

Interaction Design

CS377E Spring 2016

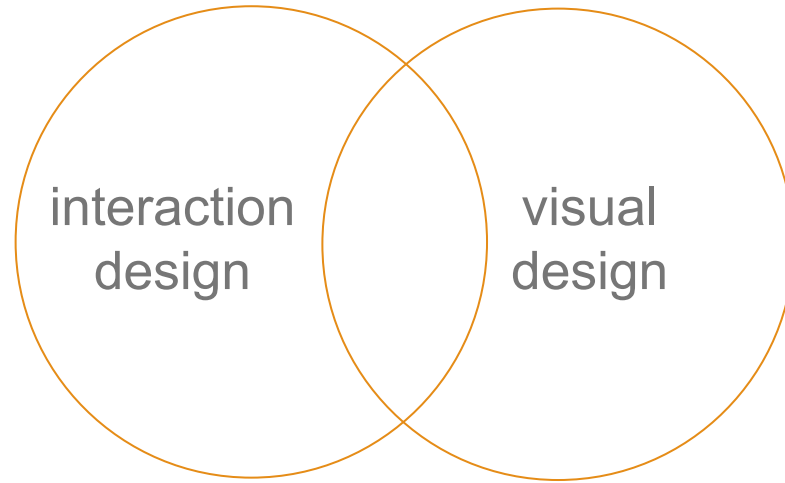
Jenny Oja Mailhot, Julie Stanford, and James Landay

A decorative footer element consisting of three horizontal bars of different colors: red, orange, and teal.

what is interaction design?

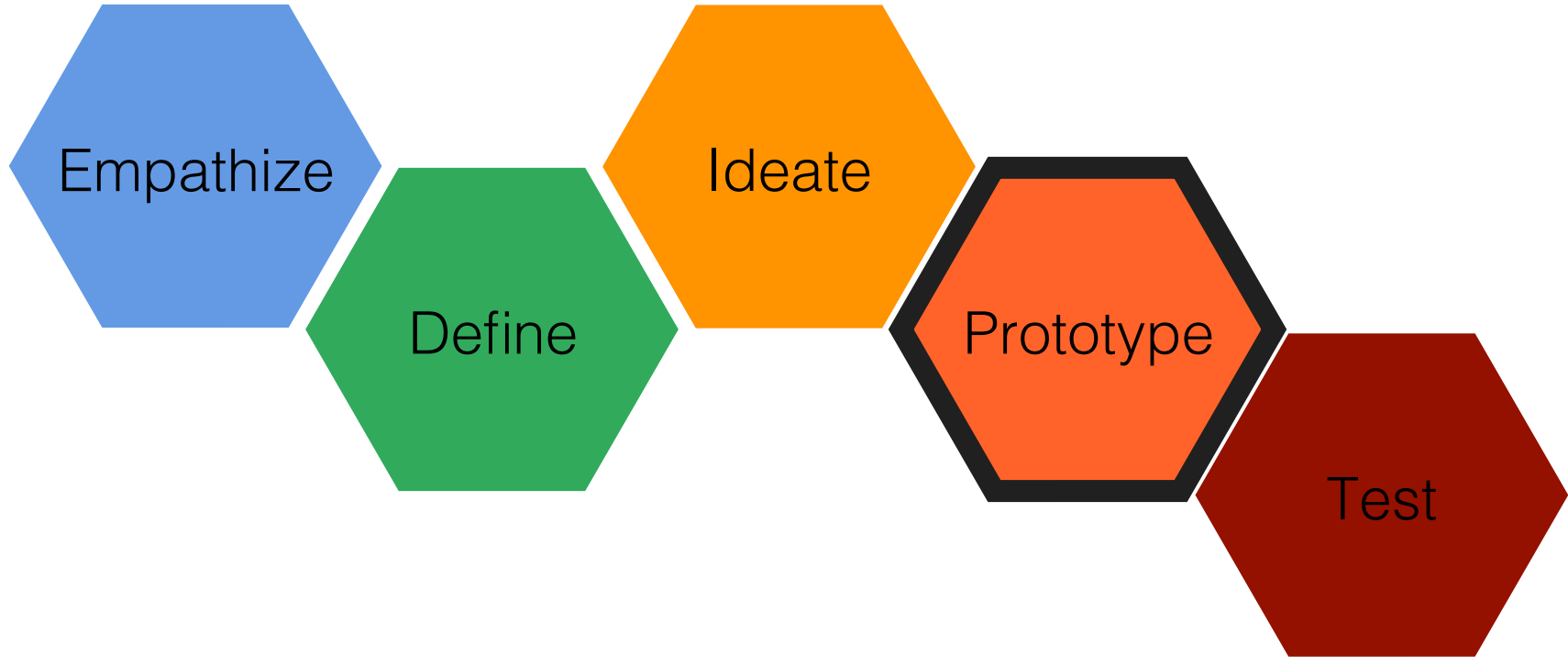
the practice of designing
interactive digital products,
environments, systems, and
services

interaction design vs. visual design

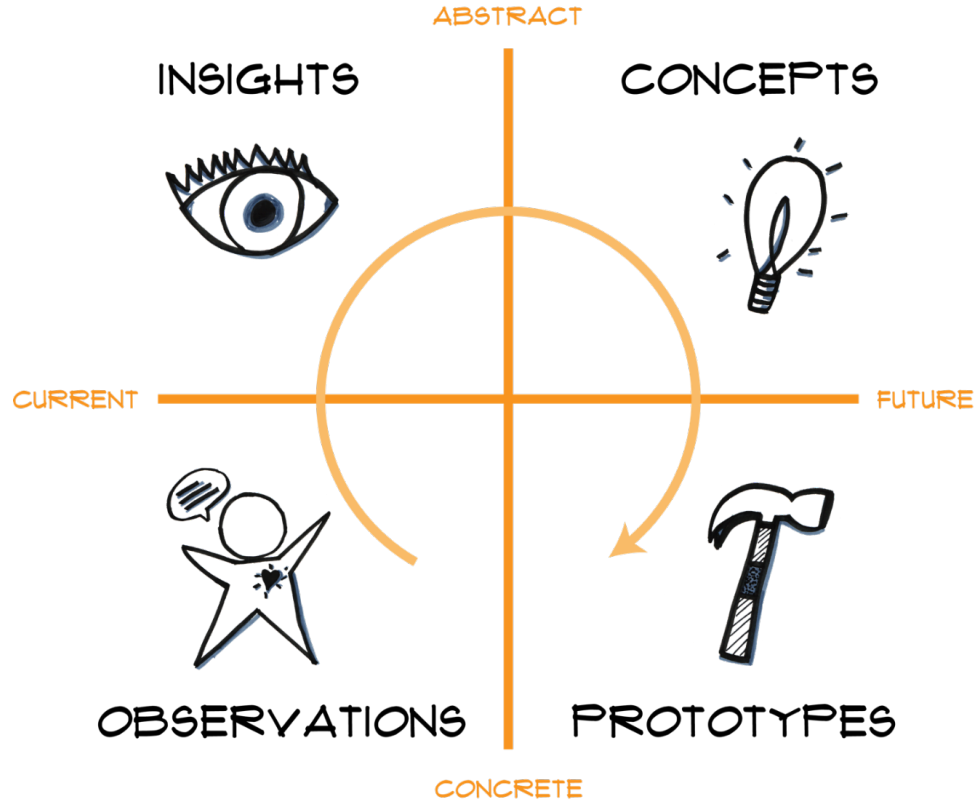


interaction design includes any aspects of the design that impact usability

where does it fit in the process?

