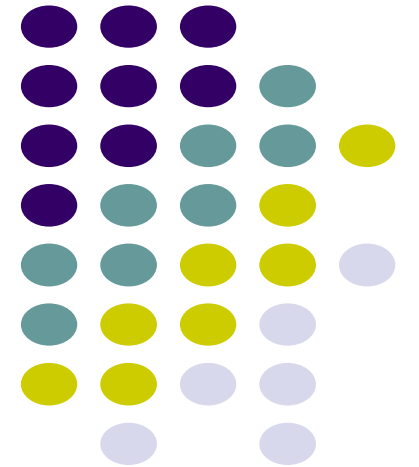


# Bootstrap

Web User Interface(UI) Design Framework

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# What is Bootstrap?

- Bootstrap is a free **front-end framework** for faster and easier web UI design and development
- Bootstrap includes **HTML** and **CSS** based design templates for container, forms, buttons, tables, navigation, modals, image and many other, as well as optional JavaScript plugins
- Bootstrap also gives you the ability to easily create responsive designs.



# What is Responsive Web Design?

- Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.



# Setting the Viewport

- To create a responsive website, add the following <meta> tag to all your web pages:

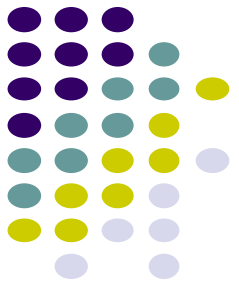
```
<meta name="viewport" content="width=device-width,  
initial-scale=1">
```

- The **width=device-width** part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).
- The **initial-scale=1** part sets the initial zoom level when the page is first loaded by the browser.



# Advantages of Bootstrap:

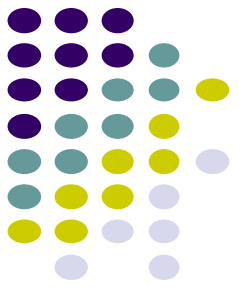
- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** In Bootstrap, mobile-first styles are part of the core framework



# Where to Get Bootstrap?

- There are two ways to start using Bootstrap on your own web site
  - Include Bootstrap from a CDN
  - Download Bootstrap from [getbootstrap.com](https://getbootstrap.com)

# Bootstrap CDN



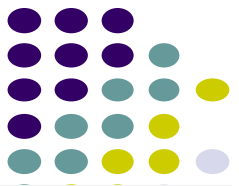
```
<!-- Latest compiled and minified CSS -->
```

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">
```

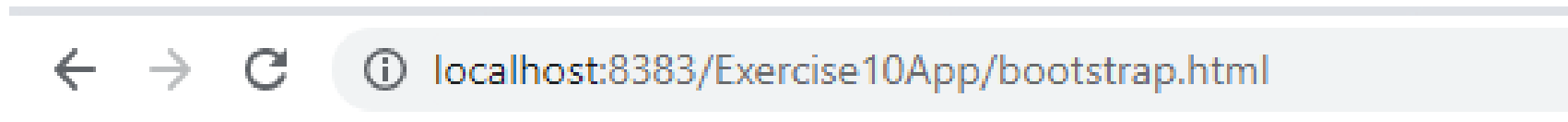
```
<!-- Latest compiled JavaScript -->
```

```
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js">  
</script>
```

# Create First Web Page With Bootstrap



