High-Level Program Design

Front-End Accelerator

GENERAL ASSEMBLY

Upskill the Broader Organization

Front-End Accelerator

Instructor-Led   Onsite or Remote   ~60 Hours

Overview:

Give employees the tools to build responsive websites with HTML, CSS, and JavaScript — a versatile skill set that complements experience in design, marketing, and other tech-adjacent roles.

Business Outcomes:.

- Expand technical competencies beyond your technology team.
- Improve efficiency by upskilling designers, marketers, and other employees to code their own websites and emails.
- Enable any employee to prototype an idea, and collaborate with engineers once ready for production.

~60 Hours of Front-End Training

HTML & CSS Basics

Get to know the building blocks of the web by adding and styling content with HTML and CSS.

Responsive Design

Take a developer's approach to problem-solving and coding responsive sites for mobile and the web.

Adding Interactivity with JavaScript

Learn programming fundamentals in JavaScript and use them to create dynamic websites.

Building in Concert

Understand how to debug and refactor your code, and incorporate functions from external libraries.

Applied Practice

Design and build a responsive website or prototype from a simple web application.

Why Front-End Accelerator?

- **Validated tools and approaches** for building web pages from scratch and a portfolio piece to match, developed in partnership with top organizations.
- **Built with subject matter experts** with industry experience in HTML, CSS, and JavaScript.
- **60 hours** of expert-led, hands-on learning, including:
  - **Projects, labs, and assignments** that mimic real-world tasks and workflows.
  - **Case studies and examples** that demonstrate how businesses use the concepts.
  - **Regular feedback and touchpoints** with instructors and peers to ensure students meeting learning goals.

Learner Persona

This product is specifically designed for the following audience:

- **Career Accelerator:** Employees who want to build responsive websites — a versatile skill set that complements experiences in design, marketing, and other tech-adjacent roles.

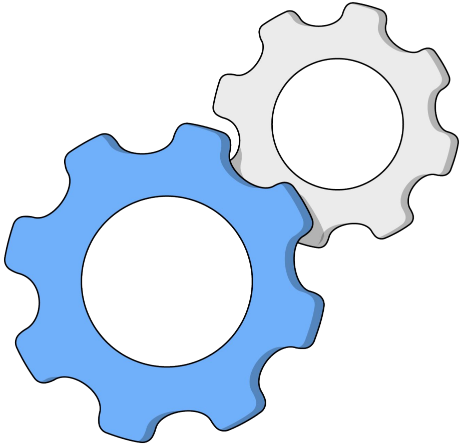
Course Project

What to know about the **final project** for this course:

- Design and build a website of the student’s choice.

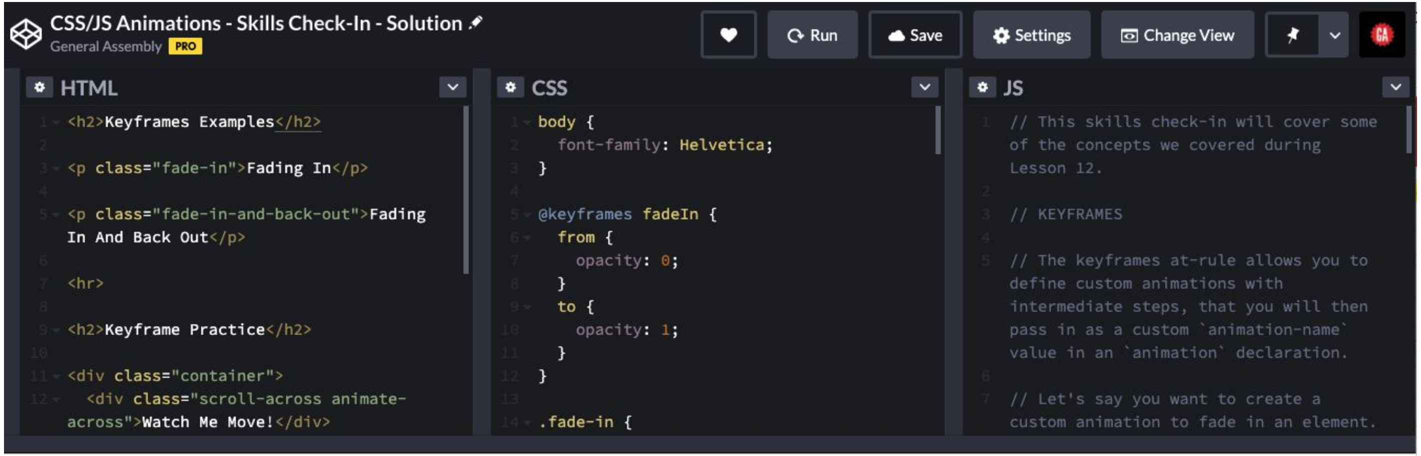
Project deliverables:

- Wireframes outlining the structure of the website.
- A website composed of HTML, CSS, and JavaScript.



Additional Exercises and Practice via CodePen

Most lessons also come with warm-up activities and extra practice in CodePen. **Reference code** as well as **starter and solution code** are also provided.



```html
<h2>Keyframes Examples</h2>

<p class="fade-in">Fading In</p>

<p class="fade-in-and-back-out">Fading In And Back Out</p>

<hr>

<h2>Keyframe Practice</h2>

<div class="container">
  <div class="scroll-across animate-across">Watch Me Move!</div>
```

```css
body {
  font-family: Helvetica;
}

@keyframes fadeIn {
  from {
    opacity: 0;
  }
  to {
    opacity: 1;
  }
}

.fade-in {
```

```js
// This skills check-in will cover some of the concepts we covered during Lesson 12.

// KEYFRAMES

// The keyframes at-rule allows you to define custom animations with intermediate steps, that you will then pass in as a custom `animation-name` value in an `animation` declaration.

// Let's say you want to create a custom animation to fade in an element.
```

Anatomy of Front-End Accelerator

Week	Activities	What's Covered
0	Pre-Work	Install the tools required for the course.
1	**Orientation and Introduction to HTML**	Create HTML documents using common element tags. Inspect web pages using the browser's developer tools. Describe the relationship between HTML, CSS, and JavaScript in websites.
	Semantic HTML and Introduction to CSS	Choose semantic HTML tags to define and organize content. Use CSS to apply style to webpages. Learn the basics of CSS syntax, including selectors and style rules.
2	**CSS Layouts**	Link to files from HTML using relative paths. Apply normalizing CSS Use margins and padding Set the display property of elements to create page layouts.
	Flexbox	Use flexbox properties to create responsive layouts. Apply flexbox properties to container elements to organize flex-item elements. Apply flexbox properties to flex-items to differentiate unique elements.

Anatomy of Front-End Accelerator

Week	Activities	What's Covered
3	**CSS Grid**	Create responsive layouts using CSS Grid properties. Compare and contrast flexbox and Grid properties. Define fractional and percentage-based widths for elements.
	Fonts, Pseudo-Selectors, and Layout Lab	Apply custom fonts to text using CSS. Use pseudo-selectors to create more specific CSS rules. Build a real-world HTML/CSS mockup.
4	**Responsive Design**	Define media query breakpoints to apply separate rules based on screen size. Use responsive measurements to smoothly scale CSS rules to devices. Apply a mobile-first methodology to CSS and website design.
	Responsive Positioning	Use the position property to create responsive layouts. Define and choose between absolute, relative, static, and fixed positioning.

Anatomy of Front-End Accelerator

Week	Activities	What's Covered
5	**Intro to Programming**	Distinguish between code and a program. Define basic variables and data types in JavaScript. Understand the role of functions in JavaScript.
	DOM Manipulation	Identify the role of JavaScript in front-end web development. Access properties of the DOM using JavaScript object syntax. Use DOM methods to respond to user actions with event listeners.
6	**Review Lab**	Apply CSS and JS skills to fit requirements of an assigned project.
	Interactive UI Components	Use JavaScript to trigger CSS animations. Design interactive user interfaces using CSS properties. Plan application states to reflect user actions.

