RAWDATA
Section 4

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System Development

Unobtrusive Design
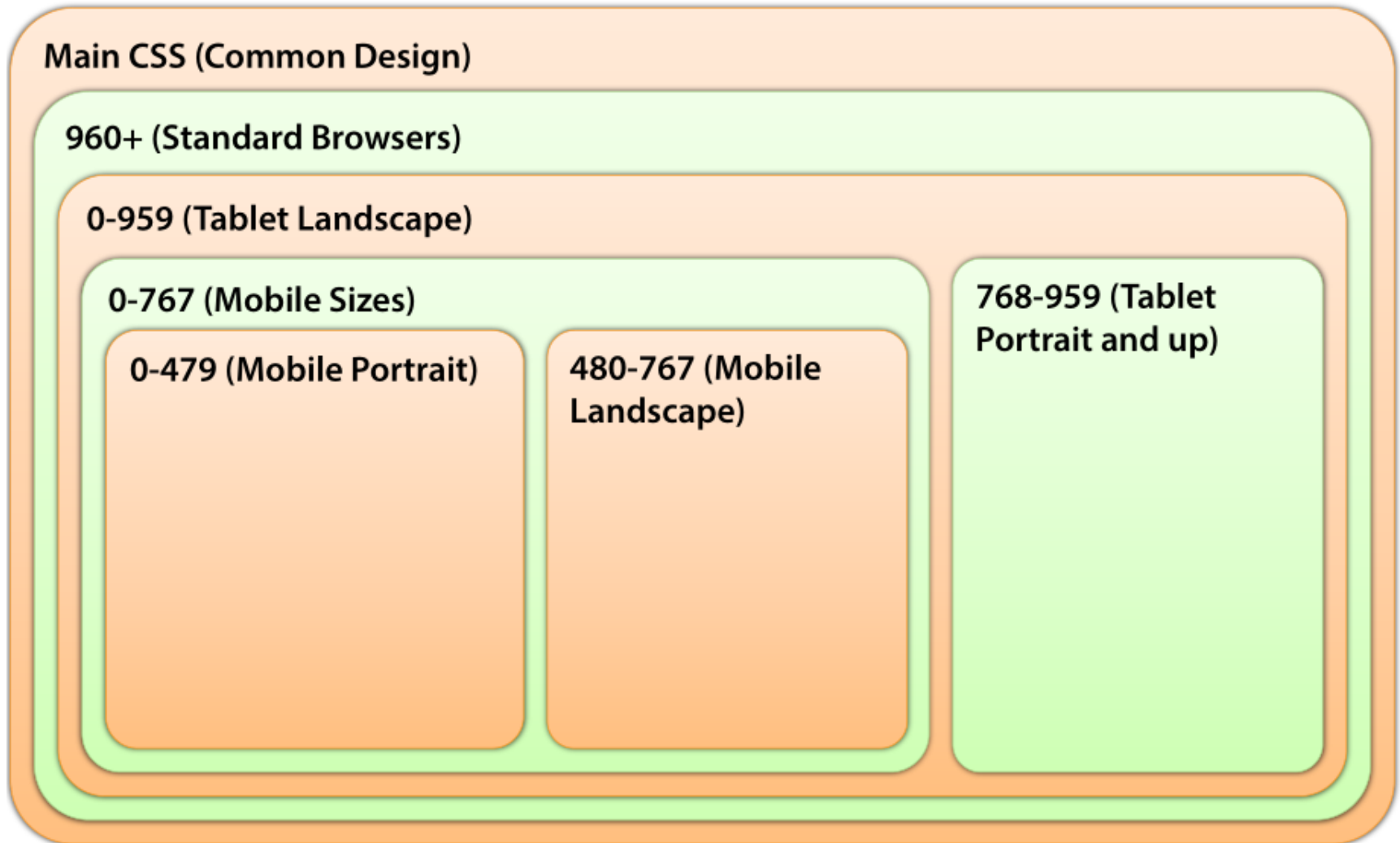
Behavior

custom.js

Content

index.html

Presentation

style.css
