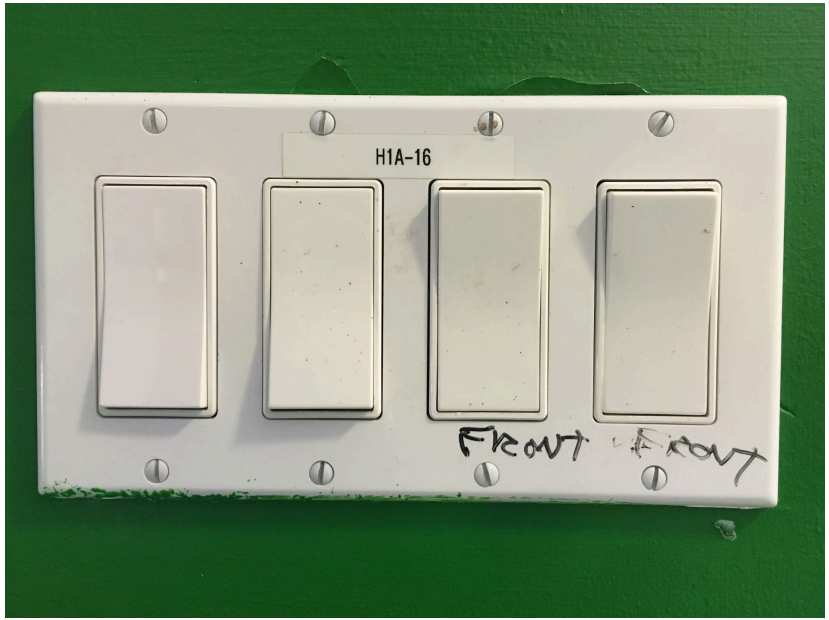
Source: Universal Principles of Design

progressive disclosure





mapping

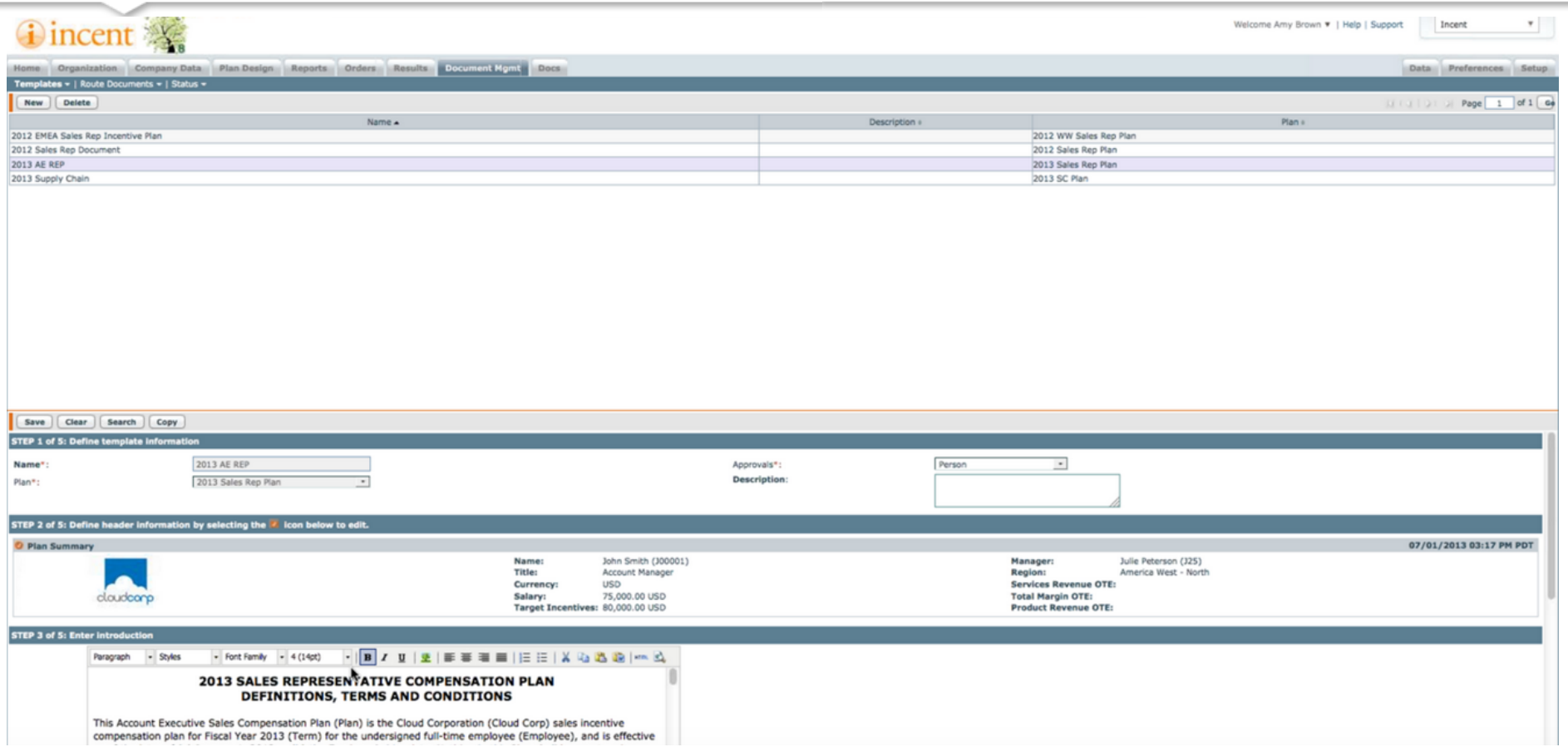


A relationship between controls and their movements