









Questions?

Today's Class

Today's Objectives

01

You will use the **Bootstrap CSS Framework** to create layouts.

02

You will learn to use **media queries** for mobile responsive websites.

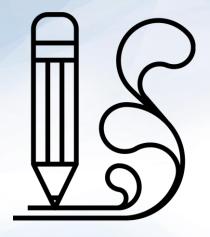
03

You will learn to use the meta tag to make sure all devices are displaying webpages optimally for their viewport.



Focus!
This stuff is important.





The Pains of Homework #1 Plain HTML + CSS makes layout building challenging

Due Date:



How You (Probably) Feel About CSS



But Then Came Bootstrap!



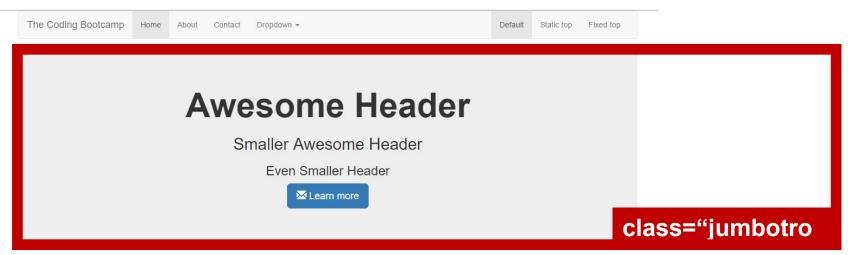
Powered by Bootstrap

External CSS Link

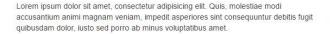
Predefined CSS Class (e.g., "Jumbotron")

```
<div class="jumbotron">
    <h1 class="text-center"><strong>Awesome Header</strong></h1>
    <h2 class="text-center">Smaller Awesome Header</h2>
    <h3 class="text-center">Even Smaller Header</h3>
    <a class="btn btn-danger btn-lg" href="#" role="button">
    <span class="glyphicon glyphicon-envelope"></span> Learn more</a>
</div>
```

Powered by Bootstrap









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Bootstrap gives you **PREDEFINED** CSS styles.

Why Use Bootstrap?

Reason #1: UI Kit



Familiarize yourself with the UI features Bootstrap offers by reading the documentation.



Once Bootstrap is active, you can simply copy snippets from the documentation to save yourself the time of creating elements yourself.



Why Use Bootstrap?

Reason #2: Mobile Responsiveness



One of the most compelling reasons to use Bootstrap is the default mobile-responsive quality it provides.

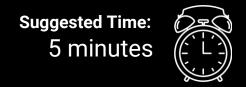


This means that your websites will automatically look "good" when viewed on screens ranging from monitors to tablets to phones.





Warm-Up Activity: Bootstrap Component



Warm-Up Activity: Bootstrap Component

01

Like you did in the last class, quickly create an HTML webpage.

02

Add in a Bootstrap component of your choosing.



Hint: Copy the Bootstrap CSS link. Then copy the code from any Bootstrap element or CSS.



Next-Phase Bootstrap

In the last class, we focused on Bootstrap components (like buttons and tables).

Today, we'll be focusing on using Bootstrap to build layouts.







FOCUS!

Because in our opinion, these next two sections are some of the **MOST IMPORTANT ONES** in the **ENTIRE** program.



The Importance of Sketches

Every good web design begins with a sketch.

01

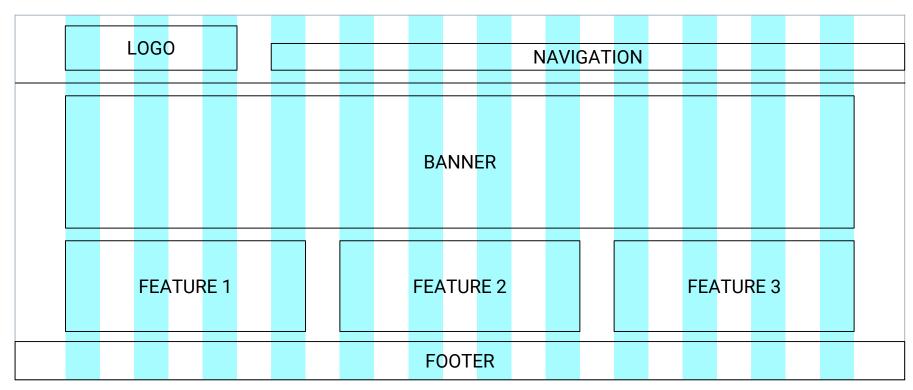
Because every aspect of a site's "look" is defined by HTML/CSS, it is crucial to have a detailed sketch going in. 02

Pay particular attention to the location of navigation bars, titles, headers, content, images, footers, etc. 03

When imagining alignments in particular, be mindful of the *grid*.

