



Front End Development

Session 5

Pulling Ourselves Up
By Our ***Bootstraps***



Learning Goals

In today's session, we will:

01

Demonstrate how to use Bootstrap to create responsive websites

02

Practice building elements using the Bootstrap grid

03

Discuss some of the differences between designing for computers vs smartphones

04

Recap and summarize what we've learned in Week 1



Let's review



Q. What kind of code are we learning in this course?

Q. Can you name a role, job, or industry that uses this kind of code?

Q. What three “languages” do we use to create websites?

Q. What does "HTML" stand for?

Q. How can we examine website code on our computers?

Q. In HTML, what's the difference between the <head> and the <body>?

What is the difference between Git and Github?

What does the CLI stand for? What would we use it for?

How do you format a link in HTML?

How do we save our work with Git and Github?

What does a `<div>` tag do?

What does CSS stand for? Why do we use CSS?

What is the difference between *block* and *inline*?

What does “float” do?

What are the five positioning properties?



Introducing: Bootstrap



Bootstrap is an open-source framework for developing websites with HTML, CSS, and Javascript. Bootstrap uses a grid system which can help you build responsive websites!



A framework is a codebase written to simplify common problems within a given programming environment.

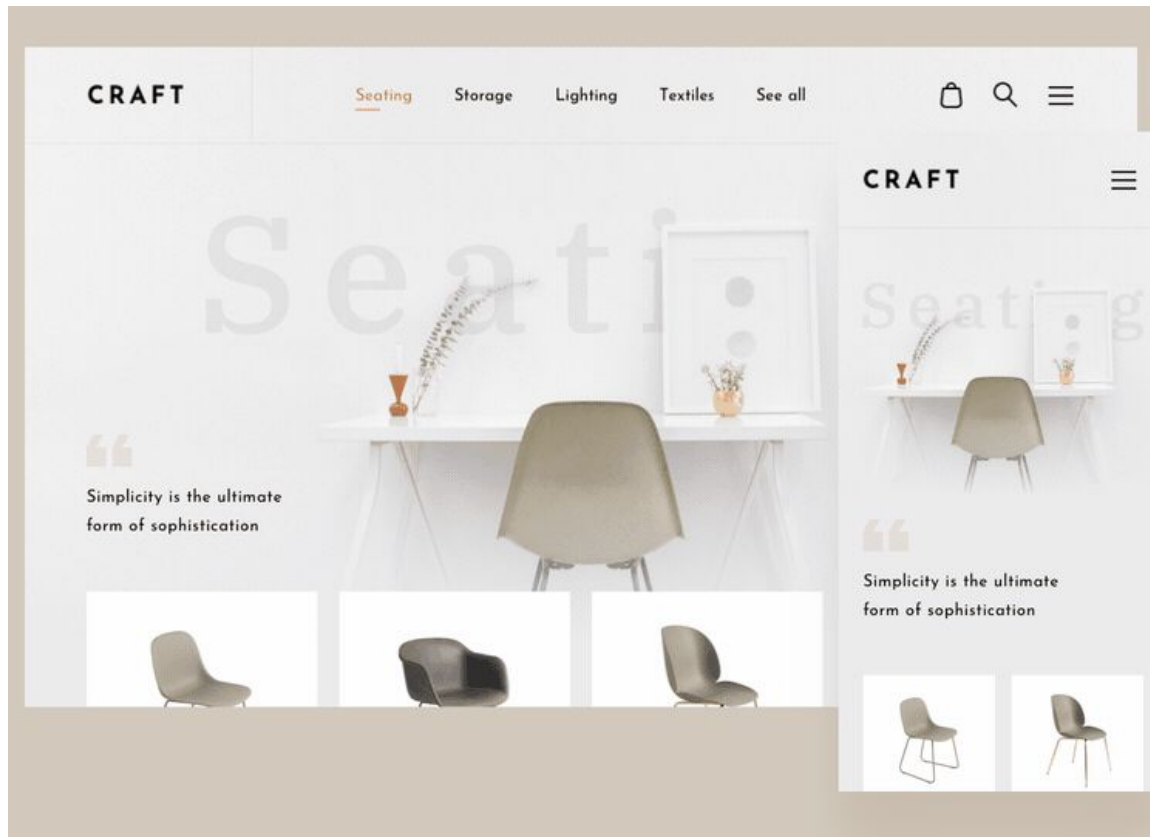
Open-source means that it has been developed in the public domain, usually through public collaboration (or if a developing company has publicly shared all of their code).



Responsive Design

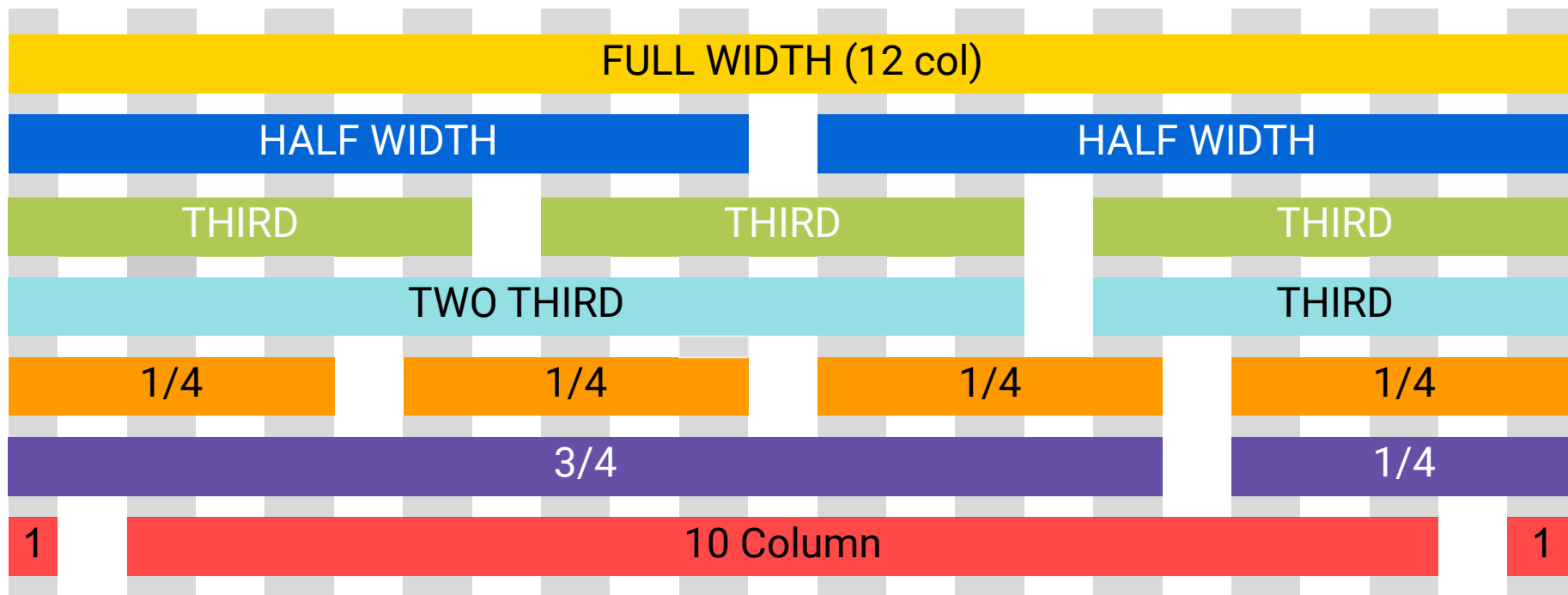
Responsive design means that a site or app can be viewed on different devices and screen sizes **without compromising quality or readability.**

We'll cover more on responsive design later this session!



Bootstrap Framework

Bootstrap was a really *innovative* framework when it was first introduced (2012)!

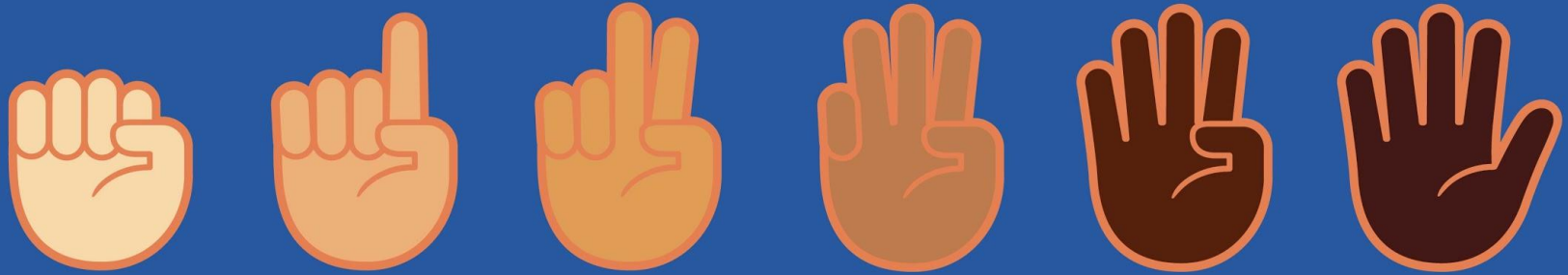




Instructor Demo: Bootstrap Components

Suggested Time:
15 minutes





Fist to five

Let's





Activity instructions are in Canvas for: Bootstrap Warmup

Suggested Time:
10 minutes





Let's review



Questions?





**Welcome to
The Grid**



UX stands for *User Experience*: designing with the user in mind.