```
bootstrap.html x
Source History
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>TODO supply a title</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7     <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">
8     <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"></script>
9   </head>
10  <body>
11    <div>Welcome</div>
12  </body>
13 </html>
```



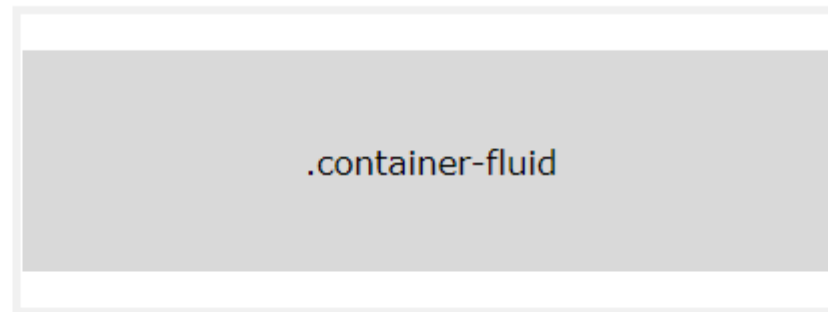
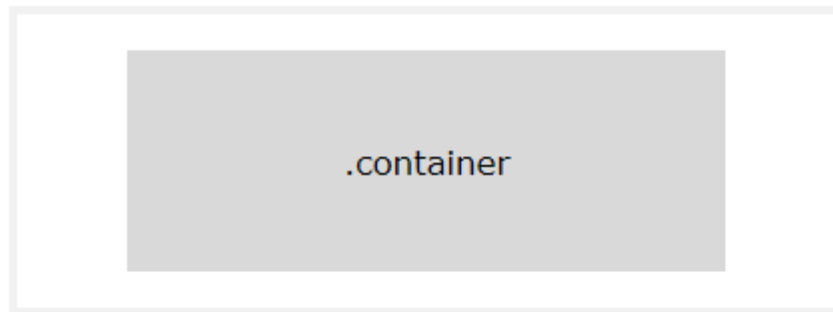
Welcome



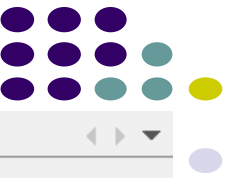
# Containers



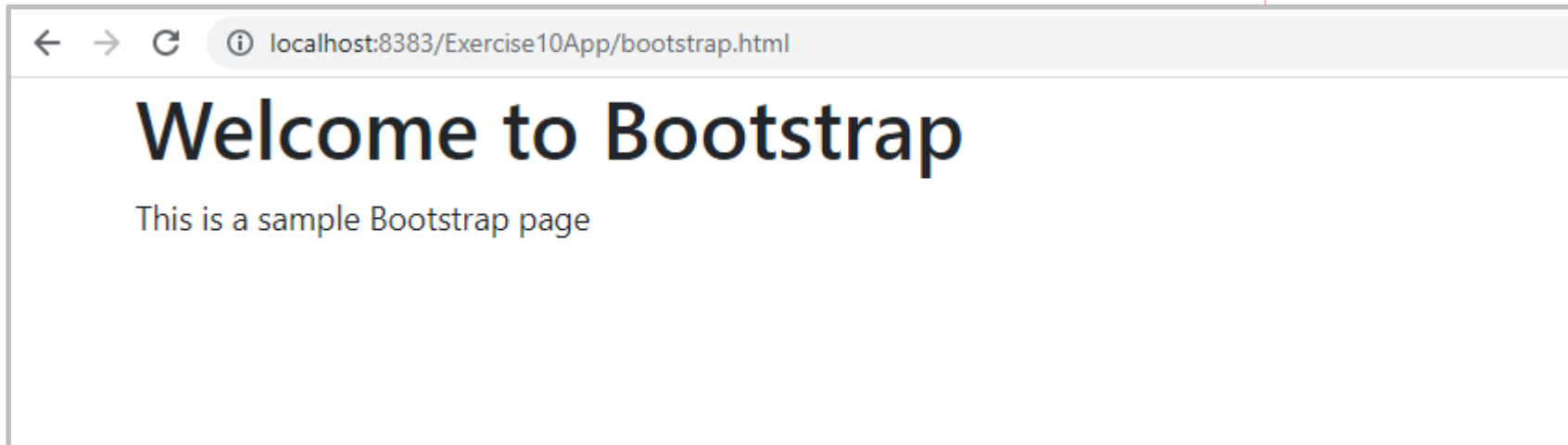
- Containers are used to pad the content inside of them, and there are two container classes available:
  - The **container** class provides a responsive fixed width container
  - The **container-fluid** class provides a full width container, spanning the entire width of the viewport



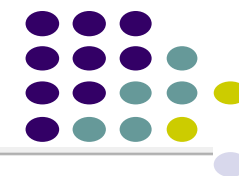
# container



```
bootstrap.html x
Source History
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>TODO supply a title</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7     <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">
8     <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"></script>
9   </head>
10  <body>
11    <div class="container">
12      <h1>Welcome to Bootstrap</h1>
13      <p>This is a sample Bootstrap page</p>
14    </div>
15  </body>
16 </html>
17
```



# container-fluid



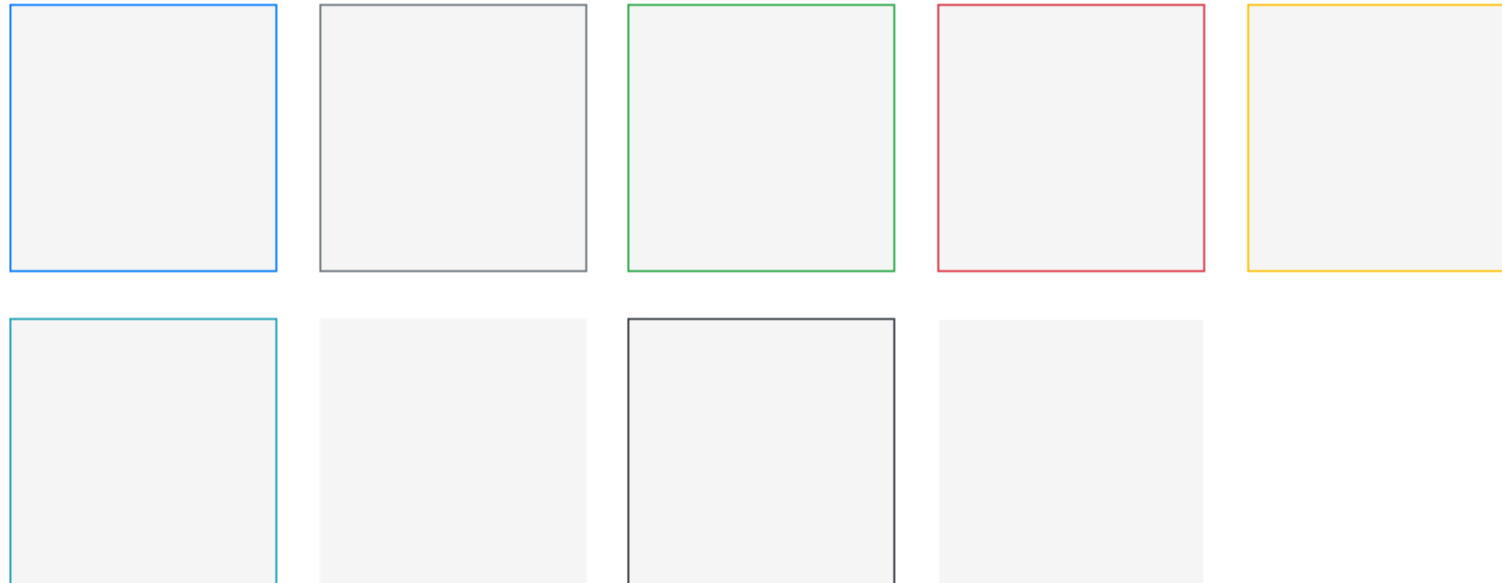
```
<!DOCTYPE html>
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"></script>
  </head>
  <body>
    <div class="container-fluid">
      <h1>Welcome to Bootstrap</h1>
      <p>This is a sample Bootstrap page</p>
    </div>
  </body>
</html>
```

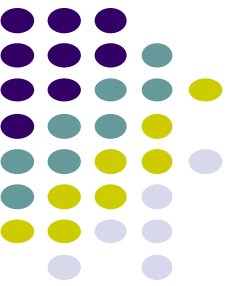


# Border & Border Color