Designing with a Grid in Mind

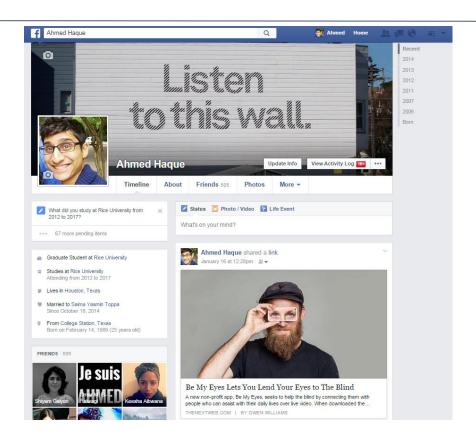
Grids serve to align elements aesthetically.



Facebook's Grid

Facebook is a perfect example of a website where the grid layout is obvious.

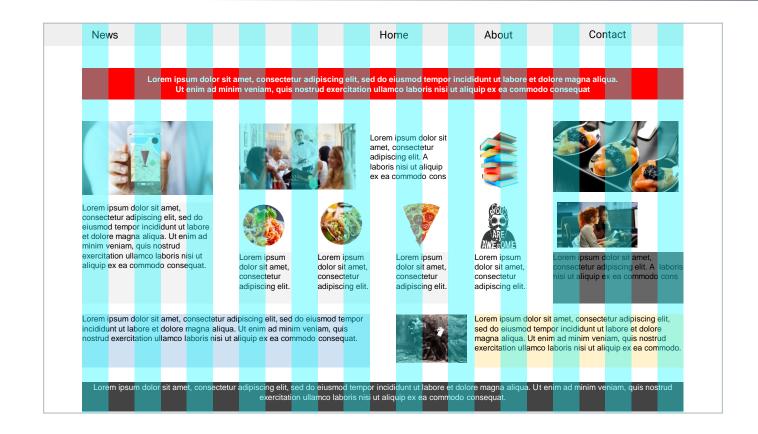
Grids make it easy to have content (text, images, and regions) align in an aesthetically pleasing way.



A More Complex Grid



A More Complex Grid



Tools for Sketches / Grid Creation

Wireframing Tools:

- Balsamiq***: https://balsamiq.com/
- Framebox: http://framebox.org/
- Pen and paper: your notebook

Grids for Photoshop / Illustrator:

- 960 GS: http://960.gs/
- GuideGuide: https://guideguide.me/

Designing with Grids Guides:

- 960 Grid System Made Easy: http://bit.ly/1sjYaFC
- Design by Grid: http://www.designbygrid.com/
- Designing with Grid-Based Approach: http://bit.ly/1CM4Hzo

Rows and Columns Workshop

Fundamentally, Web Design = Wireframes

Wireframes Home About Contact

The Greatest Website Ever Made



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The Greatest Website Ever Made