Anatomy of Front-End Accelerator

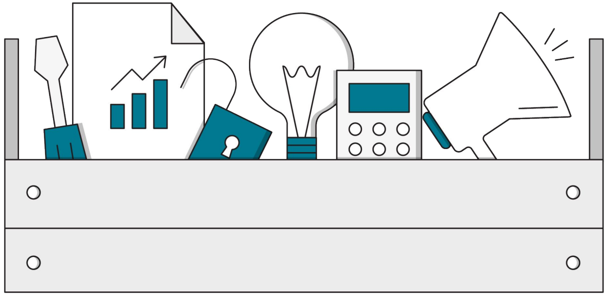
Week	Activities	What’s Covered
7	**Conditional Statements**	Define conditional statements in JavaScript to create logic-driven programs. Use switch statements to encapsulate complex logical chains. Choose the correct logical operators to enhance conditional statements.
	Arrays and Loops	Use arrays and loops in JavaScript to manage collections of data. Invoke array methods to manipulate the contents of an array. Distinguish between for loops and while loops.
8	**Forms**	Use HTML forms to collect input from users. Respond to form submission events to perform validation checks.
	API Requests and Responses	Make HTTP requests to external API sources for data.

Anatomy of Front-End Accelerator

Week	Activities	What's Covered
9	**Bootstrap**	Use the Bootstrap CSS library to leverage pre-styled components. Adapt Bootstrap components for specific use cases. Evaluate CSS frameworks against self-written CSS.
	Developer Tools	Use GitHub for version control and code collaboration. Execute commands from the command prompt for control of file systems.
10	**Flex Session**	Review and prepare for final projects and presentations.
	Final Presentation	Share the final output of student projects. Discuss how to apply learnings from the class to your current and future jobs.

Tools Used in the Course

- Google Chrome
- CodePen
- GitHub Enterprise
- Text editors — e.g. Sublime Text



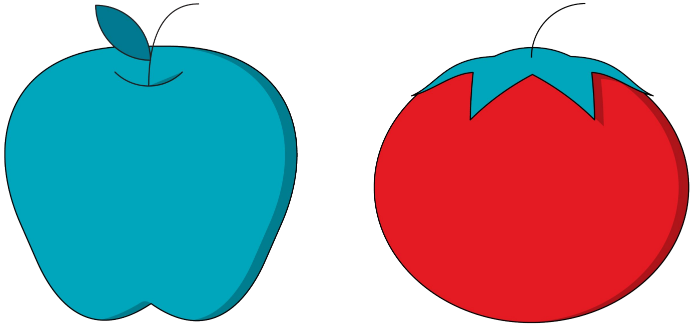
Front-End Accelerator

A Look Inside the Lessons

Cheat Sheet: Semantic Elements

It can be confusing to know when to use one element versus another, because they all do the same thing. This flowchart can help you decide.

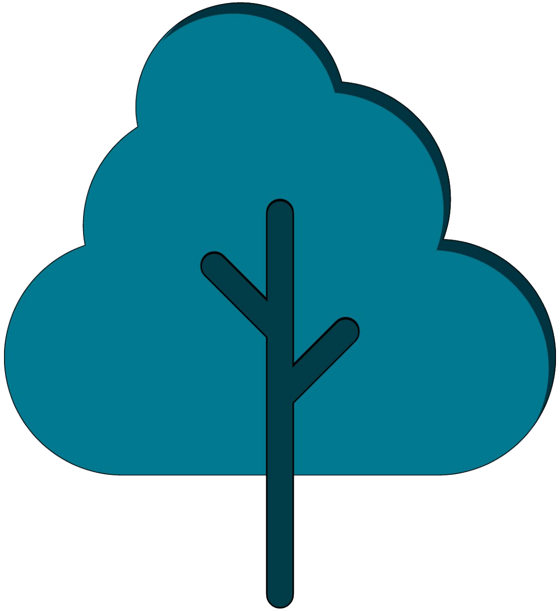
There isn't "one right way" to structure HTML. It's subjective, so do your best.



