SE 104 Web UI Design and Development

Introduction to Bootstrap

Screen Size

• The screen size is used to select how to render the data

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px
Max container width	None (auto)	540px	720px	960px	1140px
Class prefix	.col-	.col-sm-	.col-md-	.col-lg-	.col-xl-
# of columns	12				
Gutter width	30px (15px on each side of a column)				
Nestable	Yes				
Column ordering	Yes				

Screen Size

• The main concept of the lay outing the different screen is
• Each display row should contain 12 column size
• Consider

```
<div class="col-lg-2 col-md-6 col-12">
```

• What is the output?

How about we have three elements all together

```
<div class="col-lg-2 col-md-6 col-12">
<div class="col-lg-2 col-md-6 col-12">
 <div class="col-lg-2 col-md-6 col-12">
```

• What will be the screen

Now try to draw together

```
<div class="row">
        <div class="col-lg-2 col-md-6 col-8">c1</div>
        <div class="col-lg-2 col-md-7 col-4">c2</div>
        <div class="col-lg-2 col-md-6 col-2">c3</div>
</div>
<div class="row">
        <div class="col-3">c4</div>
        <div class="col-9">
                <div class="row">
                        <div class="col-lg-3 col-4">c5</div>
                        <div class="col-lg-4 col-6">c6</div>
                        <div class="col-lg-4">c7</div>
                </div>
        </div>
</div>
```

Media Selection

- Selecting the CSS to be shown

```
// Extra small devices (portrait phones, less than 576px)
@media (max-width: 575.98px) { ... }

// Small devices (landscape phones, less than 768px)
@media (max-width: 767.98px) { ... }

// Medium devices (tablets, less than 992px)
@media (max-width: 991.98px) { ... }

// Large devices (desktops, less than 1200px)
@media (max-width: 1199.98px) { ... }

// Extra large devices (large desktops)
// No media query since the extra-large breakpoint has no upper bound on its width
```
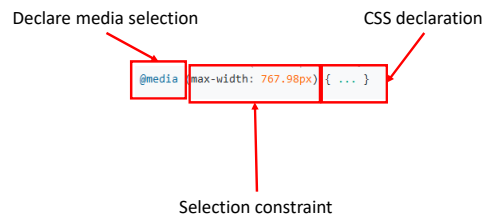
The Selection

Declare media selection   CSS declaration

```
@media (max-width: 767.98px) { ... }
```

Selection constraint

Constraint

- Checking for the size of the screen
- Max-width
  - Maximum size which still applied th css
- Min-width
  - Minimum size which still applied the css

```
@media screen and (max-width: 767px) {
        #outbox {
                background-color: red;
        }
}

@media screen and (min-width: 767px) {
        #outbox {
                background-color: black;
        }
}
```

@Media type

Value	Description
all	Default. Used for all media type devices
print	Used for printers
screen	Used for computer screens, tablets, smart-phones etc.
speech	Used for screenreaders that "reads" the page out loud

- Other features
  - Check https://www.w3schools.com/cssref/css3_pr_mediaquery.asp

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Media selection

- Using with different screen size (more than 2)

```
// Extra small devices (portrait phones, less than 576px)
@media (max-width: 575.98px) { ... }

// Small devices (landscape phones, 576px and up)
@media (min-width: 576px) and (max-width: 767.98px) { ... }

// Medium devices (tablets, 768px and up)
@media (min-width: 768px) and (max-width: 991.98px) { ... }

// Large devices (desktops, 992px and up)
@media (min-width: 992px) and (max-width: 1199.98px) { ... }

// Extra large devices (large desktops, 1200px and up)
@media (min-width: 1200px) { ... }
```
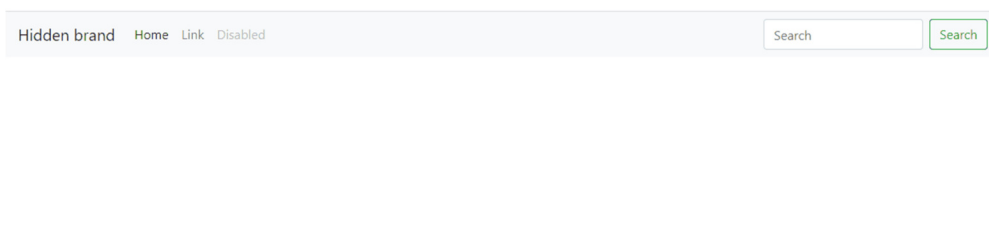

Using the Built-in Java script

- Bootstrap provide many built in Java script
  - Help developer to use the interactive interface easily
- The first case study is on nav-bar
  - https://getbootstrap.com/docs/4.3/components/navbar/

Hidden brand Home Link Disabled   Search   Search

Checking the code

```
<nav class="navbar navbar-expand-lg navbar-light bg-light">
  <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarTogglerDemo01"
  aria-controls="navbarTogglerDemo01" aria-expanded="false" aria-label="Toggle navigation">
    <span class="navbar-toggler-icon"></span>
  </button>
  <div class="collapse navbar-collapse" id="navbarTogglerDemo01">
    <a class="navbar-brand" href="#">Hidden brand</a>
    <ul class="navbar-nav mr-auto mt-2 mt-lg-0">
```

When it will collapse?

The JavaScript is provided

- Where?

In the template

```
<!-- Optional JavaScript -->
<!-- jQuery first, then Popper.js, then Bootstrap JS -->
<script
  src="https://code.jquery.com/jquery-3.4.1.slim.min.js"
  integrity="sha384-J6qa4849blE2+poT4WnyKhv5vZF5SrPo0iEjwBvKU7imGFAV0wwj1yYfoRSJoZ+n"
  crossorigin="anonymous"
></script>
<script
  src="https://cdn.jsdelivr.net/npm/popper.js@1.16.0/dist/umd/popper.min.js"
  integrity="sha384-Q6E9RHvbIyZFJoft+2mJbHaEWldlvI9IOYy5n3zV9zzTtmI3UksdQRVvoxMfooAo"
  crossorigin="anonymous"
></script>
<script
  src="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.min.js"
  integrity="sha384-wfSDF2E50Y2D1uUdj0O3uMBJnjuUD4Ih7YwaYd1iqfktj0Uod8GCExl3Og8ifwB6"
  crossorigin="anonymous"
></script>
</body>
```

- Why the script download is show at the end of the body?

QA