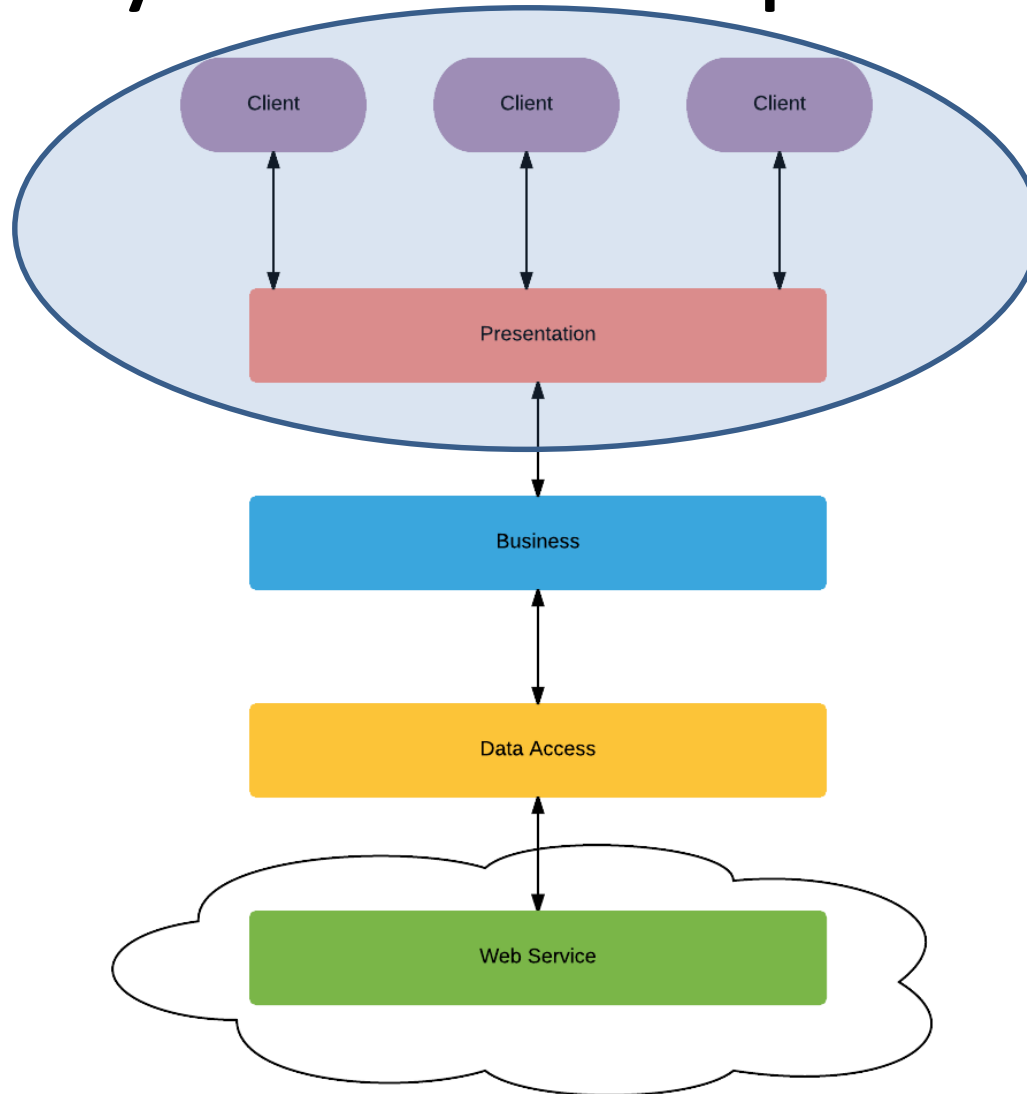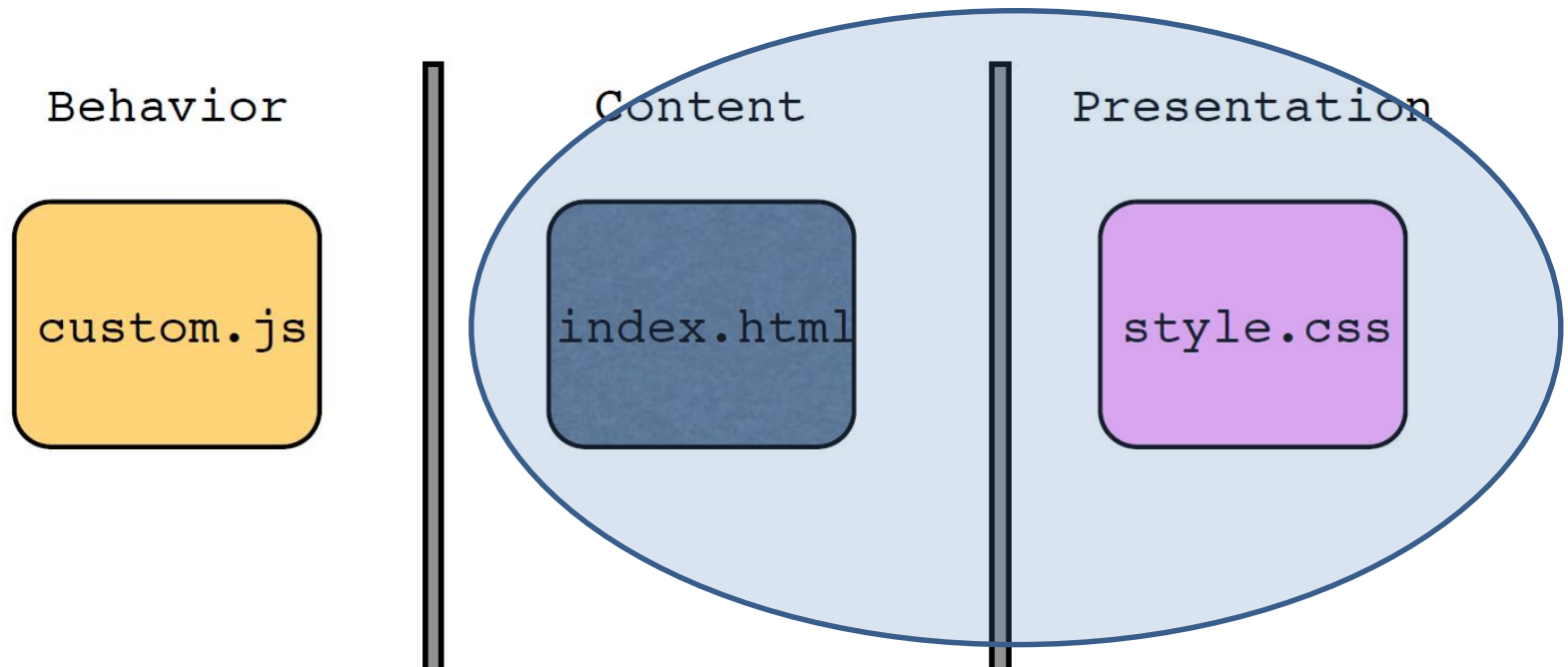
Why we need Bootstrap!

