TASK

Bootstrap

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Introduction

WELCOME TO THE BOOTSTRAP TASK!

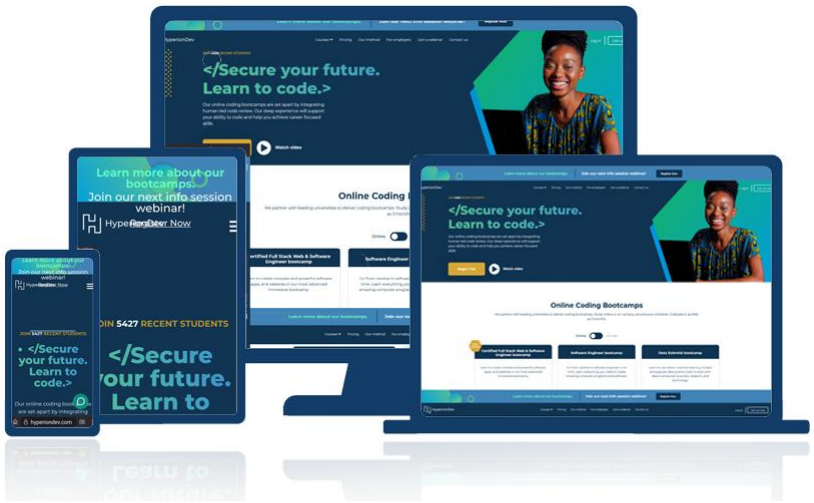
So far, you have been exposed to an excellent surface-level breakdown of CSS and its importance in the world of web development. But your learning journey does not end there! In this task, you'll get to explore one of the most popular programming frameworks, called Bootstrap. The good news is that you don't have to be a programming guru to use Bootstrap!

So hold on to your boots as we journey through this task.

However, like most things in life, the deeper we go into a concept, the more complex we start to realise it is. CSS is no different. Thankfully due to how popular programming is, we have other developers (In this case, the people that created bootstrap are a great example!) to help us solve some of these complex issues and sometimes we don't even need to know the developers for us to get help!

Bootstrap is one of those things.

RESPONSIVE DESIGN



Take a look at the above picture. Notice how, in the world we live in, we have so many different screen sizes. Think about one of the most popular applications that people use nowadays, like Whatsapp. Have you ever noticed that regardless of the device that you use Whatsapp on, the screen always remains the same? This is one of the critical features of responsive design.

At this point in time, you most likely have only created one website design, and that design works with your laptop screen, but now imagine you had to look at your website on your mobile device or on a 4k TV screen.

As you can imagine, your website would end up breaking on those devices; this is because you haven't implemented any form of **responsive design**.

By now, you might be wondering what precisely responsive design is.

Well, responsive design is a web developer's way of creating a website that changes based on the size of the screen the user is using. Now even though this takes a bit of time, you have Bootstrap to help you along the way.
This is where Bootstrap comes into play!

WHAT IS BOOTSTRAP?

We've also mentioned that there are many developers around the world who are creating systems for developers to use to help them save time and energy.

Bootstrap is one of the tools that have been created by developers to help other developers save time and effort during the process of creating systems.

It is known as a **framework** which you will slowly become more familiar with as you progress through the course. Simply put, a framework is code written by someone else that you can use in your program to make your development progress quicker and make your code more manageable and cleaner to write.

In this task, we'll be going through how to install bootstrap and how to use it to make your website responsive and well-structured!

INSTALLING BOOTSTRAP

Let's go through the quick process of "installing" bootstrap (it's just like importing a CSS file into your HTML file!)

Just follow these steps:

1. Head over to **THIS link**.
2. Scroll down the page till you see a heading that says "Include via CDN".
3. Copy the "CSS only" version.

a. It will look something like this <link href="**https://cdn.jsdelivr.net** - note that this is not the whole url, just the start to help you find it.