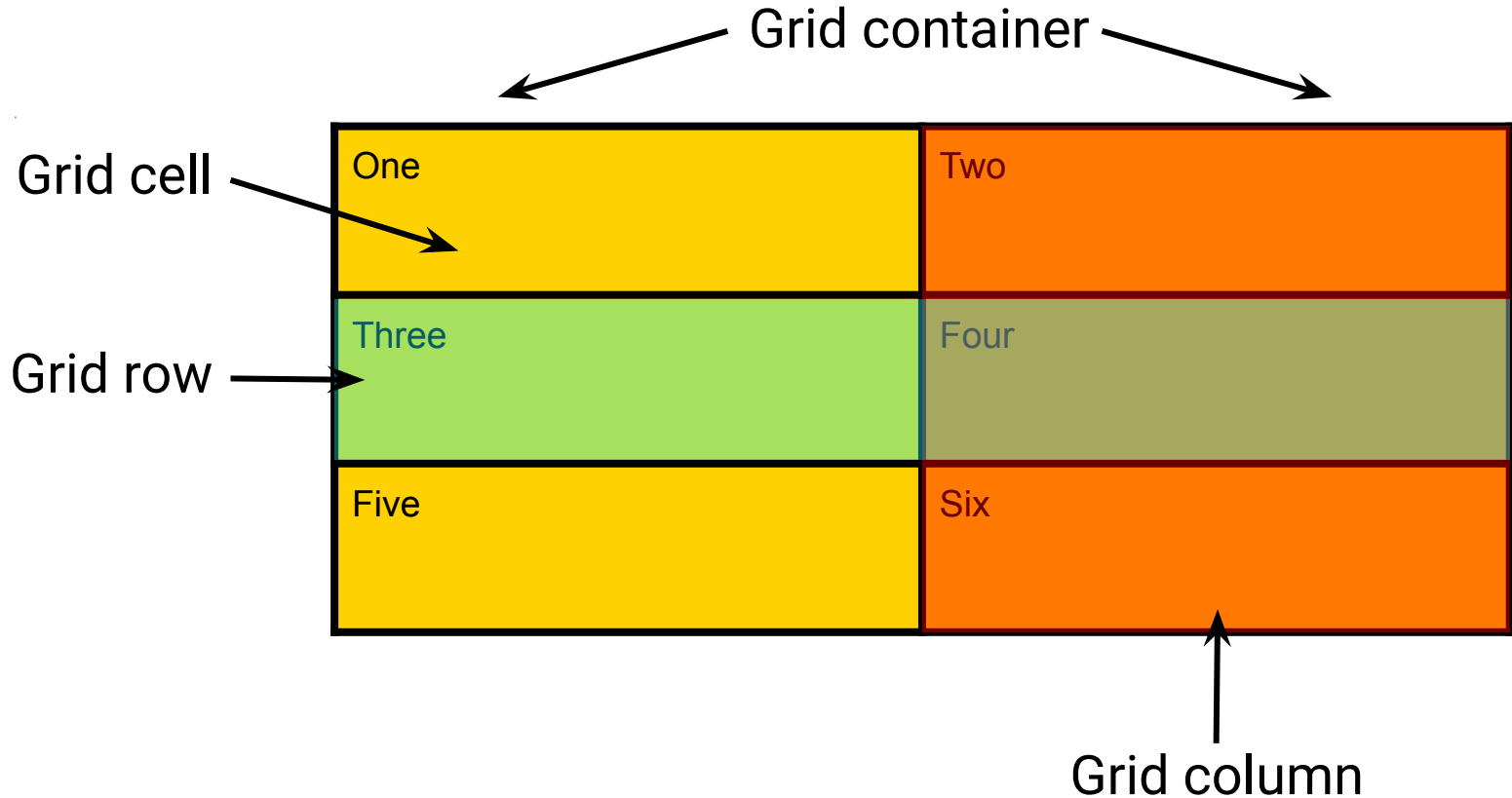
UI stands for *User Interface*: how users navigate and engage with your site or app.



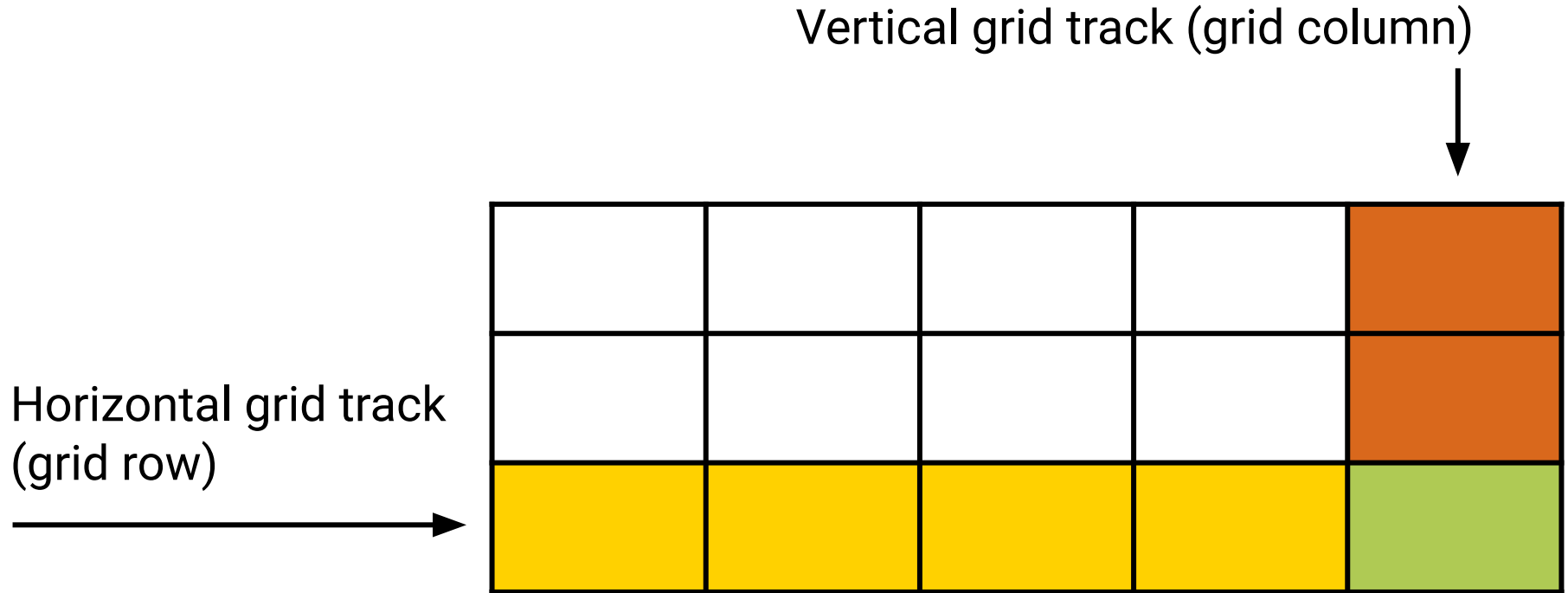
Web Design = Wireframes



Welcome to The Grid

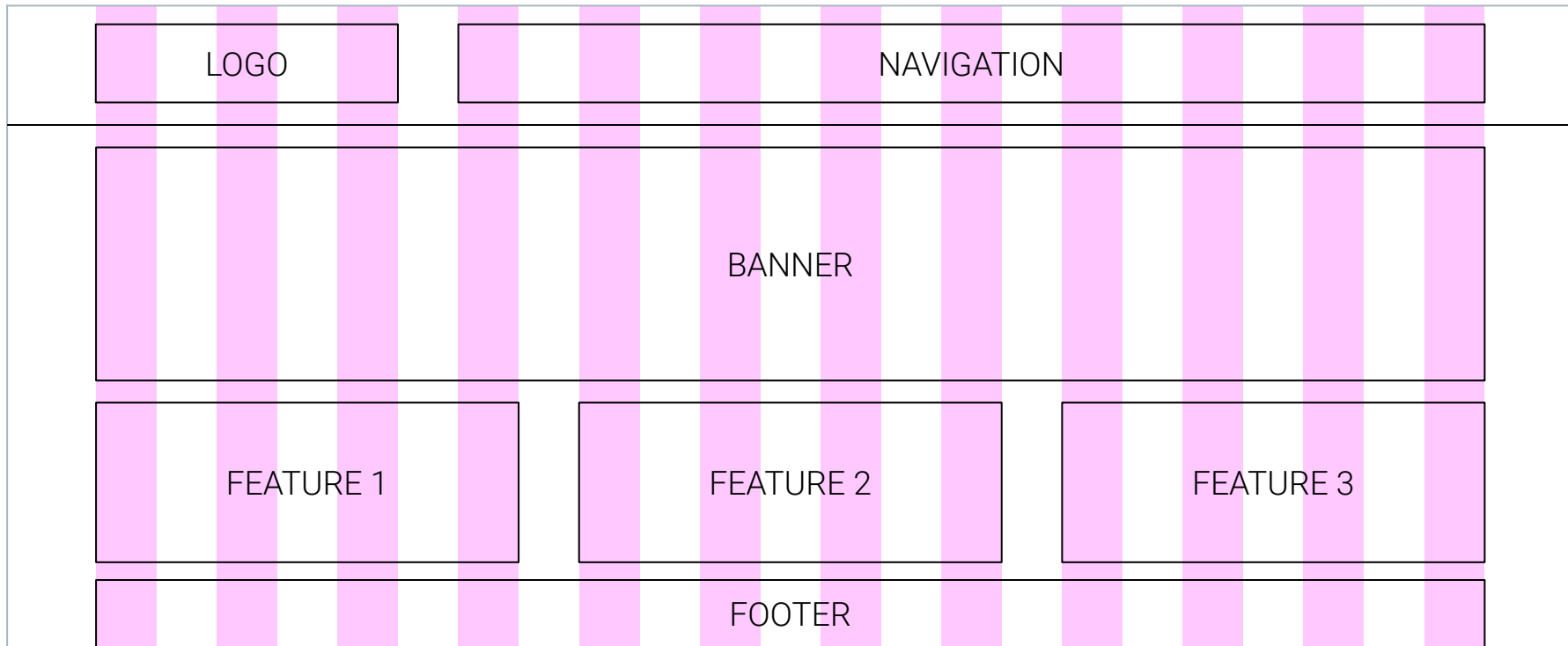


Welcome to The Grid



Grid Anatomy

Grids serve to align elements on a page.



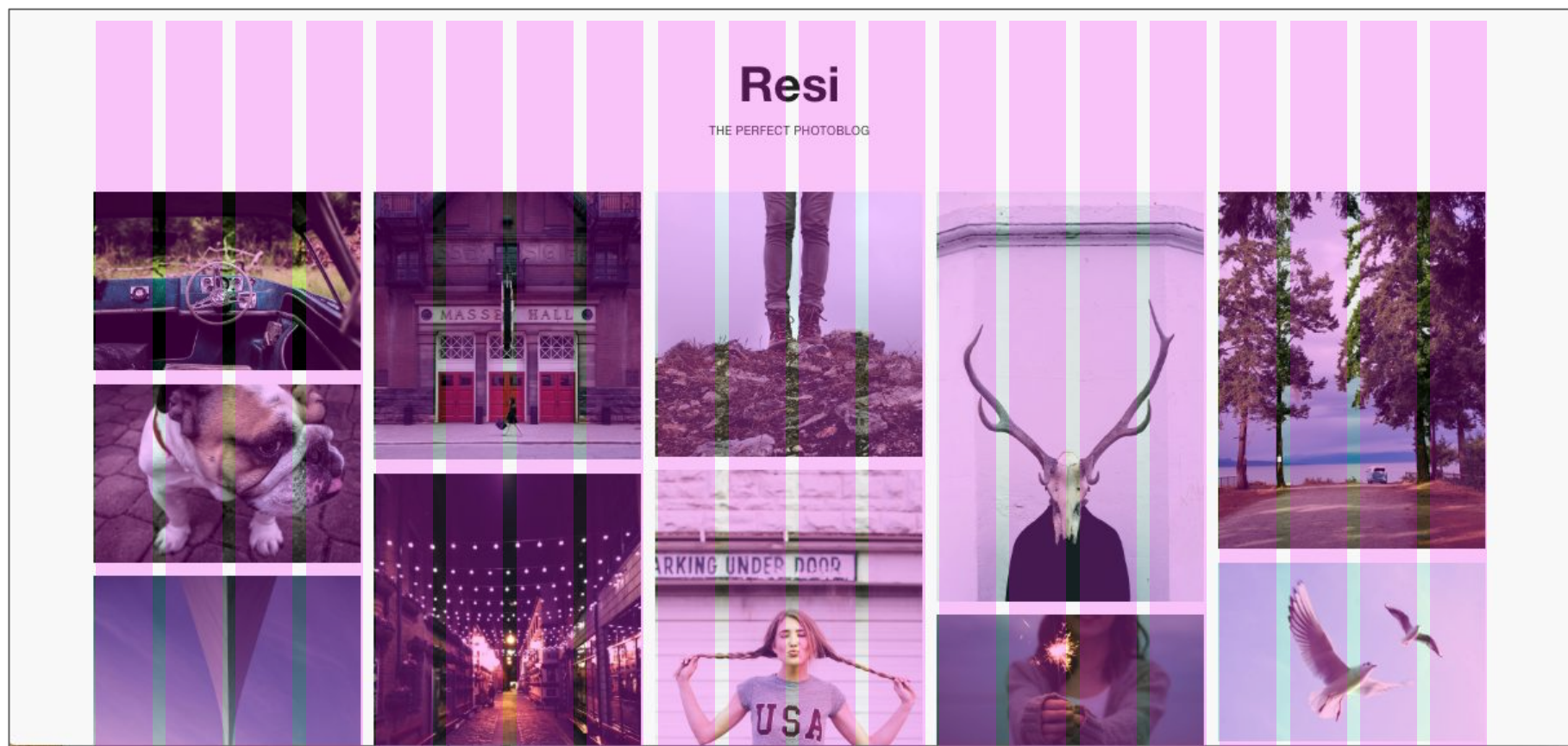
Where's the Grid?