or effects. Good mapping between controls and their effects results in greater ease of use. – *Universal Principles of Design*

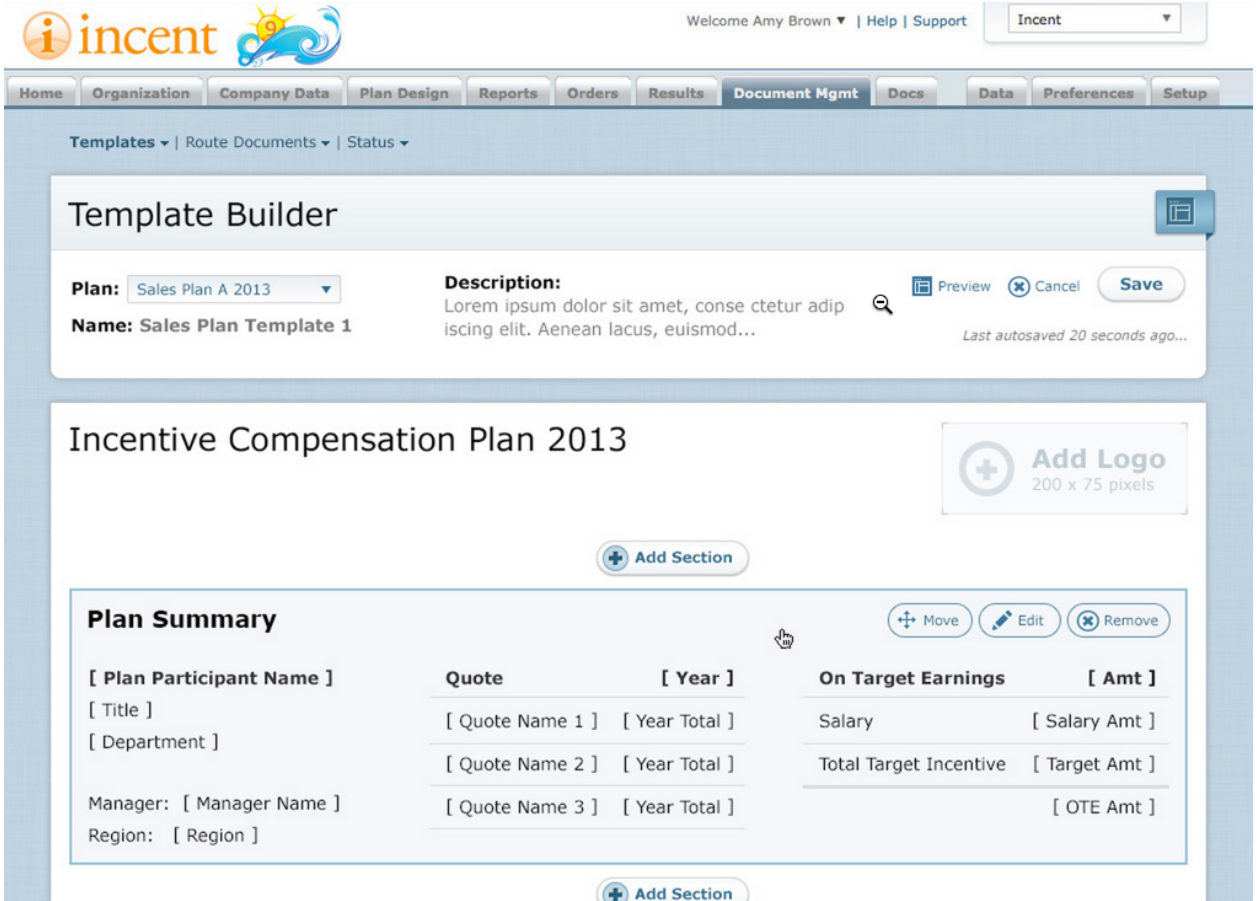
mapping – which knob goes to each burner?

