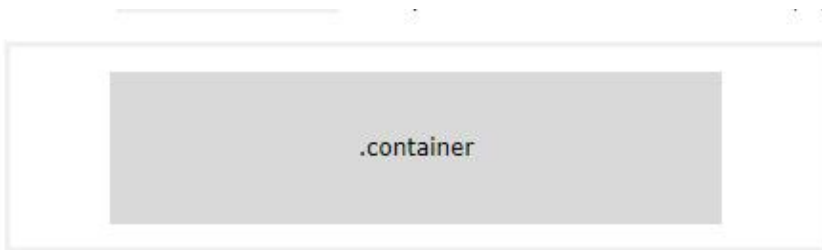**Lecture No: 10**
Topic: Bootstrap LAYOUT

Containers are used to pad the content inside of them, and there are two container classes available:
1. The .container class provides a responsive **fixed width container**
2. The .container-fluid class provides a **full width container**, spanning the entire width of the viewport
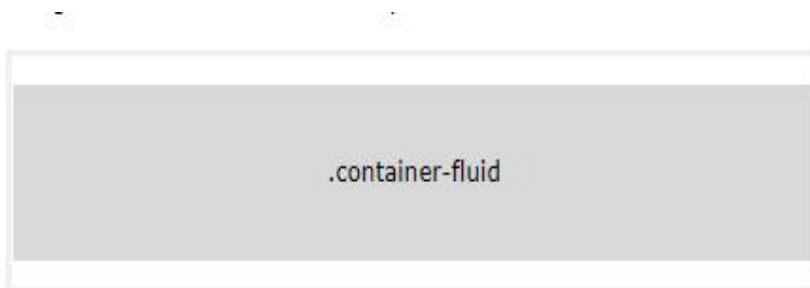

- **Fixed Container**
  - Use the .container class to create a responsive, fixed-width container.
  - Note that its width (max-width) will change on different screen sizes:

Code Snippet
```
<div class="container">
    <h1>My First Bootstrap Page</h1>
    <p>This part is inside a .container class.</p>
    <p>The .container class provides a responsive     fixed width container.</p>
    <p>Resize the browser window to see that its     width (max-width) will change at different breakpoints.</p>
</div>
```

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px
max-width	100%	540px	720px	960px	1140px

- **Fluid Container**
  - Use the .container-fluid class to create a full width container, that will always span the entire width of the screen (width is always 100%):

Code Snippet
```
<div class="container-fluid">
    <h1>My First Bootstrap Page</h1>
    <p>This part is inside a .container-    fluid class.</p>
    <p>The .container-fluid class provides a full width container, spanning the entire width of the viewport.</p>
</div>
```

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px
.container	100%	540px	720px	960px	1140px
.container-sm	100%	540px	720px	960px	1140px
.container-md	100%	100%	720px	960px	1140px
.container-lg	100%	100%	100%	960px	1140px
.container-xl	100%	100%	100%	100%	1140px
.container-fluid	100%	100%	100%	100%	100%

Container Padding

By default, containers have 15px left and right padding, with no top or bottom padding. Therefore, we often use **spacing utilities**, such as extra padding and margins to make them look even better. For example, .pt-3 means "add a top padding of 16px":
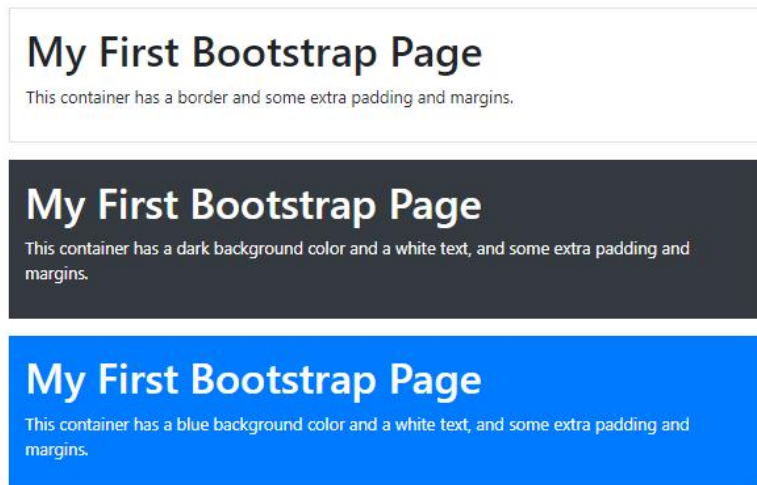
CODE SNIPPET:

<div class="container pt-3">

Container Border and Color

CODE SNIPPET:

```
<div class="container p-3 my-3 border">
    <h1>My First Bootstrap Page</h1>
    <p>This container has a border and some extra padding and        margins.</p>
</div>
<div class="container p-3 my-3 bg-dark text-white">
    <h1>My First Bootstrap Page</h1>
    <p>This container has a dark background color and a white text, and some extra padding and
margins.</p>
</div>
<div class="container p-3 my-3 bg-primary text-white">
    <h1>My First Bootstrap Page</h1>
    <p>This container has a blue background color and a white text, and some extra padding and
margins.</p>
</div>
```

Grid System
- Bootstrap's grid system is built with flexbox and allows up to 12 columns across the page.
- If you do not want to use all 12 columns individually, you can group the columns together to create wider columns.

12 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

Grid Classes
The Bootstrap grid system has five classes:
- .col- (extra small devices - screen width less than 576px)
- .col-sm- (small devices - screen width equal to or greater than 576px)
- .col-md- (medium devices - screen width equal to or greater than 768px)
- .col-lg- (large devices - screen width equal to or greater than 992px)
- .col-xl- (xlarge devices - screen width equal to or greater than 1200px)

Basic Structure of a Bootstrap Grid

```
<!-- Control the column width, and how they should appear on different devices -->
<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>

<!-- Or let Bootstrap automatically handle the layout -->
<div class="row">
  <div class="col"></div>
  <div class="col"></div>
```

```
  <div class="col"></div>
</div>
```

Three Equal Columns

The following example shows how to create three equal-width columns, on all devices and screen widths:

- ```
  <div class="row">
    <div class="col">.col</div>
    <div class="col">.col</div>
    <div class="col">.col</div>
  </div>
  ```

Responsive Columns

.col-sm-3	.col-sm-3	.col-sm-3	.col-sm-3

- The following example shows how to create four equal-width columns starting at tablets and scaling to extra-large desktops. **On mobile phones or screens that are less than 576px wide, the columns will automatically stack on top of each other**:
- ```
  <div class="row">
    <div class="col-sm-3">.col-sm-3</div>
    <div class="col-sm-3">.col-sm-3</div>
    <div class="col-sm-3">.col-sm-3</div>
    <div class="col-sm-3">.col-sm-3</div>
  </div>
  ```

Two Unequal Responsive Columns

.col-sm-4	.col-sm-8

The following example shows how to get two various-width columns starting at tablets and scaling to large extra desktops:

- ```
  <div class="row">
    <div class="col-sm-4">.col-sm-4</div>
    <div class="col-sm-8">.col-sm-8</div>
  </div>
  ```

Bootstrap Colors
Text Colors

- Bootstrap has some contextual classes that can be used to provide "meaning through colors".
- The classes for text colors are: .text-muted, .text-primary, .text-success, .text-info, .text-warning, .text-danger, .text-secondary, .text-white, .text-dark, .text-body (default body color/often black) and .text-light:

- Contextual text classes can also be used on links, which will add a darker hover color:

Contextual Link Colors

Hover over the links.

Muted link. Primary link. Success link. Info link. Warning link. Danger link. Secondary link. Dark grey link. Body/black link.

- You can also add 50% opacity for black or white text with the .text-black-50 or .text-white-50 classes:

Opacity Text Colors

Add 50% opacity for black or white text with the .text-black-50 or .text-white-50 classes:

Black text with 50% opacity on white background

White text with 50% opacity on black background

Background Colors
- The classes for background colors are: .bg-primary, .bg-success, .bg-info, .bg-warning, .bg-danger, .bg-secondary, .bg-dark and .bg-light.
- Note that background colors do not set the text color, so in some cases you'll want to use them together with a .text-* class.