Resi

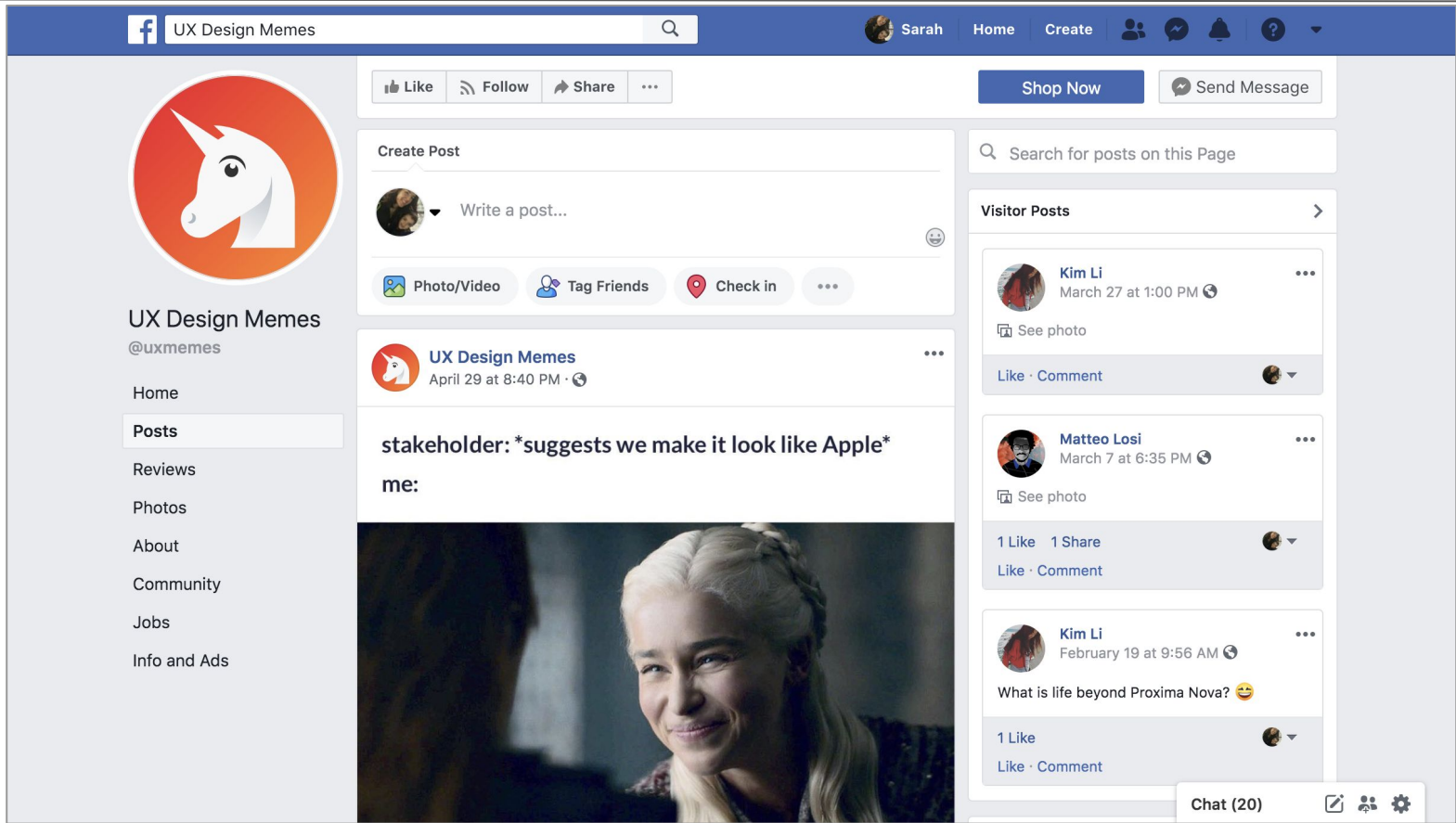
THE PERFECT PHOTOBLOG



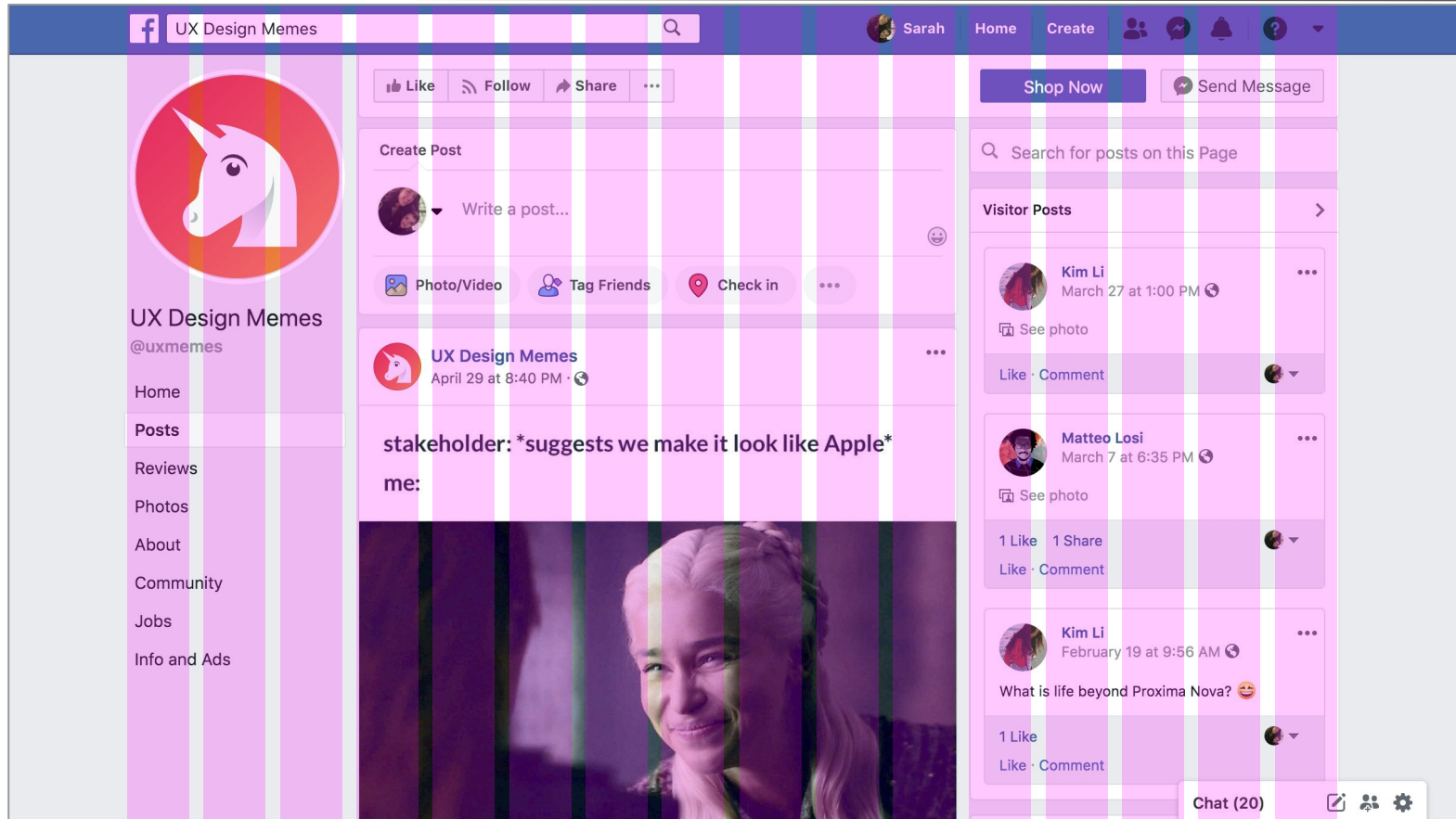
Photo Blog Grid



Facebook's Grid



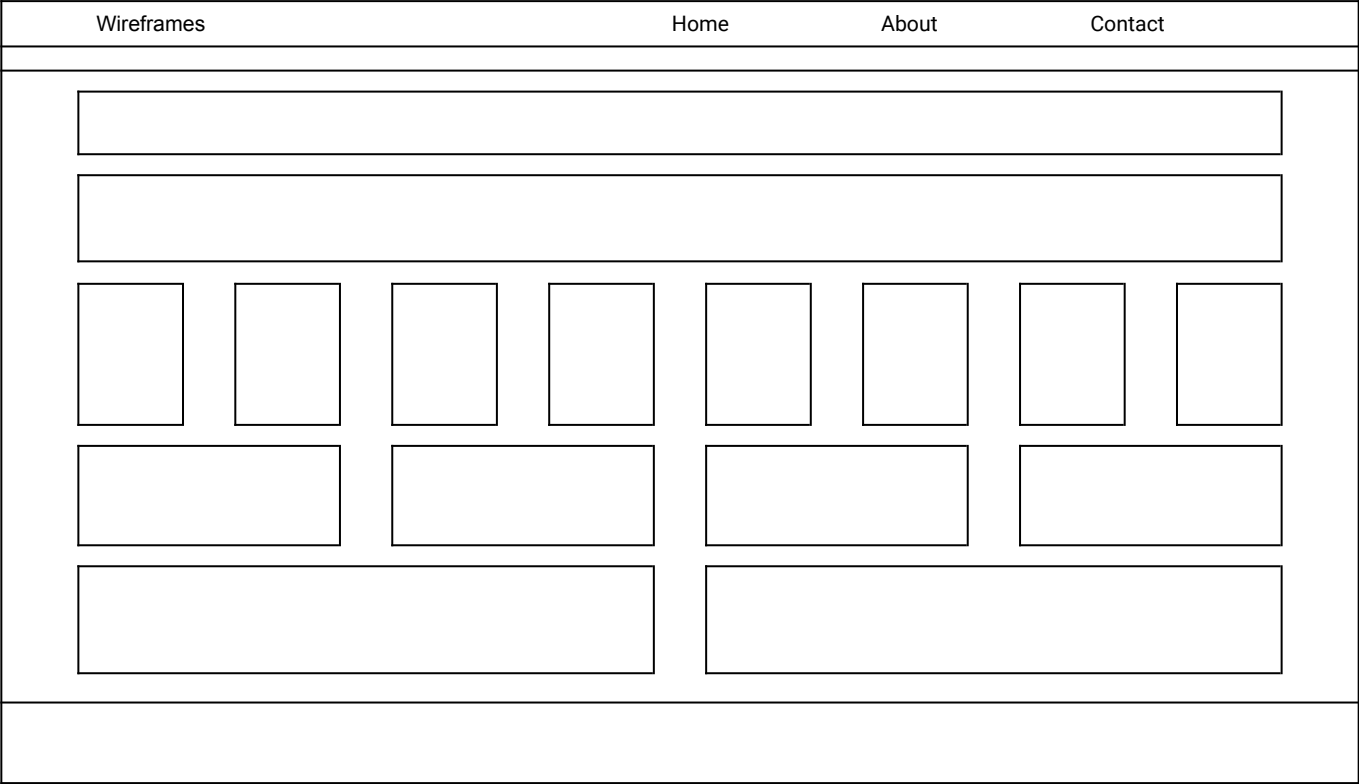
Facebook's Grid





**Rows &
Columns!**

How Many Rows and Columns Do You See?