mapping – better knob & burner mapping

before – creating a sales plan



after – creating a sales plan



alignment and grids

Nothing should be placed on the page arbitrarily. Every item should have a visual connection with something else on the page. - *Robin Williams*

The New York Times

Saturday, January 12, 2013 Last Update: 1:20 PM ET

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Sales of Guns Soar in U.S. as Nation Weighs Tougher Limits

By MICHAEL COOPER

The rapid growth in gun sales began after President Obama's re-election and surged after the Dec. 14 shooting at a school in Newtown, Conn.

Matt Gentry/Roanoke Times, via AP

· Video Game Industry Braces for Regulations

Rina Castelnuovo for The New York Times

Weather Adds to Misery of Syria Refugees

By JODI RUDOREN 11:55 AM ET

With the number of Syrian refugees expected to reach a million in 2013, the misery in one struggling camp highlights a deepening humanitarian crisis.

· Video Feature: Watching Syria's War

The Opinion Pages

EDITORIAL

Senator Reid Takes Fresh Aim

The Senate majority leader, a gun enthusiast, is now calling for better protections.

· Blow: Revolutionary Talk
· Collins: Flu Strikes Again
· Nocera: How to Shoot
· Cavett: When I Was Packing
· Editorial: The Afghan War's Last Chapter?

BUSINESS DAY »

They Got 2012 Right. What About 2013?

Experts who were accurate about 2012 discuss their thoughts on stocks, bonds and real estate for this year.

SPORTS »