Think of the Document Tree as a Real Tree

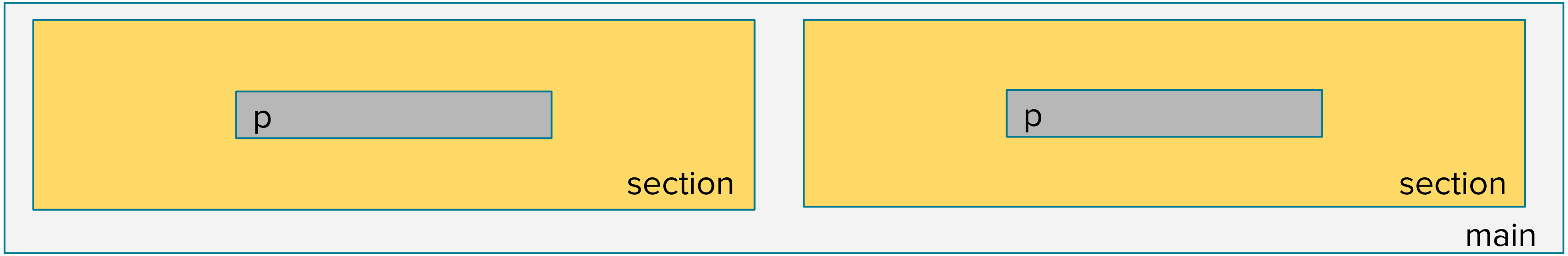
```
<main>
  <section>
    <div class=“green-font”>
      Content A
    </div>
    <div>
      Content B
    </div>
  </section>
</main>
```

DOM Tree



Real Tree

Nested Flexboxes Require Dual Flex Declarations



```
<main>
  <section class=”1”>
    <p>Content</p>
  </section>
  <section class=”2”>
    <p>More content</p>
  </section>
</main>
```

```
/* css */
main {
  display: flex;
}
section {
  align-items: center;
  display: flex;
  justify-content: center;
}
```

<section> now plays two roles: It’s the child of **<main>** but also the parent of <p> elements. When flex is applied to any element — even a flex child — it will control the children directly beneath it. You nest flexboxes indefinitely using this method.

Solo Exercise:

Build a Real Website

120 minutes

- You’re going to build the site pictured to the right (deep breath).
- This will be difficult but doable. Let’s start it off together and frame out our approach.

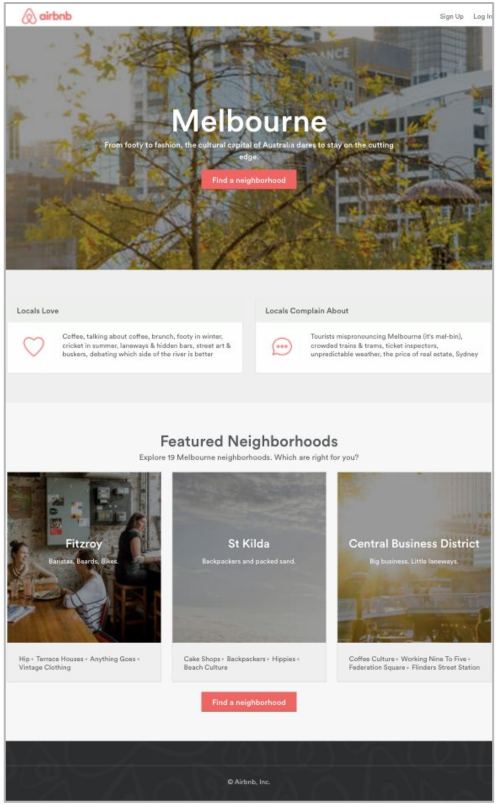
Starter code:

https://codepen.io/GAmarketing/pen/GRRwvPN

→

Solution code:

https://codepen.io/GAmarketing/pen/MWWzvXX



Melbourne

From footy to fashion, the cultural capital of Australia dares to stay on the cutting edge.