Total # of Rows:

	Wireframes	Home	About	Contact
1				
1				
1				
1				
1				
1				

Total # of Columns:

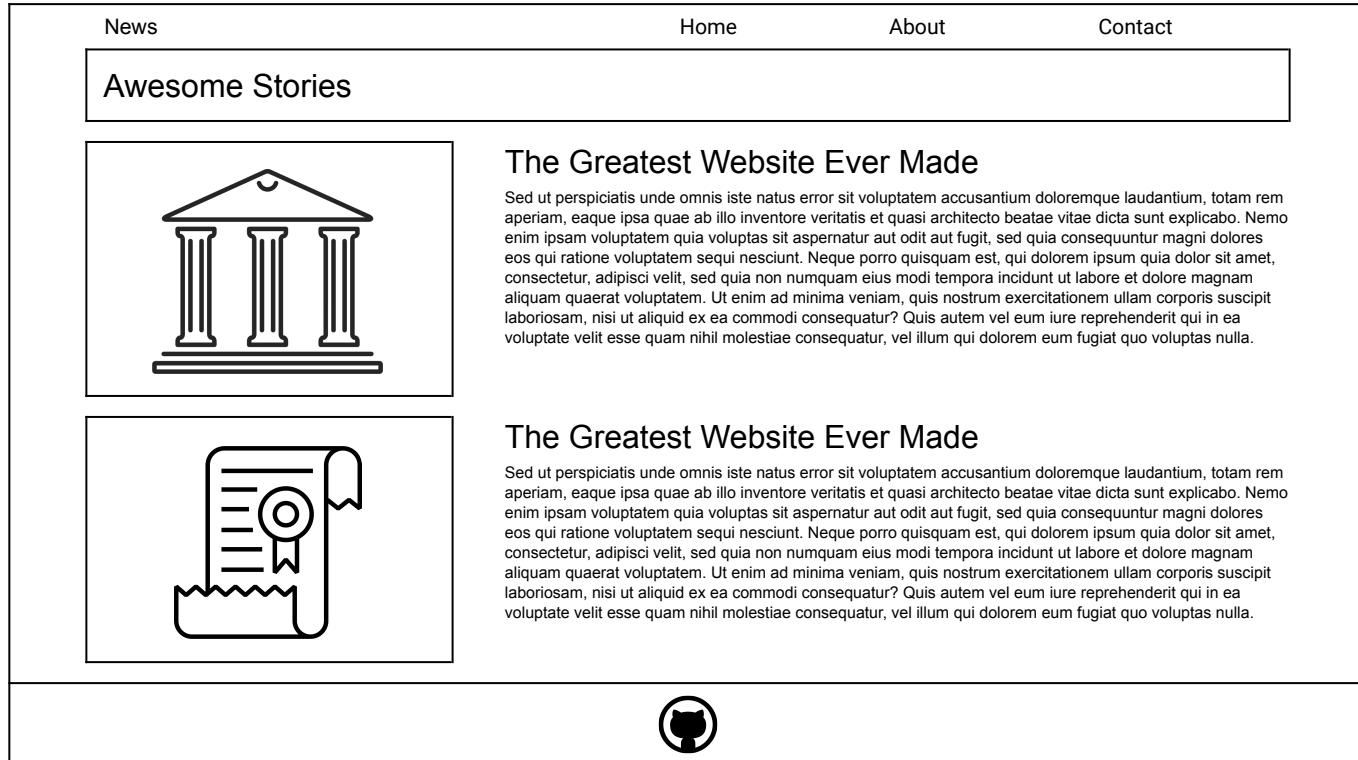
	Wireframes	Home	About	Contact
1				
1				
8				
4				
2				
1				

Level Up!




Let's make it more challenging.





How Many Rows and Columns?



Total # of Rows:

	News	Home	About	Contact
1	Awesome Stories			
1		<h3>The Greatest Website Ever Made</h3> <p>Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit laboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iure reprehenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla.</p>		
1		<h3>The Greatest Website Ever Made</h3> <p>Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit laboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iure reprehenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla.</p>		
1				

Total # of Columns:





	News	Home	About	Contact
1	Awesome Stories			
2		The Greatest Website Ever Made		
2		The Greatest Website Ever Made		
1				

Level Up!

Now for another...







How Many Rows and Columns?

Wireframes	Home	About	Contact
The Greatest Website Ever Made			
			
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	
Still the Greatest Website Ever Made			
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.			
			

Total # of Rows:

	Wireframes	Home	About	Contact
1	The Greatest Website Ever Made			
1-2				
	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	
1	Still the Greatest Website Ever Made			
	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.			
1				

Total # of Columns:

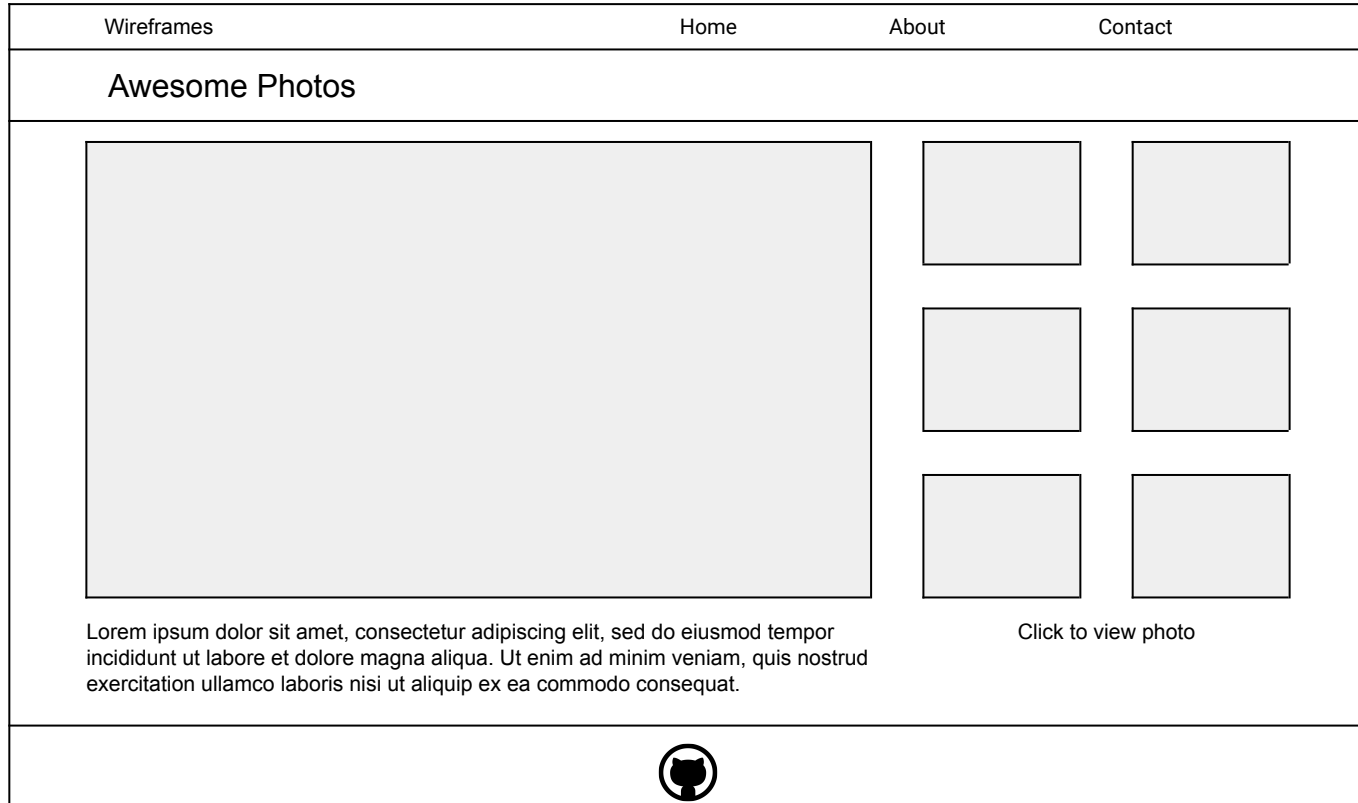
	Wireframes	Home	About	Contact
1	The Greatest Website Ever Made			
3				
	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.	
1	Still the Greatest Website Ever Made			
	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.			
1				

Level Up!

Final one!



How Many Rows and Columns?

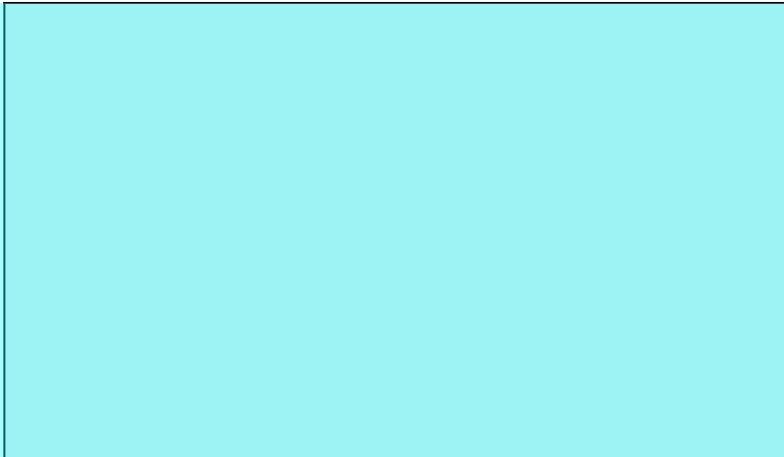


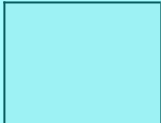
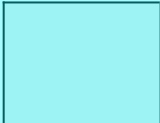





Level Up!

