

# VISUAL & RESPONSIVE DESIGN



# GOALS OF VISUAL DESIGN

structure content: relative importance,  
relationships, ordering

richer experience: branding

# WHY IS VISUAL DESIGN IMPORTANT?



50 milliseconds to make a good first impression!

perceptions about trustworthiness, usability are based on visual appeal

What Do You See When You're Surfing? Buscher et al., CHI 2009  
Attention Web Designers, Lindgaard et al., Behaviour & Information Technology 2006

# COMPONENTS OF VISUAL DESIGN

Layout

Color

Typography

Human Perception plays a  
big role in visual design

*layout*

arrangement of visual elements

spacing, alignment, and relative  
sizing

# VISUAL HIERARCHY



The Outspoken website homepage features a large, dramatic photograph of a man in a suit shouting into a megaphone. The text "Is Your Brand Outspoken?" is overlaid on the image, along with the subtitle "Use text, picture and video messaging to ensure your brand is heard." The navigation bar at the top includes links for Messaging, Aggregation, Blog, Get Started, and Login, along with a contact phone number.

**Messaging**  
If you're a brand or agency, our feature-rich SMS and MMS platform is perfect to help you increase your ROI on your mobile marketing campaigns.

**Aggregation**  
Working with carriers can be complicated. We give you the power of over 700 carriers in 250 countries simply with one API for SMS and MMS.

**Transcoding**  
Connect to the Outspoken transcoding API to optimize MMS video, picture, audio and other rich media for individual carriers, OS and phone make/model.

[See Features](#)    [Learn More](#)    [Try it Now](#)

[outspoken.com](http://outspoken.com)

What's important?

What's related?

How can you tell?

Designing User Interfaces, Jennifer Tidwell

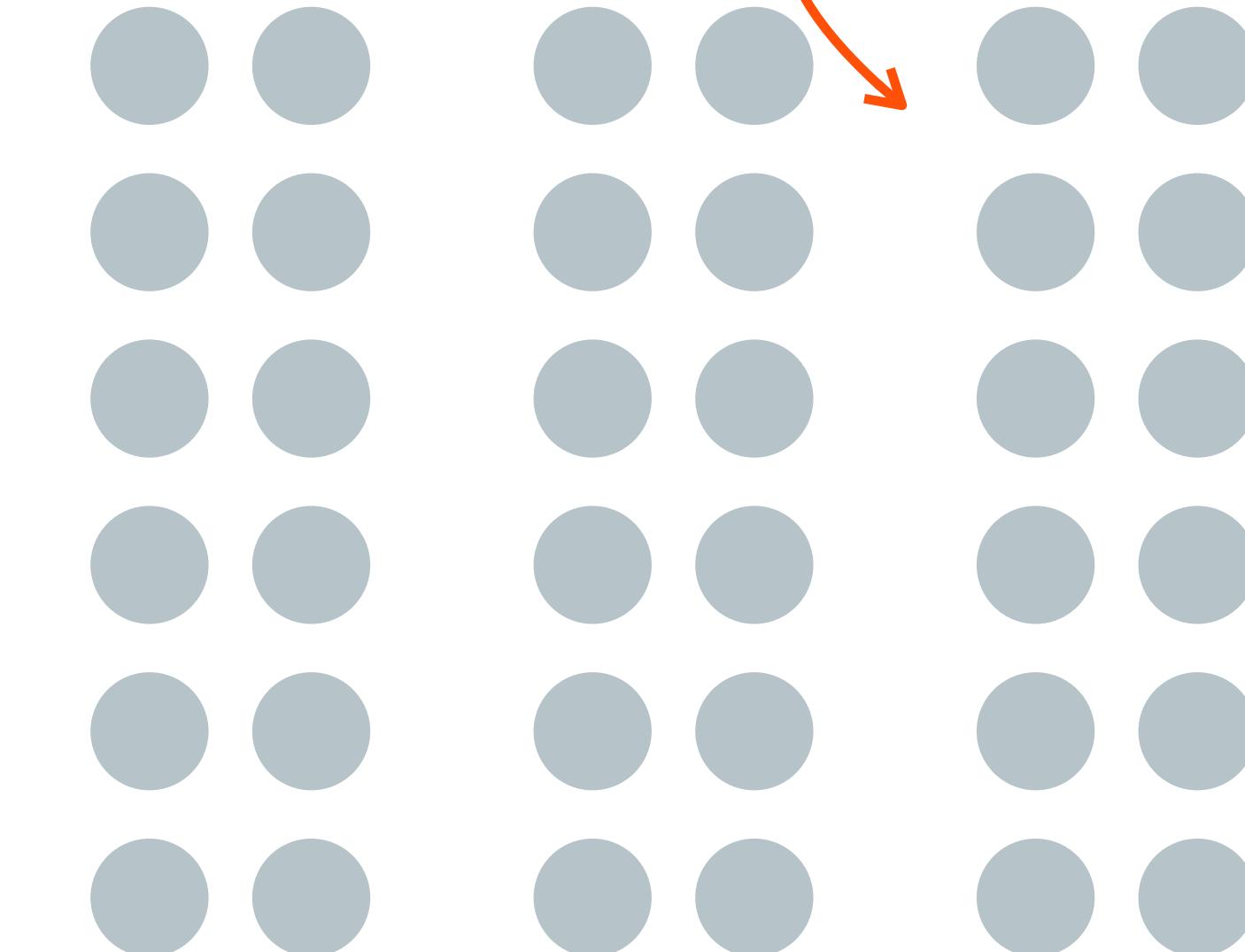
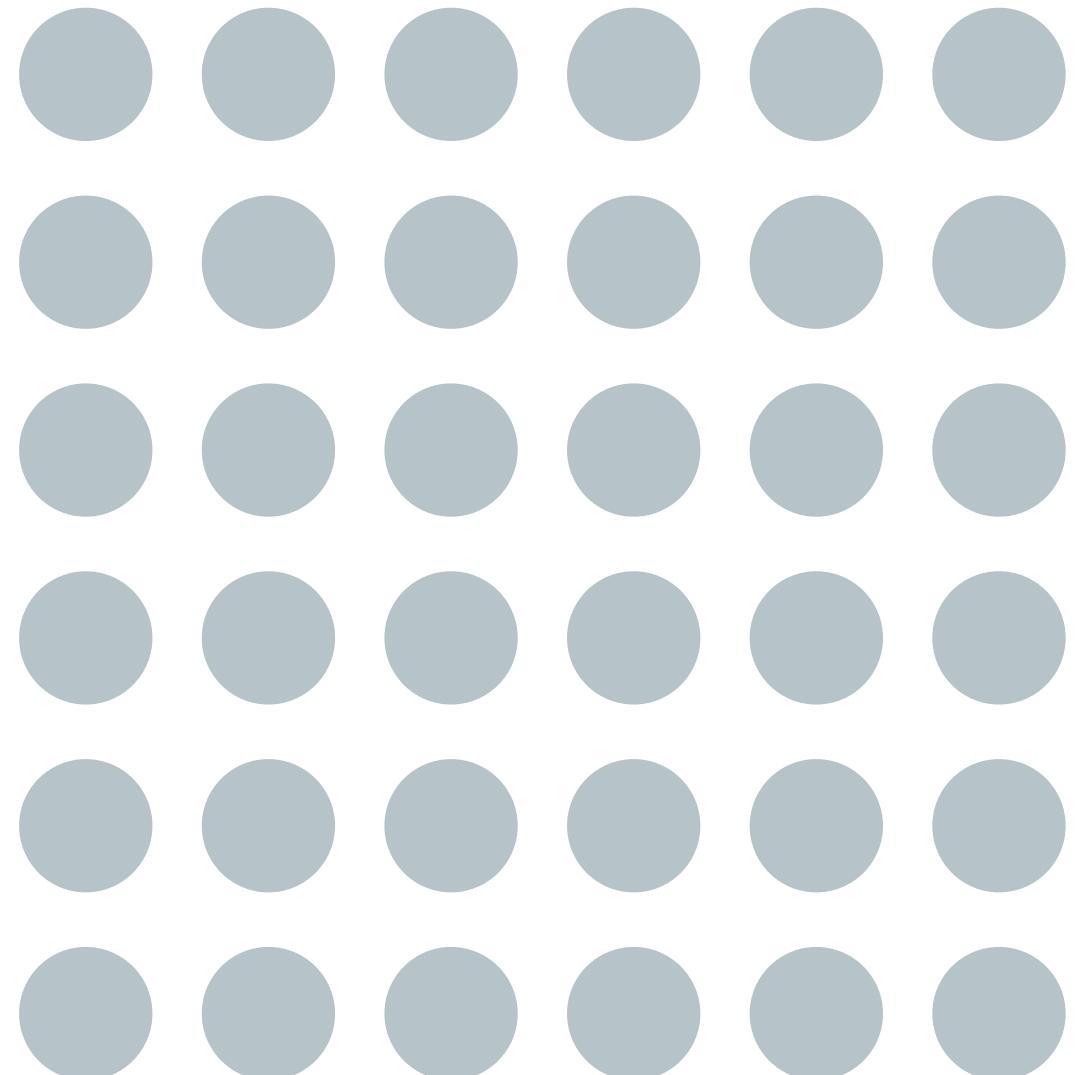
# GESTALT LAWS