```
<span class="border border-primary"></span>  
<span class="border border-secondary"></span>  
<span class="border border-success"></span>  
<span class="border border-danger"></span>  
<span class="border border-warning"></span>  
<span class="border border-info"></span>  
<span class="border border-light"></span>  
<span class="border border-dark"></span>  
<span class="border border-white"></span>
```





# Rounded Border

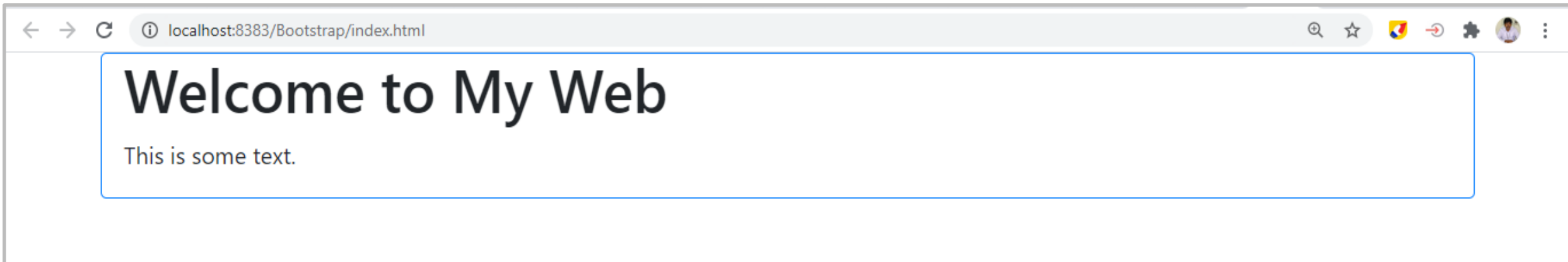
```
<div class="border border-primary rounded">  
  welcome to Bootstrap  
</div>
```

welcome to Bootstrap

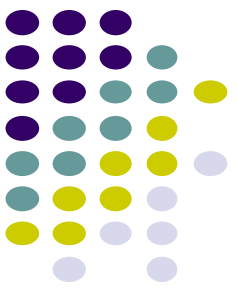
# container with border



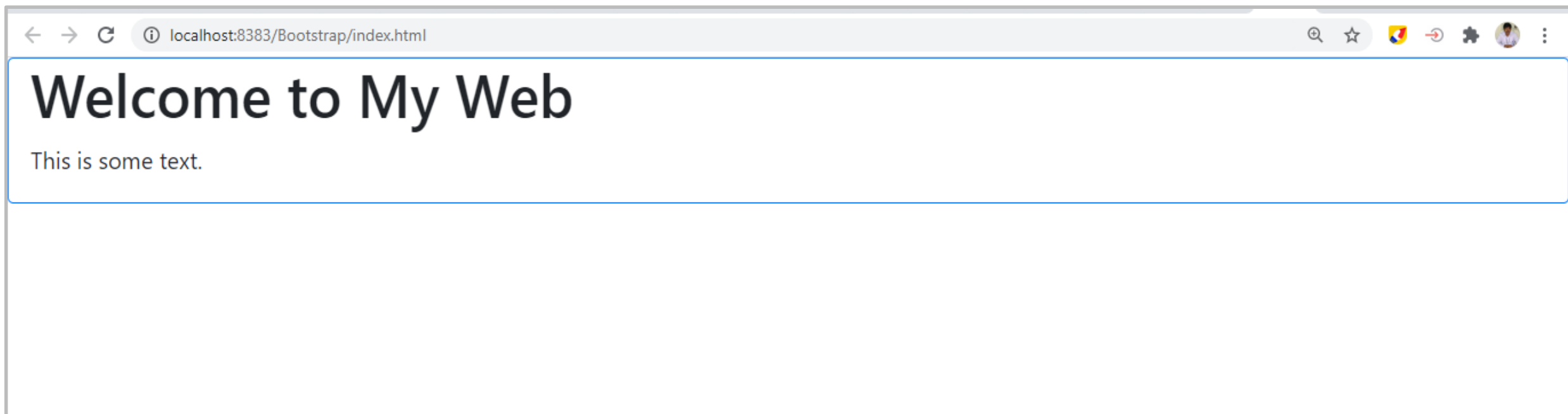
```
<body>
  <div class="container border border-primary rounded">
    <h1>Welcome to My Web</h1>
    <p>This is some text.</p>
  </div>
</body>
```



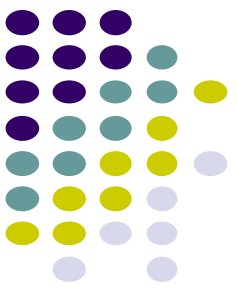
# container-fluid with border