4. Head into your HTML file.
   a.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <!— CSS only —>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.0/dist/css/bootstrap.min.css" rel="stylesheet"
          integrity="sha384-gH2yIJqKdNHPEq0n4Mqa/HGKIhSkIHeL5AyhkYV8i59U5AR6csBvApHHNl/vI1Bx" crossorigin="anonymous">
    <title>iTunes App</title>
</head>
<body>
```

5. Paste the link in your head tags.

And that's it! You've successfully installed Bootstrap!

USING BOOTSTRAP

Just like any concept in programming, you will need to learn how to implement bootstrap.

Before we can begin implementing it, we need to understand the backbone of bootstrap and how it will calculate how to create a responsive website.

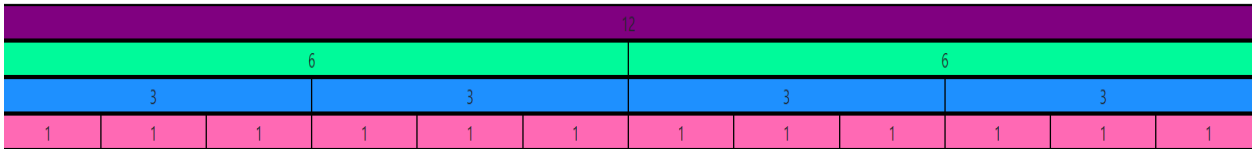
THE GRID SYSTEM

Whenever you look at a website, you're actually looking at a grid system! Take a look at the image below of our website.

As you can see, there are a lot of different colours on the screen! These are known as “columns” (usually invisible); this is what helps a webpage identify where certain elements are. Bootstrap works with the grid system!

You may notice that there are 12 purple columns. This is the **maximum** number of columns bootstrap can work with! This means that once you start designing your web pages using Bootstrap, you should never forget that you only have twelve columns to design your web page on. work with the limit of 12 columns in the back of your head.

Take a look at the image below.



This is an example of a grid pyramid that was created using Bootstrap and standard HTML. As you can see, we’re now able to place some aspects next to each other using the different columns Bootstrap provides for us.

Because we’re now making use of grids, what you’ll find is that no matter how you resize the browser, the website will still stay on the page and automatically adjust itself to fit all the content in the way it was placed.

This can be done in minutes with Bootstrap, compared to writing our own version of the grid system using normal CSS!

SCREEN SIZES

While Bootstrap is powerful, it becomes even more powerful once we start learning and implementing screen sizes. Bootstrap allows us to select what data will be displayed based on the screen size we provide.

Take a look at the screenshot below:

Class prefix	Screen Size	Grid behaviour	Container width	Suitable for
.col-	Extra small (<576px)	Horizontal at all times	None (auto)	Portrait phones
.col-sm-	Small (>=576px)	Collapsed to start, horizontal above breakpoints	540px	Landscape phones
.col-md-	Medium (>=768px)	Collapsed to start, horizontal above breakpoints	720px	Tablets
.col-lg-	Large (>=992px)	Collapsed to start, horizontal above breakpoints	960px	Laptops