- Programmers aren't designers!
  - http://www.lingscars.com/
  - http://arngren.net/
  - http://heaven.internetarchaeology.org/heaven.html#bottom

What is Bootstrap

- Open Source Framework for Building Web Sites
  - A bit of CSS
  - A bit of JavaScript
  - Modular
  - Covers the 80% of the Metaphors

Responsive Web Design

Main CSS (Common Design)

960+ (Standard Browsers)

0-959 (Tablet Landscape)

0-767 (Mobile Sizes)

0-479 (Mobile Portrait)

480-767 (Mobile Landscape)

768-959 (Tablet Portrait and up)

Responsive Design

- Media Queries
  - Works because of cascading rules
  - Later rules over-rule (pun!) earlier rules
  - More specific rules overrule earlier rules

```
// your.css
#main { width: 989px; }

@media only screen and (min-width: 768px) and (max-width: 959px) {
  #main { width: 760px; }
}

@media only screen and (max-width: 767px) {
  #main { width: 470px; }
}
```
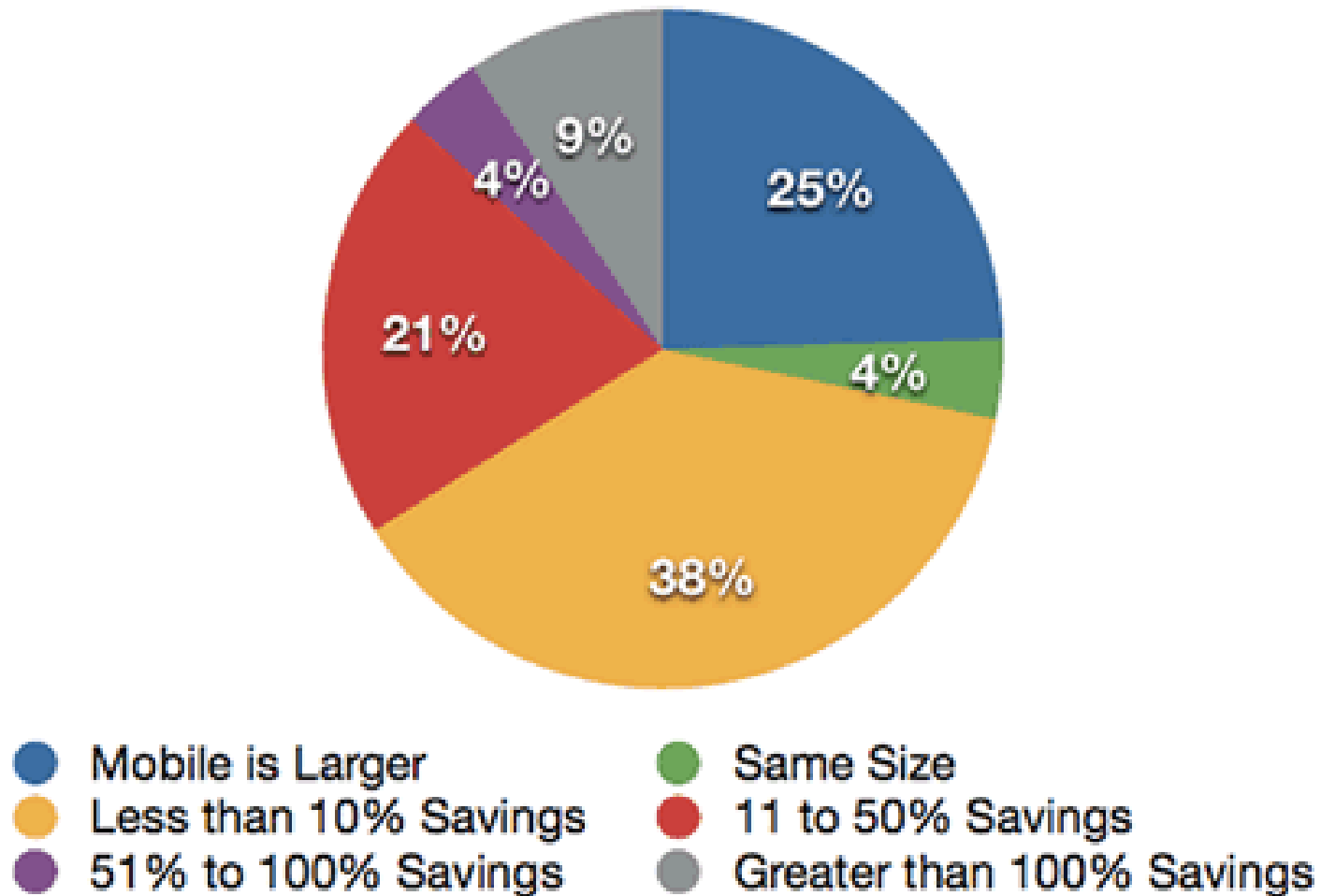
https://developer.mozilla.org/en-US/docs/Web/CSS/Media_Queries/Using_media_queries