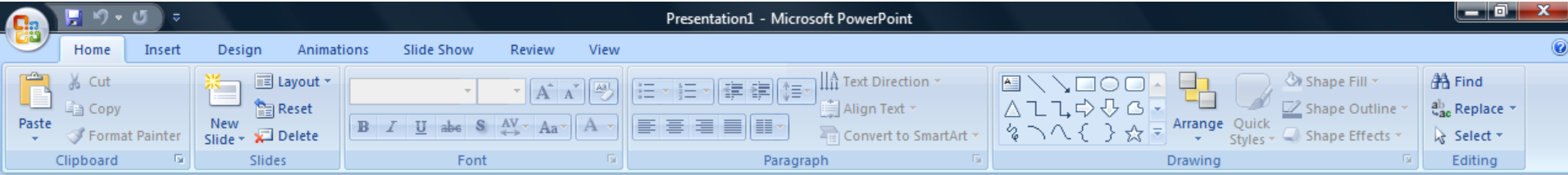


where does it fit in the process?



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 known 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

FRESH COLESLAW

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

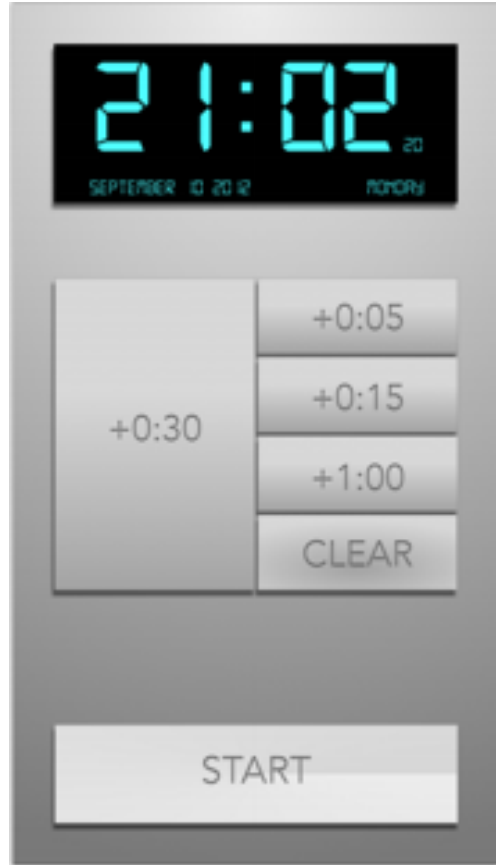
CLOCK

0

RED 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

A photograph of a Starbucks Coffee storefront. The building has large glass windows reflecting the surrounding city buildings and trees. A prominent white sign with green, 3D-style lettering reads "STARBUCKS COFFEE". To the left, a portion of a poster is visible, featuring a green circular logo with a white mermaid (Siren) and the text "Monday, March 6". Inside the store, a person is visible near the entrance, and there are promotional displays and menu boards.

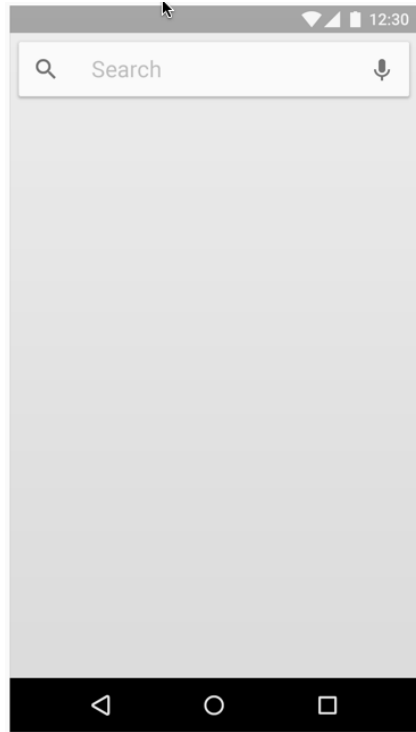
STARBUCKS COFFEE

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

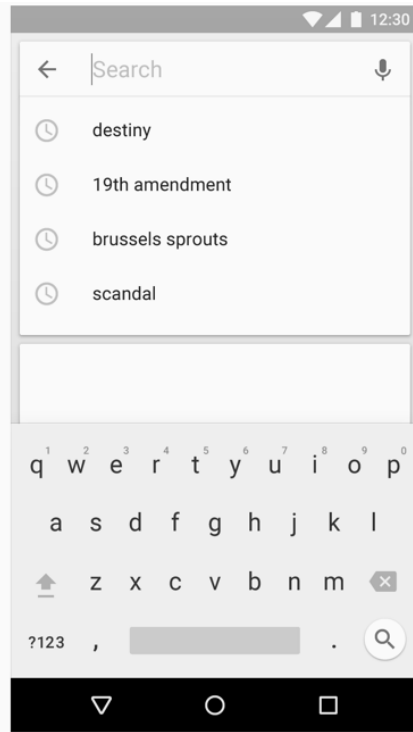
But do not compromise clarity or usability for consistency.

- *Universal Principles of Design*

consistency: design patterns



Persistent search box



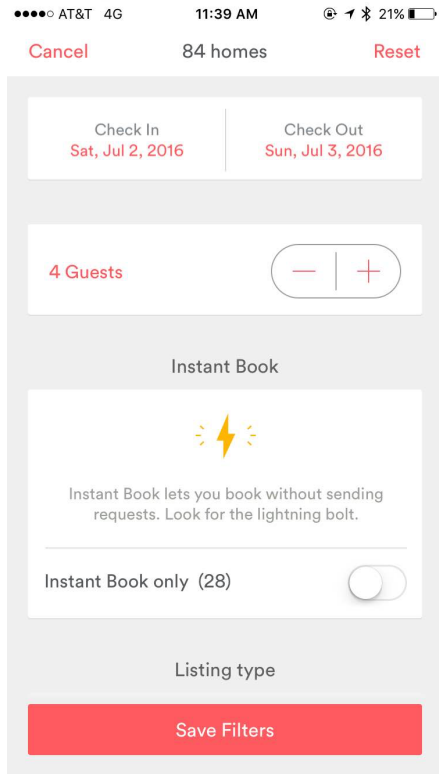
Persistent search text field in focus

Design patterns are conventions and best practices.