.col-xl-	Extra Large (>=1200px)	Collapsed to start, horizontal above breakpoints	1140px	Laptops and Desktops

These are all the screen sizes that are used in Bootstrap! For the most part, when you work with Bootstrap, you will most commonly use “col-md” (medium device) as you are most likely working on a tablet/laptop.

However, you will implement all the other screen sizes the exact same way you’ll be implementing the medium device tag.

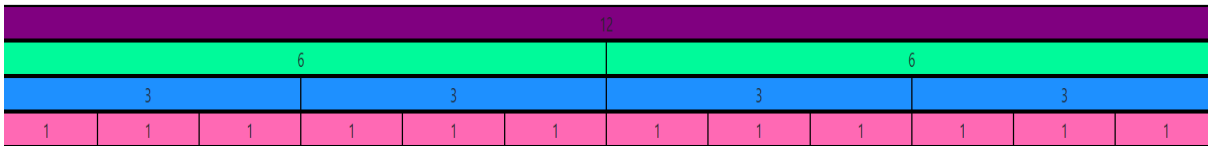
Let us explain each of these concepts to help you better understand why we write these.

1. **Col**
    - The “col” keyword stands for column. It’s how Bootstrap identifies that you are going to want to work with columns.
2. **sm/md/lg/xl**
    - This is the screen size that we are going to be working with. As mentioned, you will typically be working with **md** through the bulk of the course; however, it’s encouraged that you play around with other values to see how they will change the display of your page.

3. ***
    - The asterisk is actually a wild-card placeholder! This will eventually be replaced with a number that will describe how many columns it will take up (i.e. if we enter 6, it will take up half of the page - remember, you only have 12 columns to work with!).

ROWS

Now that you have a better understanding of different screen sizes and columns, we need to discuss one last concept that is an important part of Bootstrap - the implementation of rows.



In the grid pyramid image that shows all the columns in different colours, you will notice that each number goes onto a different “line”. These lines are known as rows.

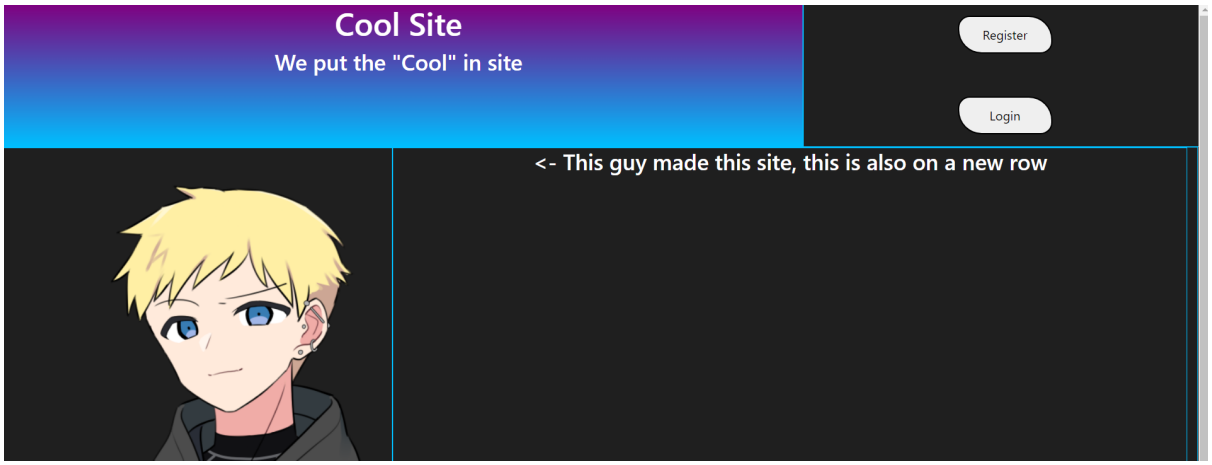
Unlike columns, there can be an infinite number of rows (as a web page can reach an unlimited height).

PUTTING IT ALL TOGETHER

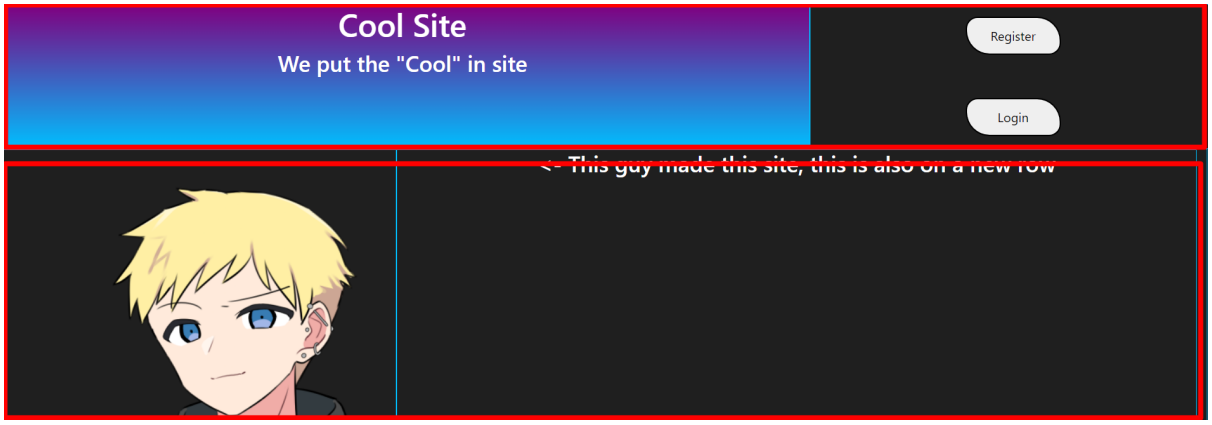
Now that we know that websites are built using the grid system, we can start making use of Bootstrap. Something that makes Bootstrap so powerful for new learners is that they only have to learn class names. It adds no additional HTML tags or new systems that make it a complex learning experience.

It’s suggested that you create a text document that contains a cheat sheet of all of the class names so that you can avoid having to come back to this PDF file every time you need to remember the spelling of a term.

Let's start by creating a basic webpage using Bootstrap. Below is a screenshot of the final product (It’s not the most beautiful design, but it does its job providing an example to showcase the concept of Bootstrap.)



Let's start by discussing where the rows are in this project.



Notice how each major part of the website is on its own row. So let's create the code that will be used to make the rows!

