



**TASK**

# **Bootstrap: Build attractive pages faster using 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) to help us solve some of these complex issues.



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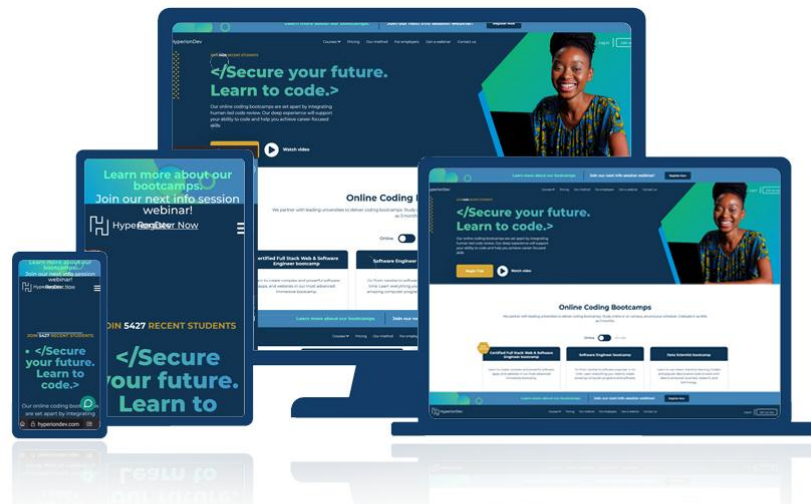
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## RESPONSIVE DESIGN



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, such as 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**. At this point, 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.

## WHAT IS BOOTSTRAP?

Bootstrap is a framework (tool) created by developers to save other developers time and effort. 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 walk 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 process of "installing" bootstrap (it's just like importing a CSS file into your HTML file!).

Follow these steps:

1. Navigate to "[Include via CDN](#)" on the webpage.
2. Copy the "CSS only" version.
3. Open a HTML file and paste the link with all its attributes inside the head tags as shown below:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <!-- CSS only -->
    <link
      href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css"
      rel="stylesheet"
      integrity="sha384-Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeu0xjzrPF/et3URy9Bv1
      WTRi" crossorigin="anonymous">
    <title>Cool App</title>
  </head>
  <body>