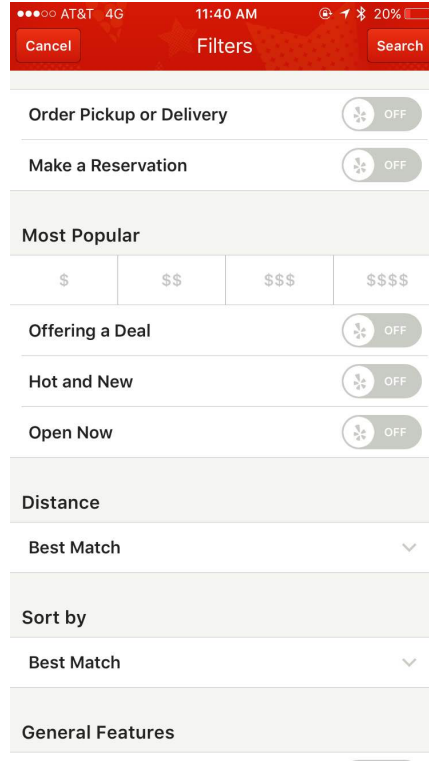
“A formal way of documenting a solution to a common design problem.” - *Wikipedia*

Google Material Design pattern: search

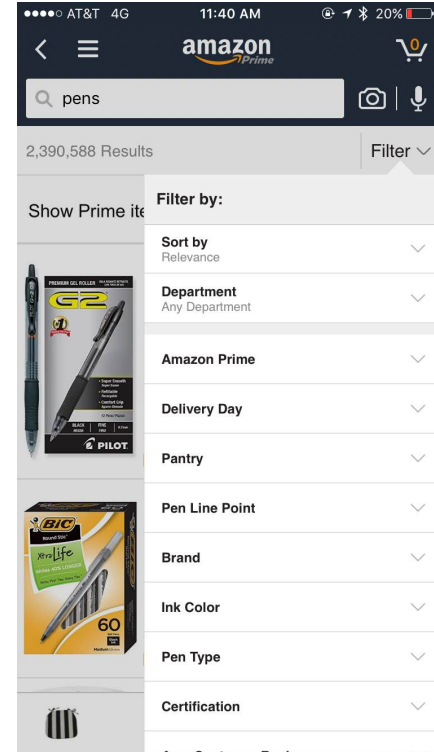
consistency: filter patterns



airbnb



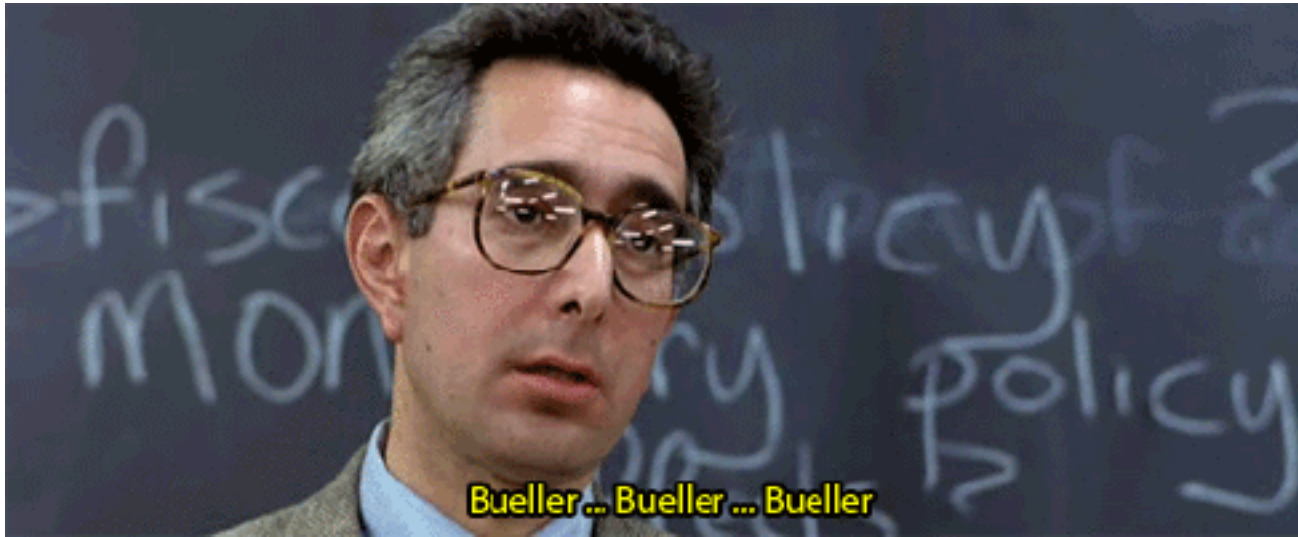
yelp



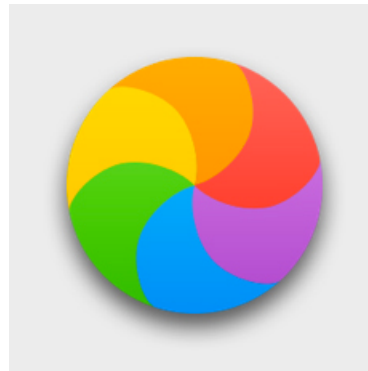
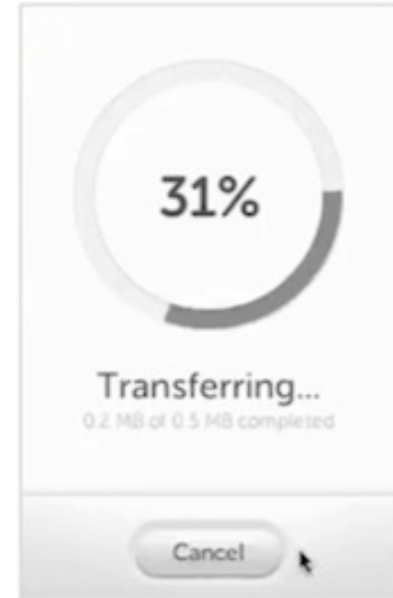
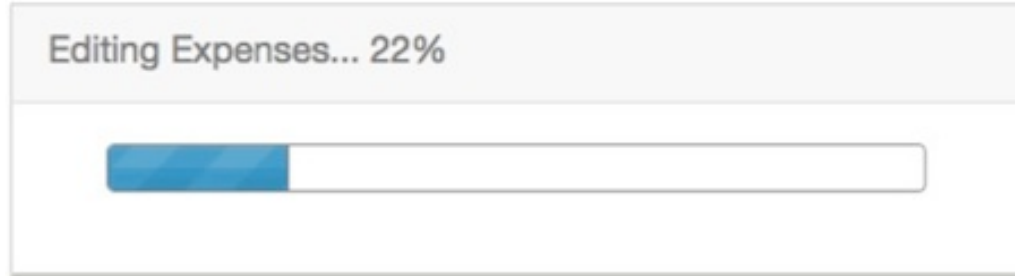
amazon