```
<body>
  <div class="container-fluid border border-primary rounded">
    <h1>Welcome to My Web</h1>
    <p>This is some text.</p>
  </div>
</body>
```



# Text 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`:

This text is muted.

This text is important.

This text indicates success.

This text represents some information.

This text represents a warning.

This text represents danger.

Secondary text.

Dark grey text.

Body text.



# 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`.

`.bg-primary`

`.bg-secondary`

`.bg-success`

`.bg-danger`

`.bg-warning`

`.bg-info`

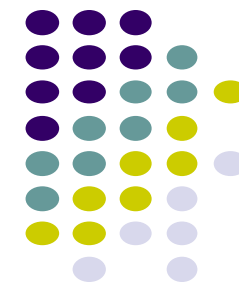
`.bg-light`

`.bg-dark`

`.bg-white`

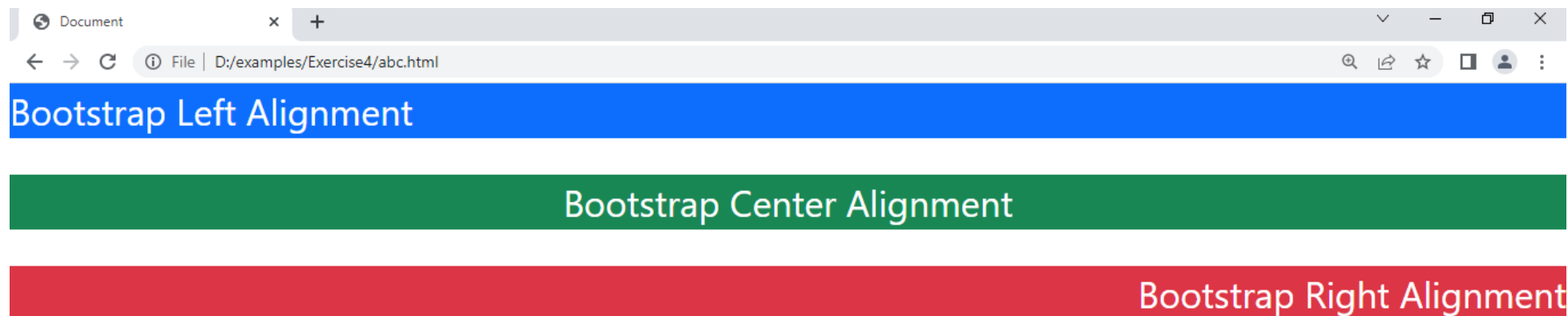
`.bg-transparent`

# Text Align

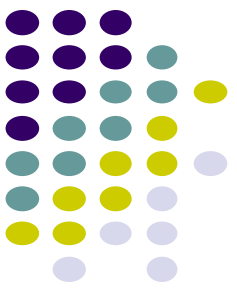


- `text-center`, `text-start`, `text-end`, `text-justify` classes used to align the text in center, left, and right respectively.

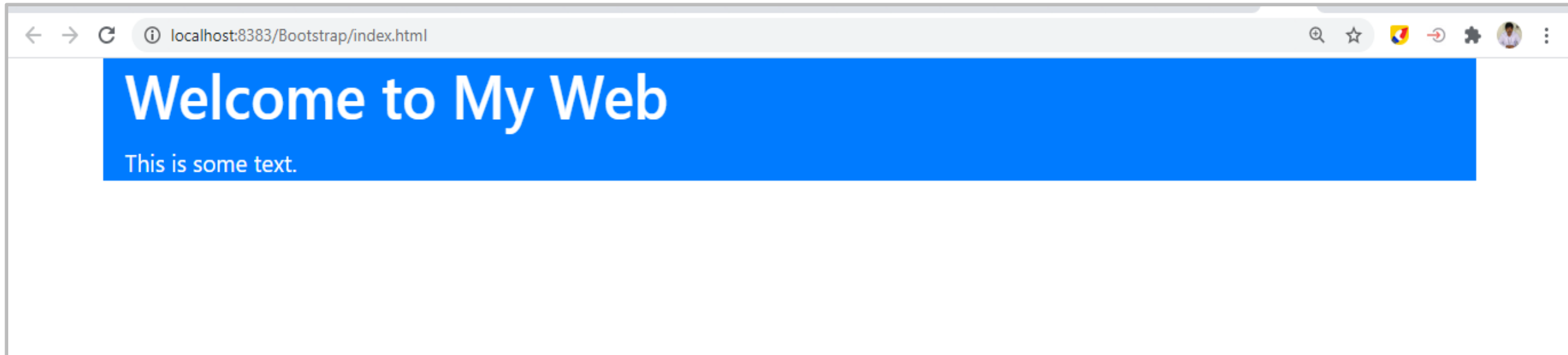
```
<p class="bg-primary text-white text-start">Bootstrap Left Alignment</p>  
<p class="bg-success text-white text-center">Bootstrap Center Alignment</p>  
<p class="bg-danger text-white text-end">Bootstrap Right Alignment</p>
```

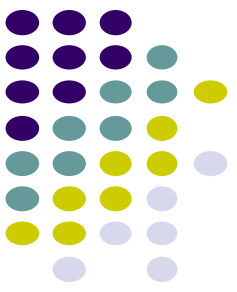


# container with background color and text color