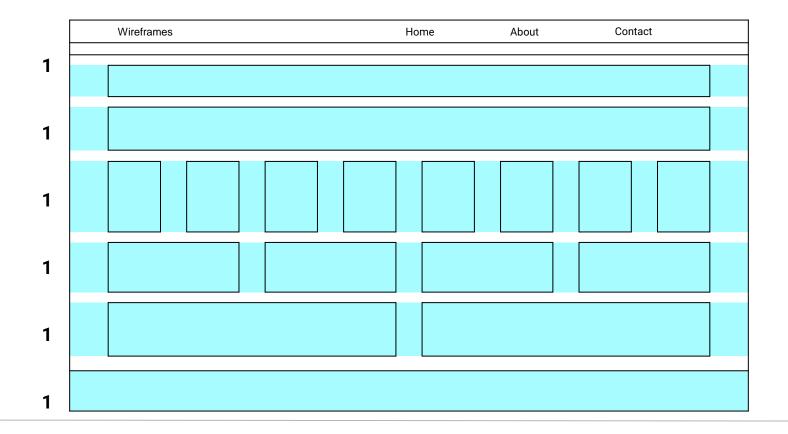
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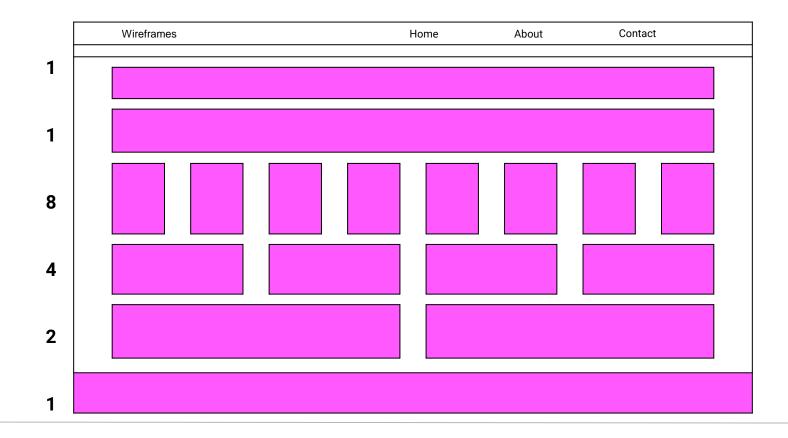
How Many Rows and Columns Do You See?

Wireframes	Home	About	Contact
Wireframes	Home	About	Contact

Total # of Rows: Six



Total # of Columns: Different for each row



You Try!

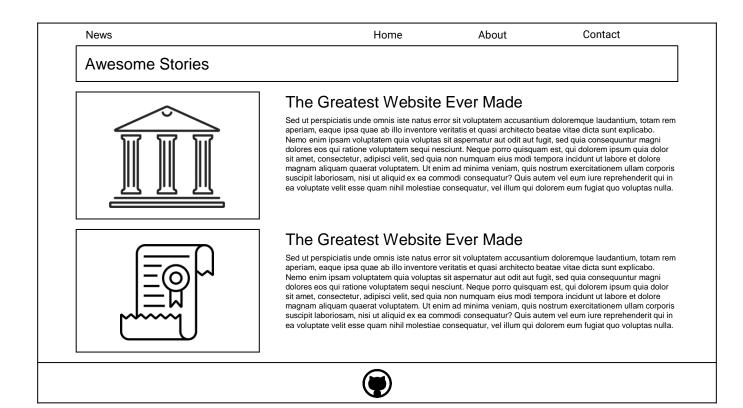
Wireframes	Home	About	Contact

Level Up!

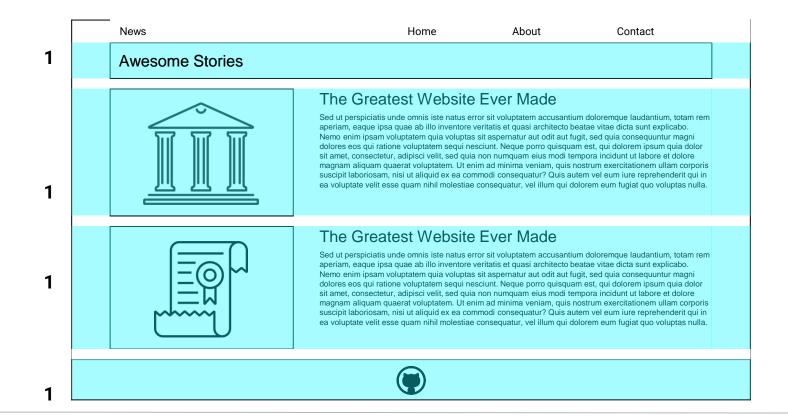
Let's make it more challenging.



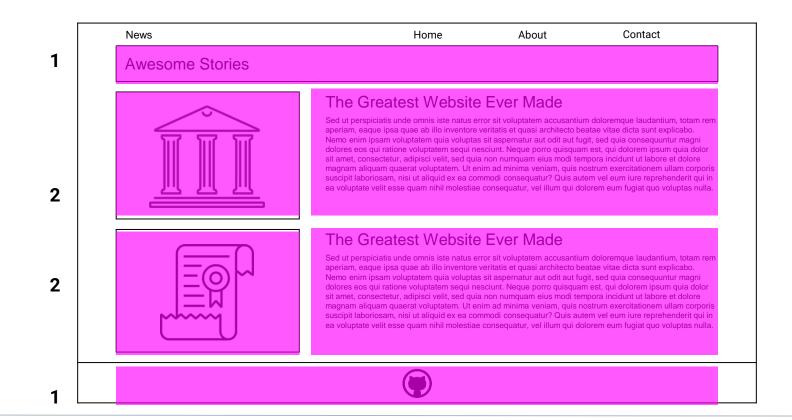
How Many Rows and Columns?