feedback

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



feedback: progress indicators



feedback: confirmation screens

amazon
Prime

All ▾



Mother's Day

Sponsored by OtterBox

Departments ▾

Shopping History ▾

Jenny's Amazon.com

Today's Deals

Gift Cards & Registry

Hello, Jenny

Your Account ▾

Prime ▾

Lists ▾



Cart

✓ Thank you, your order has been placed.

An email confirmation has been sent to you.

Order Number: **103-2244754-7500207**

- Tuffo Water Resistant Outdoor Blanke... will be shipped to [Jennifer Oja Mailhot](#) ▾ by Amazon.com.

Guaranteed delivery: April 29, 2016

[Review or edit your order](#) ▾

[Turn on 1-Click ordering](#)



Facebook



Twitter



E-mail



I just bought: 'Tuffo Water Resistant Outdoor Blanket, Mini Dot' by Tuffo

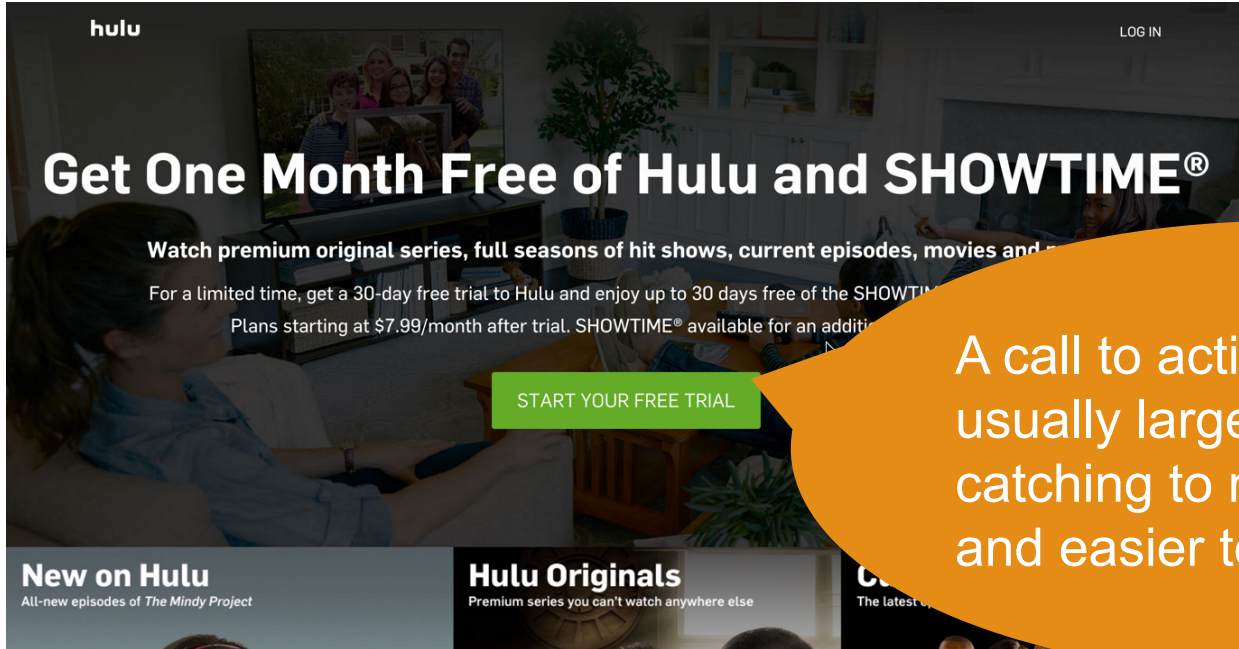
Our unique and innovative water resistant blanket is ideal for numerous indoor and outdoor activities that include the beach, picnics, sporting events, and around...

[Your sharing settings](#)