In New England, Few Words and Many Wins

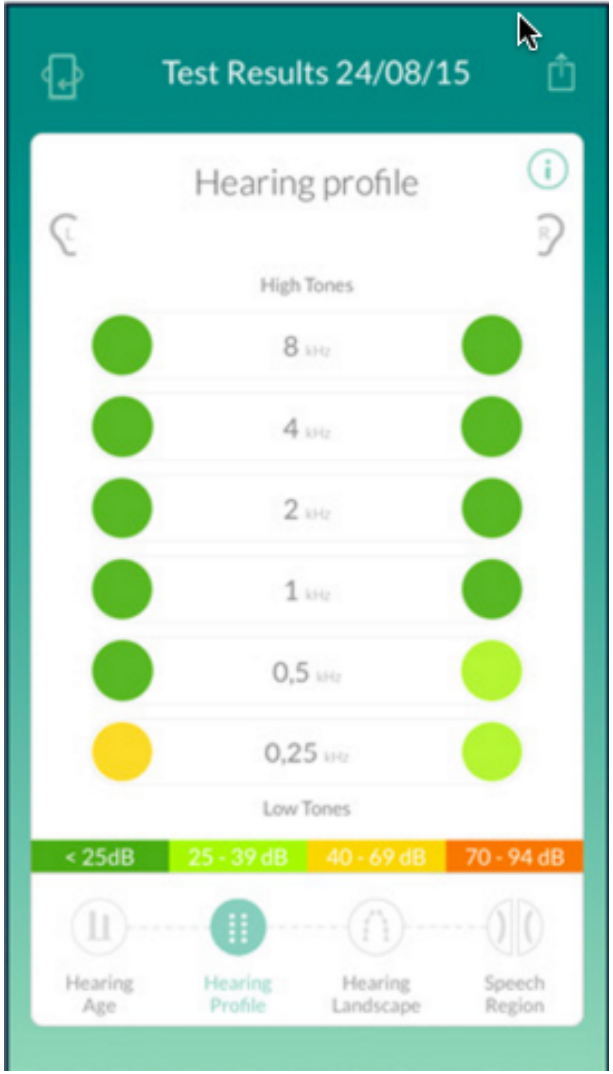
Bill Belichick and Tom

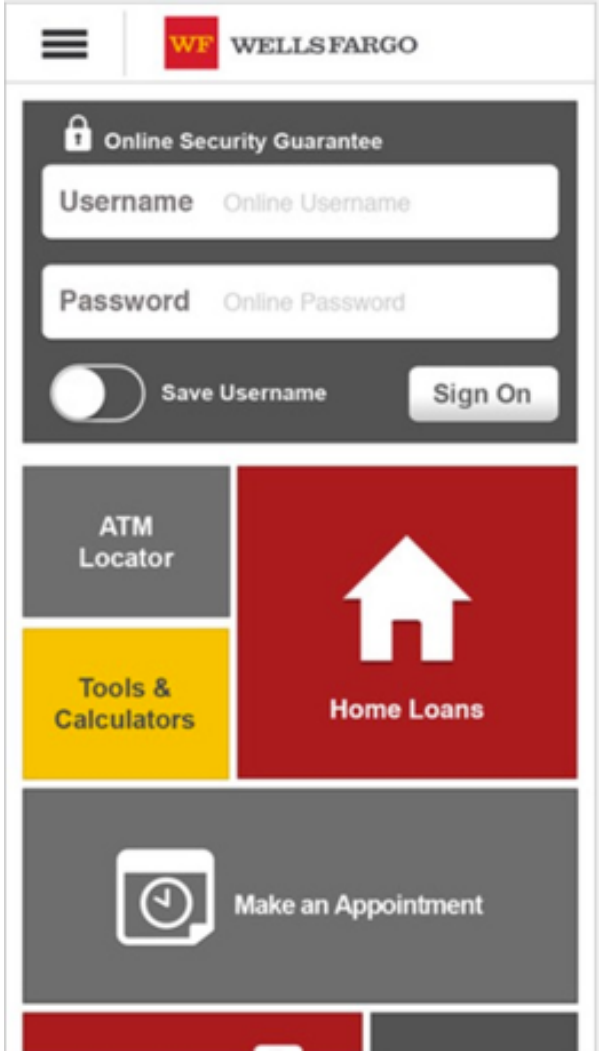
What Came First. the Chicken or the Sack?

Von Miller of the Denver Broncos aspires to be the

alignment and grids: responsive design

examples


Test Results 24/08/15
Hearing profile
High Tones
8 kHz
4 kHz
2 kHz
1 kHz
0,5 kHz
0,25 kHz
Low Tones
< 25dB
25 - 39 dB
40 - 69 dB
70 - 94 dB
Hearing Age
Hearing Profile
Hearing Landscape
Speech Region