Total # of Rows: Four



Total # of Columns: Different for each row



Level Up!

Now for another...



How Many Rows and Columns?

Wireframes Home About Contact

The Greatest Website Ever Made



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The Greatest Website Ever Made

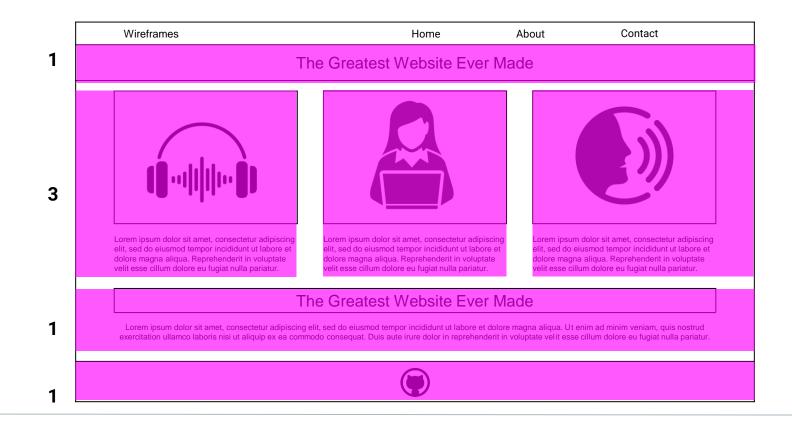
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Total # of Rows: Four

Wireframes Contact Home About The Greatest Website Ever Made 1*** Lorem ipsum dolor sit amet, consectetur adipiscing Lorem ipsum dolor sit amet, consectetur adipiscing Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et elit, sed do eiusmod tempor incididunt ut labore et elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Reprehenderit in voluptate dolore magna aliqua. Reprehenderit in voluptate dolore magna aliqua. Reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. velit esse cillum dolore eu fugiat nulla pariatur. velit esse cillum dolore eu fugiat nulla pariatur. 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 vel it esse cillum dolore eu fugiat nulla pariatur.

Total # of Columns: Different for each row

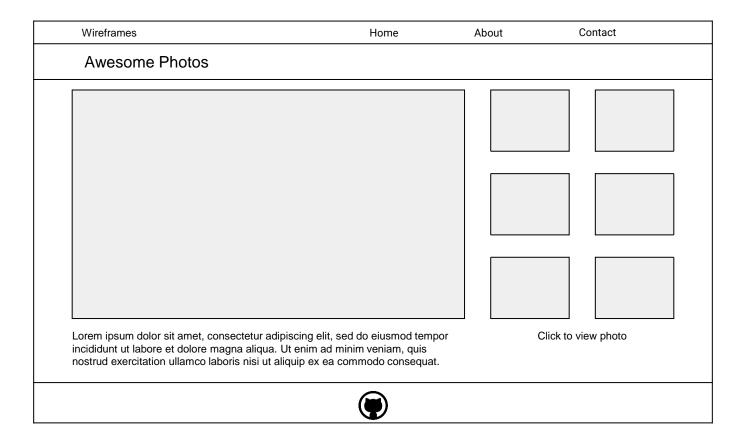


Level Up!

This final one is tricky.



How Many Rows and Columns?

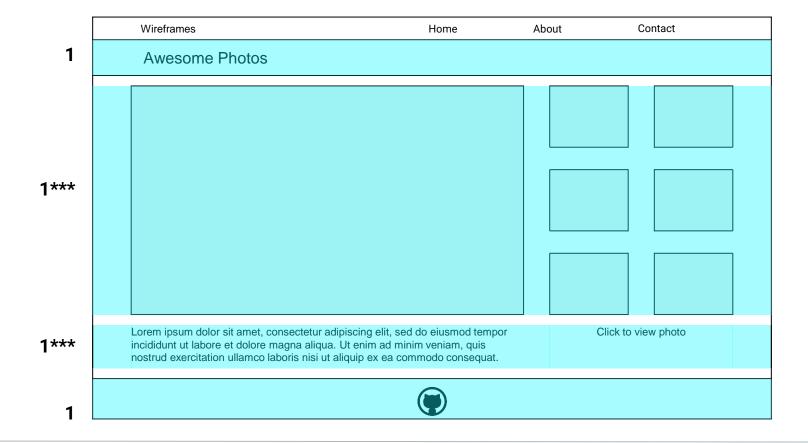


Level Up!