Locals Love

Coffee, talking about coffee, brunch, footy in winter, cricket in summer, laneways & hidden bars, street art & buskers, debating which side of the river is better

Locals Complain About

Tourists mispronouncing Melbourne (it's mel-bin), crowded trains & trams, ticket inspectors, unpredictable weather, the price of real estate, Sydney

Featured Neighborhoods

Explore 19 Melbourne neighborhoods. Which are right for you?

Fitzroy

Baristas. Beards. Bikes.

Hip • Terrace Houses • Anything Goes • Vintage Clothing

St Kilda

Backpackers and packed sand.

Cake Shops • Backpackers • Hippies • Beach Culture

Central Business District

Big business. Little laneways.

Coffee Culture • Working Nine To Five • Federation Square • Flinders Street Station

© Airbnb, Inc.

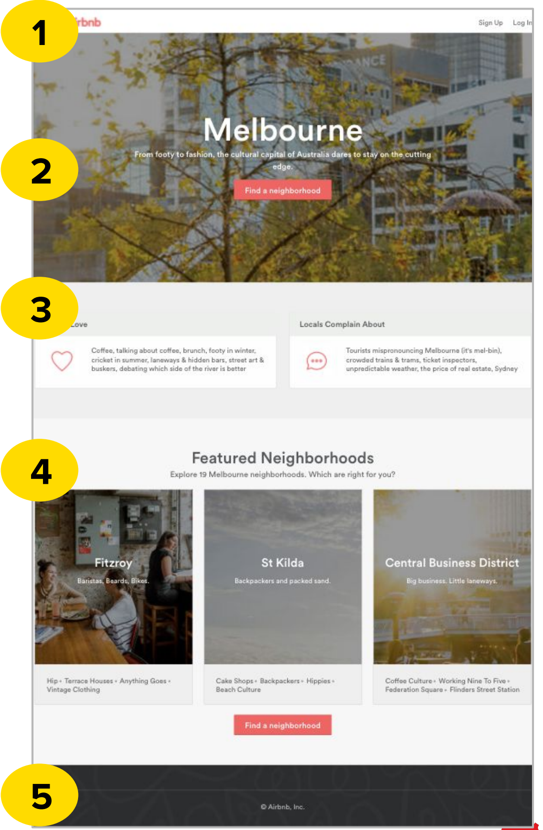
Guided Walk-Through:

The Sections Are...

There are five sections on the site:

1. Header / navigation
2. Main background image section (with **Find a Neighborhood** button)
3. Locals section with two columns
4. Featured neighborhoods section with three columns
5. Footer

Each section stacks one on top of the other. They can be built separately, and you should focus on them one by one as you build your site.



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Device Grouping

Phones

iPhone SE/iPhone 5S = 320px
Galaxy/iPhone 6 = 380px– 400px
iPhone 6+/Galaxy Note = 420px