Problems…

- Subtractive solution means too many resources
- All JS code is running
  - On Platform that is least suited to handle it
- Images are loaded but hidden

Comparison of Mobile and Desktop Views

- Mobile is Larger — 25%
- Same Size — 4%
- Less than 10% Savings — 38%
- 11 to 50% Savings — 21%
- 51% to 100% Savings — 4%
- Greater than 100% Savings — 9%

http://blog.cloudfour.com/where-are-the-mobile-first-responsive-web-designs/

Mobile First Responsive Design

- Philosophy created by Luke Wroblewski*
  - Focuses on Progressive Enhancement
    - Where RWD is typically Graceful Degradation
  - Scales Up…not down

*http://www.lukew.com

Mobile First Responsive Web Design

Main CSS (Common Design) (0-480)
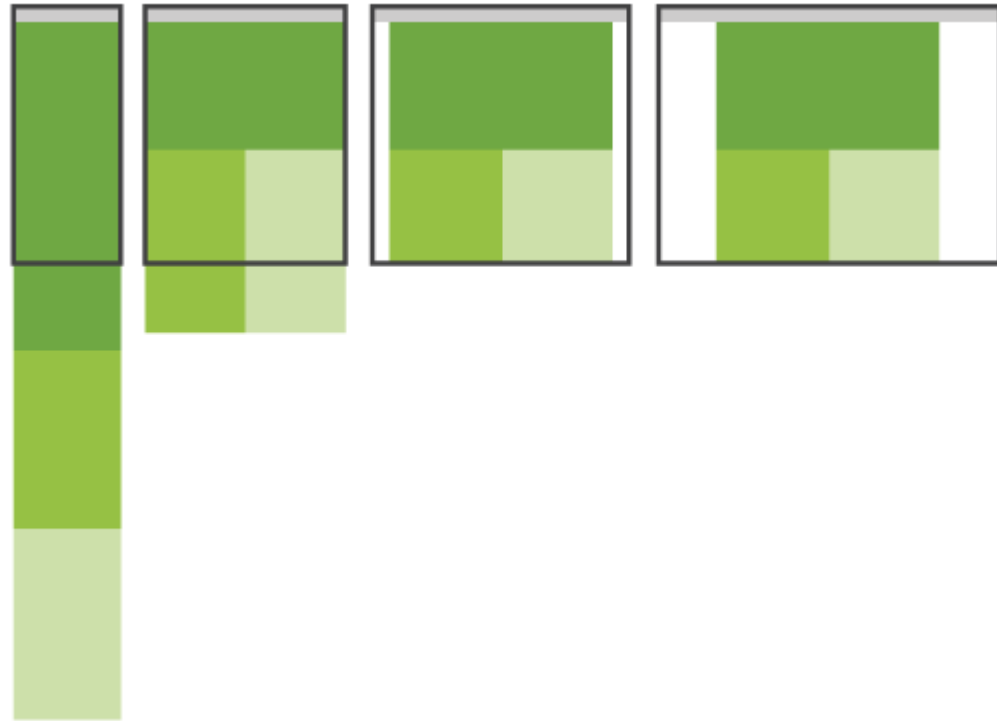
> 480px

> 768px

> 992px

> 1200px

Multi-Device Layout Patterns

- Mostly Fluid

- Column Drop

- Layout Shifter

- Content reflow

- Responsive patterns examples
 - https://bradfrost.github.io/this-is-responsive/patterns.html