Didn't quite work, right? For this one, we need **sub-rows** and **sub-columns**.



Total # of Rows:

	Wireframes	Home	About	Contact
1	Awesome Photos			
1*				
				
				
1*	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.		Click to view photo	
1				

Total # of Column:

	Wireframes	Home	About	Contact
1	Awesome Photos			
2	<div></div> <div> Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</div>			<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>Click to view photo</div>
1	<div></div> <div></div>			

Total # of Sub-Rows:

Wireframes

Home

About

Contact

Awesome Photos

Click to view photo

Total # of Sub-Columns:





Now You Try!

1. Get into pairs
2. Each pick a website
3. Try to guess the grid
4. Share your findings

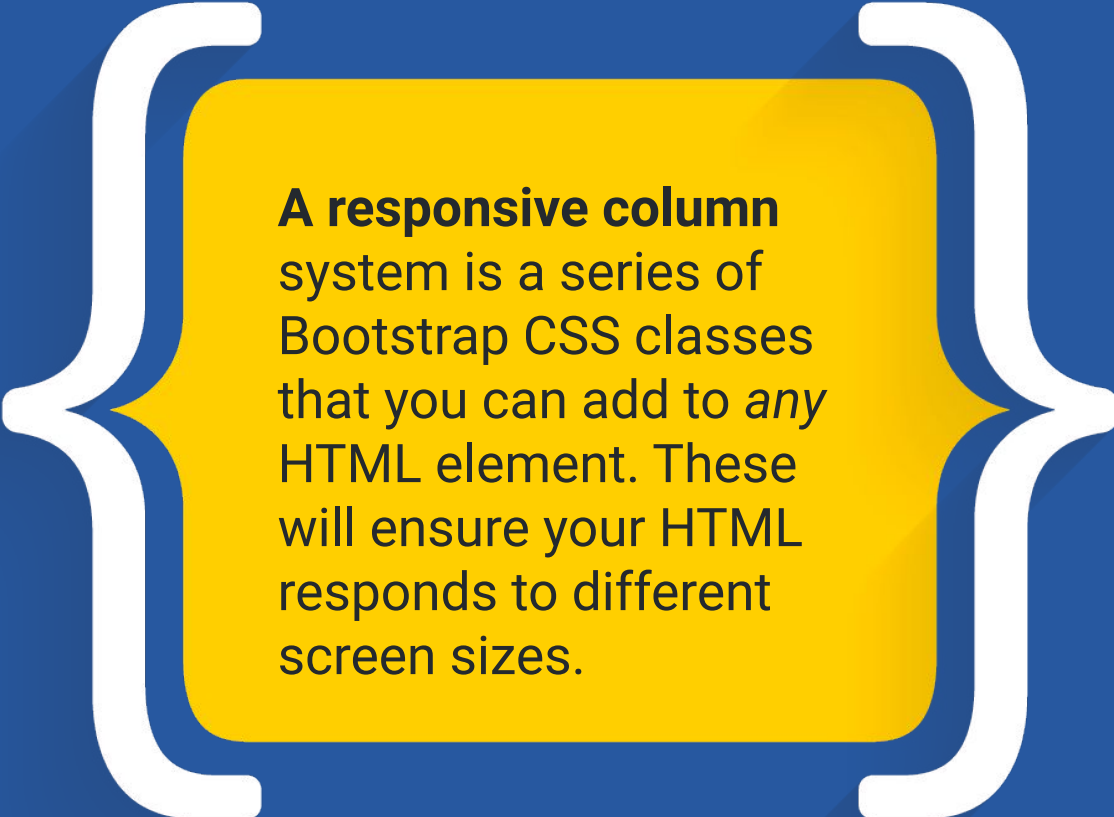


Questions?



A large yellow pill-shaped graphic with a rounded left side and a straight right side, centered on a solid blue background.

Responsive Columns



A responsive column system is a series of Bootstrap CSS classes that you can add to *any* HTML element. These will ensure your HTML responds to different screen sizes.

Bootstrap Grids

The responsive column system has three parts:



Containers—wrap around the entire grid.



Rows—defined within containers.



Columns—defined within rows; created using classes.



Each of these elements is implemented by creating a `<div>` with a specific class name.

Bootstrap 4

Bootstrap provides us with classes that can be applied to our HTML elements.

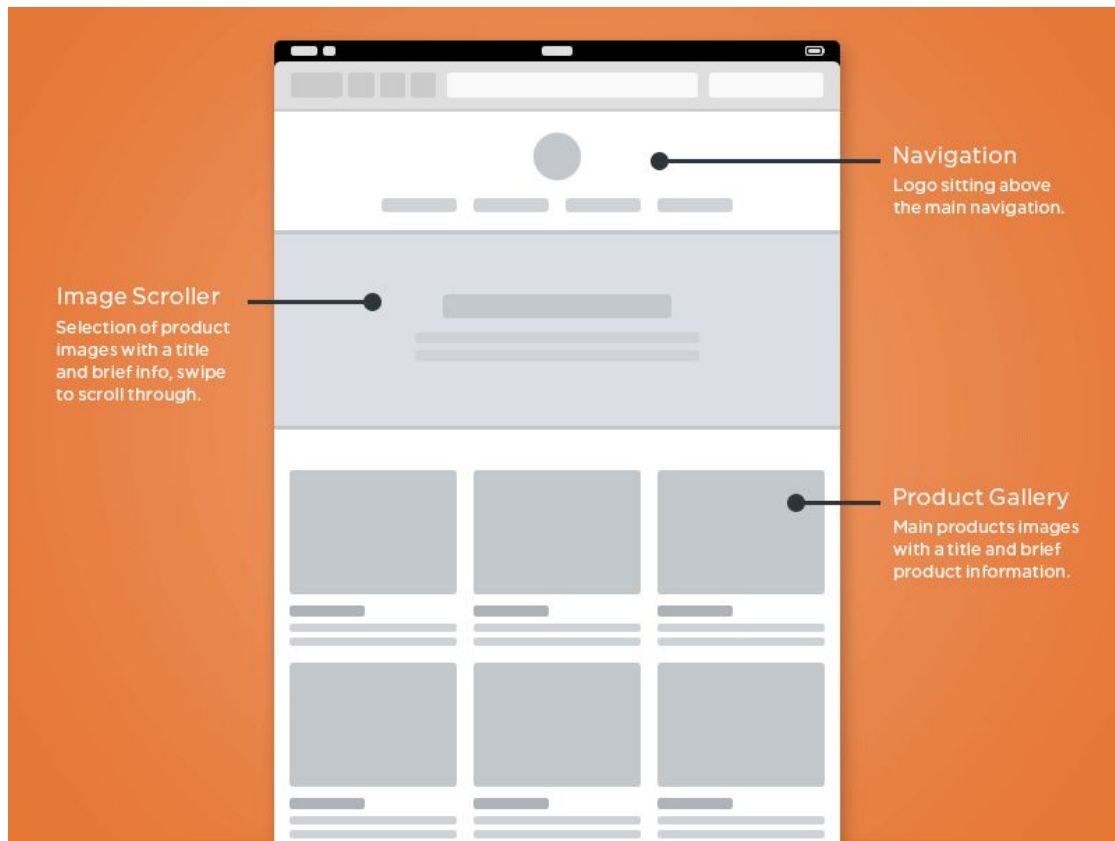
These classes modify how our layout responds to different screen widths (called "*viewports*" in developer jargon).



Prewritten classes

Bootstrap classes, such as Bootstrap containers or rows, are pre-written to be *automatically responsive*.

All we have to do is apply them to any HTML element wrapped inside of a row and a container.



class = "container"

Containers provide a means to center and horizontally pad your site's contents.

Use `.container` for a container with a fixed width.

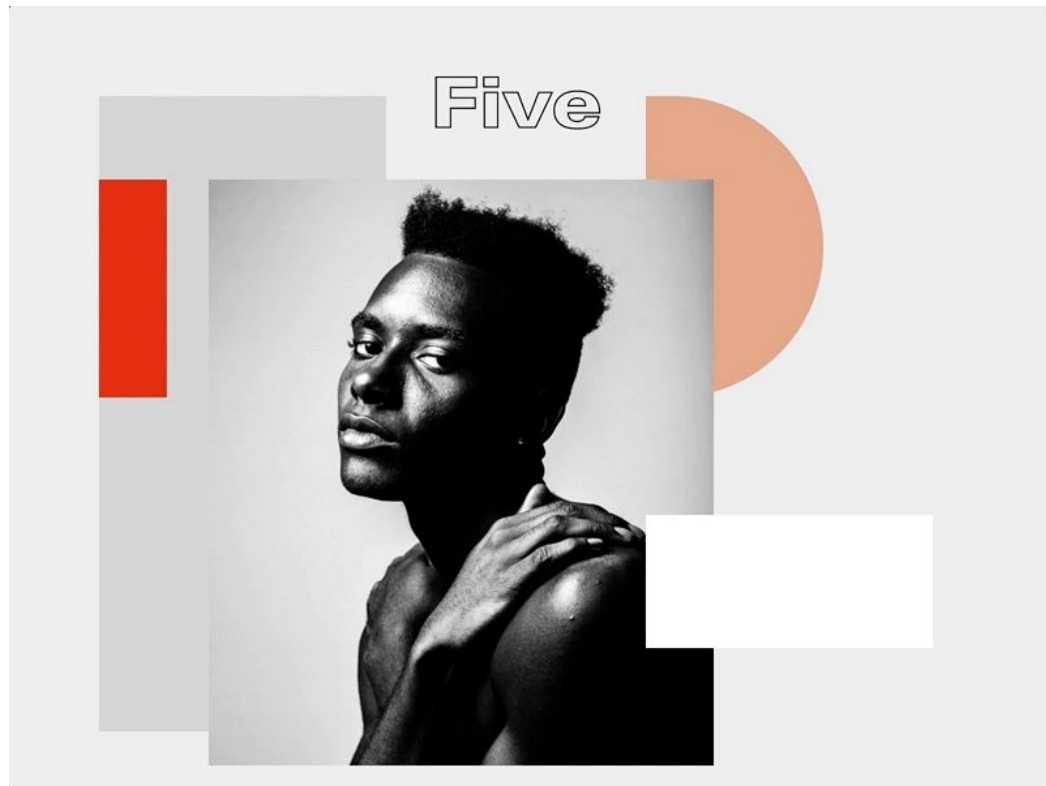
```
<div class="container">
  <div class="row">
    <div class="col-lg-6"></div>
    <div class="col-lg-6"></div>
  </div>
  <div class="row">
    <div class="col-lg-4"></div>
    <div class="col-lg-4"></div>
    <div class="col-lg-4"></div>
  </div>
  <div class="row">
    ...
  </div>
</div>
```

class = "container-fluid"

A fluid container has the same function as a regular container except that its width is *fluid*.

.container-fluid will always display at 100% across all viewport and device sizes.

In other words, a fluid container will always *span the full width* of its web page or parent container.



class = "container-fluid"

Hello World!

I love the color yellow.