theories of visual perception (1920s)

describe how people organize visual elements into groups

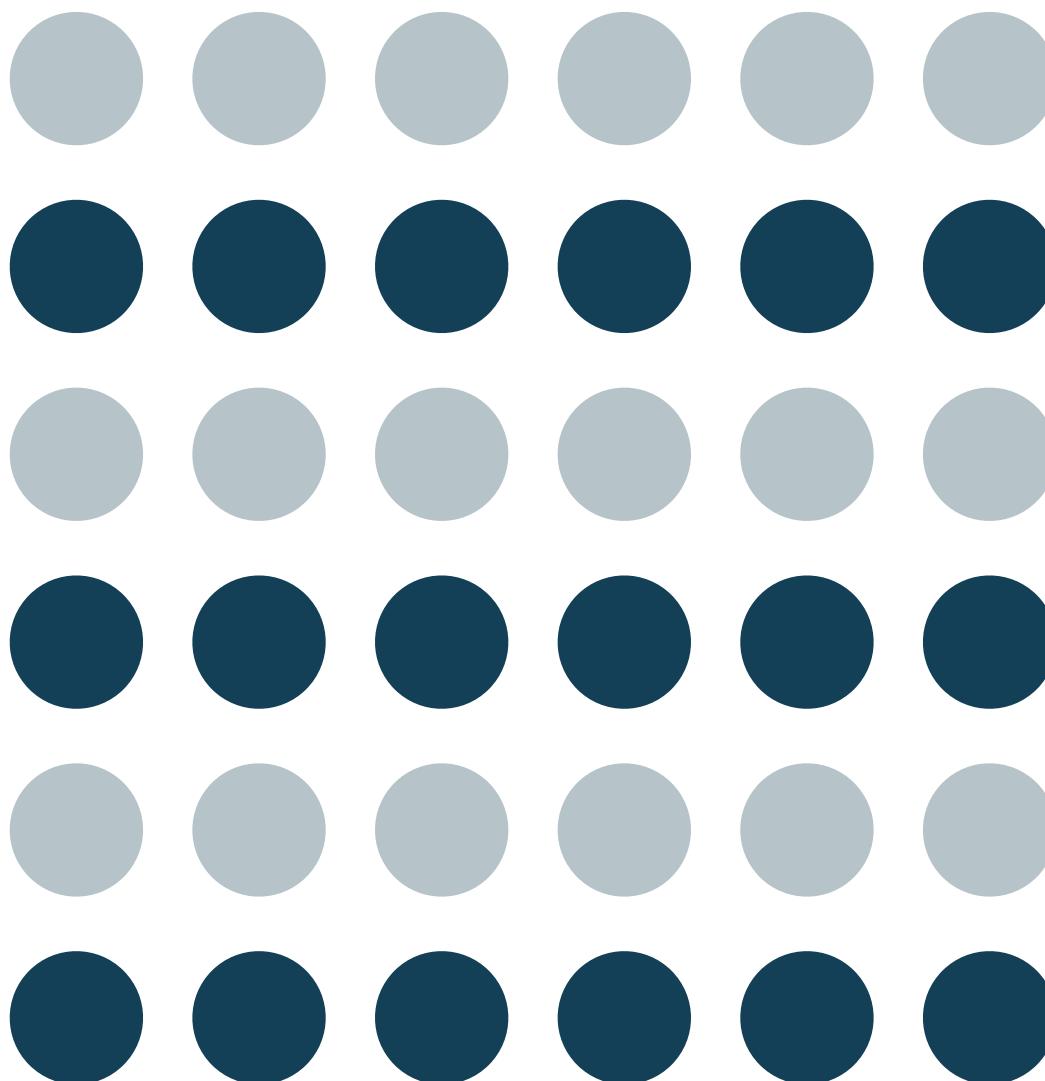
important for layout design

# PROXIMITY



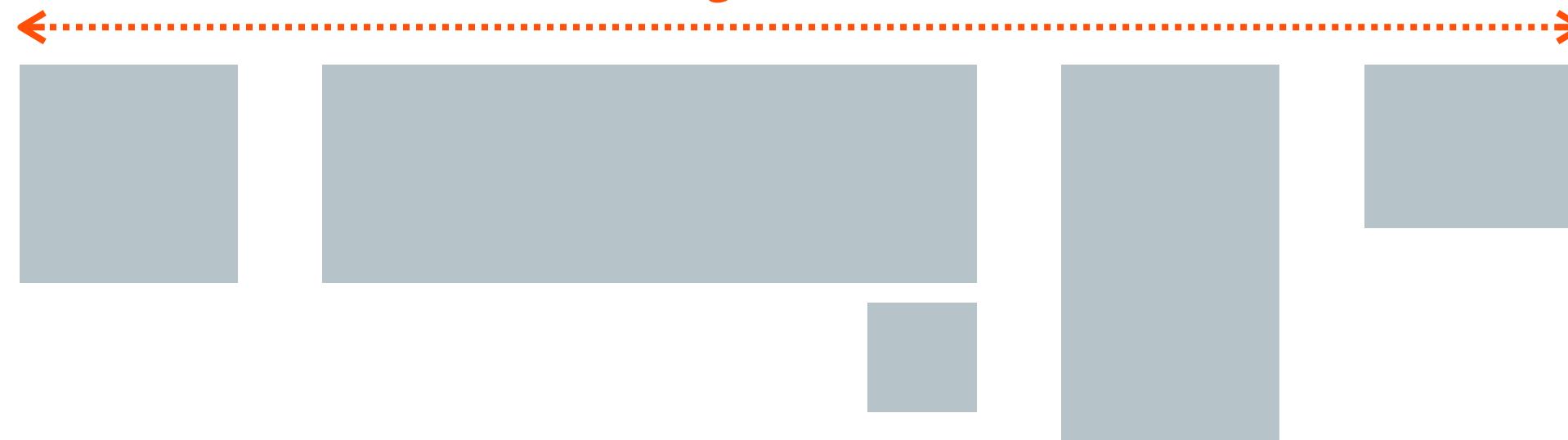
*white space matters*

# SIMILARITY

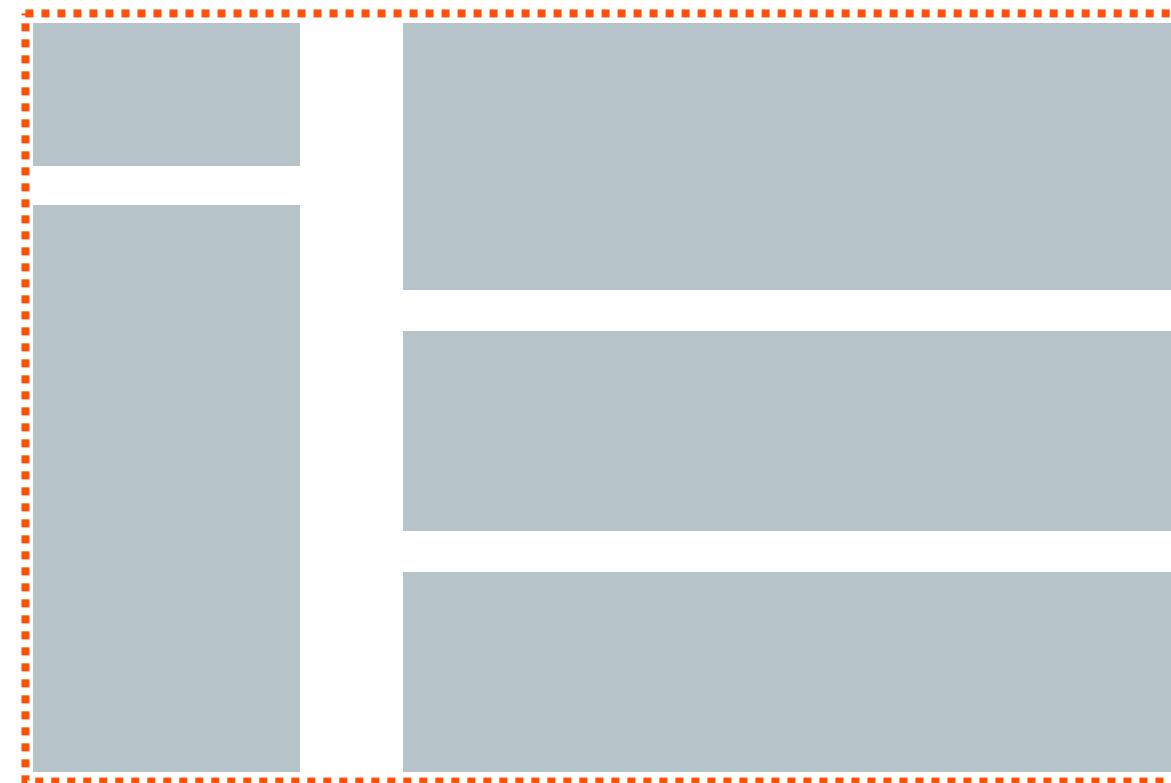


# CONTINUITY

*alignment*



# CLOSURE

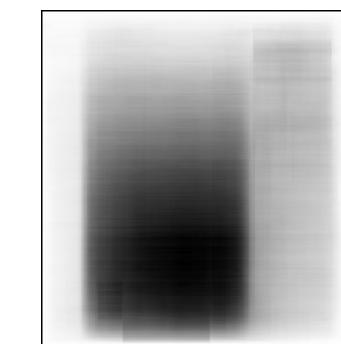


[en.wikipedia.org/wiki/Gestalt\\_psychology](https://en.wikipedia.org/wiki/Gestalt_psychology)