Tablets

Phablet/tablet = 500px–650px
iPad/iPad mini = 768px

Laptops & Desktops

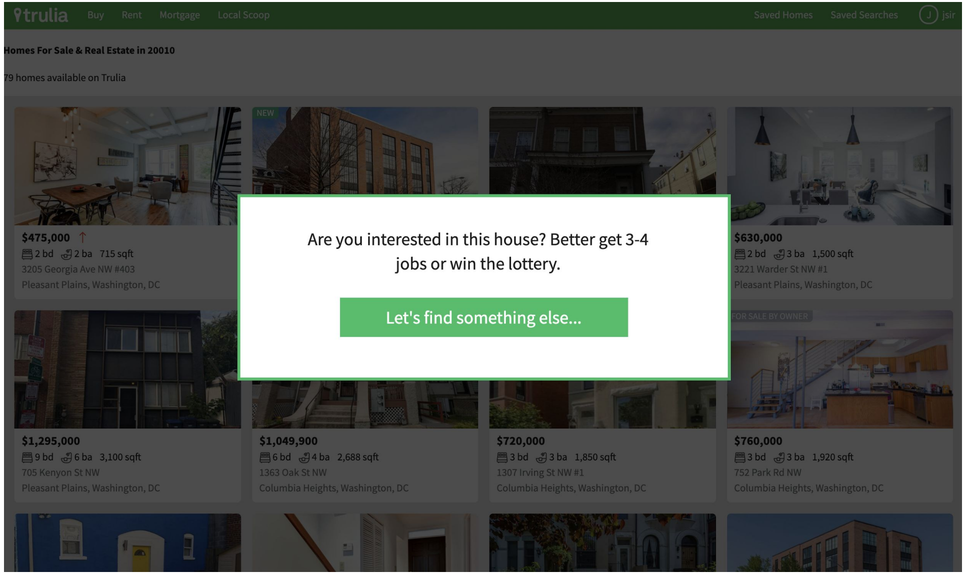
Laptops = 960px–1200px
Desktop = 1024px–1800px

The point in between groups = the **breakpoint**.

Add a Modal to Homework 3 for Homework 4

Homework 3 contained a nice grid and flexbox layout to really push you to the next level. Now it's time to level up once again by adding your first component: **a modal window**.

Do some research and see how you would implement one.



Homes For Sale & Real Estate in 20010

79 homes available on Trulia

$475,000
2 bd 2 ba 715 sqft
3205 Georgia Ave NW #403
Pleasant Plains, Washington, DC

$630,000
2 bd 3 ba 1,500 sqft
3221 Warder St NW #1
Pleasant Plains, Washington, DC

Are you interested in this house? Better get 3-4 jobs or win the lottery.

$1,295,000
9 bd 6 ba 3,100 sqft
705 Kenyon St NW
Pleasant Plains, Washington, DC

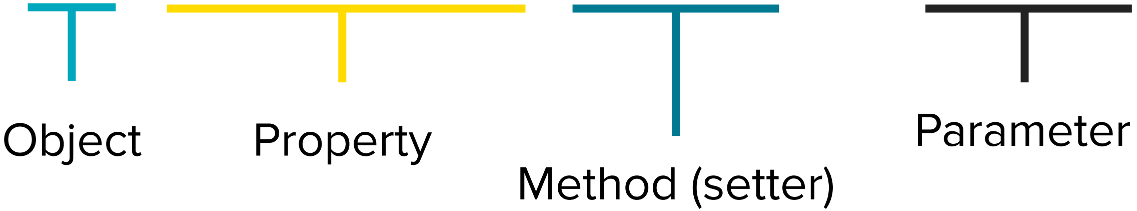
$1,049,900
6 bd 4 ba 2,688 sqft
1363 Oak St NW
Columbia Heights, Washington, DC

$720,000
3 bd 3 ba 1,850 sqft
1307 Irving St NW #1
Columbia Heights, Washington, DC

$760,000
3 bd 3 ba 1,920 sqft
752 Park Rd NW
Columbia Heights, Washington, DC

Manipulating an Element’s Classes

```
gaData.classList.toggle(‘show’);
```



Object

Property

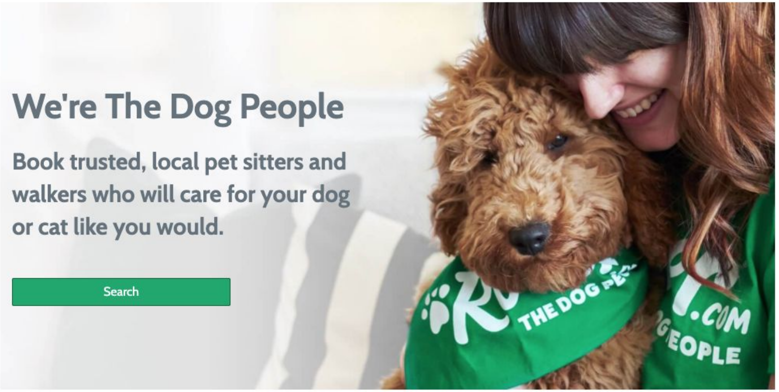
Method (setter)

Parameter

This statement takes the **ga** object, looks at the element’s list of classes, and toggles the **show** class on or off.