WELLS FARGO
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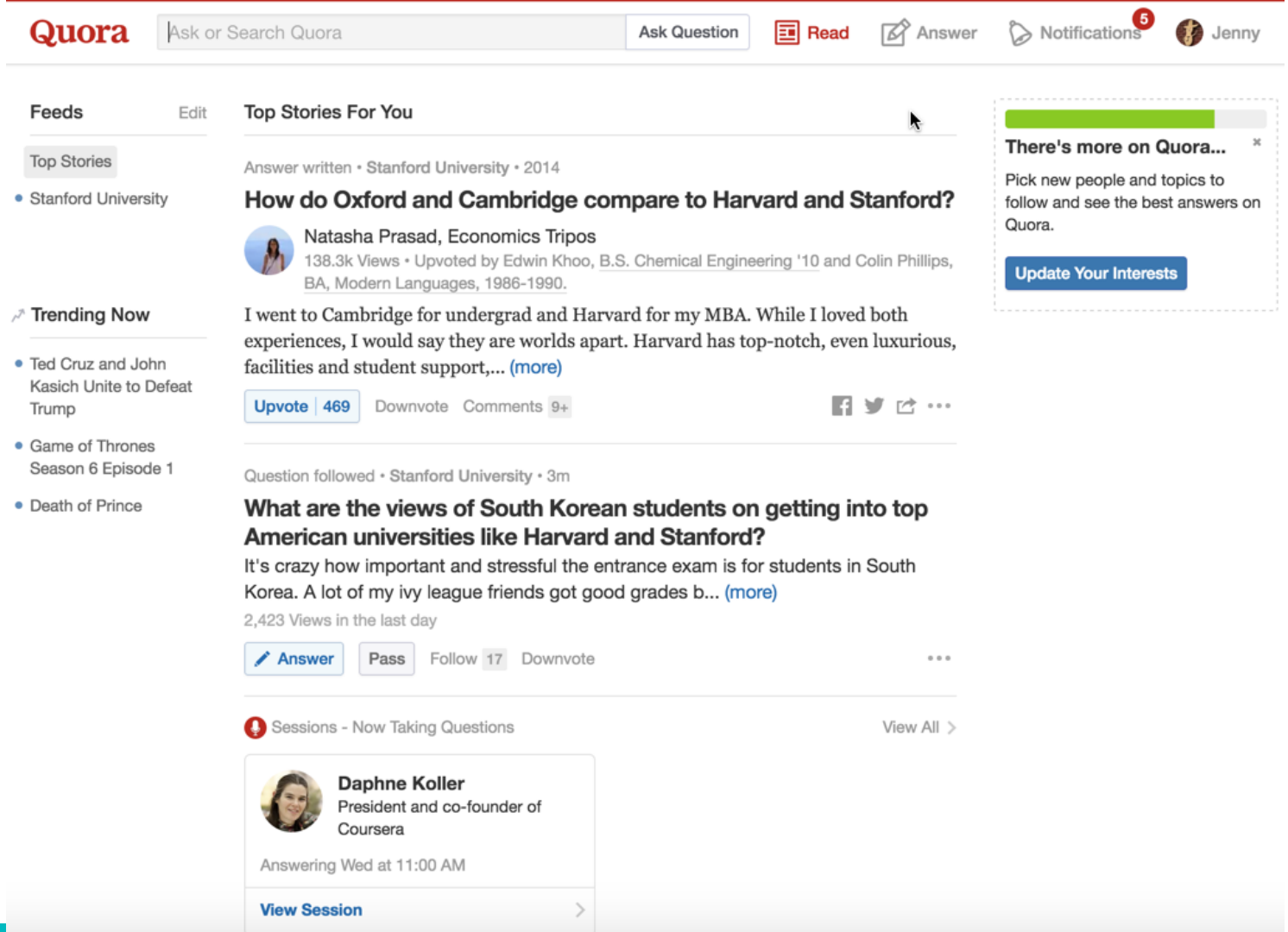
Username
Online Username
Password
Online Password
Save Username
Sign On
ATM Locator
Tools & Calculators
Home Loans
Make an Appointment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Answer
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5
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Natasha Prasad, Economics Tripos
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Downvote
Comments 9+
Question followed • Stanford University • 3m
What are the views of South Korean students on getting into top American universities like Harvard and Stanford?
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Concord Pavilion

Beyoncé - The Formation World Tour
May 16, 2016
Levi's® Stadium

Steely Dan
Jun 16, 2016
Shoreline Amphitheatre

Guns N' Roses: Not In This Lifetime...
Aug 9, 2016
AT&T Park

Luke Bryan: Kill The Lights Tour 2016
Apr 29, 2016
Concord Pavilion

Gwen Stefani: This Is What the Truth Feels Like Tour
Aug 20, 2016
Save Mart Center

Rihanna: Anti World Tour 2016
May 6, 2016
SAP Center At San Jose

Kenny Chesney: Spread the Love Tour
Aug 6, 2016
Levi's® Stadium

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Rihanna: Anti World Tour 2016
SAP Center At San Jose