Share this item

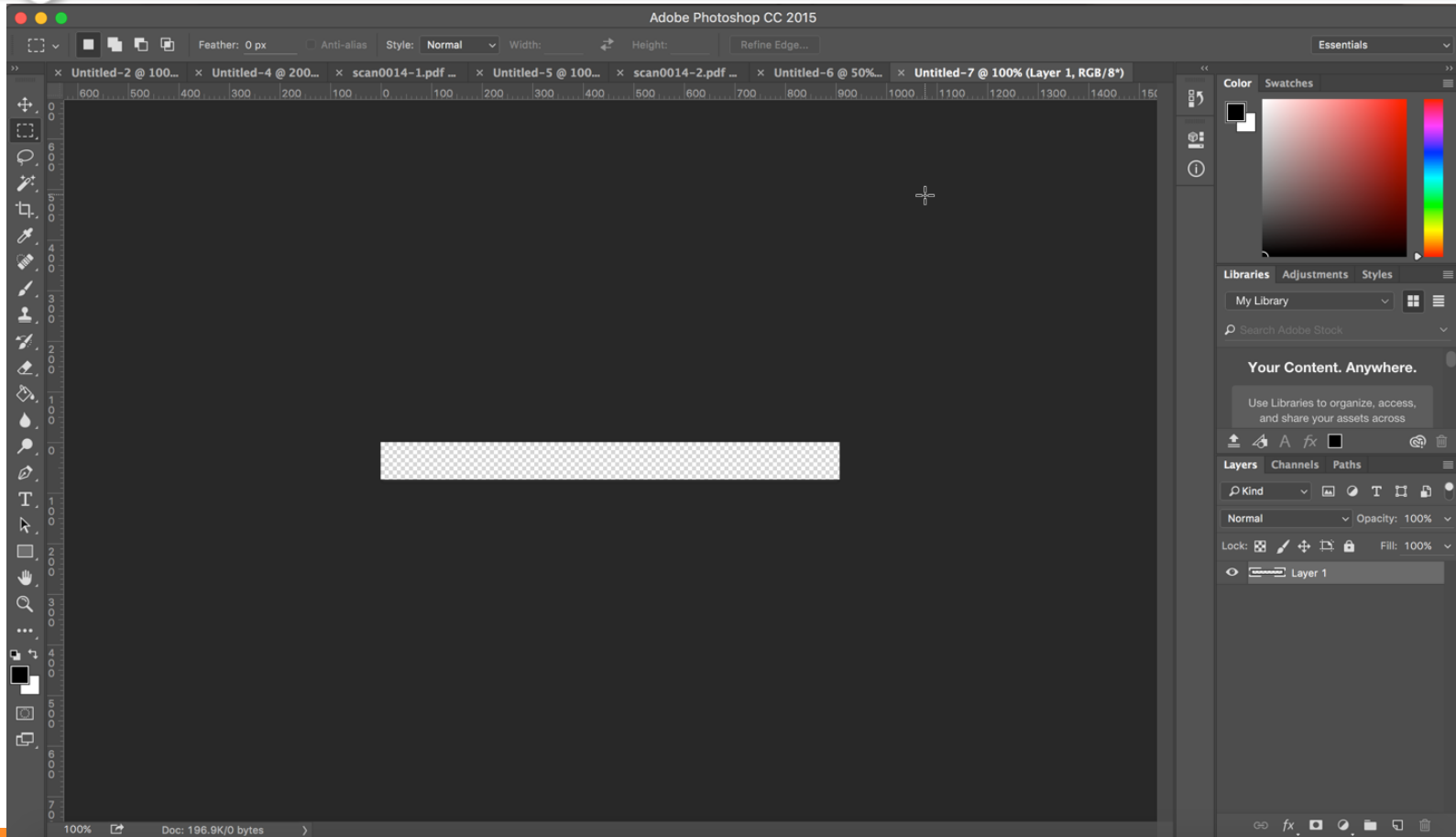
Fitts's Law

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

Travel Advisories: DAL, LAX, TSA Security Checkpoints and Changes to Express [More](#)



BOOK

CHECK IN

MANAGE

Deals

Flying With Us

Where We Fly

Fees

Flight Status

Flight Alerts

elevate

Sign In

Sign Up

Round Trip One Way Multi City

Where would you like to go?

Guests

1 Adult

From

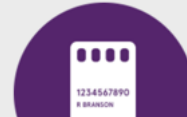
San Francisco

To

City

Best Fares Guaranteed online

SEARCH FLIGHTS



reducing clicks



Flights Hotels Cars Packages Deals



All Searches

Log In

S.F. ↔ Boston: Fri Apr 29 – Sun May 1, 1 person, Coach

Search Hotels in Boston

Sort: Agony Price Duration Takeoff Landing Filter: Airlines Stops

My Saved Flights

Fare Alerts

Searching.

Cheapest trip from

1 Select Departure

S.F. → Boston, Fri, Apr 29

2 Select Return

Boston → S.F., Sun, May 1

Total trip price/person
Includes taxes & fees. Additional
baggage fees may apply.



Select Leg \$565.20+



17 return options

Select Leg \$565.20+



13 return options

Select Leg \$993.20+



10 return options

¹ Mesa dba American Eagle operated



ad

Compare & Save on Hotels

Hipmunk vs. other sites

Boston

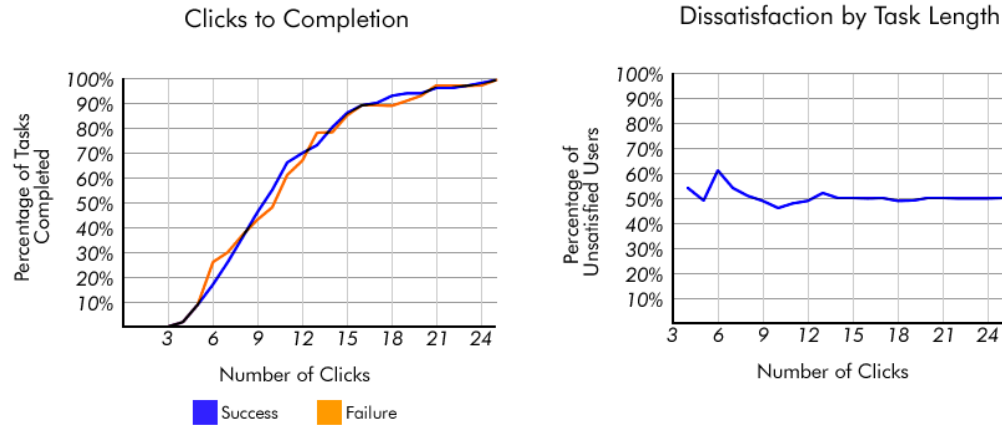
Apr 29-May 01



The new Choice Privileges®

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.

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



Change Design ▾

Preview Invitation

Save Draft

Continue

Enter Details

* Event Title

* Event Type

* Host

- 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.



NETFLIX ORIGINAL

KONG 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

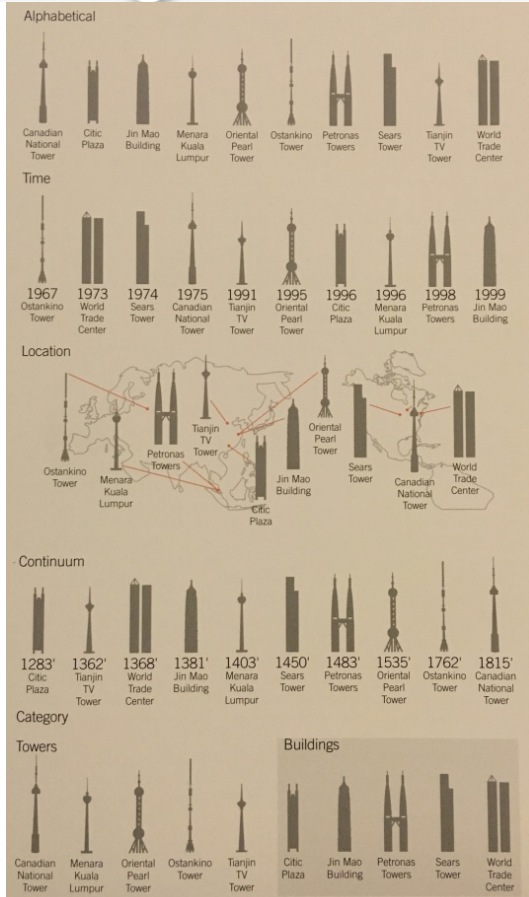


reading order pillars



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

5 ways to organize information (five hat racks)