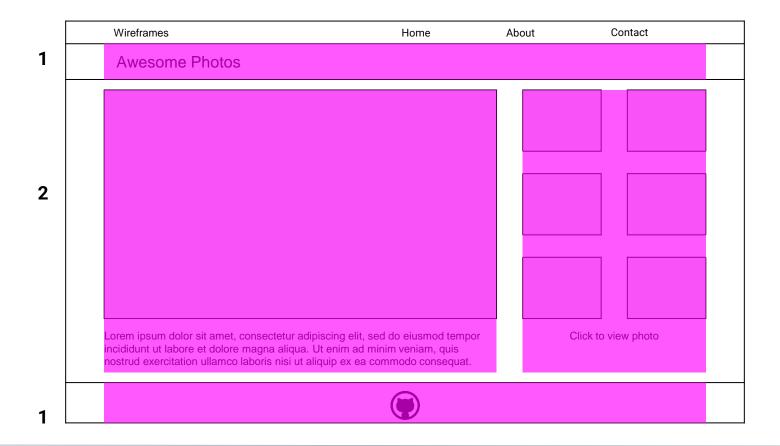
For this one, we need **sub-rows** and **sub-columns**.



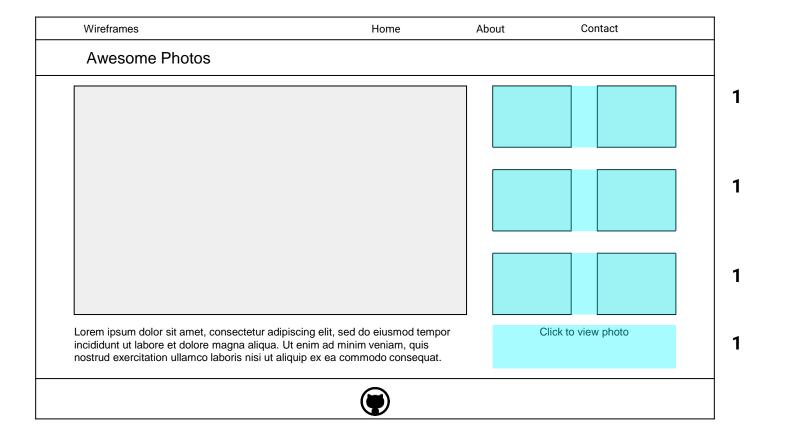
Total # of Rows: Four



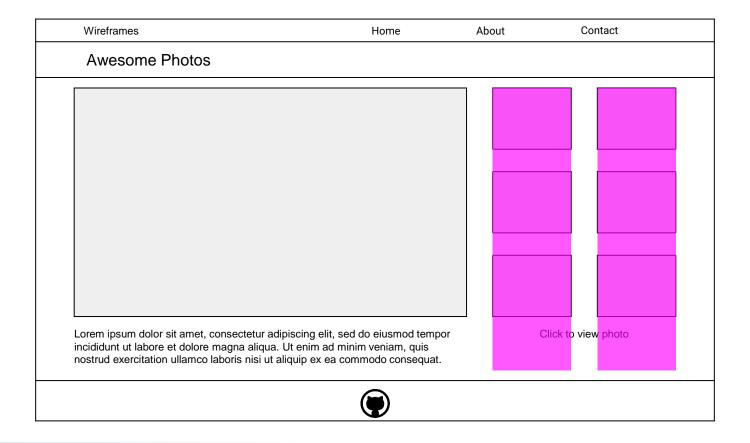
Total # of Column: Different for each row