Purple is my jam!

```
<div class="container-fluid">
  <h1>Hello World!</h1>
  <div class="row">
    <div class="col-sm-12" style="background-color:yellow;">
      <p>I love the color yellow</p>
    </div>
    <div class="col-sm-12" style="background-color:violet;">
      <p>Purple is my jam!</p>
    </div>
  </div>
```

class = "row"

Rows serve as a way to separate content *within* containers.

```
<div class="container-fluid">  
  <div class="row"><!-- This row is going to separate our content -->  
  </div>  
  <div class="row"> <!-- This row is going to separate our content -->  
  </div>  
</div>
```



Rows can display either horizontally or vertically depending on the layout you are trying to achieve!



Instructor Demo: Bootstrap's Column System

Suggested Time:
5 minutes

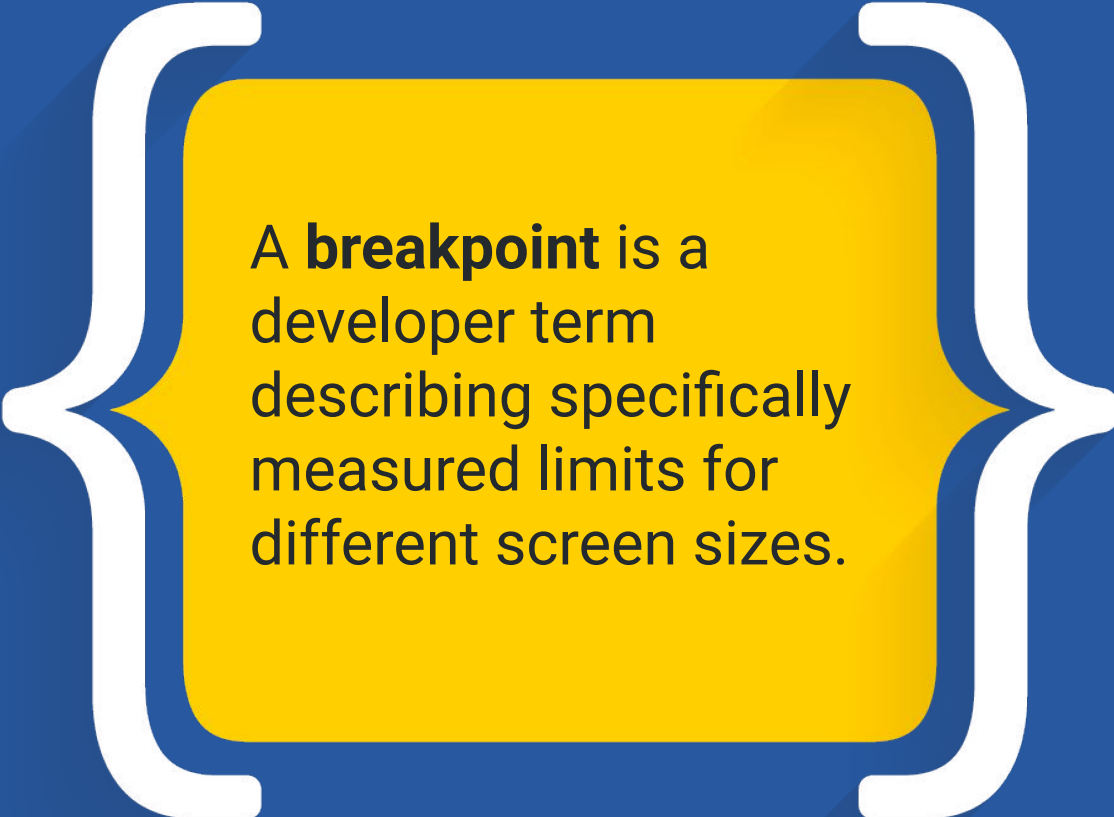


Questions?





“Breakpoints”



A **breakpoint** is a developer term describing specifically measured limits for different screen sizes.

“Breakpoints”

Size limits that allow us to design content based on *standard user device sizes* (mobile, tablet, laptop, desktop).

```
@media only screen and (max-width: 768px)
{

  /* CSS Styles */
}
```





Instructor Demo:

Chrome's Responsive Tool

Suggested Time:
5 minutes



Breakpoint Classes

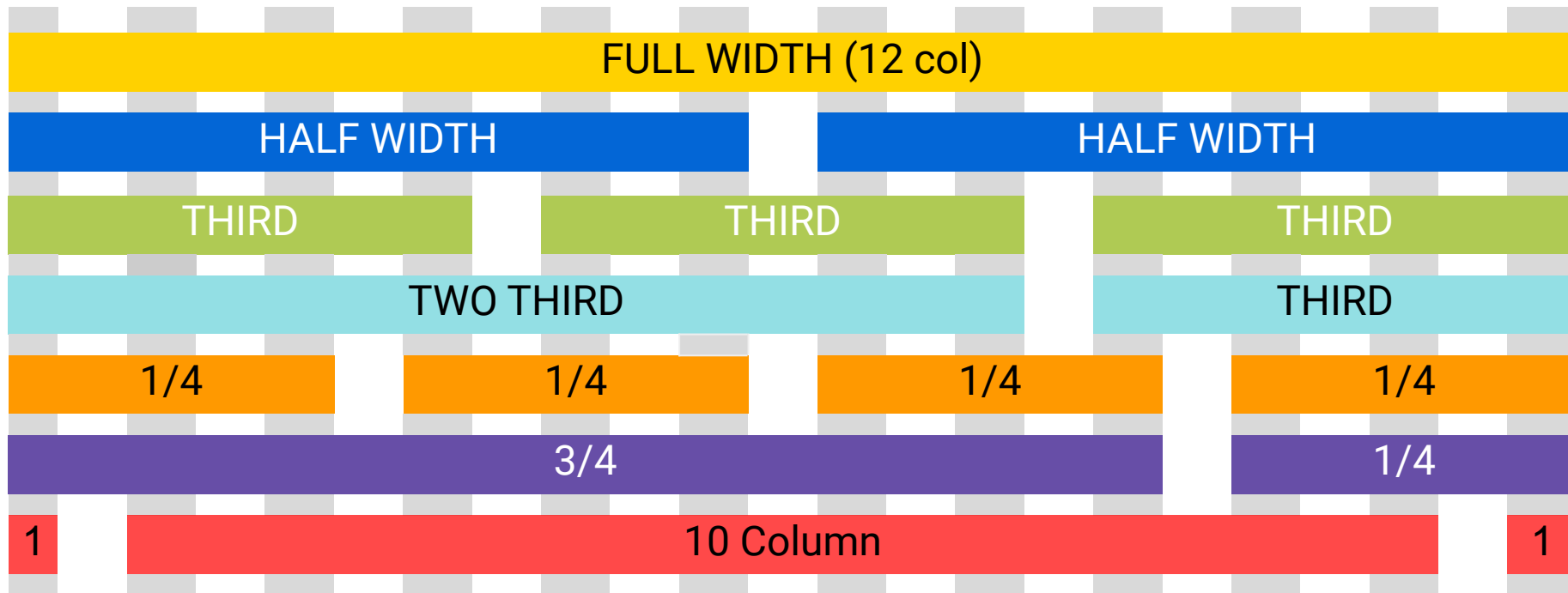
Here is a quick survey of breakpoint classes, measured in pixel size.



Size	Class	Screen Type	Pixel Width Range (media queries)
Extra Small	col-xs-	Phone	Less than 576 px
Small	col-sm-	Small Tablet	Between 576 and 768 pixels
Medium	col-md-	Tablet/Small Laptop	Between 768 and 992 pixels
Large	col-lg-	Laptop	Between 992 and 1200 pixels
Extra Large	col-xl-	Desktop	Greater than 1200 pixels
Auto Responsive	col-	Any screen size	Will attempt to display the layout you specify no matter the screen size

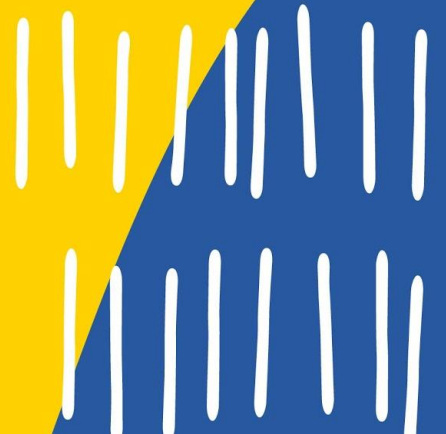
Breakpoint Classes

Bootstrap container, container-fluid, and row classes form a 12-column system.





Bootstrap classes in a responsive row must *always* add up to 12.

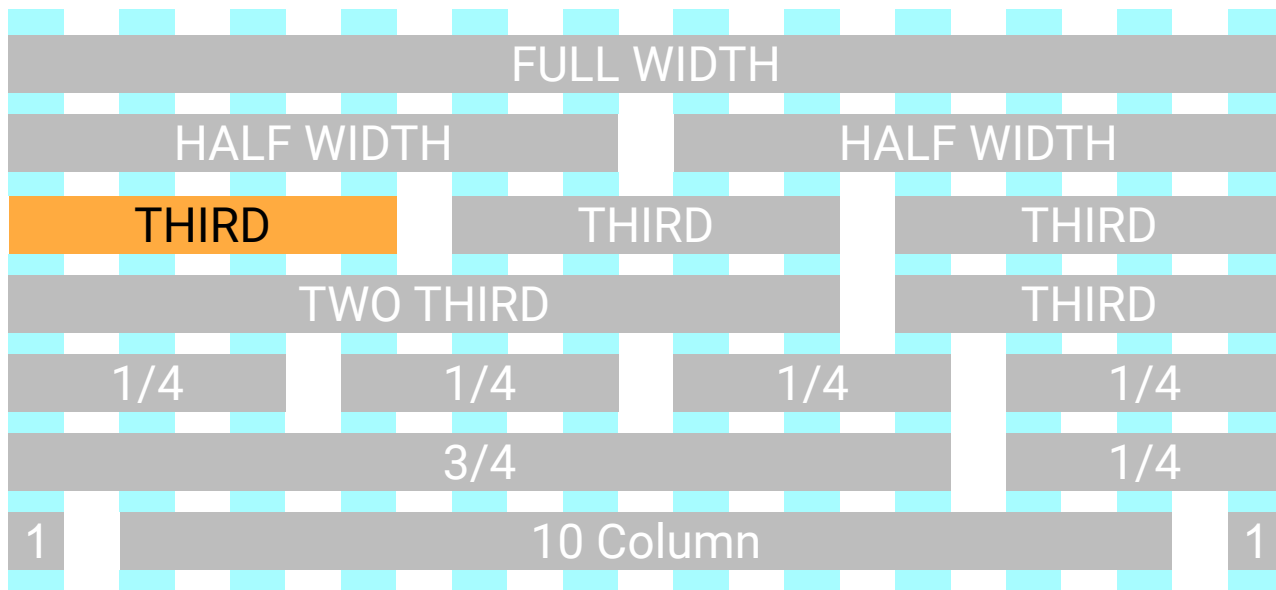


Bootstrap Grids Sample

```
<div class="col-xl-4"></div>  
<div class="col-xl-4"></div>  
<div class="col-xl-4"></div>
```

