

# Spike Project – Bootstrap 5

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## Background

When designing user interfaces, its often hard to translate beautiful concepts into HTML and CSS. Building your own CSS library from scratch can be time consuming and stressful. Because of this problem, programmers often resort to CSS frameworks such as Tailwind, Foundation, and Bootstrap. These libraries provide consistent components, grid systems, and color palattes to build responsive user interfaces. With this, there is no headache of building your own grid system for layouts, or adapting your content to fit on mobile viewports.

For this project I chose Bootstrap, as it is one of the most popular on the web. It also would help with our Software Engineering project, as we needed to design a responsive web app. Early on in the project, I created some mockups of the website in Figma, but was struggling to translate them into pure HTML, CSS, and Javascript. Thankfully, I designed these mockups on a 12 column grid similar to the one used by Bootstrap, so the translations were relatively simple.

## Practice and Experimentation

For this experiment, I built each of my Figma mockups using bootstrap classes for layout and reusable components. I added my own custom CSS file for image backgrounds. The full site can be explored [here](#). My github repo with the full source code can be explored [here](#). Below is the mockup of the homepage a user sees when logging in. I needed a navbar, dropdown menus, and cards to show featured vehicles.

## Search For A Vehicle

Make

Model

Search

## Featured Vehicles



2021 Honda Civic Type R \$43,385



2021 Volkswagen Tiguan \$34,568



2021 Honda Civic Type R \$43,385



2021 Volkswagen Tiguan \$34,568

Figma mockup of the homepage at a desktop viewport



## Search For A Vehicle

Make

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## Featured Vehicles





**2021 Honda  
Civic Type R**

**\$43,385**



**2021  
Volkswagen  
Tiguan**

**\$34,568**

Figma mockup of the homepage at a mobile screen size

I began by studying Bootstraps plentiful examples for a navbar. The library provides classes for responsible navigation bars that are customizable to your liking. For my navbar, I used the declaration:

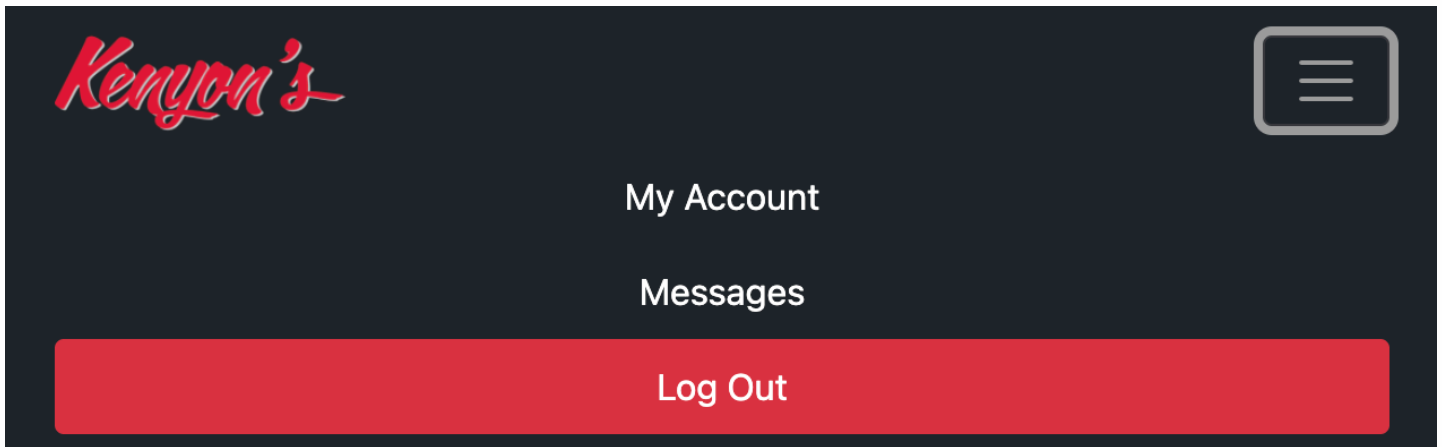
```
<nav class="navbar navbar-expand-md navbar-dark bg-dark px-3">  
  <!-- Divs for buttons and logos -->  
</nav>
```

The most useful of these was the `navbar-expand-md` class, which means the navbar is full width until it collapses at the medium breakpoint of 768px or less. The `navbar-dark` and `bg-dark` classes set the colors for the component. Finally, the `px-3` class set the spacing between elements in the navbar.

*Kenyon's*

[My Account](#) [Messages](#) [Log Out](#)

Navbar at full width



Navbar at medium breakpoint

Breakpoints in Bootstrap also work for other page components, which I would need for my cards and the search options. I placed my cards in a main container div that houses a grid with one row and four columns. Each column had a similar declaration:

```
<div class="col-md-3">
  <div class="card shadow mb-3">
    

    <div class="card-body">
      <h5 class="card-title">2021 Honda Civic Type R</h5>
      <h6>$40,685</h6>
      <a href="./vehicle.html" class="btn btn-danger">More Info</a>
    </div>
  </div>
</div>
```

The `col-md-3` class means that each card will take up 3 columns on Bootstrap's 12 column grid until the medium breakpoint. At the medium breakpoint and below, the card will take up the full width of the grid. The `card` class is a component from the bootstrap library that can be used to display images, text, and other components. Using the `shadow` class, I was able to add a drop shadow underneath the cards. I also added the `mb-3` class which adds a margin of 3 units to the bottom of each card. The value 3 is calculated from the frameworks main spacing unit that is equivalent to 16px.



2021 Honda Civic Type R  
\$40,685

[More Info](#)



2021 Volkswagen Tiguan  
\$40,685

[More Info](#)



2021 Subaru WRX  
\$40,685

[More Info](#)



2021 Lotus Elise  
\$40,685

[More Info](#)

Cards at desktop viewport



2021 Honda Civic Type R  
\$40,685

[More Info](#)



2021 Volkswagen Tiguan  
\$40,685

[More Info](#)

Cards at mobile viewport

The rest of the pages consisted of similar components. First I referenced my Figma designs and checked how many columns an element took up. Then, I added the correct row and column grid for each component on my page. To handle the media queries, I set each element to collapse into a mobile layout at the medium breakpoint of 768px.

## Questions

When exploring the Bootstrap framework, I had questions about customizing the existing framework to support a specific color scheme. From cursory research on the Bootstrap docs, it requires the use of a preprocessor like Sass to customize certain components. In the future, I would like to customize Bootstrap's variables to support different color schemes.

## Reflections

After studying Bootstrap, I see the value in CSS frameworks. They allow you to quickly build webpages while adhering to good design guidelines. Setup is simple, and the framework can be included with 2 lines in your HTML page, or integrated into a package manager like npm. If you wanted to quickly build a site that is friendly and intuitive, a CSS framework like Bootstrap is much more reliable than writing your whole site from scratch.