```
<body>
  <div class="container bg-primary text-white">
    <h1>Welcome to My Web</h1>
    <p>This is some text.</p>
  </div>
</body>
```





# Bootstrap Spacing – Padding and Margin

- The classes are named using the format

**{property}{sides}-{size}**

Where **property** is one of:

**m** - for classes that set **margin**

**p** - for classes that set **padding**

Where **sides** is one of:

**t** - for classes that set **margin-top** or **padding-top**

**b** - for classes that set **margin-bottom** or **padding-bottom**

**s** - for classes that set **margin-left** or **padding-left**

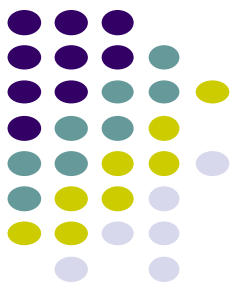
**e** - for classes that set **margin-right** or **padding-right**

**x** - for classes that set both **\*-left** and **\*-right**

**y** - for classes that set both **\*-top** and **\*-bottom**

**blank** - for classes that set a **margin or padding** on **all 4 sides** of the element

# Bootstrap Spacing – Padding and Margin



- The classes are named using the format

**{property}{sides}-{size}**

Where *size* is one of:

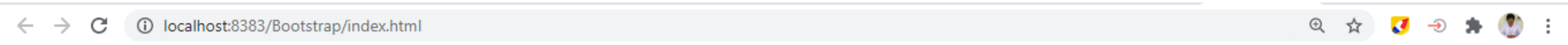
- **0** - sets **margin** or **padding** to **0**
- **1** - sets **margin** or **padding** to **.25rem** (4px if font-size is 16px)
- **2** - sets **margin** or **padding** to **.5rem** (8px if font-size is 16px)
- **3** - sets **margin** or **padding** to **1rem** (16px if font-size is 16px)
- **4** - sets **margin** or **padding** to **1.5rem** (24px if font-size is 16px)
- **5** - sets **margin** or **padding** to **3rem** (48px if font-size is 16px)
- **auto** - sets **margin** to auto

# Apply Spacing in Container



```
<body>
  <div class="container bg-primary text-white p-5 my-4">
    <h1>Welcome to My Web</h1>
    <p>This is some text.</p>
  </div>
</body>
```

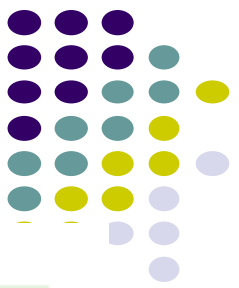
Padding – 48 px applied to all sides  
Margin – 24px is applied to top and bottom



# Welcome to My Web

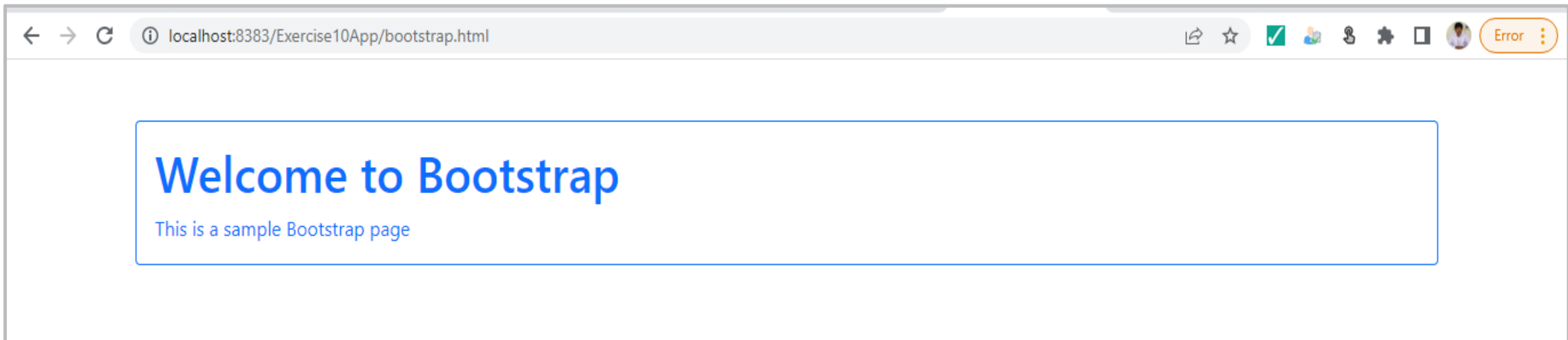
This is some text.

# Padding and Margin