# Design cues are predictive of semantic meaning!



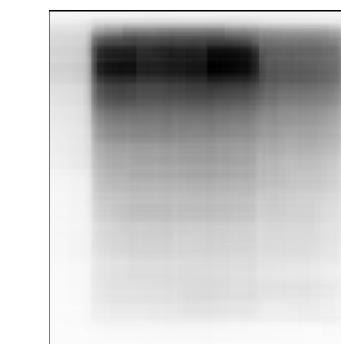
**breadcrumb**



**comments**



**copyright**



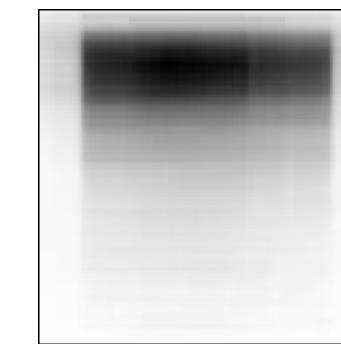
**featured**



**footer**



**header**



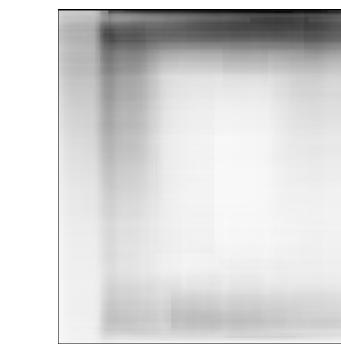
**hero**



**login**



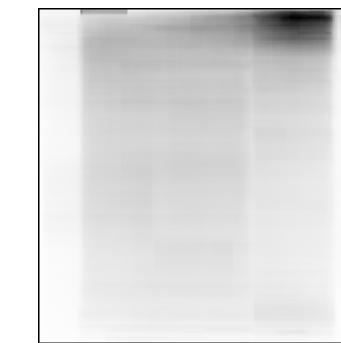
**logo**



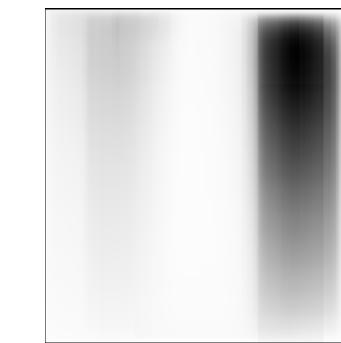
**menu**



**nav**



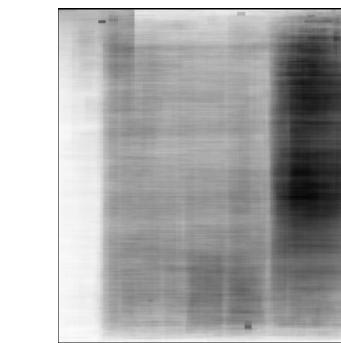
**search**



**sidebar**



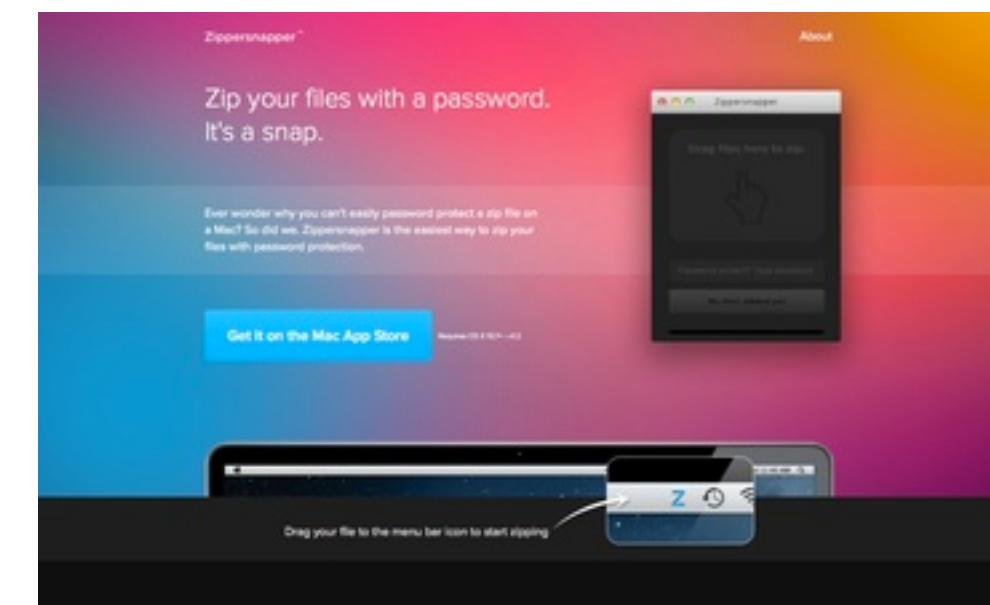
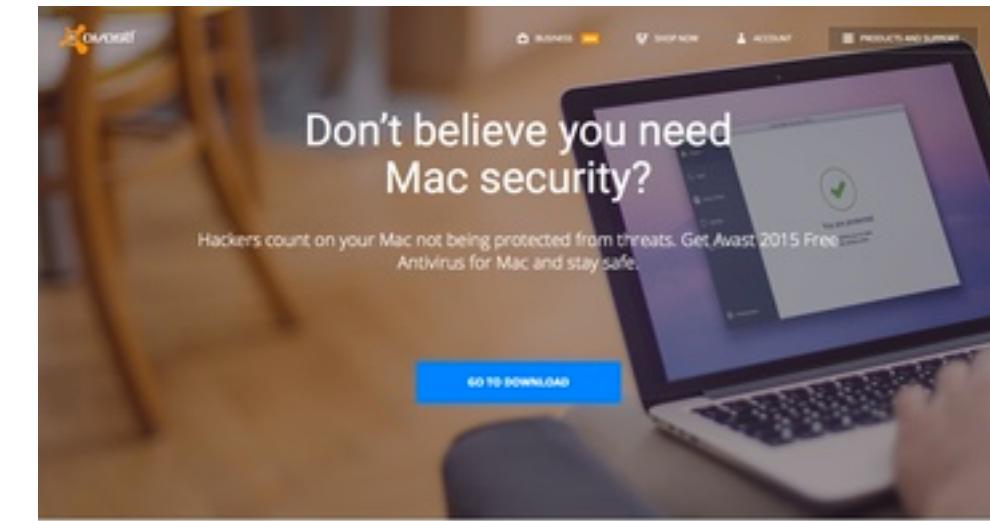
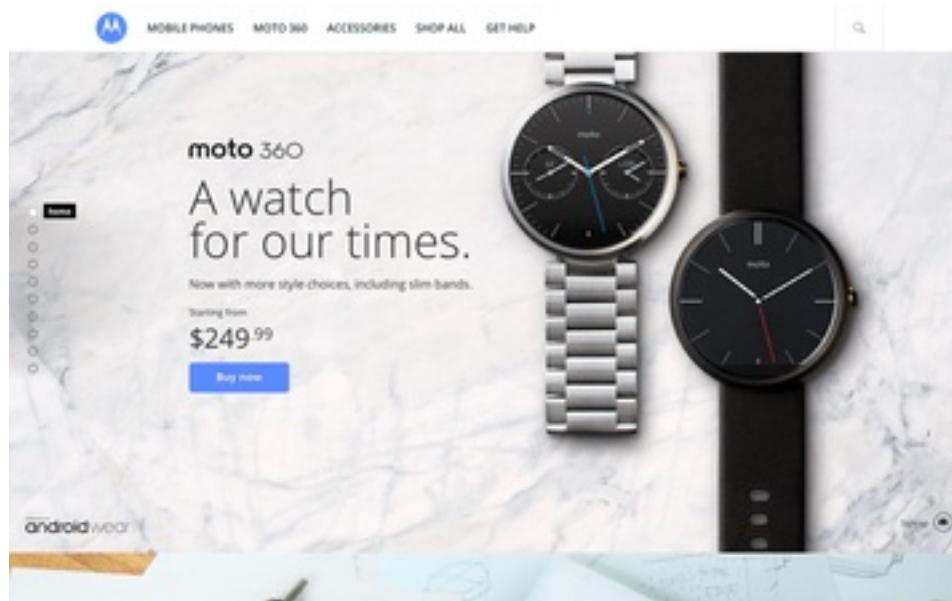
**sitemap**



**twitter**

Lim et al. 2013

# Call-to-Action Buttons



TINT

INDUSTRY ▾ CLIENTS BLOG LOGIN REQUEST DEMO START TRIAL

Display any social feeds for ...