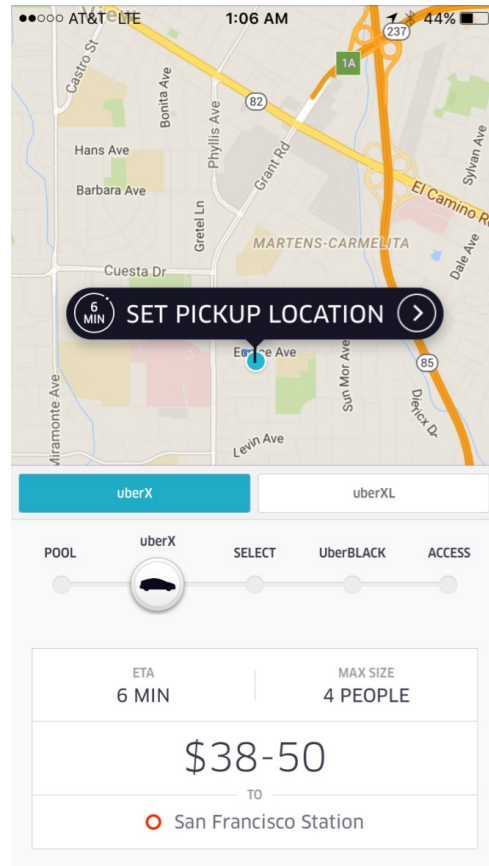
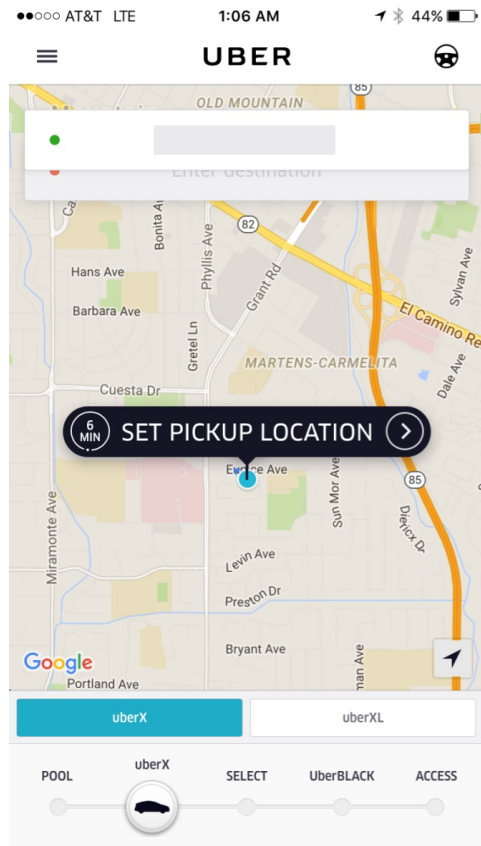


- category
- time
- location
- continuum
- alphabet

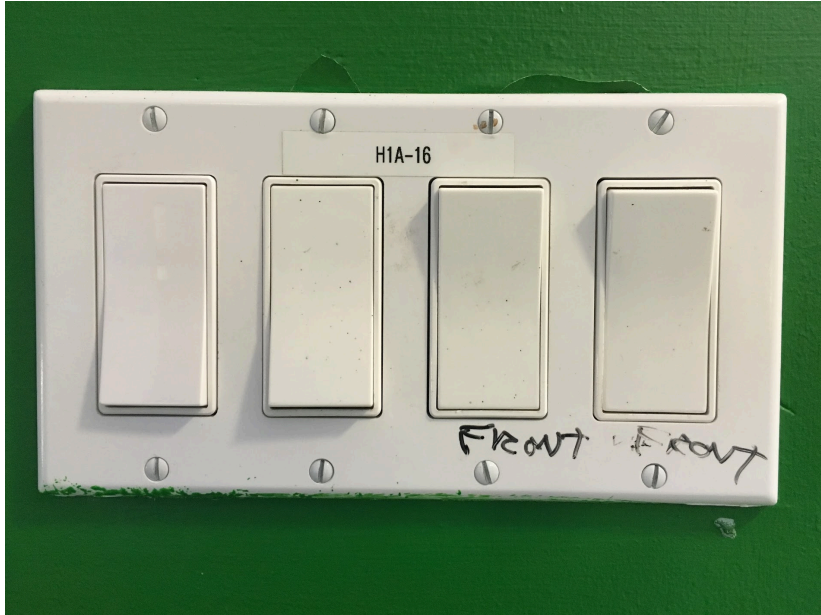
The fallback order is alphabetical order.

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

 Welcome Amy Brown | Help | Support | Incent

Home Organization Company Data Plan Design Reports Orders Results Document Mgmt Docs

Templates | Route Documents | Status

New Delete

Name	Description	Plan
2012 EMEA Sales Rep Incentive Plan		2012 WW Sales Rep Plan
2012 Sales Rep Document		2012 Sales Rep Plan
2013 AE REP		2013 Sales Rep Plan
2013 Supply Chain		2013 SC Plan


Save Clear Search Copy

STEP 1 of 5: Define template information

Name*: 2013 AE REP Approvals*: Person
Plan*: 2013 Sales Rep Plan Description:

STEP 2 of 5: Define header information by selecting the icon below to edit.

Plan Summary 07/01/2013 03:17 PM PDT

	Name: John Smith (J00001) Title: Account Manager Currency: USD Salary: 75,000.00 USD Target Incentives: 80,000.00 USD	Manager: Julie Peterson (J25) Region: America West - North Services Revenue OTE: Total Margin OTE: Product Revenue OTE:
---	--	--

STEP 3 of 5: Enter introduction

Paragraph Styles Font Family 4 (14pt)

2013 SALES REPRESENTATIVE COMPENSATION PLAN DEFINITIONS, TERMS AND CONDITIONS

This Account Executive Sales Compensation Plan (Plan) is the Cloud Corporation (Cloud Corp) sales incentive compensation plan for Fiscal Year 2013 (Term) for the undersigned full-time employee (Employee), and is effective

after – creating a sales plan

The screenshot shows the Incent software interface. At the top, there is a navigation bar with the Incent logo, user information (Welcome Amy Brown), and a dropdown menu (Incent). Below the navigation bar is a menu with tabs: Home, Organization, Company Data, Plan Design, Reports, Orders, Results, Document Mgmt, Docs, Data, Preferences, and Setup. The main content area is titled "Template Builder" and includes a "Plan:" dropdown (Sales Plan A 2013), a "Name:" field (Sales Plan Template 1), and a "Description:" field (Lorem ipsum dolor sit amet, conse ctetur adip iscing elit. Aenean lacus, euismod...). There are buttons for "Preview", "Cancel", and "Save", and a note "Last autosaved 20 seconds ago...". Below this is the "Incentive Compensation Plan 2013" section, which includes an "Add Logo" button (200 x 75 pixels) and an "Add Section" button. The "Plan Summary" section contains a table with columns for Plan Participant Name, Quote, Year, On Target Earnings, and Amt. The table has three rows of data, with a mouse cursor hovering over the second row. There are also "Move", "Edit", and "Remove" buttons for the table.