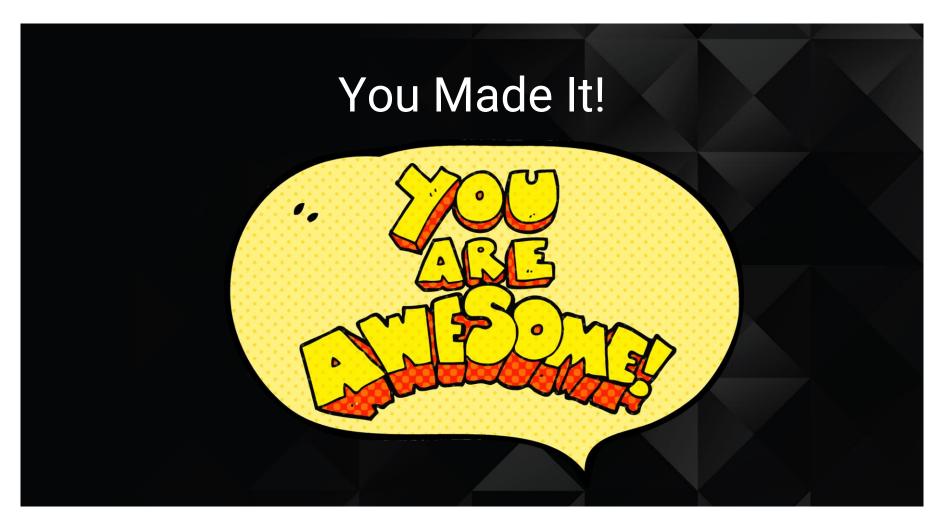


Total # of Sub-Rows: Four



Total # of Sub-Columns: Two



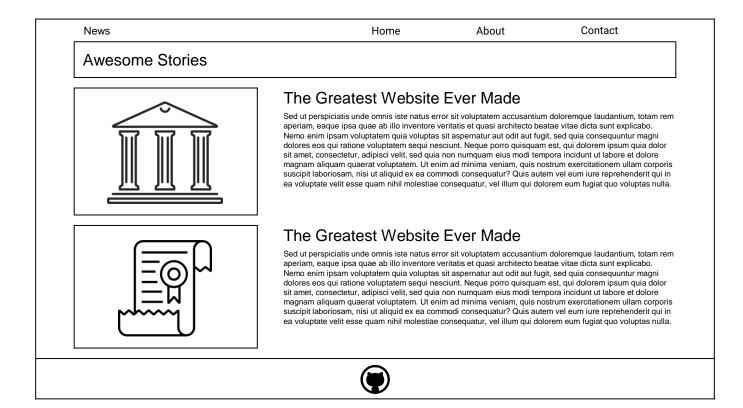


Grid Design with Bootstrap



Warning This is a fairly tricky but VERY IMPORTANT topic.

In Bootstrap, all content is organized in rows and columns



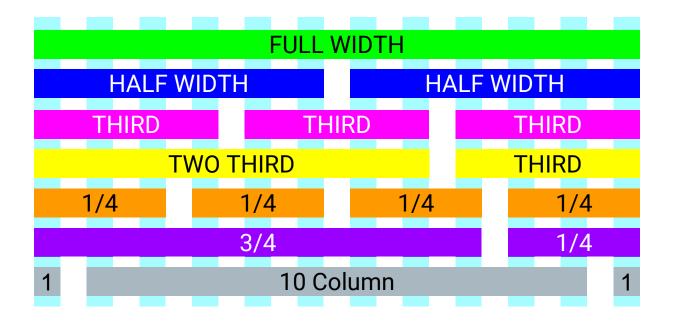
Bootstrap Grids

Bootstrap lets you organize content based on the number of columns out of 12 that a div spans.

Example:

<divclass="col-md-12">
(Spans full width)

<divclass="col-md-4">
(Spans 1/3 of full width)



Bootstrap Grids

Every Bootstrap grid is made up of:



Containers—wrap around the entire grid



Rows—defined first and are just rows



Columns—defined within rows and specify the columns. The sum total of all columns within a row **must** add up to 12.