## In-Store Screens

v s f o v in d h t

A self-service platform that allows organizations to create social hubs in minutes. Engage audiences anywhere.

START TRIAL WATCH VIDEO

SEE HOW IT WORKS

How can we help? ▾

1. CONNECT

### Connect any social feeds & hashtags

Pull user generated and branded content into one place from over 10+ social networks.

2. PERSONALIZE

### Custom brand your social hub

It's easy to change themes, colors, and add custom CSS for an elegant design.

CLASSIC SLIDE SHOW GRID

3. MANAGE

### Control your content from anywhere

Approve or reject posts from any device to control content instantly.

NASDAQ

All your content on any website or screen

v s f o v in d h t

NASDAQ

START TRIAL

# Trending: Horizontal Stripe

*Color*

hue, saturation, value

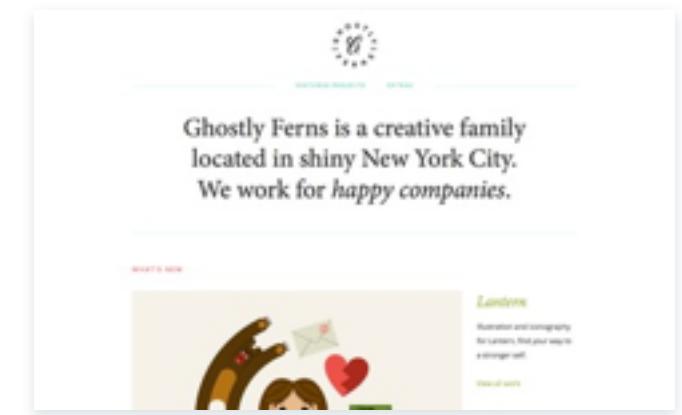
# FUNCTIONAL COLOR

Contrast between background and text is key to readability

Design in greyscale first and keep those luminance values when moving to color

# Expressive

## light



## Dark



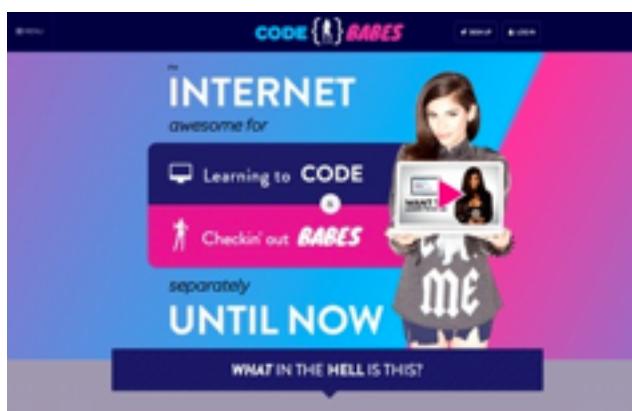
## Warm



## Cool



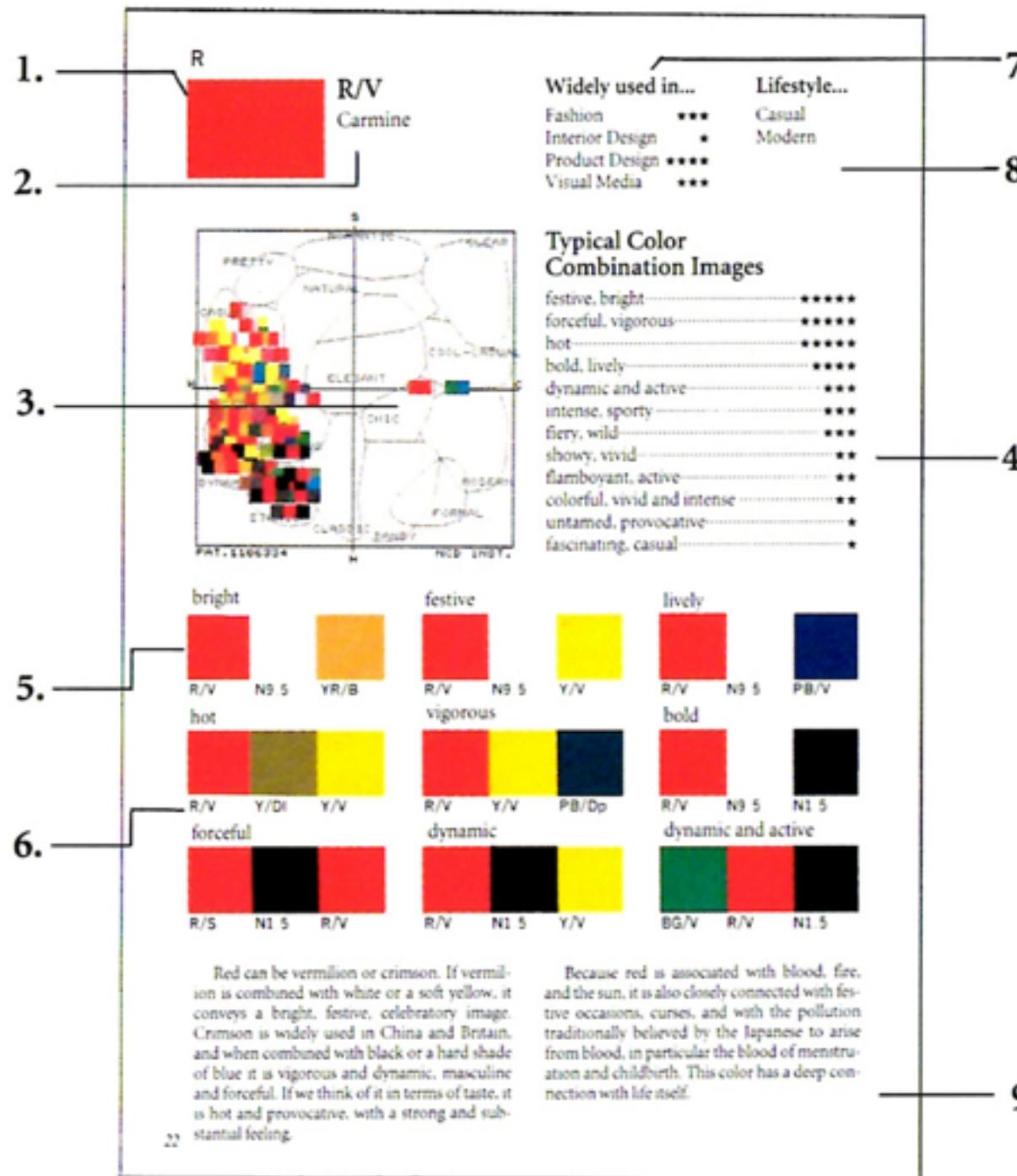
## Colorful



## Greyscale



# SEMANTIC MEANING



Color Image Scale, Kobayashi

# Trending: Greyscale with Accent Colors

ABOUT   BLOG   WORK   CONTACT

## Google Material Design's Animated Loading Spinner Using HTML, CSS and SVG

05 DECEMBER 2014

A look at how to create an animated loading spinner in the style of Google's Material Design.

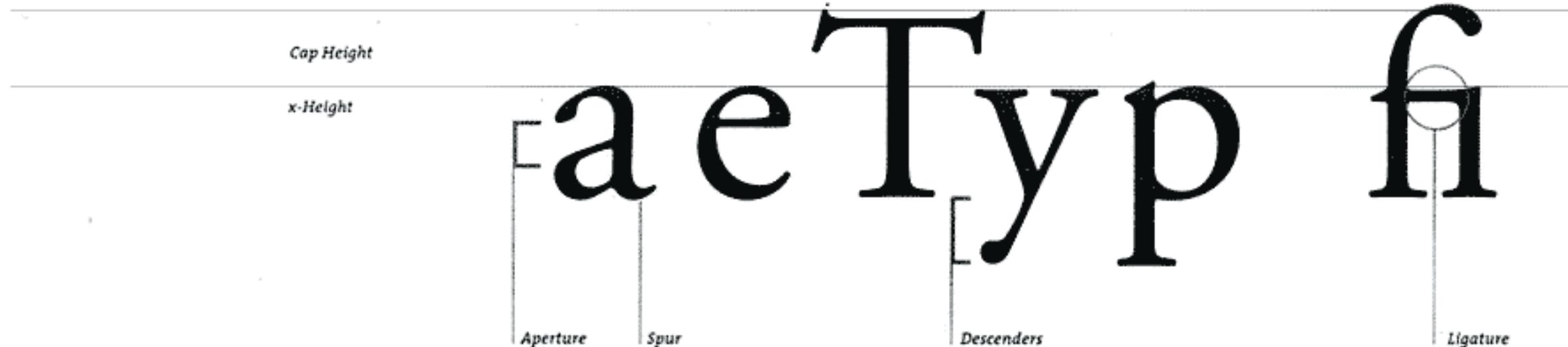
## Simple Static Web Server with 1 Line of Python

23 JULY 2014

Setup a simple static web server for local development with just 1 line of Python  
SimpleHTTPServer.