Tables
- A basic Bootstrap table has a light padding and horizontal dividers.
- The. table class adds basic styling to a table:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Striped Rows**
- The .table-striped class adds zebra-stripes to a table:

Striped Rows

The .table-striped class adds zebra-stripes to a table:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Bordered Table**
- The .table-bordered class adds borders on all sides of the table and cells:

Bordered Table

The .table-bordered class adds borders on all sides of the table and the cells:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Hover Rows**
- The .table-hover class adds a hover effect (grey background color) on table rows:

Hover Rows

The .table-hover class enables a hover state (grey background on mouse over) on table rows:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Black/Dark Table**
- The .table-dark class adds a black background to the table:

Black/Dark Table

The .table-dark class adds a black background to the table:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Dark Striped Table**
- Combine. table-dark and. table-striped to create a dark, striped table:

Dark Striped Table

Combine .table-dark and .table-striped to create a dark, striped table:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Hoverable Dark Table**
- The. table-hover class adds a hover effect (grey background color) on table rows:

Hoverable Dark Table

The .table-hover class adds a hover effect (grey background color) on table rows:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Borderless Table**
- The. table-borderless class removes borders from the table:

Borderless Table

The .table-borderless class removes borders from the table:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- **Small table**
- The. table-sm class makes the table smaller by cutting cell padding in half:

Small Table

The .table-sm class makes the table smaller by cutting cell padding in half:

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

Contextual Classes

- Contextual classes can be used to color the whole table (<table>), the table rows (<tr>) or table cells (<td>).

Firstname	Lastname	Email
Default	Defaultson	def@somemail.com
Primary	Joe	joe@example.com
Success	Doe	john@example.com
Danger	Moe	mary@example.com
Info	Dooley	july@example.com
Warning	Refs	bo@example.com
Active	Activeson	act@example.com
Secondary	Secondson	sec@example.com
Light	Angie	angie@example.com
Dark	Bo	bo@example.com

The contextual classes that can be used are:

Class	Description
.table-primary	Blue: Indicates an important action
.table-success	Green: Indicates a successful or positive action
.table-danger	Red: Indicates a dangerous or potentially negative action
.table-info	Light blue: Indicates a neutral informative change or action
.table-warning	Orange: Indicates a warning that might need attention
.table-active	Grey: Applies the hover color to the table row or table cell
.table-secondary	Grey: Indicates a slightly less important action
.table-light	Light grey table or table row background
.table-dark	Dark grey table or table row background

Table Head Colors
- The. thead-dark class adds a black background to table headers, and the. thread-light class adds a grey background to table headers:

Responsive Tables
- The. table-responsive class creates a responsive table: an horizontal scrollbar is added to the table on screens that are less than 992px wide (if needed). When viewing on anything larger than 992px wide, there is no difference.
- You can also decide when the table should get a scrollbar, depending on screen width:

Class	Screen width
.table-responsive-sm	< 576px
.table-responsive-md	< 768px
.table-responsive-lg	< 992px
.table-responsive-xl	< 1200px

Bootstrap Images
- Image Shapes

Rounded Corners: Circle: Thumbnail:

Rounded Corners
- The. rounded class adds rounded corners to an image:
  <img src= "panda.png" class="rounded" alt= "Pan-pan">
- The. rounded-circle class shapes the image to a circle:
  <img src= "polar.png" class="rounded-circle" alt= "Ice">
- The .img-thumbnail class shapes the image to a thumbnail (bordered):
  <img src= "grizzly.png" class="img-thumbnail" alt= "Grizzly">

Aligning Images
- Float an image to the right with the. float-right class or to the left with. float-left:
- <img src="polar.png" class="float-left">
  <img src="grizzly.png" class="float-right">
Centered Image

10

- Center an image by adding the utility classes .mx-auto (margin:auto) and .d-block (display:block) to the image:
- `<img src= "polar.png" class="mx-auto d-block">`

Responsive Images
- Images come in all sizes. So do screens. Responsive images automatically adjust to fit the size of the screen.
- Create responsive images by adding an .img-fluid class to the <img> tag. The image will then scale nicely to the parent element.
- The .img-fluid class applies max-width: 100%; and height: auto; to the image:

`<img class="img-fluid" src= "panda.png" alt= "Pan-pan">`

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