```
<body>
    <div class="row">
    </div>
    <div class="row">
    </div>
</body>
```

You will notice that we have created two divs (a div for each row on the website). You'll notice that we've given each div tag a "class" name with the term "row". It's important to note that this is a class name created by Bootstrap, which will start to modify how your website will be displayed. This is how it separates each row on the website.

Now that we've created our two rows let's look at the image below to see how many columns your website will be made up of:

You will notice that inside each section, there are either 8 or 4 different columns. We decide how many we want. So, let's head over to our code and put our columns in place.

```
<div class="row">
 <div class="col-md-8">
        <!-- this is col 1-8 (this is a cool site)-->
   </div>
   <div class="col-md-4">
        <!-- This is col 9-12 (login/register button) -->
   </div>
</div>
<div class="row">
    <div class="col-md-4">
       <!-- This is col 1-4 (The image) -->
    </div>
    <div class="col-md-8">
       <!-- This is col 5-12 (The text) -->
    </div>
</div>
```

As you can see we've now added a div inside our "row" divs and given them a class name of "col-md-*" You can see how the different screen sizes will come into play here as you can change the "md" to a different size based on the device you expect the user to use.

From there you can enter the total number of columns you want each div to take. That's the number after the device size. What's important to remember when using these is that the total should always be less than or equal to 12. So make sure you check your calculations when you start modifying the sizes.

Once everything is written you can now start adding any normal code (such as images and buttons) inside these div tags!

```
<div class="row">
   <div class="col-md-8 background">
      <h1>Cool Site</h1>
      <h3>We put the "Cool" in site</h3>
   </div>
   <div class="col-md-4">
      <button>Register</button>
```

```
      <br>
      <br>
      <button>Login</button>
   </div>
</div>
<div class="row">
   <div class="col-md-4">
      <img src="myimg.png" alt="">
   </div>
   <div class="col-md-8">
      <h3><- This guy made this site, this is also on a new row</h3>
   </div>
</div>
```

Once you've finished up all your code you have officially created your first ever responsive website! This is a huge step in your programming journey and you should be proud of what you have accomplished.

BOOTSTRAP BUTTONS AND STYLING

Bootstrap has a lot of features built into it, most of which we can control with the class name. One of these features is the different styling of buttons. Below are a couple of examples.

For more examples, feel free to visit:
https://getbootstrap.com/docs/4.0/getting-started/introduction/
https://www.w3schools.com/bootstrap4/bootstrap_ref_all_classes.asp

Class	Description	Example
`.btn`	Adds basic styling to any button	Basic Button
`.btn-danger`	Indicates a dangerous or potentially negative action	Danger
`.btn-dark`	Dark grey button	Dark
`.btn-default`	Indicates a default/standard button	Default
`.btn-info`	Contextual button for informational alert messages	Info
`.btn-light`	Light grey button	Light
`.btn-link`	Makes a button look like a link (will still have button behavior)	Link
`.btn-primary`	Provides extra visual weight and identifies the primary action in a set of buttons	Primary
`.btn-success`	Indicates a successful or positive action	Success
`.btn-secondary`	Indicates a "less" important action	Secondary
`.btn-warning`	Indicates caution should be taken with this action	Warning

Bootstrap is a powerful tool that can be used to create amazing websites with a lot less effort than manually creating a responsive website!

Compulsory Task 1

Follow these steps:

- You are going to create an online shopping page. The idea behind this task is to create an online store with products on display. Please implement all of the below features by making use of Bootstrap in your program.
- Items
    - Add 10 items to the page.
    - Use the grid system.
    - Have your images become responsive (make them change when the user moves their mouse over them).
    - Have your page display a price and name for each product.
    - Include a button under each product to “buy” the product (this does not need to be functional yet!)
- Footer
    - Create a horizontal form.
    - This form should get the contact details of the customer (this does not need to be functional yet!)
    - Include a small company logo next to the form.

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