# *Typography*

## Letterform Anatomy



**Serif**

**Sans Serif**

**Slab Serif**

*Script*

**Display**

**Monospace**

# FONT GUIDELINES

For small text, higher x-height easier to read

serif or sans serif?

2-3 font faces: use variations in size, weight,  
and style for contrast

# SPACING GUIDELINES

Use leading and margins

*distance between lines*

line-height: 120%

Keep text paragraphs narrow

60-75 characters / 12-15 words /  
30-45 em

# Trending: Typographic



*More on prototypes...*

# UI/UX PROTOTYPES

storyboarding  
paper prototypes  
video prototypes  
functional prototypes

*specific tasks and flows*

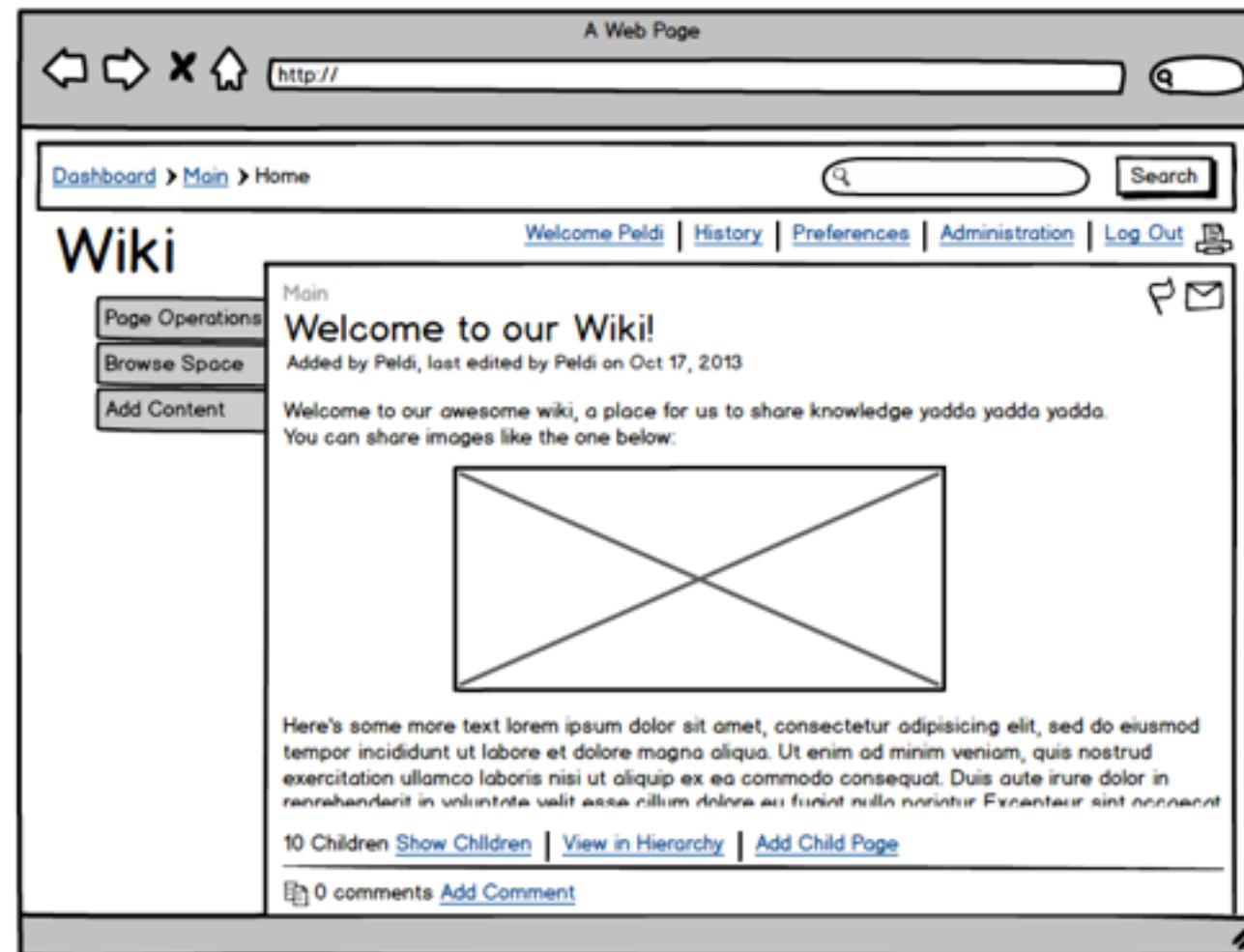


Sitemaps, Storyboards, and Specifications  
Newman and Landay, DIS 2000

# WIREFRAMES

## a.k.a. *Schematics*

Balsamiq



*not the final visual design*

content (information, navigation, interface elements) and layout

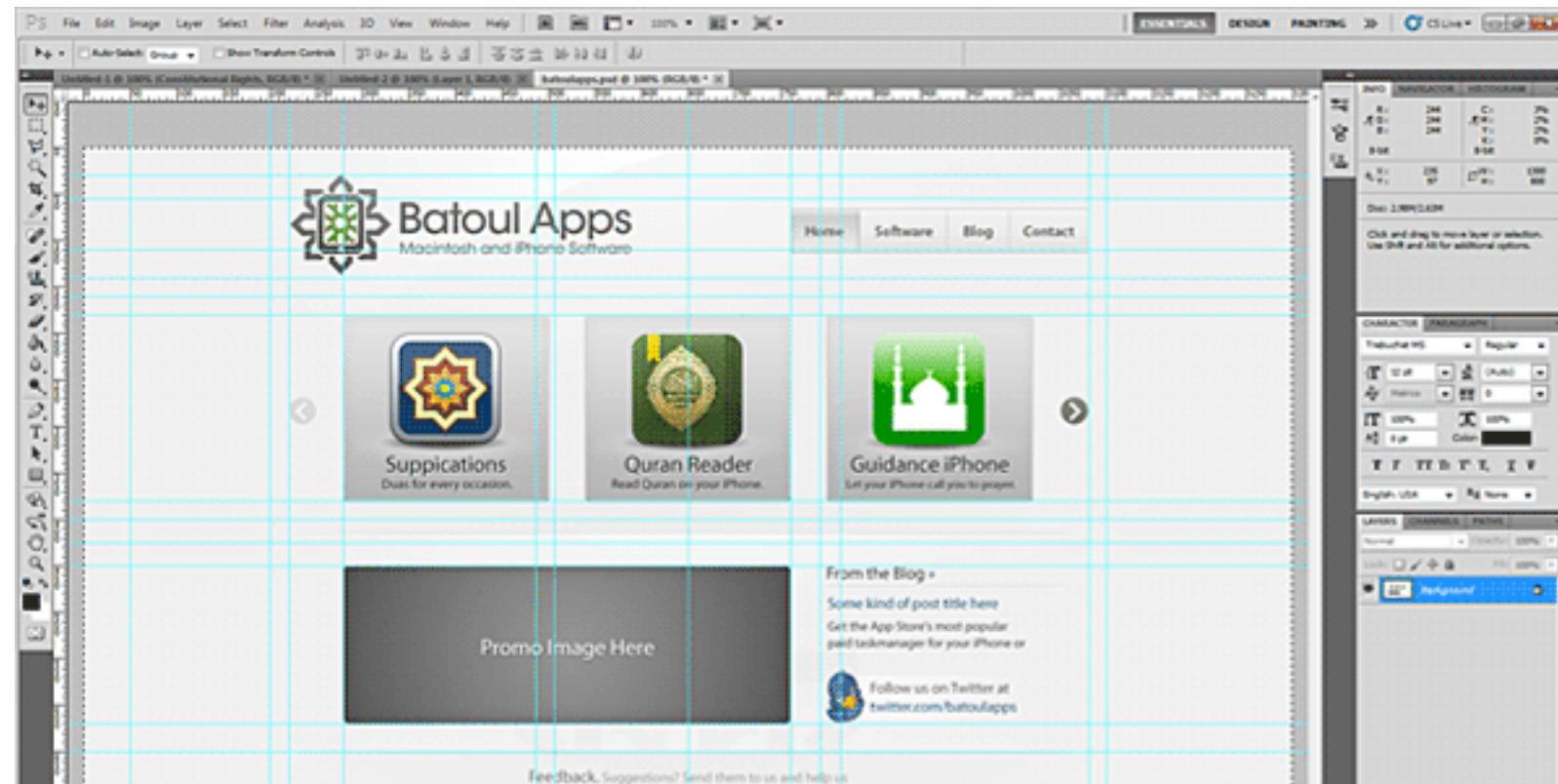
mixture of real content and annotated placeholders (images)

variations in color, typography used to differentiate different types of content

# MOODBOARDS



# MOCKUPS



high-fidelity prototypes of visual design

static: created in Photoshop, Illustrator, Sketch

# STYLE TILES

# *between moodboards and mockups*

[styletil.es](http://styletil.es)

# STYLE TILES

**Election Headline**  
Font: Adelle Typekit

**Election Subhead**  
Font: Arial  
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonumy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exercit ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at