Each div spans $\frac{1}{3}$ of our container

$$4 + 4 + 4 = 12$$





Instructor Demo:

More Bootstrap Rows

Suggested Time:
5 minutes

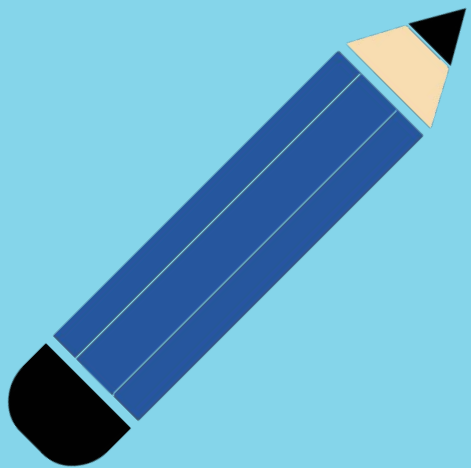




Fist to five

Let's





Activity instructions are in Canvas for: Text Layout Activity

Suggested Time:
20 minutes





Let's review





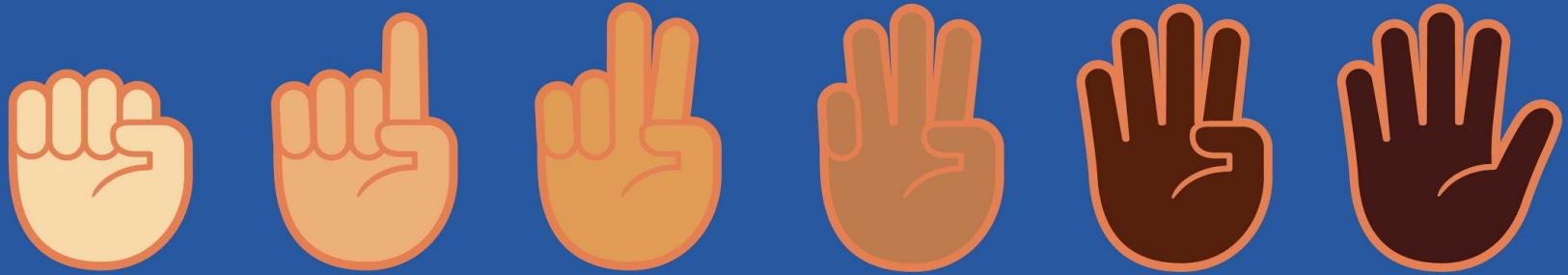
**Let's Lay
It All Out**



Instructor Demo: Bootstrap Wireframe Layout

Suggested Time:
15 minutes

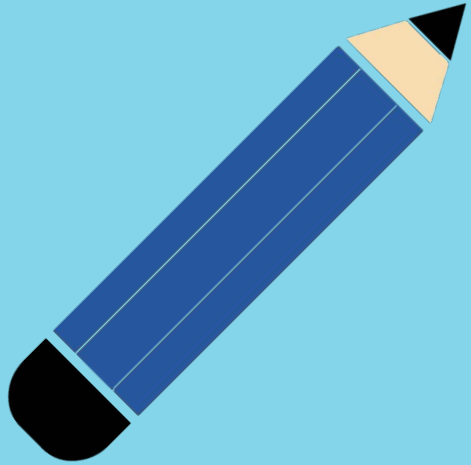




Fist to five

Let's





Activity instructions are in Canvas for: Bootstrap Wireframe Activity

Suggested Time:
25 minutes





Let's review



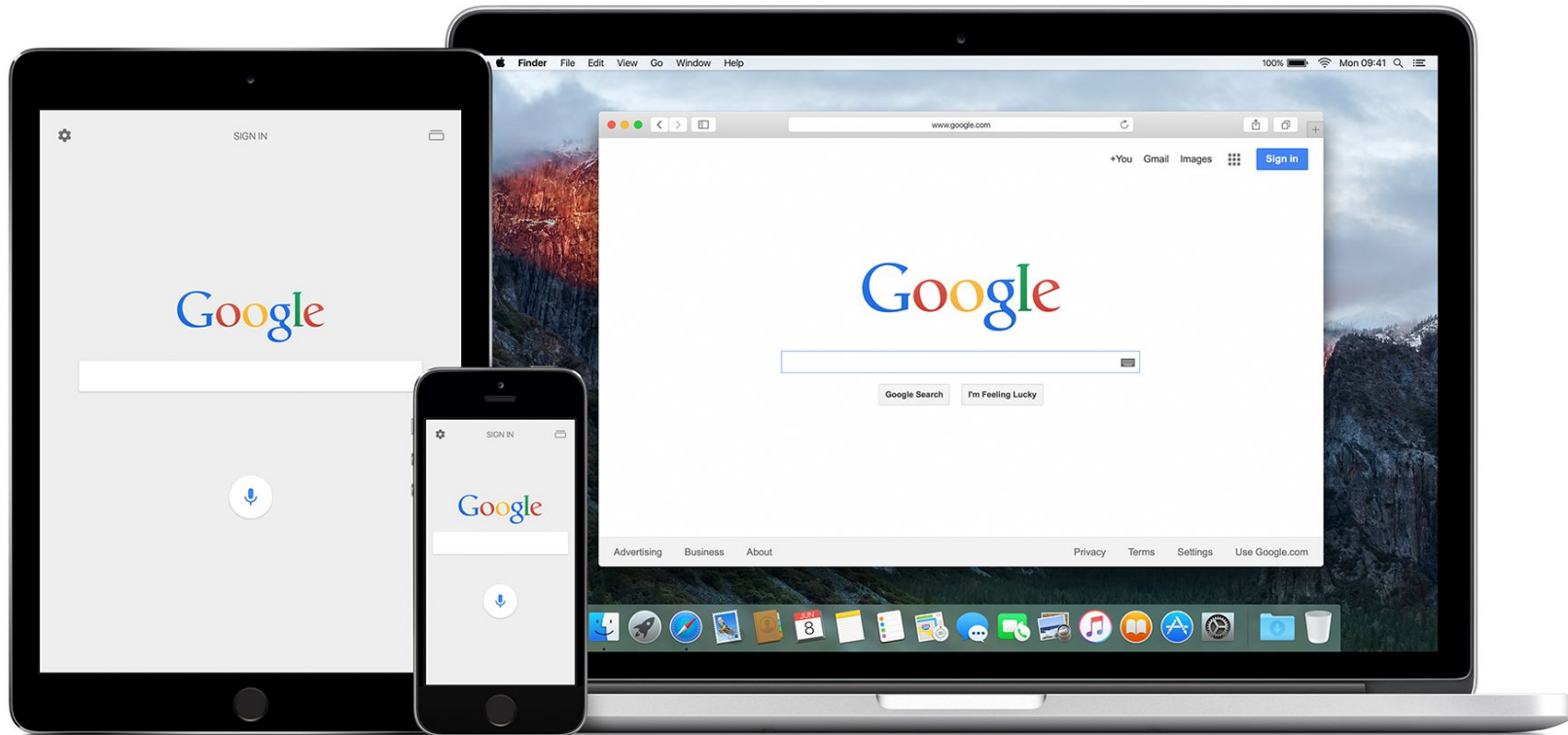
Questions?




A large yellow semi-circle is positioned on the left side of the slide, partially overlapping the blue background. The text 'Responsive Design Tips' is centered within this semi-circle.

Responsive Design Tips

Which do you prefer?



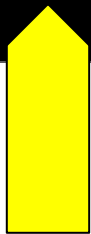


Media queries
are another name
for *breakpoints*.

Media queries

Media queries and breakpoints effectively create "conditional css": if a particular width of the screen is met, then the CSS within that specific media query will be triggered.

```
@media(min-width:900px){p{color:red;}}
```

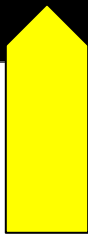


Media query announcement

Media queries

Media queries and breakpoints effectively create "conditional css": if a particular width of the screen is met, then the CSS within that specific media query will be triggered.

```
@media(min-width:900px){p{color:red;}}
```



What circumstance should this query be "turned on" or applied

Media queries

Media queries and breakpoints effectively create "conditional css": if a particular width of the screen is met, then the CSS within that specific media query will be triggered.

```
@media(min-width:900px){p{color:red;}}
```

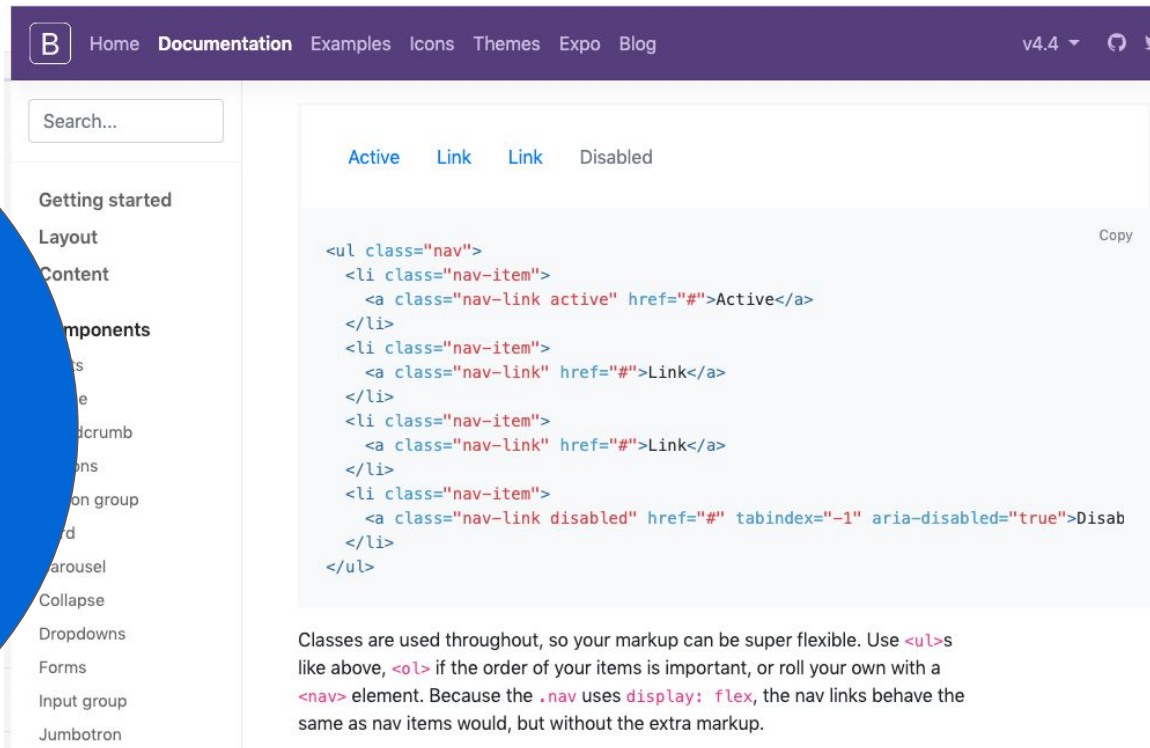


What it should do if the
circumstance happens

Media queries

Bootstrap classes contain *pre-written media queries*.