```
<body>
  <div class="container text-primary border border-primary rounded ps-3 pt-3 mt-5">
    <h1>Welcome to Bootstrap</h1>
    <p>This is a sample Bootstrap page</p>
  </div>
</body>
```

ps-3 => padding 16px applied to left side  
pt-3 => padding 16 px is applied to top side  
mt-5 => Margin 16px is applied to top side



- |         |        |        |        |        |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 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 |        |        |        |        |        |        |        |        |        |        |        |



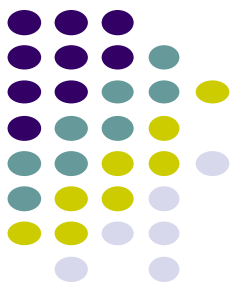


# Grid Classes

- Grid system contains a row class
  - row
- Grid system contains a column classes
  - col

# Grid System Example

## - Three equal width columns



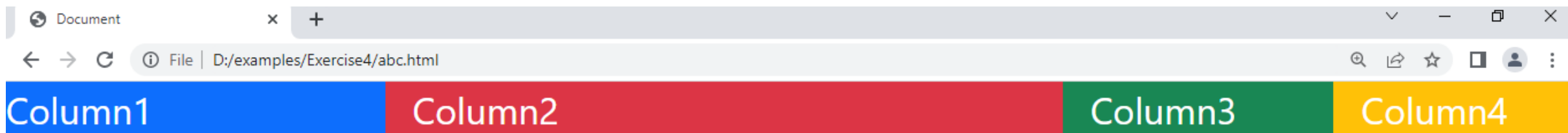
```
<body>
  <div class="row">
    <div class="col bg-primary text-white">Column 1</div>
    <div class="col bg-danger text-white">Column 2</div>
    <div class="col bg-dark text-white">Column 3</div>
  </div>
</body>
```



# Unequal Responsive Columns



```
<div class="row">  
  <div class="col-3 bg-primary text-white">Column1</div>  
  <div class="col-5 bg-danger text-white">Column2</div>  
  <div class="col-2 bg-success text-white">Column3</div>  
  <div class="col-2 bg-warning text-white">Column4</div>  
</div>
```



# Sizing



- Easily make an element as wide or as tall with width and height utilities.
- Includes support for **25%**, **50%**, **75%**, **100%**, and **auto** by default.

`class="w-25"`

Width 25%

`class="w-50"`

Width 50%

`class="w-75"`

Width 75%

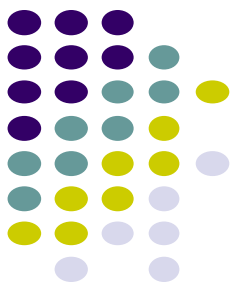
`class="w-100"`

Width 100%

Width auto

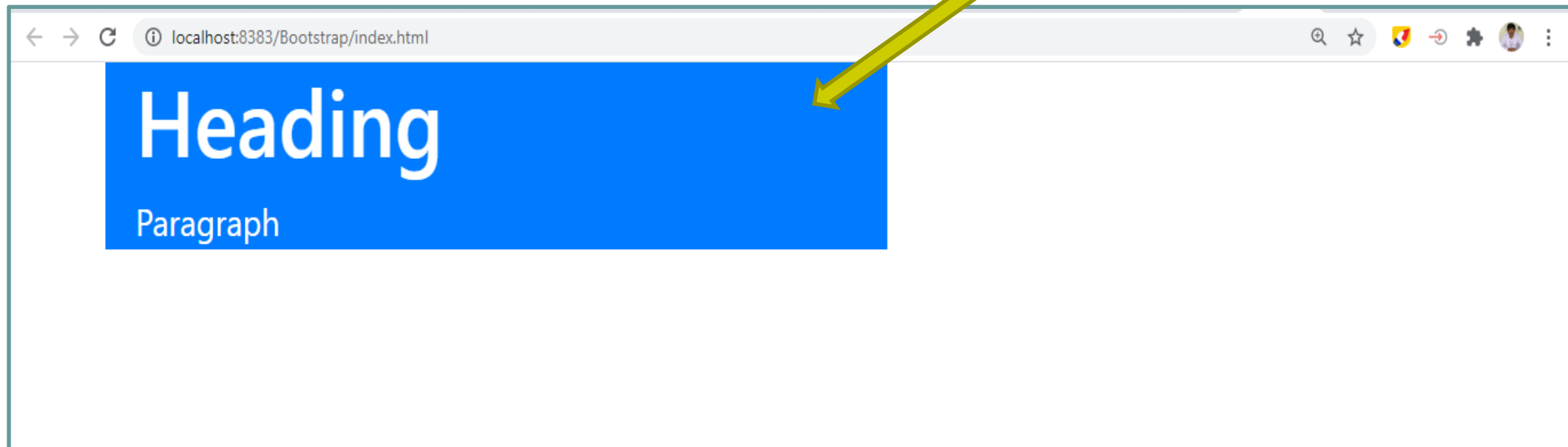
# Sizing

## - Changing width