Mostly Fluid

- The most popular pattern

- introduces larger margins on big screens

- fluid grids and images to scale
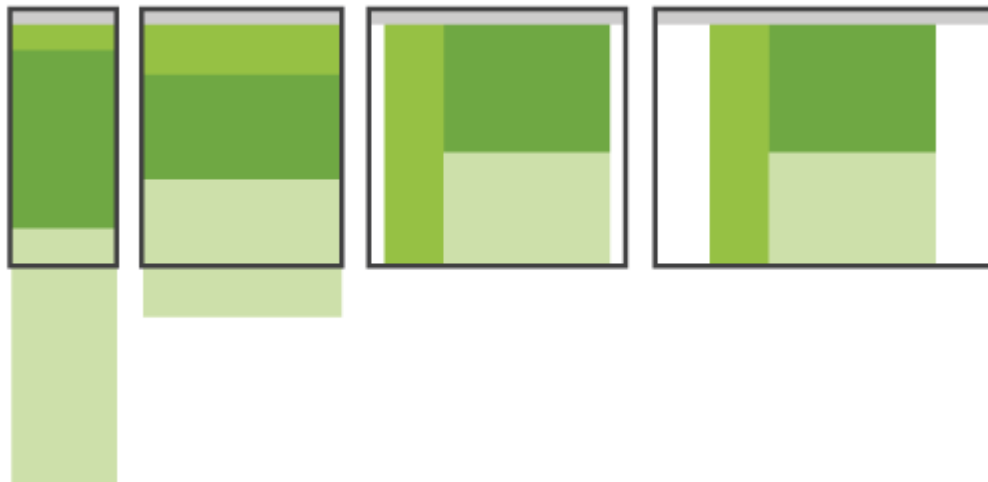
- stacks columns vertically

Column Drop

- starts with a multi-column layout

- ends up with a single column layout

- dropping columns along the way

- overall size of elements tend to stay consistent

- stacking columns
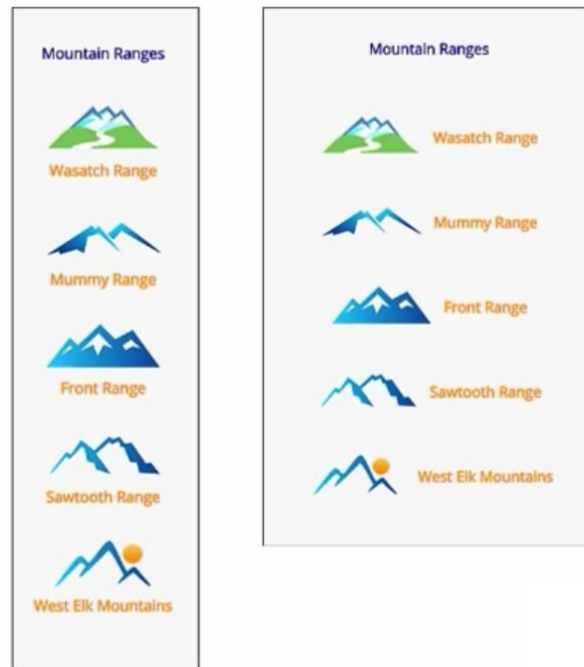

http://codepen.io/bradfrost/full/zhCwd
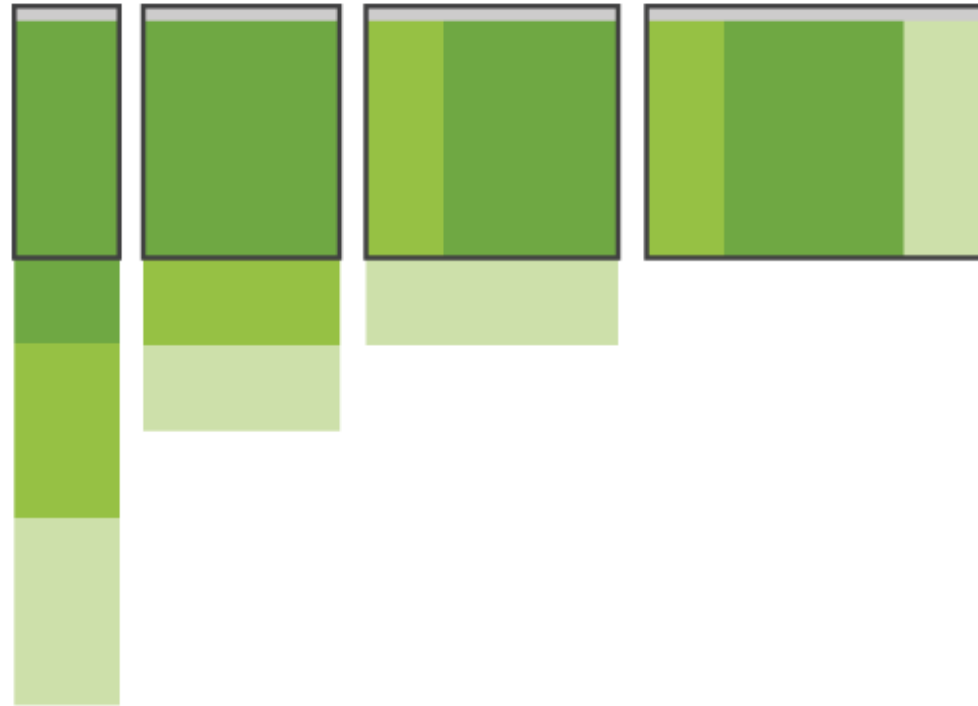
Layout Shifter