SAT 7 MAY — On Sale Now
Rihanna: Anti World Tour 2016
Oracle Arena

WED 11 MAY — On Sale Now
Selena Gomez
SAP Center At San Jose

ONE NATION photos & videos

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Demi + N

MON 16 MAY — On Sale Now
Beyoncé - The Formation World Tour
Levi's® Stadium

SAT — On Sale Now

references

Web Form Design by Luke Wroblewski

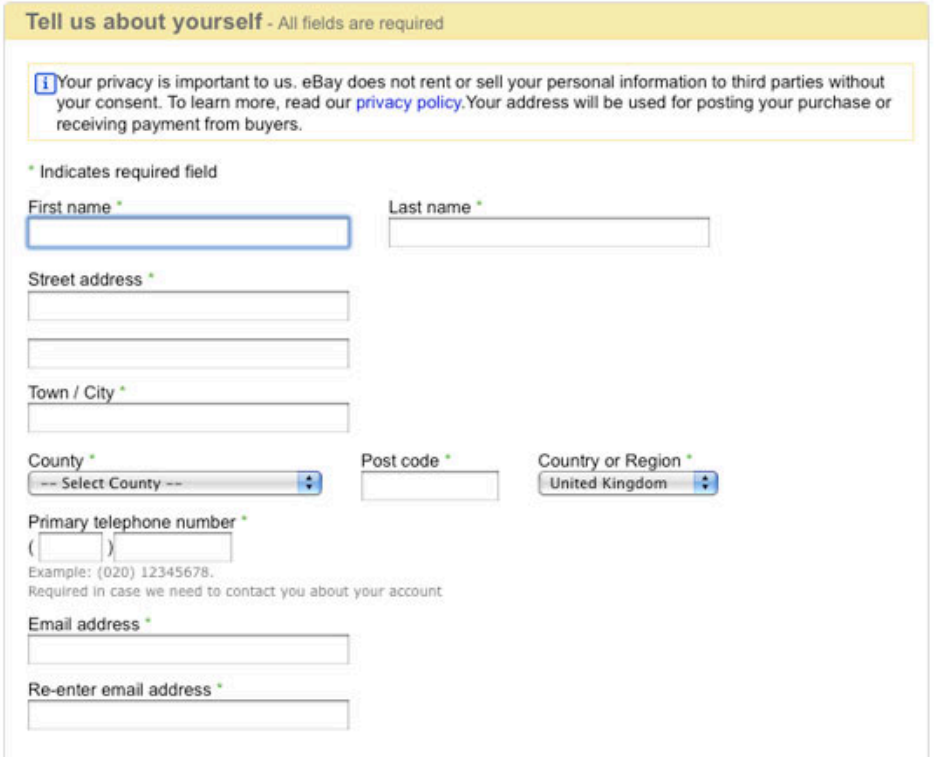
practical advice for forms

- How can I increase form conversion?
- How should I align labels?
- How should I handle ghost text?

http://www.lukew.com/

example: How should you indicate required and optional fields?

How do you decide?

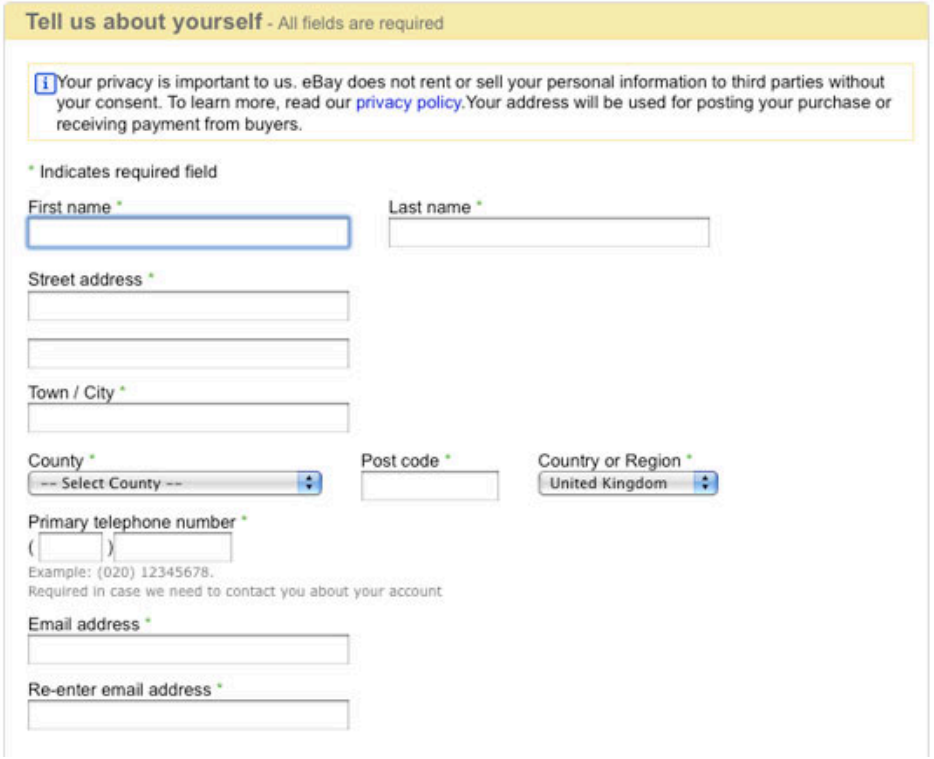


example: How should you indicate required and optional fields?

How do you decide?