```
<div class="container bg-primary text-white w-50">  
  <h1>Heading</h1>  
  <p>Paragraph</p>  
</div>
```

width is set as 50%

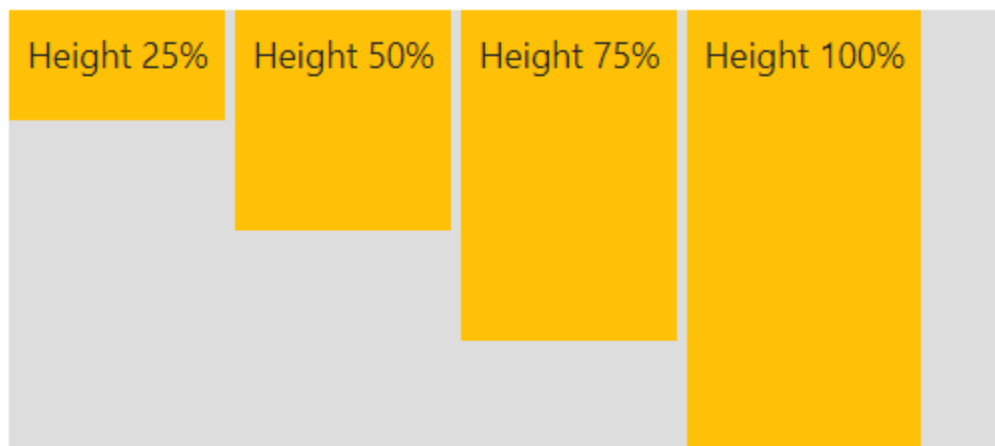


# height

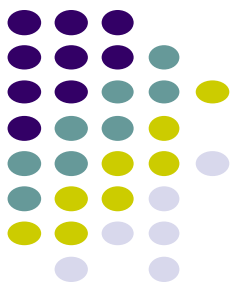


- Set the height of an element with the h-\* classes
- .h-25, .h-50, .h-75, .h-100

```
<div style="height:200px;background-color:#ddd">  
  <div class="h-25 bg-warning">Height 25%</div>  
  <div class="h-50 bg-warning">Height 50%</div>  
  <div class="h-75 bg-warning">Height 75%</div>  
  <div class="h-100 bg-warning">Height 100%</div>  
</div>
```



# Responsive images



- The `.rounded` class adds rounded corners to an image
- The `.rounded-circle` class shapes the image to a circle
- The `.img-thumbnail` class shapes the image to a thumbnail (bordered)

Rounded Corners:



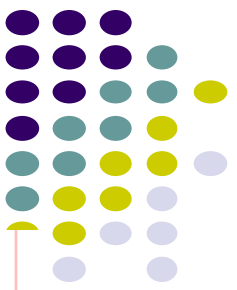
Circle:



Thumbnail:



# Responsive Images



```
<body>
```

```

```

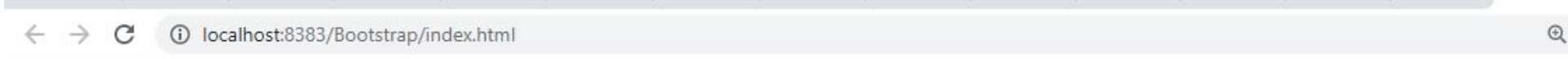
```

```

```

```

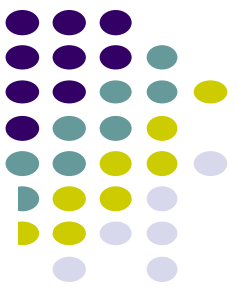
```
</body>
```





# Bootstrap Buttons

## Button Styles



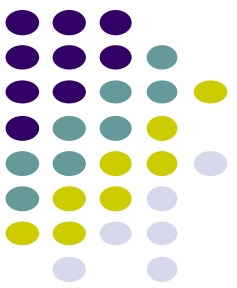
Bootstrap 4 provides different styles of buttons:

Basic   **Primary**   Secondary   Success   Info   Warning   Danger   Dark   Light   [Link](#)

### Example

```
<button type="button" class="btn">Basic</button>
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-secondary">Secondary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-dark">Dark</button>
<button type="button" class="btn btn-light">Light</button>
<button type="button" class="btn btn-link">Link</button>
```

# Bootstrap Buttons



## Button Outline

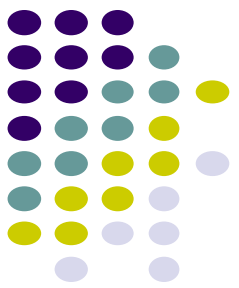
Bootstrap 4 provides eight outline/bordered buttons:



## Example