*This is an example of a Text link >*

**Learn More**

**Style Tile version: 4**

**Possible Colors**

**Possible Patterns**

**WASHINGTON EXAMINER LOGO / MASTHEAD**

**Leaderboard Ad (728x90)**

**Macy's Ad**

**Thumbnail Images**

**Top Story Treatment TBD In Design Phase**

**Ad (300x250)**

**Marketing Ad**

**Our Blogs** 6

**Washington Examiner.com**

**Elections 2012** Washington Examiner.com Share: Search Examiner 2012

**The Examiner WASHINGTON**

**ELECTIONS 2012**

**Beltway Confidential**

**MICHAEL BARONE** More non-boring analysis of the Canadian election

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**THE RUNDOWN**

**ADVERTISEMENT**

**Trump lashes out**

**Power Rankings**

**Gingrich claims #1, Trump slips to #3**

**Younger voters hold key**

**State Races**

**Choose a State**

**What to Watch For**

**AUG 27** Republican National Convention

**What Matters Most ?**

- Economy
- Environment
- Medicare
- Social Security
- Taxes
- Welfare

**Follow Us**

**Could Tim Pawlenty be the next president?**

**Bachmann Is In**

**Vote Now**

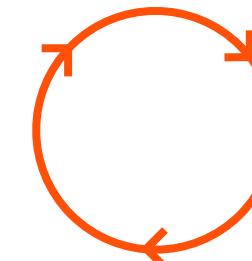
# DISCOVERY

PRD



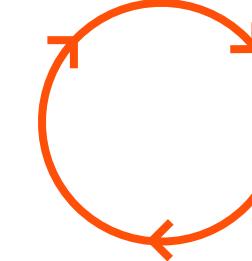
# DESIGN

UI/UX Design



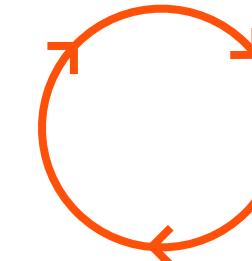
storyboards, paper prototypes,  
video prototypes, functional prototypes

Information and  
Navigation Design



wireframes/schematics

Visual Design



style tiles, mockups

*Responsive Design*



number of devices on which people view Web content is exploding



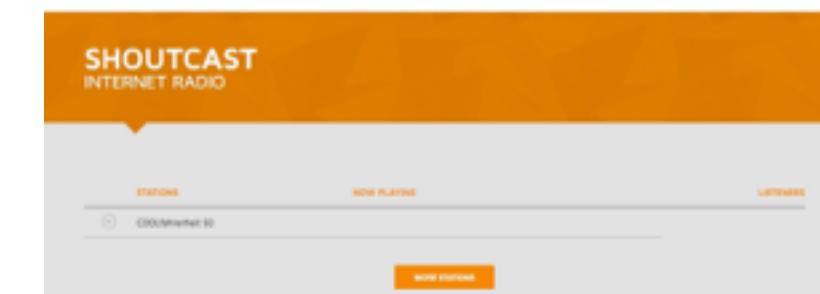
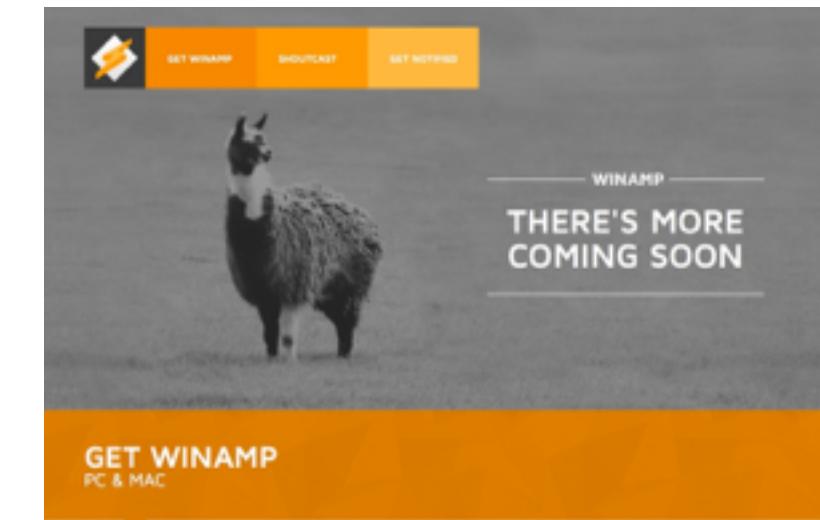
In the US, ~30% of mobile  
Web users are mobile-only

# GOAL OF RESPONSIVE DESIGN

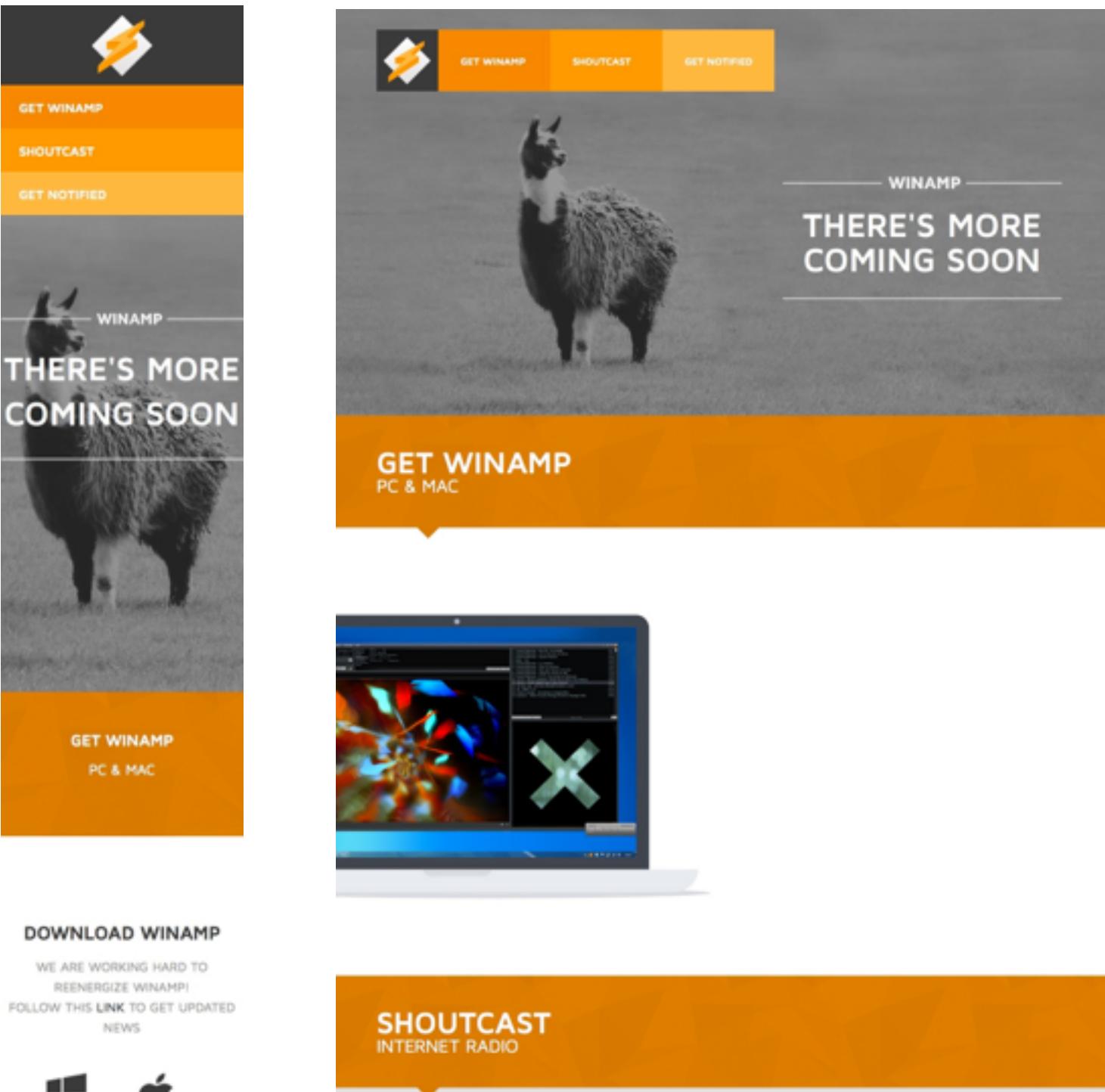
optimize design for different form factors



and everything  
in between



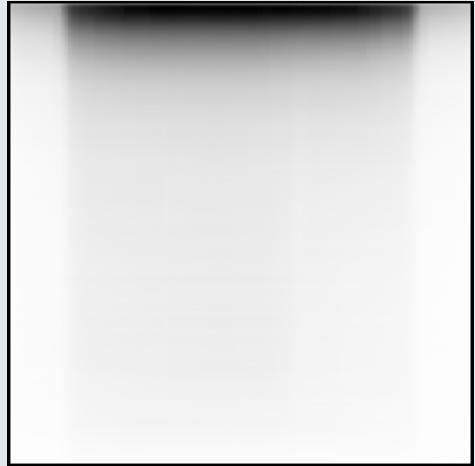
# DESIGN CONSIDERATIONS



How do styles and layouts change?