Partner Exercise:

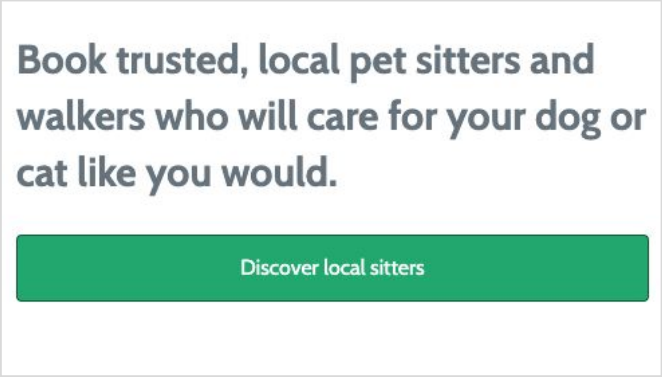
2. Hero Container



We're The Dog People

Book trusted, local pet sitters and walkers who will care for your dog or cat like you would.

Search



Book trusted, local pet sitters and walkers who will care for your dog or cat like you would.

Discover local sitters

Here, we see a background image, and then content on top of the image.

- Try creating the element with the image first, then adding content inside of that element.
- What do we need to adjust at a smaller screen size?

Solo Exercise:

The To-Do Functionality

Let’s break the to-do functionality (without completing to-dos) into the following steps:

1. Create our form submit event listener.
   a. Do we need **`event.preventDefault()`** here?
2. Get user input.
   a. Check if user typed anything
3. Add the to-do to the array.
   a. What array method?
4. Render the to-do.
   a. How can we add an **`li`** to a **`ul`** element?
5. Update the to-do count.
   a. What array property?

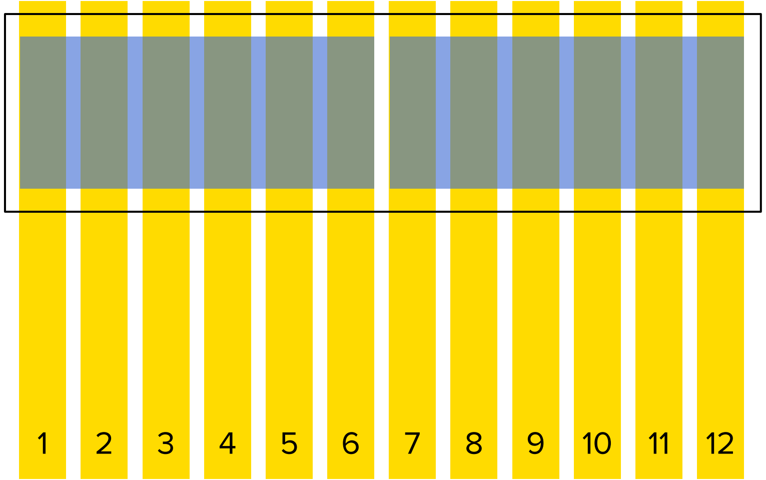
To-dos only solution code:

https://codepen.io/GAmarketing/pen/ZELBaxJ

All Together

This is how you Bootstrap:

```
<div class="container">
 <div class="row">
  <div class="col">
   Your content here.
  </div>
  <div class="col">
   Your content here.
  </div>
 </div>
</div>
```



Guided Walk-Through:

Storing a Project on GitHub

Choose any of the previous assignments or projects and store them in a repository using the command line, then push that repository to a repository on github.com.

Use your text editor to create the folder structure and copy files into a new folder.