```
<button type="button" class="btn btn-outline-primary">Primary</button>
<button type="button" class="btn btn-outline-secondary">Secondary</button>
<button type="button" class="btn btn-outline-success">Success</button>
<button type="button" class="btn btn-outline-info">Info</button>
<button type="button" class="btn btn-outline-warning">Warning</button>
<button type="button" class="btn btn-outline-danger">Danger</button>
<button type="button" class="btn btn-outline-dark">Dark</button>
<button type="button" class="btn btn-outline-light text-dark">Light</button>
```

# Bootstrap Buttons



## Button Sizes

Use the `.btn-lg` class for large buttons or `.btn-sm` class for small buttons:

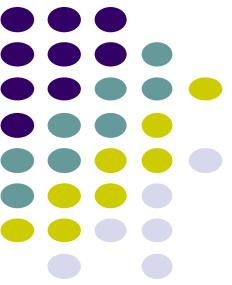
Large

Default

Small

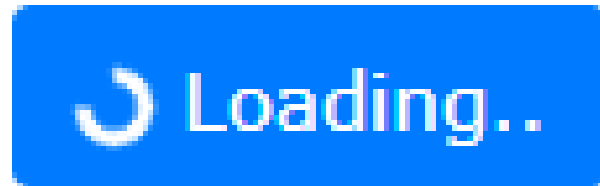
### Example

```
<button type="button" class="btn btn-primary btn-lg">Large</button>  
<button type="button" class="btn btn-primary">Default</button>  
<button type="button" class="btn btn-primary btn-sm">Small</button>
```



# Spinner Buttons

```
<button class="btn btn-primary">  
  <span class="spinner-border spinner-border-sm"></span>  
  Loading..  
</button>
```

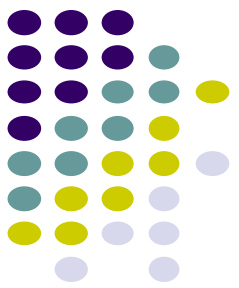




# Bootstrap Forms

- Form controls automatically receive some global styling with Bootstrap:
  - Apply `.form-group` class for form tag
  - All textual `<input>`, `<textarea>`, and `<select>` elements with class `.form-control` have a width of 100%.
  - For radio button and check boxes, use the class `.form-check-input`

# Bootstrap Form



Email

Password

Radios

☒ First radio

☐ Second radio

☐ Third disabled radio

Checkbox

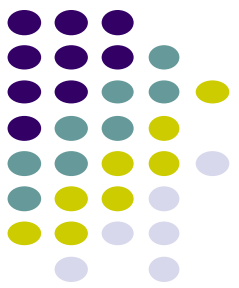
☒ Example checkbox

Sign in

Activat

Go to Set

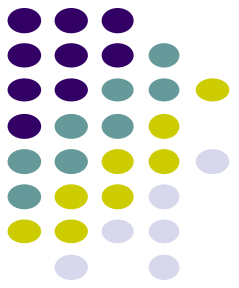
# Bootstrap Form Design



```
<form class="form-group w-50 p-4 bg-light mt-5">
  <h1 class="text-primary text-center">Register Here!</h1>
  <label class="text-primary mb-1">Name:</label>
  <input type="text" class="form-control">
  <label class="text-primary mb-1">Email:</label>
  <input type="email" class="form-control">
  <label class="text-primary mb-1">Phone:</label>
  <input type="text" class="form-control">
  <br>
  <label class="text-primary mb-2">Gender:</label>
  <input type="radio" class="form-check-input mx-2" name="gender">Male
  <input type="radio" class="form-check-input mx-2" name="gender">Female

  <br><br>
  <input type="checkbox" class="form-check-input mx-2">Remember me!
  <div class="mt-3">
    <button type="submit" class="btn btn-primary">Register</button>
    <button type="reset" class="btn btn-warning">Clear</button>
  </div>
</form>
```

# Form – Output



## Register Here!

Name:

Email:

Phone:

Gender: ☐ Male ☐ Female

☐ Remember me!

Register

Clear





# Bootstrap tables

- A basic Bootstrap table has a light padding and only horizontal dividers.
- The `.table` class adds basic styling to a table
- The `.table-striped` class adds zebra-stripes to a table
- The `.table-bordered` class adds borders on all sides of the table and cells
- The `.table-hover` class adds a hover effect (grey background color) on table rows
- The `.table-dark` class adds a black background to the table
- The `.table-borderless` class removes borders from the table



# Bootstrap 4 Basic Table

- A basic Bootstrap 4 table has a light padding and horizontal dividers.
- The **.table** class adds basic styling to a table:

Example

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:

## Example

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:

## Example

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:

## Example

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:

## Example

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



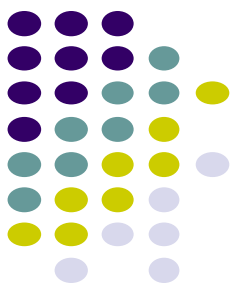
# Hoverable Table

- 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

# Example Program

```
<table class='table w-75 mx-auto mt-5 table-bordered table-hover text-center'>
  <thead>
    <tr class="bg-primary text-white">
      <th>Firstname</th>
      <th>Lastname</th>
      <th>Email</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td>John</td>
      <td>Doe</td>
      <td>john@example.com</td>
    </tr>
    <tr>
      <td>Mary</td>
      <td>Moe</td>
      <td>mary@example.com</td>
    </tr>
  </tbody>
</table>
```





# Example Program



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