How is content remapped?

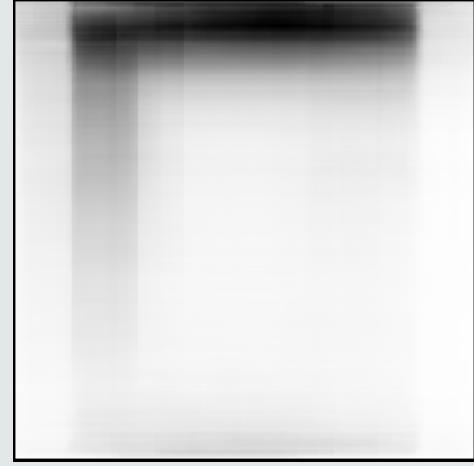
# DESKTOP



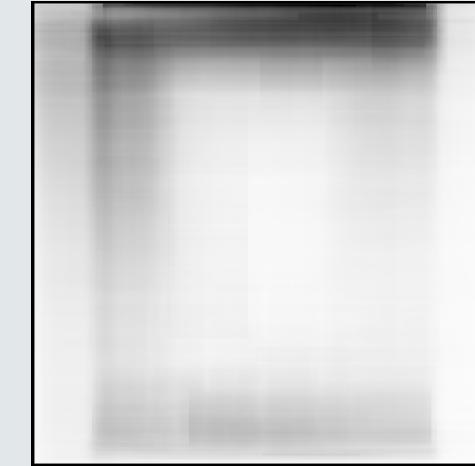
header



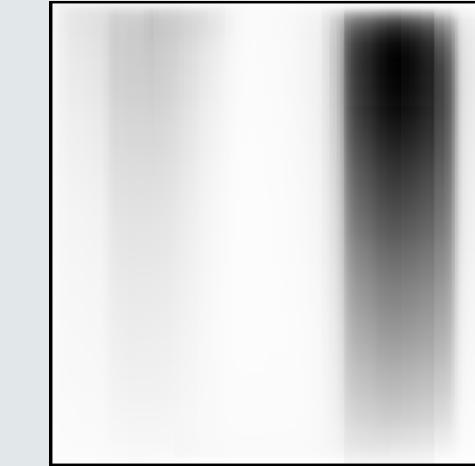
login



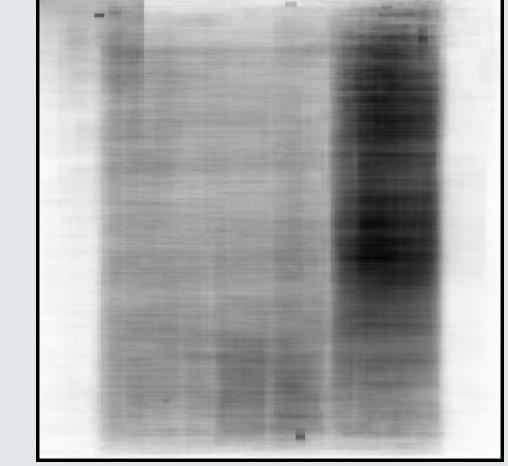
nav



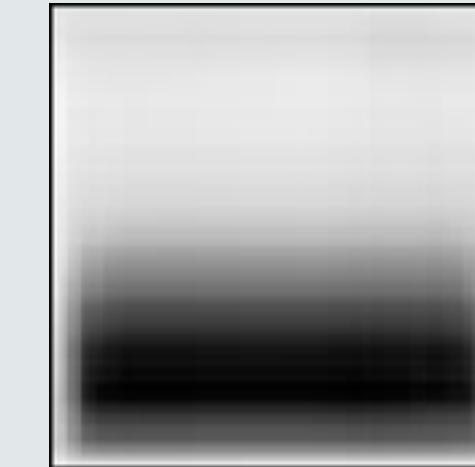
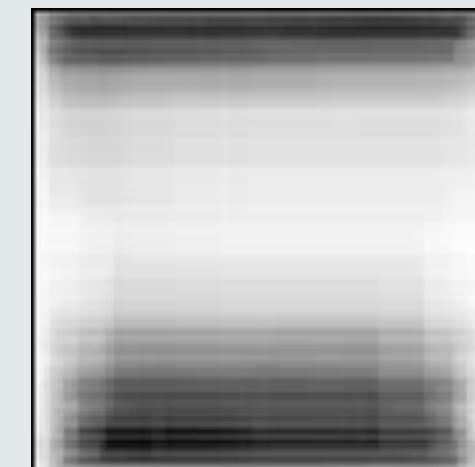
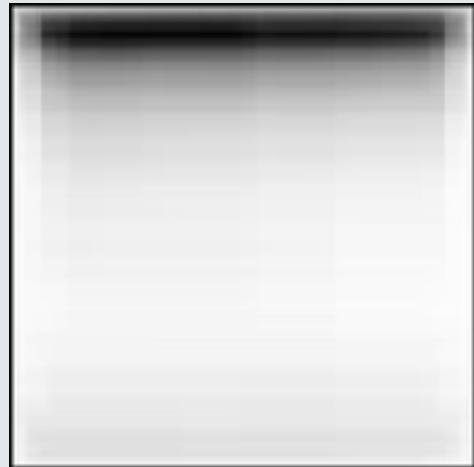
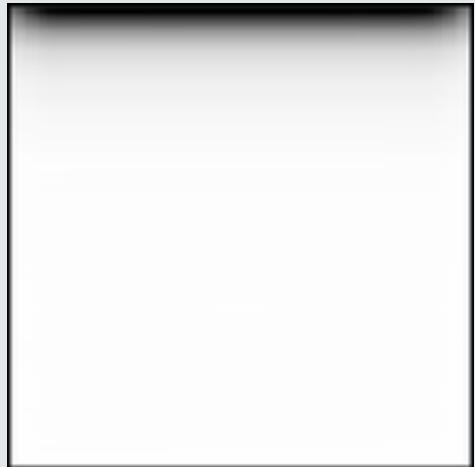
menu



sidebar



twitter



# MOBILE

# @media

CSS media queries are used to define different style rules for different devices

usually defined on browser width and/or height

can also query device width, height, orientation, resolution, etc.

# @media SYNTAX

```
@media not|only mediatype and  
(media feature) {  
    CSS-Code;  
}
```

screen, print, tv

max-width, min-width, width,  
max-height, min-height, height,  
max-resolution, ...

# @media EXAMPLE

```
Hide style sheets from  
older user agents  
@media only screen and  
(max-width: 640px) {  
    body {color: blue; }  
}
```

A red curved arrow points from the text "Hide style sheets from older user agents" down to the opening brace of the CSS code block. Another red curved arrow points from the text "breakpoint" down to the media query condition "(max-width: 640px)".

CODEPEN

writing media queries by hand is hard!