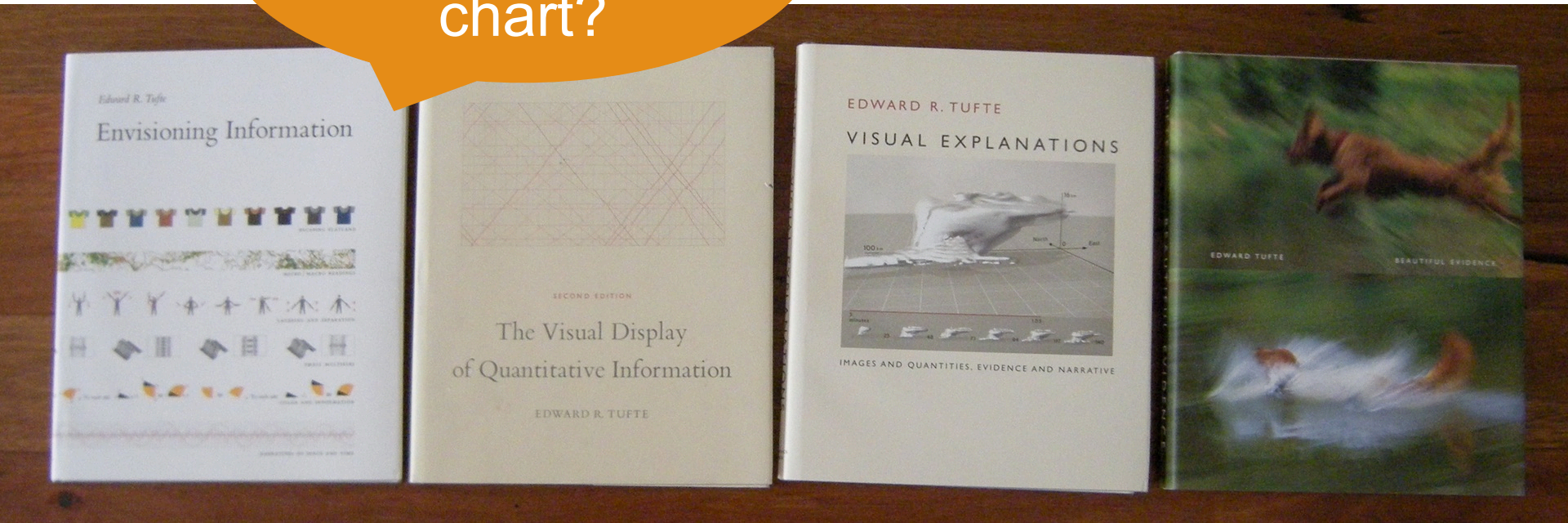
Check LukeW!

“Including the phrase ‘optional’ after a label is much clearer than any visual symbol you could use to mean the same thing.”

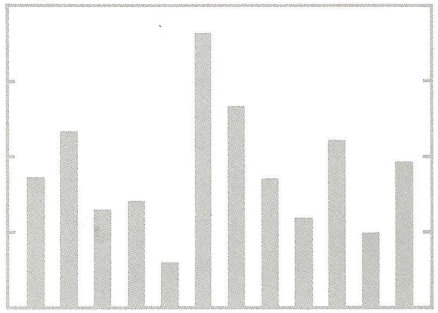


Edward Tufte on visualizing information

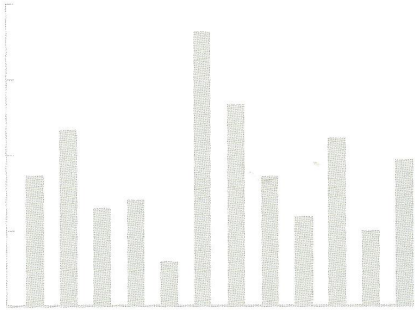
How should I design a bar chart?



