**BOOTSTRAP**

Bootstrap is a popular open-source front-end framework for building responsive and visually appealing websites and web applications.

It was originally developed by Twitter and is now maintained by a community of developers.

Bootstrap provides a collection of CSS, JavaScript, and HTML templates that help creating consistent and modern web interfaces.

Installation Notes: to do

In Bootstrap, the meta tag with the viewport syntax is used to ensure that your website is responsive and displays correctly on various devices, such as mobile phones, tablets, and desktops. The viewport meta tag informs the browser about the width and initial scale of the viewport, allowing the browser to adjust the layout accordingly.

Here's the recommended syntax for the viewport meta tag in Bootstrap:

<meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

Let's break down the attributes used in this meta tag:

* name="viewport": Indicates that this meta tag is related to controlling the viewport behavior.
* content="width=device-width, initial-scale=1, shrink-to-fit=no":
* width=device-width: Sets the width of the viewport to be equal to the device's width. This ensures that the content fits within the screen width, making it responsive.
* initial-scale=1: Sets the initial zoom level to 100%, which prevents the page from loading zoomed in or out.
* shrink-to-fit=no: Prevents the browser from automatically shrinking the content to fit within the viewport. This can be particularly useful to avoid unwanted text size adjustments.

Including this viewport meta tag in the <head> section of your HTML document is a crucial step in making sure that Bootstrap's responsive features work as intended and that your website looks good on different devices.

Some important Bootstrap CSS classes that are commonly used:

1. **.container and .container-fluid:**

These classes are used for creating responsive containers that hold the content of your webpage.

The difference between them lies in their width behavior:

**.container:** Creates a fixed-width container that adapts to different screen sizes. It centers the content and adds margins on the sides.

**.container-fluid:** Creates a full-width container that spans the entire width of the viewport. It's ideal for fluid layouts.

A screenshot of a computer

Description automatically generated

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**Bootstrap Grid System**

Bootstrap's grid system allows up to 12 columns across the page.

If you do not want to use all 12 column individually, you can group the columns together to create wider columns:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 |
| span 4 | | | | span 4 | | | | span 4 | | | |
| span 4 | | | | span 8 | | | | | | | |
| span 6 | | | | | | span 6 | | | | | |
| span 12 | | | | | | | | | | | |

Bootstrap's grid system is responsive, and the columns will re-arrange depending on the screen size: On a big screen it might look better with the content organized in three columns, but on a small screen it would be better if the content items were stacked on top of each other.

Tip: Remember that grid columns should add up to twelve for a row. More than that, columns will stack no matter the viewport.

Grid Classes

The Bootstrap grid system has four classes:

xs (for phones - screens less than 768px wide)

sm (for tablets - screens equal to or greater than 768px wide)

md (for small laptops - screens equal to or greater than 992px wide)

lg (for laptops and desktops - screens equal to or greater than 1200px wide)

The classes above can be combined to create more dynamic and flexible layouts.

Tip: Each class scales up, so if you wish to set the same widths for xs and sm, you only need to specify xs.

Grid System Rules

Some Bootstrap grid system rules:

Rows must be placed within a .container (fixed-width) or .container-fluid (full-width) for proper alignment and padding

Use rows to create horizontal groups of columns

Content should be placed within columns, and only columns may be immediate children of rows

Predefined classes like .row and .col-sm-4 are available for quickly making grid layouts

Columns create gutters (gaps between column content) via padding. That padding is offset in rows for the first and last column via negative margin on .rows

Grid columns are created by specifying the number of 12 available columns you wish to span. For example, three equal columns would use three .col-sm-4

Column widths are in percentage, so they are always fluid and sized relative to their parent element

Basic Structure of a Bootstrap Grid

The following is a basic structure of a Bootstrap grid:

<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>

So, to create the layout you want, create a container (<div class="container">). Next, create a row (<div class="row">). Then, add the desired number of columns (tags with appropriate .col-\*-\* classes). Note that numbers in .col-\*-\* should always add up to 12 for each row.

Grid Options

The following table summarizes how the Bootstrap grid system works across multiple devices:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Extra small <768px | Small >=768px | Medium >=992px | Large >=1200px |
| Class prefix | .col-xs- | .col-sm- | .col-md- | .col-lg- |
| Suitable for | Phones | Tablets | Small Laptops | Laptops & Desktops |
| Grid behaviour | Horizontal at all times | Collapsed to start, horizontal above breakpoints | Collapsed to start, horizontal above breakpoints | Collapsed to start, horizontal above breakpoints |
| Container width | None (auto) | 750px | 970px | 1170px |
| # of columns | 12 | 12 | 12 | 12 |
| Column width | Auto | ~62px | ~81px | ~97px |
| Gutter width | 30px (15px on each side of a column) | 30px (15px on each side of a column) | 30px (15px on each side of a column) | 30px (15px on each side of a column) |
| Nestable | Yes | Yes | Yes | Yes |
| Offsets | Yes | Yes | Yes | Yes |
| Column ordering | Yes | Yes | Yes | Yes |