Plan Summary

[Plan Participant Name]	Quote	[Year]	On Target Earnings	[Amt]
[Title] [Department]	[Quote Name 1]	[Year Total]	Salary	[Salary Amt]
Manager: [Manager Name] Region: [Region]	[Quote Name 2]	[Year Total]	Total Target Incentive	[Target Amt]
	[Quote Name 3]	[Year Total]		[OTE Amt]

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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ARTS
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OPINION

Autos
 Blogs
 Books
 Cartoons
 Classifieds
 Crosswords
 Dining & Wine
 Education
 Event Guide
 Fashion & Style

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 Castelnovo 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**

EDITORIAL

Senator Reid Takes Fresh Aim

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

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



The Opinion Pages

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

What Came First. the Chicken or the Sack?

Von Miller of the Denver Broncos aspires to be the

alignment and grids: responsive design



examples



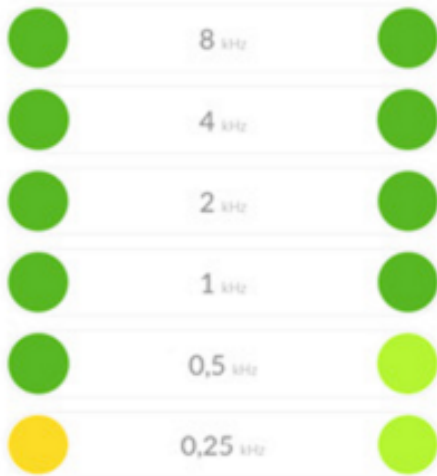
Test Results 24/08/15



Hearing profile



High Tones



Low Tones

< 25dB 25 - 39 dB 40 - 69 dB 70 - 94 dB



Hearing Age



Hearing Profile



Hearing Landscape



Speech Region



WELLS FARGO



Online Security Guarantee

Username Online Username

Password Online Password



Save Username

Sign On

ATM
Locator

Tools &
Calculators



Home Loans



Make an Appointment

Feeds

Edit

Top Stories

- Stanford University

Trending Now

- Ted Cruz and John Kasich Unite to Defeat Trump
- Game of Thrones Season 6 Episode 1
- Death of Prince

Top Stories For You

Answer written • Stanford University • 2014

How do Oxford and Cambridge compare to Harvard and Stanford?



Natasha Prasad, Economics Tripos

138.3k Views • Upvoted by Edwin Khoo, B.S. Chemical Engineering '10 and Colin Phillips, BA, Modern Languages, 1986-1990.

I went to Cambridge for undergrad and Harvard for my MBA. While I loved both experiences, I would say they are worlds apart. Harvard has top-notch, even luxurious, facilities and student support... [\(more\)](#)

Upvote 469

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?

It's crazy how important and stressful the entrance exam is for students in South Korea. A lot of my ivy league friends got good grades b... [\(more\)](#)

2,423 Views in the last day

Answer

Pass

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Sessions - Now Taking Questions

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Daphne Koller

President and co-founder of Coursera

Answering Wed at 11:00 AM

View Session

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*NEW DATES ADDED

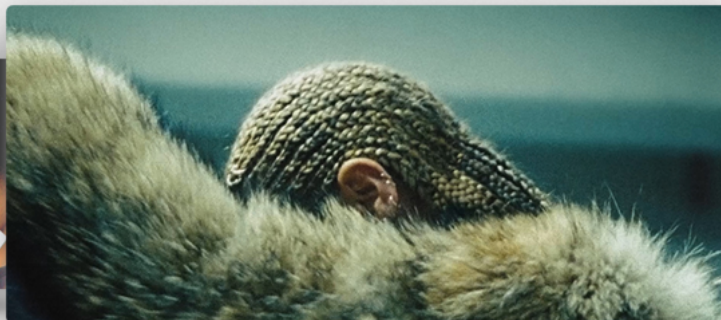
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1958 - 2016



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THE UNTOUCHABLE TOUR
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FRI **6** **MAY** **On Sale Now**
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



Where's RiRi? Get pics + news!

Demi + N

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

SAT **On Sale Now**

Top Tours



Merry Jane Presents Snoop Dogg & Wiz
Aug 28, 2016
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



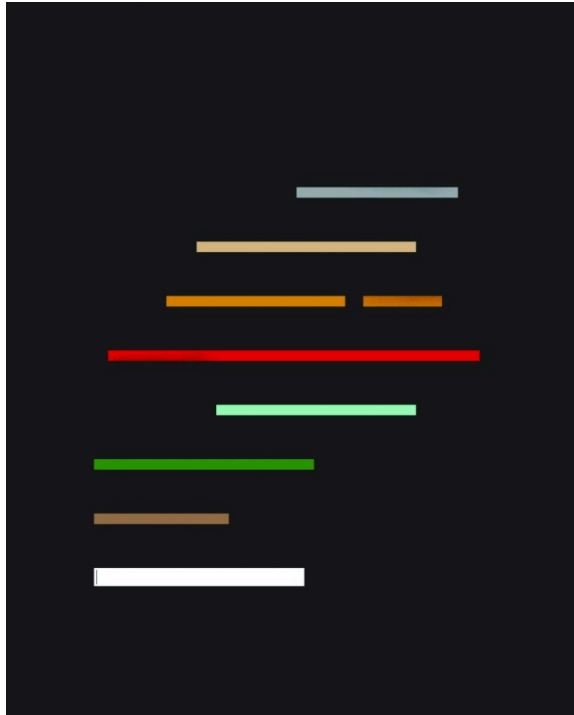
Rihanna: Anti World Tour 2016
May 6, 2016
SAP Center At San Jose



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

references

Web Form Design by Luke Wroblewski



WEB FORM DESIGN

Filling in the Blanks

by **LUKE WRUBLEWSKI** foreword by Jared Spool

 Rosenfeld

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?

Tell us about yourself - All fields are required

i Your privacy is important to us. eBay does not rent or sell your personal information to third parties without your consent. To learn more, read our [privacy policy](#). Your address will be used for posting your purchase or receiving payment from buyers.

* Indicates required field

First name * Last name *

Street address *

Town / City *

County * Post code * Country or Region *

Primary telephone number *
Example: (020) 12345678.
Required in case we need to contact you about your account

Email address *

Re-enter email address *

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.”

Tell us about yourself - All fields are required

i Your privacy is important to us. eBay does not rent or sell your personal information to third parties without your consent. To learn more, read our [privacy policy](#). Your address will be used for posting your purchase or receiving payment from buyers.

