Modern Web Development

1

BOOTSTRAP

What is Bootstrap?

- Bootstrap is a **free front-end framework** for faster and easier web development
- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins
- Bootstrap also gives you the ability to easily create **responsive designs**
  - Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.

Why Use Bootstrap?

- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** In Bootstrap 3, mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Safari, and Opera)

How can I use Bootstrap in my website?

- Boot strap is a framework, that uses its own set of css and javascript, so we only need to link our website with these files.
- Luckily for us, we get download a premade template that includes links to the urls of these files at: https://getbootstrap.com/docs/4.0/getting-started/introduction/
- Then we will use prefabricated `.classes` in `divs` to add our content.

The BOOTSTRAP template file

Use this as a template. Available from

https://getbootstrap.com/docs/4.0/getting-started/introduction/

```
<!doctype html>
<html lang="en">
  <head>
    <title>Hello, world!</title>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-
beta.2/css/bootstrap.min.css" integrity="sha384-
PsH8R72JQ3SOdhVi3uxftmaW6Vc51MKb0q5P2rRUpPvrszuE4W1povHYgTpBfshb"
crossorigin="anonymous">
  </head>
  <body>
    <h1>Hello, world!</h1>

    <!-- Optional JavaScript -->
    <!-- jQuery first, then Popper.js, then Bootstrap JS -->
    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.3/umd/poppe
r.min.js" integrity="sha384-
vFJXuSJphROIrBnz7yo7oB41mKfc8JzQZiCq4NCceLEaO4IHwicKwpJf9c9IpFgh"
crossorigin="anonymous"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-
beta.2/js/bootstrap.min.js" integrity="sha384-
alpBpkh1PFOepccYVYDB4do5UnbKysX5WZXm3XxPqe5iKTfUKjNkCk9SaVuEZflJ"
crossorigin="anonymous"></script>
  </body>
</html>
```

Basic BS concepts: Containers

- Containers are the most basic layout element in Bootstrap and are **required**.
- While containers *can* be nested, most layouts do not require a nested container.
- Choose from a responsive, fixed-width container (meaning its max-width changes at each breakpoint) or fluid-width (meaning it's 100% wide all the time).
- `<div class="container"> ...</div>`
- `<div class="container-fluid"> ... </div>`

Basic BS concepts: Responsive breakpoints

- Since Bootstrap is developed to be mobile first, we use a handful of [media queries](#) to create sensible breakpoints for our layouts and interfaces. These breakpoints are mostly based on minimum viewport widths and allow us to scale up elements as the viewport changes.
  - Extra small devices (xs) for portrait phones, less than 576px
  - Small devices (sm) for landscape phones, 576px and up
  - Medium devices (md) for tablets, 768px and up
  - Large devices (lg) for desktops, 992px and up
  - Extra large devices (xl) for large desktops, 1200px and up

Basic BS concepts: The grid

- The grid system is the basis of layout content in BS.
- The container div is separated in rows (`div` of `.row` class)
- Each row may have up to 12 columns (other `divs` of `.col-sz-##` class), where `sz` defines the breakpoint (xs, sm, md, lg, xl) and `##` defines the width out of 12

A simple grid

create a row with three equal sized (each 4/12) panels

```
<div class="container">
  <div class="row">
    <div class="col-sm-4">
      1st of three columns
    </div>
    <div class="col-sm-4">
      2nd of three columns
    </div>
    <div class="col-sm-4">
      3rd of three columns
    </div>
  </div>
</div>
```

1st of three columns	2nd of three columns	3rd of three columns

A simple grid

create a row with three panels, the first taking half the width, the other two an equal amount

```
<div class="container">
  <div class="row">
    <div class="col-sm-6">
      1st of three columns
    </div>
    <div class="col-sm-3">
      2nd of three columns
    </div>
    <div class="col-sm-3">
      3rd of three columns
    </div>
  </div>
</div>
```

| 1st of three columns | 2nd of three columns | 3rd of three columns |

Images in BS

- place images as usual, but we can add the following classes:
  - .img-fluid makes image responsive
  - .img-thumbnail to give an image a rounded 1px border appearance.
  - .rounded to make the corners rounded (more options in utilities at the BS website)
  - .float-left to make the image float to the left

Using the BS Documentation

- Bootstrap has a number of predefined classes. The online documentation available at https://getbootstrap.com/docs/4.0/getting-started/introduction/ is a useful bookmark to have

Buttons in BS

The .btn classes are designed to be used with the <button> element. However, you can also use these classes on <a> or <input> elements (though some browsers may apply a slightly different rendering).

```
<a class="btn btn-primary" href="#"
role="button">Link</a>

<button class="btn btn-primary"
type="submit">Button</button>

<input class="btn btn-primary" type="button"
value="Input">

<input class="btn btn-primary" type="submit"
value="Submit">

<input class="btn btn-primary" type="reset"
value="Reset">
```

Useful links for building websites

- https://www.pexels.com/ Pexels provides high quality and completely free stock photos licensed under the Creative Commons Zero (CC0) license. All photos are nicely tagged, searchable and also easy to discover through our discover pages.
- https://www.flaticon.com/ provides icons
- https://pixlr.com/ online image editor
- https://formspree.io/ Functional HTML forms