These align our content with modern device sizes!



The screenshot shows the Bootstrap 4 documentation page. The top navigation bar is purple with a 'B' logo and links for Home, Documentation, Examples, Icons, Themes, Expo, and Blog. The version 'v4.4' is shown on the right. A search bar is on the left. The main content area shows the 'Navigation' component with a preview of the 'Active' state. The code for the navigation is displayed in a light blue box, and a 'Copy' button is on the right. Below the code, a paragraph explains the flexibility of the classes.

Home Documentation Examples Icons Themes Expo Blog v4.4

Search...

Getting started
Layout
Content
Components
Alerts
Breadcrumbs
Buttons
Cards
Carousel
Collapse
Dropdowns
Forms
Input group
Jumbotron

Active Link Link Disabled

```
<ul class="nav">
  <li class="nav-item">
    <a class="nav-link active" href="#">Active</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">Link</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">Link</a>
  </li>
  <li class="nav-item">
    <a class="nav-link disabled" href="#" tabindex="-1" aria-disabled="true">Disab
  </li>
</ul>
```

Copy

Classes are used throughout, so your markup can be super flexible. Use ``s like above, `` if the order of your items is important, or roll your own with a `<nav>` element. Because the `.nav` uses `display: flex`, the nav links behave the same as nav items would, but without the extra markup.



Becoming familiar with media queries will help you learn to create their own "mobile responsive" designs!



Responsive websites

Prioritize **important elements** higher up on the page so that your viewer doesn't have to scroll too far for them!



Adventure photography and illustrated paper goods

[HOME](#)[SHOP](#)[BLOG](#)[WANDER](#)[MY PCT HIKE](#)[CONTACT](#)

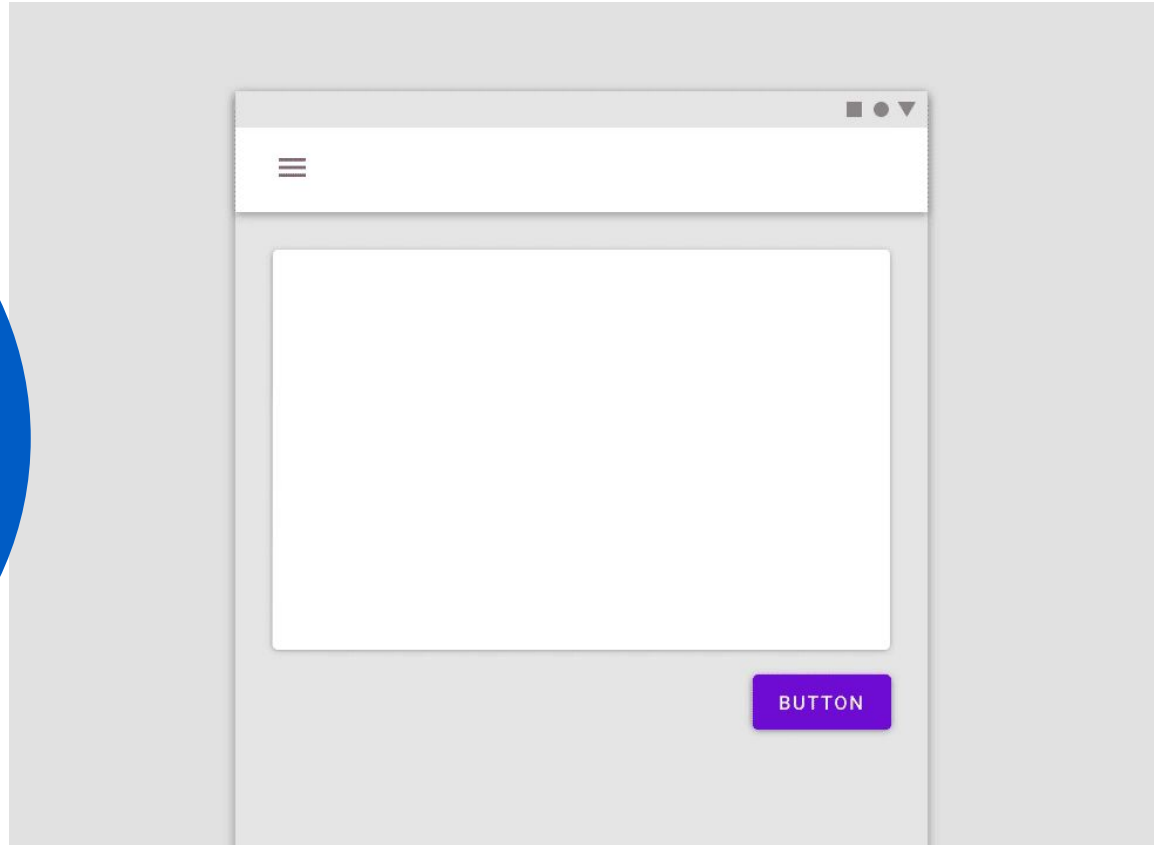
Bootstrap Navigation Bars

Make sure
your design
offers **clear
cues** for your
users



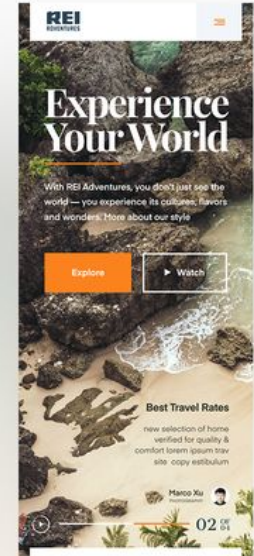
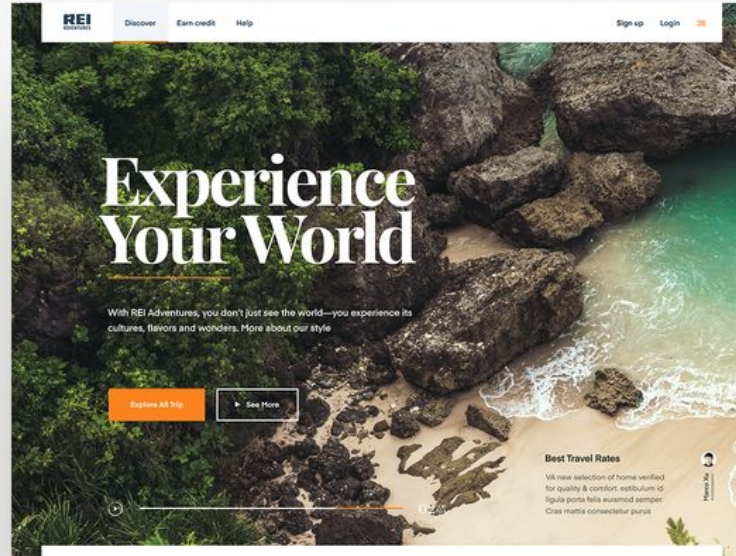
Responsive websites

Think about
how you want
your site layout
to **change** as
screen size gets
smaller or
larger!



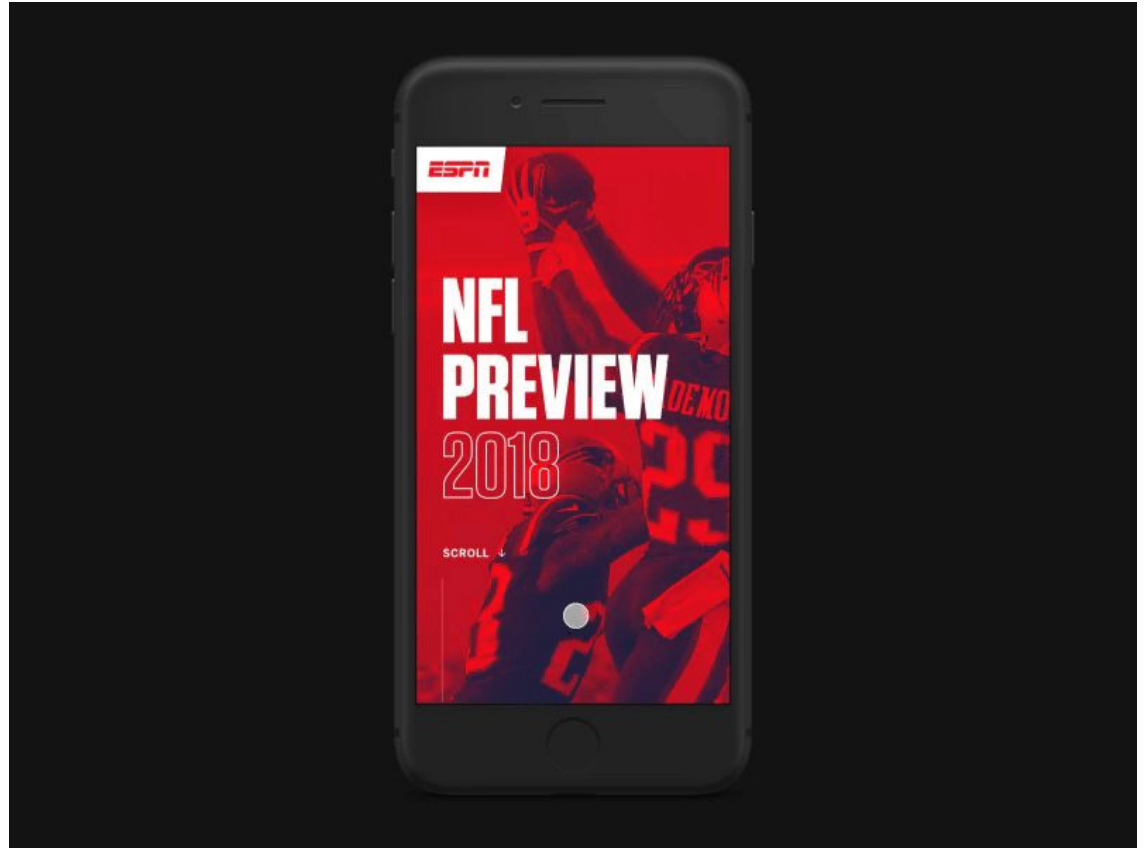
Responsive websites

Pay attention to
information presented
on other sites—
What do they **cut out**
when the viewing
window gets smaller?



Responsive websites

Looking at design patterns with **great responsive UX** can help as you plan your own site!



Questions?





**Time to
Recap**

Learning Goals

Our objectives for today's session were to:

01

Demonstrate how to use Bootstrap to create responsive websites

02

Practice building elements using the Bootstrap grid

03

Discuss some of the differences between designing for computers vs smartphones

04

Recap and summarize what we've learned in Week 1!

Reflection

What was your **favorite part** of today's session?

What was the **most interesting thing** we covered today?

What do you **still have questions** about?



WEEKEND REVIEW

Take a few minutes this weekend and think about:

01

What topic did you like best so far?

02

What resource has been the most helpful so far?

03

What will you add to your portfolio site next?



Sneak Preview

Next week, we will be diving into a new coding language - *JavaScript*! We'll explore programming basics while creating interactive games and websites!

Questions?



*The
End*