# GRID-BASED DESIGNS

divide screen into equal-width columns

columns separated by gutters

margins on both sides of window

elements may span multiple columns

elements start or end at column boundaries

alignment reduces visual clutter



# WHY ARE GRIDS USEFUL IN RESPONSIVE DESIGN?

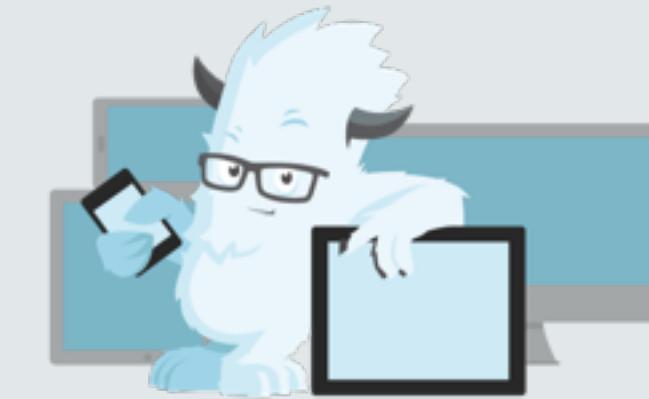
# NATIVE GRIDS & FRAMEWORKS

CSS Grid Layout

Semantic UI

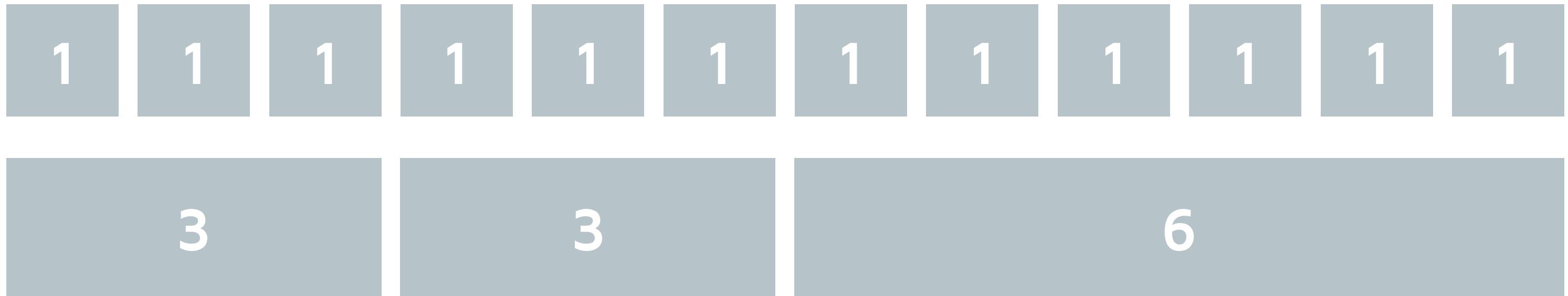


Twitter  
Bootstrap



Zurb  
Foundation

# 12-COLUMN GRIDS

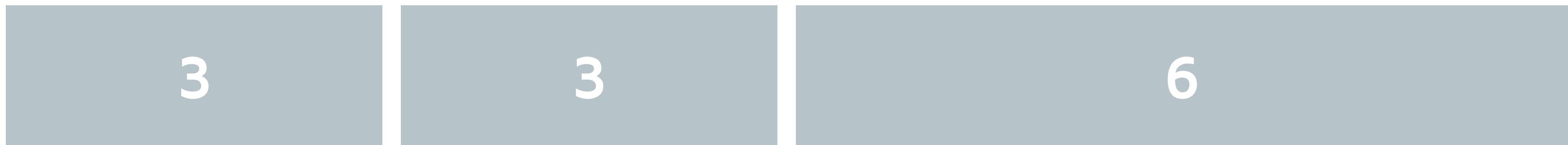


# GRID CLASSES

use predefined class libraries to  
create layouts and define  
responsive behaviors



# GRID CLASSES



```
<div class="row">  
  <div class="small-3 columns">...</div>  
  <div class="small-3 columns">...</div>  
  <div class="small-6 columns">...</div>  
</div>
```

All children of rows  
must be columns!



# COLUMN CLASSES

**small-#**      **max-width: 640px**

**medium-#**      **min-width: 641px and max-width: 1024px**

**large-#**      **min-width: 1025 and max-width: 1440px**

**xlarge-#**      **min-width: 1441 and max-width: 1920px**

**xxlarge-#**      **min-width: 1920px**



# COMBINING CLASSES



```
<div class="row">  
  <div class="small-3 columns">...</div>  
  <div class="small-3 columns">...</div>  
  <div class="small-6 columns">...</div>  
</div>
```

why don't we see any  
responsive behavior?



# MOBILE FIRST

design mobile first, then desktop

Google's approach, Eric Schmidt 2010

graceful degradation vs progressive enhancement



# MOBILE FIRST BEHAVIOR



larger devices will inherit  
styles from smaller ones

```
<div class="row">  
  <div class="medium-3 columns">...</div>  
  <div class="medium-3 columns">...</div>  
  <div class="medium-6 columns">...</div>  
</div>
```

CODEPEN



# MOBILE FIRST BEHAVIOR

```
<div class="row">  
    <div class="small-3 large-2 columns">...</div>  
    <div class="small-3 large-2 columns">...</div>  
    <div class="small-6 large-8 columns">...</div>  
</div>
```

what does this do?



# NESTING GRIDS

```
<div class="row">  
  <div class="small-3 columns">...</div>  
  <div class="small-9 columns">  
    <div class="row">  
      <div class="medium-6 columns">...</div>  
      <div class="medium-6 columns">...</div>  
    </div>  
  </div>  
</div>
```

CODEPEN



# MORE GRID CLASSES

```
<div class="row">  
  <div class="small-4 small-offset-2 columns">...</div>  
</div>
```

offset columns

```
<div class="row">  
  <div class="small-3 small-centered columns">...</div>  
</div>
```

center columns

CODEPEN



# REORDER COLUMNS

```
<div class="row">  
  <div class="medium-9 medium-push-3 columns">...</div>  
  <div class="medium-3 medium-pull-9 columns">...</div>  
</div>
```

CODEPEN



# CSS PREPROCESSOR INTEGRATION

Bootstrap is built on LESS,  
but also has SASS port

Foundation works with SASS



# CUSTOMIZING WITH SASS

customize grid with SASS variables in `_settings.scss`

```
$row-width: rem-calc(1000);
```

```
$column-gutter: rem-calc(30);
```

```
$total-columns: 12;
```



Device Apple iPhone 5 Network No throttling  
320 x 568 2 Fit UA Mozilla/5.0 (iPhone; CPU iPhone O...  
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300  
ANNOUNCEMENT: Enrollment is at max capacity -- keep checking online for openings.  
PIAZZA LABS AND MPS RESOURCES  
THE ART AND SCIENCE OF WEB PROGRAMMING  
CS498RK SPRING 2015 UIUC MONDAY AND WEDNESDAY 11AM-12.15PM SIEBEL 0216  
OVERVIEW  
Presents client- and server-side technologies that enable modern Web applications. Topics include the building blocks of the Web (HTML, CSS, the Document Object Model, Javascript) and data exchange (HTTP, JSON, RESTful APIs, and SQL/NoSQL databases). Programming

The screenshot shows a mobile browser simulation for an iPhone 5. The page content includes an announcement about enrollment being at capacity, navigation links (PIAZZA, LABS AND MPS, RESOURCES), course information (CS498RK, SPRING 2015 UIUC, MONDAY AND WEDNESDAY 11AM-12.15PM, SIEBEL 0216), and an overview section describing the course's focus on client-side and server-side technologies. A red circle highlights the 'Elements' tab in the developer tools interface at the bottom.

Elements Network Sources Timeline Profiles Resources Audits Console

Styles Computed Event Listeners DOM Breakpoints Properties

element.style {  
}  
@media only screen and (max-width: 40em)  
.nav {  
}

Find in Styles

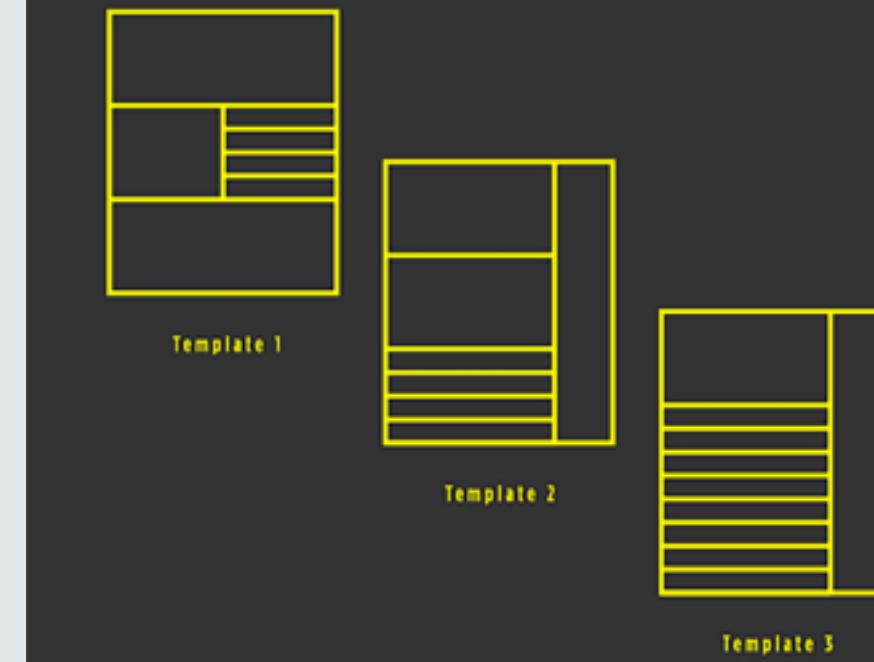
# *Towards a Responsive Philosophy*

[www.fastcodesign.com/3036091/the-next-big-thing-in-responsive-design](http://www.fastcodesign.com/3036091/the-next-big-thing-in-responsive-design)

“Most homepages use the exact same layout, day in and day out. And it’s not just homepages. Article pages—where most users first land on websites—look exactly the same, too. To a user, a day when war breaks out in Iraq can feel exactly the same as a day when the biggest news is a change in Bieber's hairstyle.”



MOST PUBLISHERS ONLINE HAVE THE SAME TEMPLATE EVERY DAY.



have responsive elements instead of responsive pages?

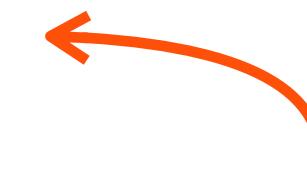
[www.fastcodesign.com/3036091/the-next-big-thing-in-responsive-design](http://www.fastcodesign.com/3036091/the-next-big-thing-in-responsive-design)

# TAILORED EXPERIENCES

screen size is just one part of a user's context

there's a lot more you know: where people are in the world, where they've just come from, how long they've been on the site, etc.

design algorithms and interfaces that take into account more of the user's context



*percentage of influence specifier?*

# NEXT CLASS: GRIDS & RESPONSIVE DESIGN

[courses.engr.illinois.edu/cs498rk1/](https://courses.engr.illinois.edu/cs498rk1/)