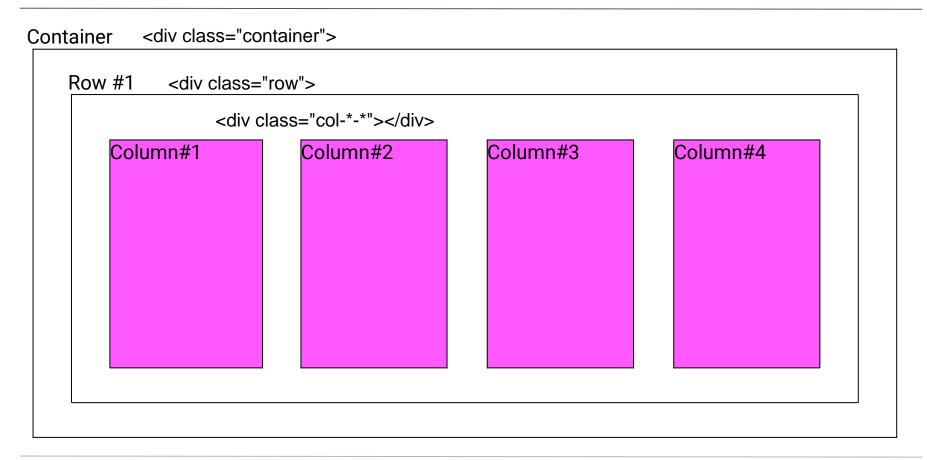
Each of these elements is implemented by creating a div with a specific class name.

Defining Container

Container



Defining Columns



Activity: Containers, Rows, and Columns

Prepared to be called on! Think about:

01

The relationship between **containers**, **rows**, and **columns**. (Draw it out on a piece of paper for them.)

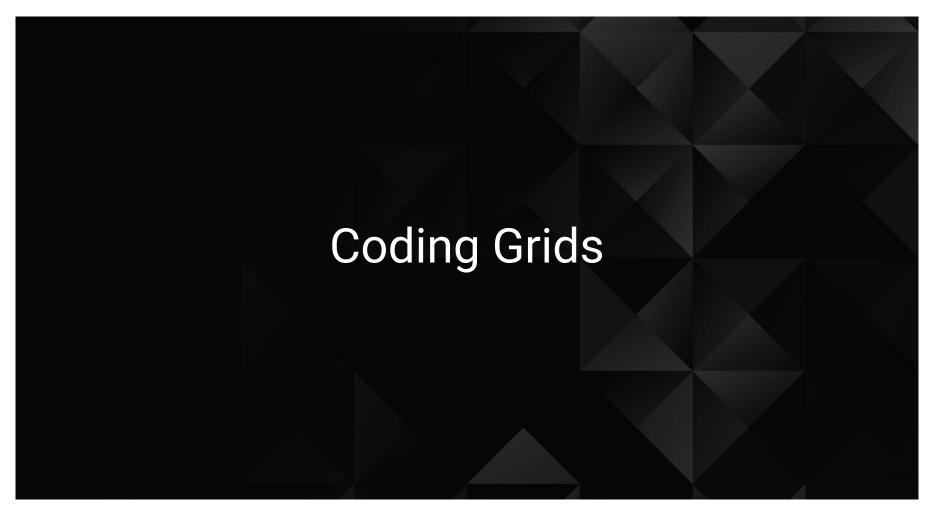
02

The syntax for each.

03

The specific syntax details for columns.







Instructor Demonstration Coding Grids

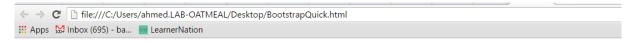
Bootstrap Grid

Note the rows, columns (e.g., col-lg-6), and containers.

```
<div class="container">
   <div class="row">
        <div class="col-lg-12">
           <h1>I'm in Column 1 of 1. I stretch the entire width. And keep going.</h1>
        </div>
   </div>
   <div class="row">
        <div class="col-lg-6">
           <h1>I'm in Column 1 of 2</h1>
        </div>
        <div class="col-lg-6">
           <h1>I'm in Column 2 of 2</h1>
       </div>
   </div>
</div>
```

Bootstrap Grid

Note the rows, columns (e.g., col-lg-6), and containers.



I'm in Column 1 of 1. I stretch the entire width. And keep going.