    </body>
</html>
```

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 many different colours on the screen! These are known as “columns” (usually invisible); this is what helps a webpage identify where certain elements are positioned. Bootstrap works with this 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. Therefore, work with the limit of 12 columns in the back of your head.

Take a look at the image below.

12											
6						6					
3			3			3			3		
1	1	1	1	1	1	1	1	1	1	1	1

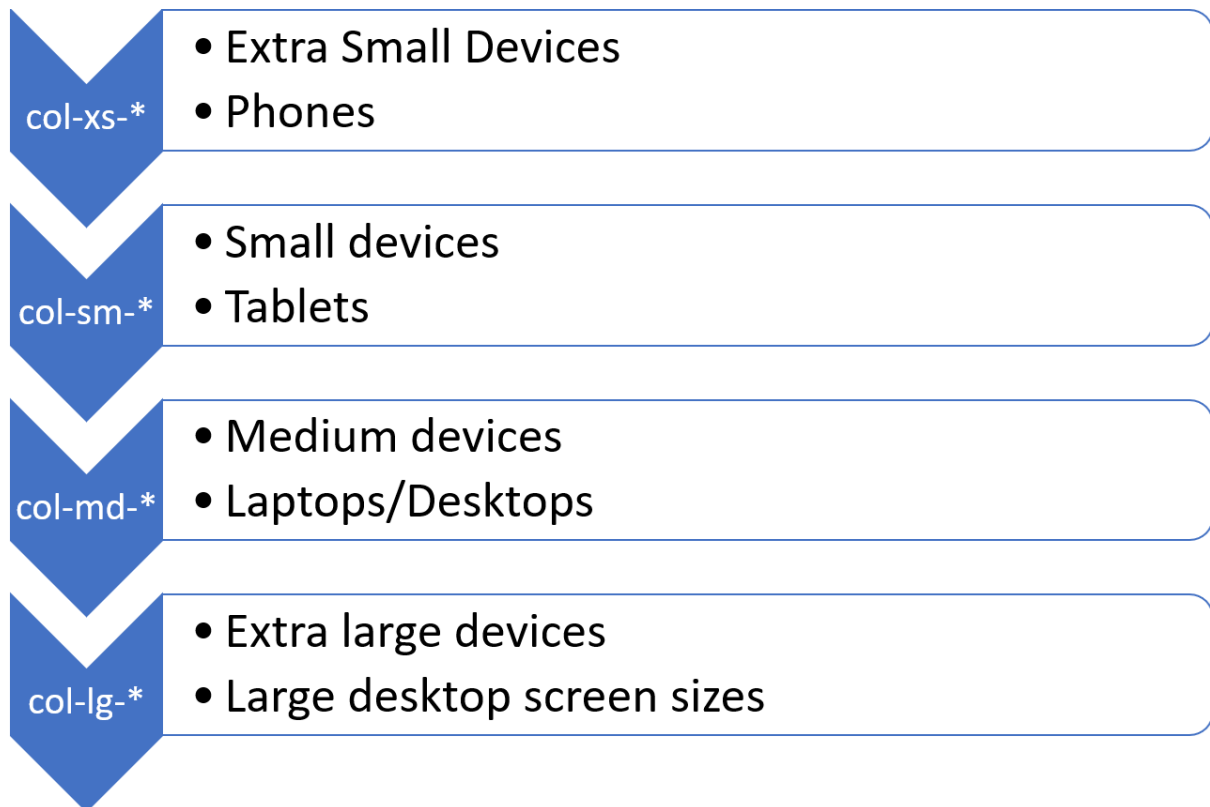
This is an example of a grid pyramid that was created using Bootstrap and standard HTML. As you can see, we’re now able to place some aspects next to each other using the different columns Bootstrap provides for us.

Because we’re now making use of grids, you’ll find 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 implementing for different 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:



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 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 the components of the tags:

- 1. Col:** the **col** keyword stands for column. It's how Bootstrap identifies that you want to work with columns.
- 2. xs/sm/md/lg:** this is the screen size that you want to work with. As mentioned, you will typically be working with **md**; however, it's encouraged that you play around with other values to see how they will change the display of your page.
- 3. Asterisk(\*):** the asterisk is a wild-card placeholder. This will be replaced with a number that will describe how many columns a element 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.

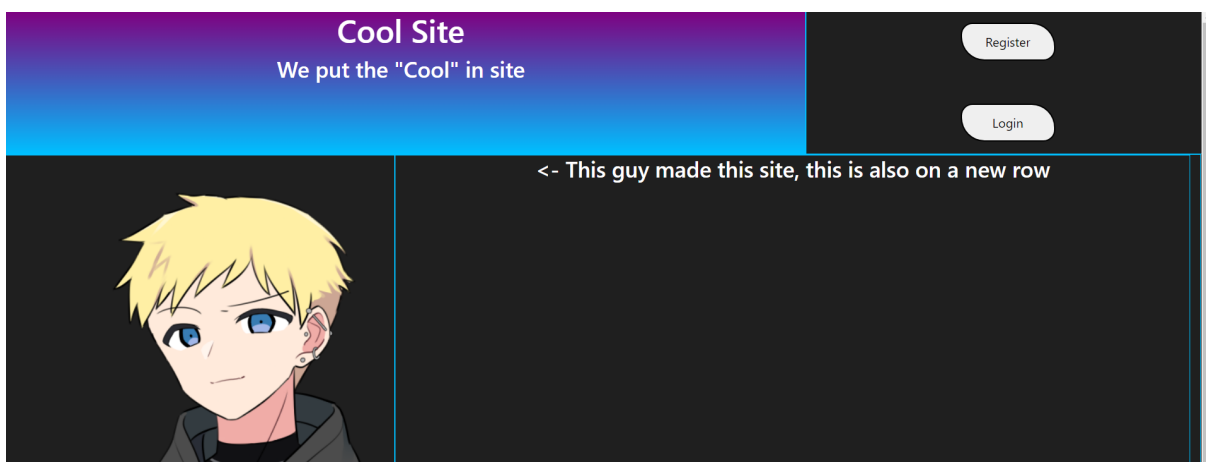
12											
6						6					
3			3			3			3		
1	1	1	1	1	1	1	1	1	1	1	1

The grid pyramid image shows all the columns in different colours, and 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).