* Indicates required field

First name * Last name *

Street address *

Town / City *

County * Post code * Country or Region *

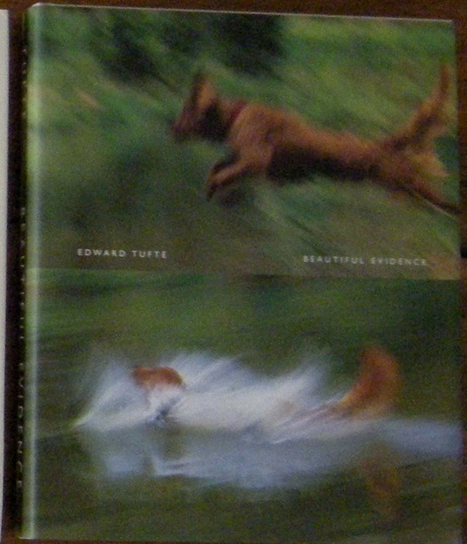
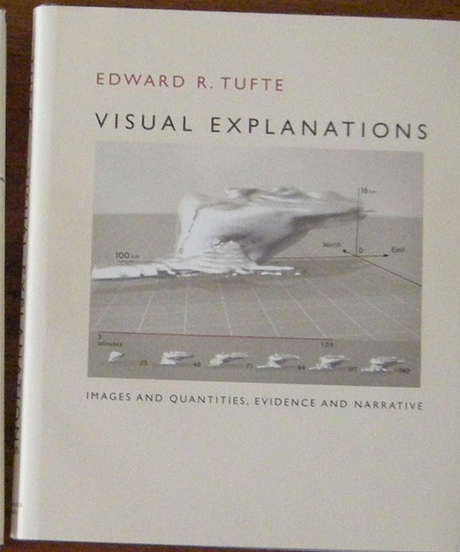
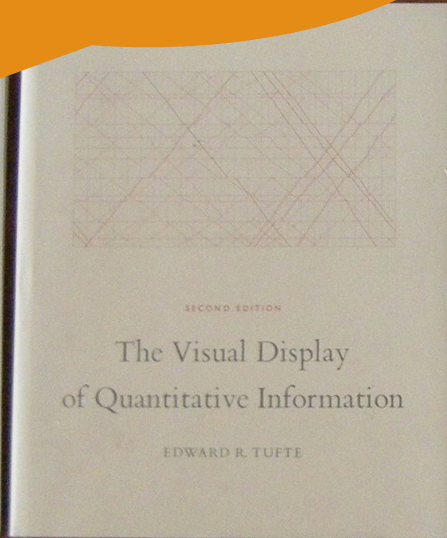
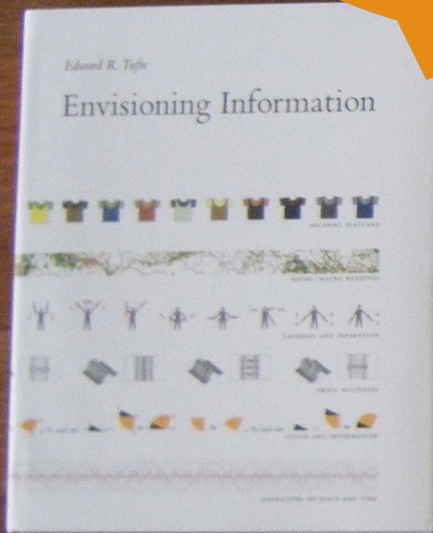
Primary telephone number *
Example: (020) 12345678.
Required in case we need to contact you about your account

Email address *

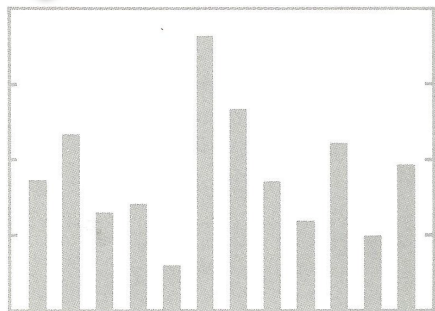
Re-enter email address *

Edward Tufte on visualizing information

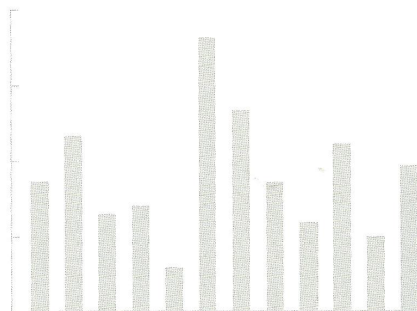
How should I design a bar chart?



Edward Tufte on visualizing information



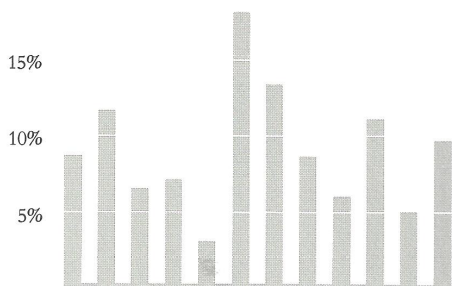
typical bar chart



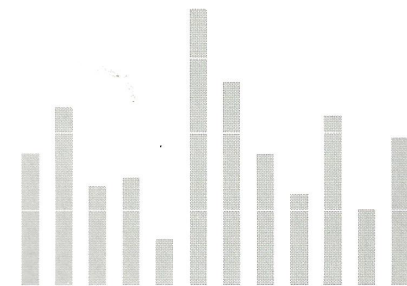
erase box



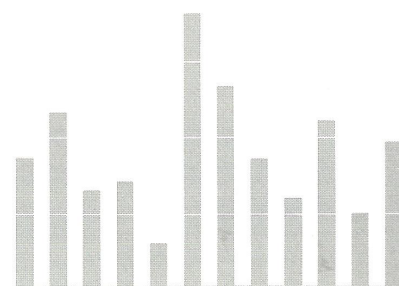
erase vertical axis, except ticks



add white grid to replace tick marks



erase baseline, bottom of bars define endpoint



still, a thin baseline looks good

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

Shopping > Electronics > Digital Cameras > Canon EOS Digital Rebel XT Kit - Black Digital Camera

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



Compare New Prices
\$535.00 to **\$787.49**

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For convenience, ease of use and no-compromise SLR performance, look no further than the EOS Digital Rebel XT... [more...](#)

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Sort by: Merchant	Merchant Rating	Base Price	Tax & Shipping	Total Price*	Buy
 home of electronics Merchant Info	 Read reviews (476) Write a review	\$598.00 \$598.00	No tax Free shipping	\$598.00 \$598.00	Buying Info from Butterflyphoto.com
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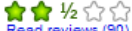




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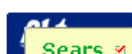
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