- different layouts are used on large, medium, and small screens
- Using @media queries

Content Reflow

- http://codepen.io/ramonlapenta/full/nhlqg

The Bootstrap Grid System

Multiple Grids

	Extra small <576px	**Small** ≥576px	**Medium** ≥768px	**Large** ≥992px	**Extra large** ≥1200px
Max container width	None (auto)	540px	720px	960px	1140px
Class prefix	.col-	.col-sm-	.col-md-	.col-lg-	.col-xl-
# of columns	12				
Gutter width	30px (15px on each side of a column)				
Nestable	Yes				
Column ordering	Yes				

Theming Bootstrap

- You can easily change your page by use of themes
    - e.g. https://bootswatch.com/

Bootstrap Basics

- Typography

- Buttons

- Navs & NavBars

- Lists

- Tables

- Forms

http://getbootstrap.com/css/

Typography

- Headings
- Lead
- Alignment
  - text-left, text-right …
- Transformation
  - text-lowercase, text-capitalize
- Code
- Contextual colors (Helper classes)
  - text-muted, text-primary, …

https://getbootstrap.com/docs/4.0/content/typography/
https://getbootstrap.com/docs/4.0/content/code/

Buttons

- Button
  - btn class
  - btn-default, btn-primary …
  - btn-sm, btn-lg …

https://getbootstrap.com/docs/4.0/components/buttons/

Navs & NavBars

- navbar
  - navbar-default, …
  - navbar-fixed-top … (need to add body top margin)
- navbar-header
  - Button
    - navbar-toggle
    - data-toggle=collapse
    - data-target .navbar-collapse
- navbar-collapse
  - collapse
- navbar-nav
  - navbar-right …
  - nav, active

https://getbootstrap.com/docs/4.0/components/navbar/

Lists

- list-unstyled, list-inline
- list-group, list-group-item
  - Badges
  - Linked items
  - Disabled
  - Contextual classes

https://getbootstrap.com/docs/4.0/components/list-group/

Tables

- table
  - table-stribed
  - table-bordered
  - table-hover

https://getbootstrap.com/docs/4.0/content/tables/

Forms

- form-group
  - form-control
  - btn
- form-vertical
- form-inline
- form-horizontal

https://getbootstrap.com/docs/4.0/components/forms/

Bootstrap Components

- Page header & breadcrumbs
- Button Groups
- Dropdowns
- Button Dropdowns
- Input Groups
- Pagination

Button Groups

- btn-group
  - btn-group-vertical
  - btn-group-sm …
- Toggles
  - data-toggle="buttons"
  - Use labels instead of buttons and add either checkboxex or radio inside

https://getbootstrap.com/docs/3.3/components/#btn-groups

Dropdowns

- div.dropdown
  - button with data-toggle='dropdown' (sibling)
  - e.g. use caret span
  - ul.dropdown-menu
    - a href='#' and tabindex='-1'
- Add to form data
  - Hidden select or field you set value on (js)

https://getbootstrap.com/docs/3.3/components/#btn-dropdowns

Bootstrap Plugins

- Tooltips
- Alert
- Carousel
- …