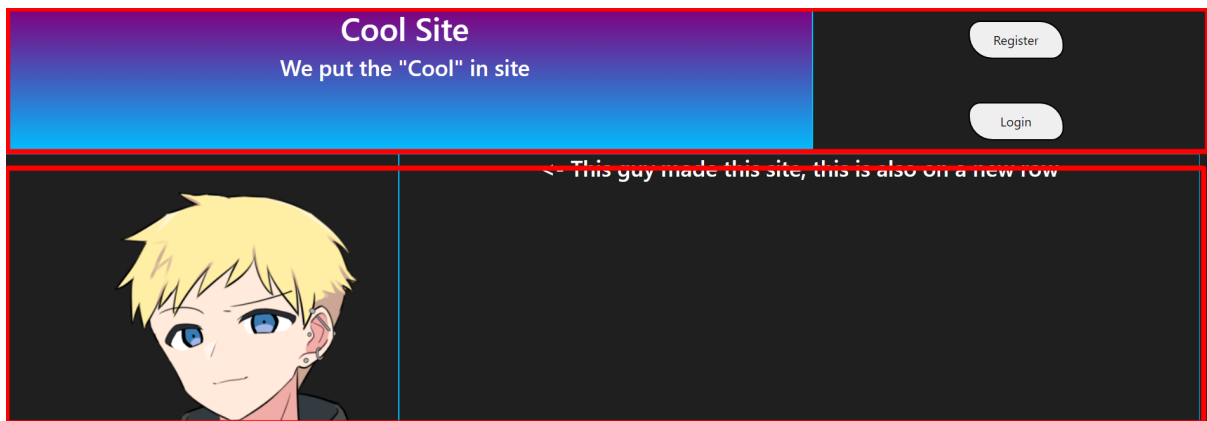
## Putting it all together

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 to complicate the learning experience.

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.

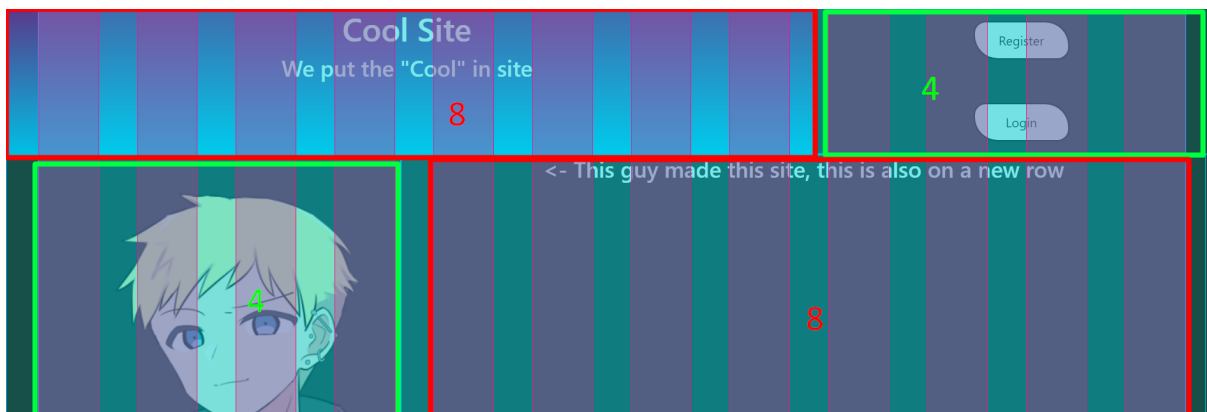


Notice how each major part of the website is on its own row. So let's create the code that will be used to make the rows!

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

You will notice that we have created two div tags (a div container 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>
</div>
```

As you can see we've now added a div tag inside our "row" div tags 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.

You can replace the asterisk with the total number of columns you want each div tag 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>
  </div>
</div>
```

```

    <br>
    <button>Login</button>
  </div>
  <div class="row">
    <div class="col-md-4">
      
    </div>
    <div class="col-md-8">
      <h3><- This guy made this site, this is also on a new row</h3>
    </div>
  </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 is a powerful tool that can be used to create amazing websites with a lot less effort than manually creating a responsive website.



### Extra resource

**Bootstrap Studio** is a app that uses the Bootstrap framework. You can use this tool for by signing up for the **GitHub Student Developer Pack** (choose HyperionDev as your institution). You can also explore and **introduction to Bootstrap** for additional information.

## 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.
- 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.

## Completed the task(s)?

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