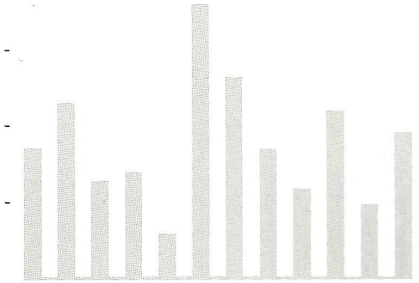
Edward Tufte on visualizing information



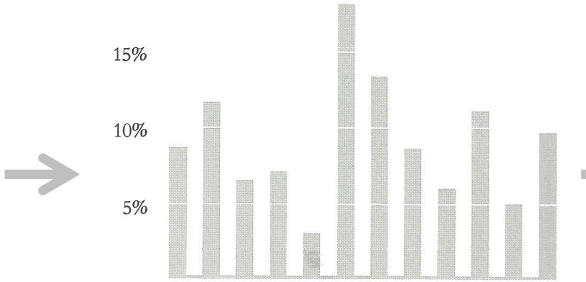
typical bar chart



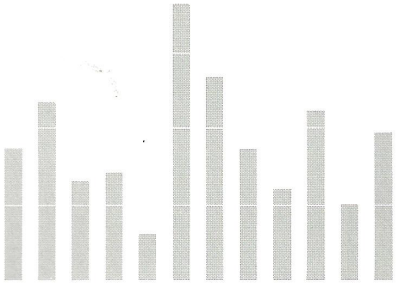
erase box



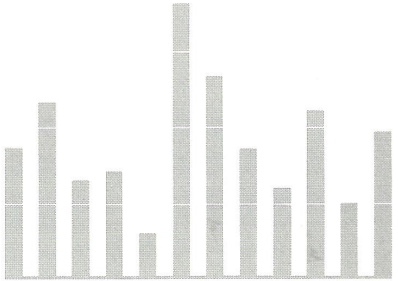
erase vertical axis, except ticks



add white grid to replace tick marks



erase baseline, bottom of bars define endpoint



still, a thin baseline looks good

Source: The Visual Display of Quantitative Information by Edward R. Tufte

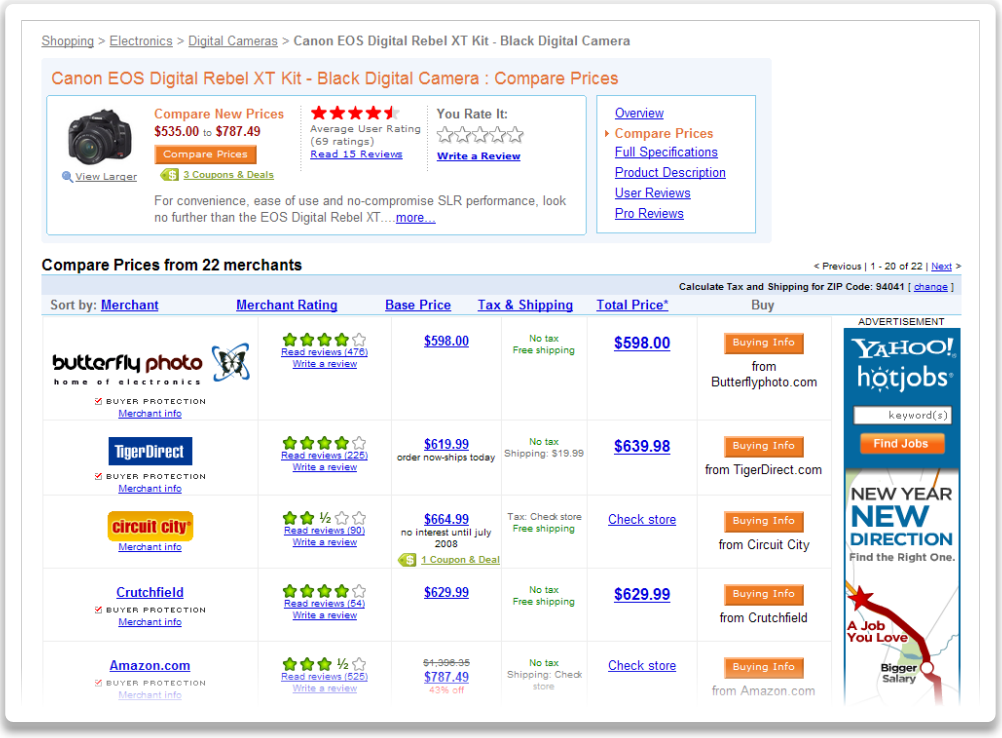
other reference books

- Universal Principles of Design by Lidwell, Holden, and Butler
- Designing for Interaction by Dan Saffer
- The Non-Designer's Design Book by Robin Williams
- Don't Make Me Think by Steve Krug

inspiration and resources

- inspiration
  - https://www.pinterest.com/timoa
  - http://pttrns.com/
- icon resources
  - Noun Project
  - FontAwesome

exercise: redesign Yahoo Shopping



Sketch ideas on your own for redesigning this UI.

Get together with your group to review and discuss.

Canon EOS Digital Rebel XT Kit - Black Digital Camera : Compare Prices

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Canon EOS 400D / Rebel XTi Body Only Digital Camera

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Price Range: $585.00 to $899.00

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