I'm in Column 1 of 2

I'm in Column 2 of 2

Defining Containers

A container is the box the entire grid sits inside.

```
<!-- Creates the Container -->
<div class="container">
    <!-- Inside we fill it up with rows and columns -->
</div>
```

Defining Rows

Rows are the rows we talked about earlier.

```
<div class="container">
    <!-- Defines the row -->
    <div class="row">
        <!-- Columns fit inside -->
    </div>
</div>
```

Defining Columns

Columns fit inside of rows. Syntax: col-sz-#

- Col: column
- sz: viewing size (in this case, medium)
- #: number of "columns taken" out of 12 (in this case, 4 out of 12)

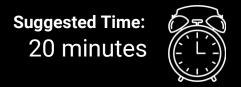
```
<div class="row">
    <div class="col-md-4">
    </div>
    <div class="col-md-4">
    </div>
    <div class="col-md-4">
       <!-- This is colmn 3 of 3 -->
    </div>
</div>
```

Defining Columns

```
<div class="container">
  <div class="row">
    <div class="col-*-*"></div>
   <div class="col-*-*"></div>
 </div>
 <div class="row">
    <div class="col-*-*"></div>
    <div class="col-*-*"></div>
    <div class="col-*-*"></div>
 </div>
  <div class="row">
    . . .
 </div>
</div>
```



Activity: Text Layout



Activity: Text Layout

Using Bootstrap, create a layout that looks like the one shown on the next screen.

01

Before you start coding, spend some time drawing the grid layout.

02

Count the number of rows and columns.

03

Use the Bootstrap grid syntax to code it out.

04

Share a screenshot of your page with the class when you are done.

05

You can use the Ipsum Generator (www.lipsum.com/) to generate content for your page.



Your Turn

Header

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Building Bootstrap Layouts



Instructor Demonstration
Bootstrap Wireframe Layout



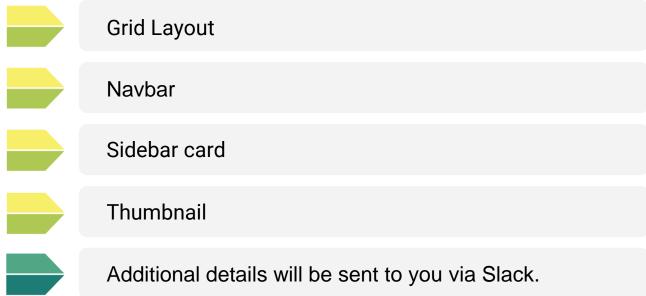
Challenge:Bootstrap Wireframe

Suggested Time: 30 minutes

Challenge: Bootstrap Wireframe

Working in pairs, use Bootstrap to wireframe out a design.

Be sure to include the following elements:



Challenge: Bootstrap Wireframe

Example:

Navbar About Portfolio Contact

About Me



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Card title

Card subtitle

Some quick example text to build on the card title and make up the bulk of the card's content.



Common Questions



Can I reverse the order (i.e., rows inside columns)? Not typically. Columns should go inside of rows. You can create sub-rows inside columns, but they must be inside of a row of their own.



Can I avoid having a container? You could, but it will mess things up. Just throw in a container. So, no.



What if I have more than 12 columns? Your bootstrap grid won't behave as expected. Don't go past 12.



What if my columns don't add up to 12? You will have empty space at the end. Be careful, because the next column you add in the row will fill up the empty space—sometimes without your intention.



Mobile Responsiveness (HW)



Pay Attention!

This next section matters a lot for your homework.

Media Queries



Media queries define how CSS styles are applied in relation to the characteristics of the device viewport.



Through media queries, we can change the way a webpage is displayed based on width, height, orientation, and even media type (screen, paper, braille, etc.).



Bootstrap uses media queries extensively to help you create mobile-responsive websites.



But remember! Media queries must be declared last.



Instructor Demonstration
Media Queries

Activity: Explain Media Queries

Think about what the following CSS code does:

```
@media screen and (max-width: 768px) {
      body {
             background-color: #333;
   .wrapper {
             width: 600px;
```





Activity:Build Media Query

(Follow the steps sent to you via Slack)



Viewport



Viewport refers to the display being used to view the website.



By default, mobile devices with small-screen, high-resolution viewports can render content at a typical desktop screen ratio (scaled down at the smaller screen size).



Use a meta tag to specify that a webpage should scale its content to the width of its current viewport.

Viewport

Without Viewport content scaling



With Viewport content



Viewport Inclusion

Just include this line in the head

```
<meta name="viewport" content= "width-device-width, initial-scale=1">
```

And then include a variety of @media queries for various sized screens.

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

```
@media screen and (max-width: 480px) {
```



Activity: Viewport

Spend the next few moments on the site <u>viewportemulator.com</u> and visit your favorite websites using various viewports.

Notice how the sites' displays change.





