



Bootstrap 4.

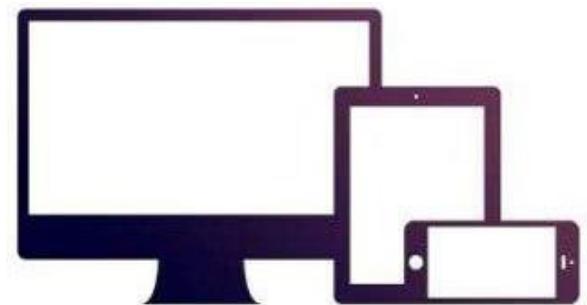
National Telecommunication Institute - NTI



What is Bootstrap

Bootstrap

- *Is the most popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website.*
- *Is absolutely free to download and use.*
- *Is a front-end framework used for easier web development.*
- *Includes HTML and CSS based design templates for all HTML components.*
- *Can also use JavaScript plug-ins.*



Main advantage of Bootstrap

- *It is very easy to use. Anybody having basic knowledge of HTML and CSS can use Bootstrap.*
- *It facilitates users to develop a responsive website.*
- *It is compatible on most of browsers like Chrome, Firefox, Internet Explorer, Safari and Opera.*



Bootstrap - Setup

Download Bootstrap

- The latest version of Bootstrap can be download from
<http://getbootstrap.com/>



Installation Steps:

1. *Create the Root folder for your website.*
2. *Create the “css”, “js”, “images” and “fonts” folders inside your website root folder.*
3. *Download the ready-to-use compiled version for Bootstrap.*
4. *Unzip the Bootstrap folder.*
5. *Open the “Bootstrap/CSS” folder and copy the “bootstrap.css”, “bootstrap.min.css” files to your Website “CSS” folder.*

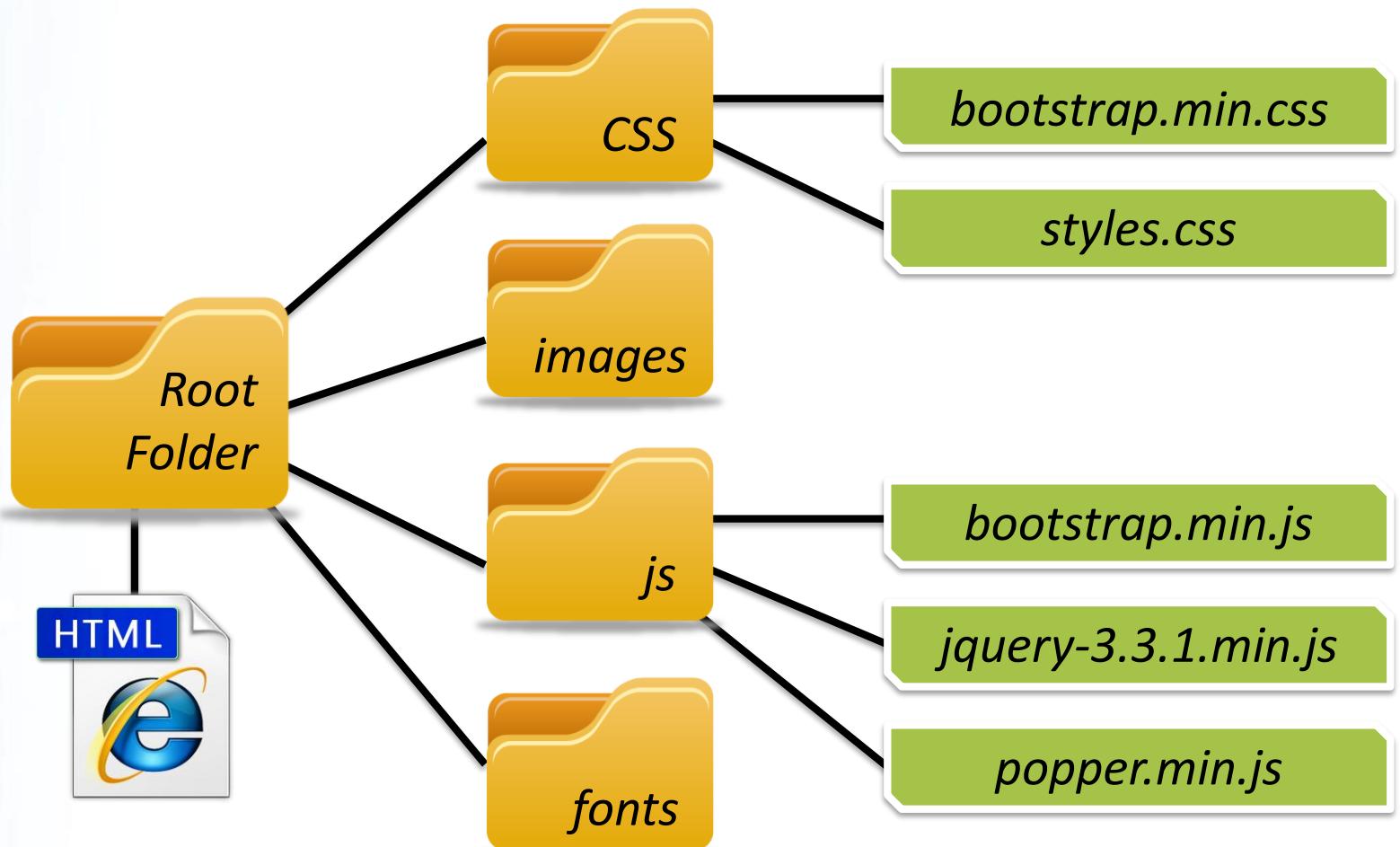
Installation Steps:

6. *Create a new .css file for your customized CSS rules inside the “CSS” folder. “Ex: ➔ styles.css”*
7. *Open the “Bootstrap/JS” folder and copy the “bootstrap.js”, “bootstrap.min.js” files to your Website “js” folder.*
8. *Download the minified jQuery core file from the jQuery website: “<http://code.jquery.com/>” to your Website “js” folder.*

Installation Steps:

- 9. Download the minified “popper.min.js” file from the URL:
“<https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.0/umd/popper.min.js>” to your “js” folder.*
- 10. Create the index.html file in the root folder.*

Website Final Structure





Adding Bootstrap to page

1. Add the HTML5 doctype

Code

```
<!DOCTYPE html>  
<html>  
    <head>  
    </head>  
  
    <body>  
    </body>  
</html>
```

2. Add the meta tag character set.

Code

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
    </head>

    <body>
    </body>
</html>
```

3. Add the mobile responsive meta tag.

Code

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width,
      initial-scale=1">
  </head>
  <body>
  </body>
</html>
```

What is mobile responsive meta tag?

- ✓ *Viewport: is the user's visible area of a web page.*
- ✓ *width=device-width: used to set the width of the page to follow the screen-width of the device (vary according to the devices).*
- ✓ *initial-scale=1: used to set the initial zoom level when the page is first loaded by the browser.*

4. Link the CSS files to the page.

Code

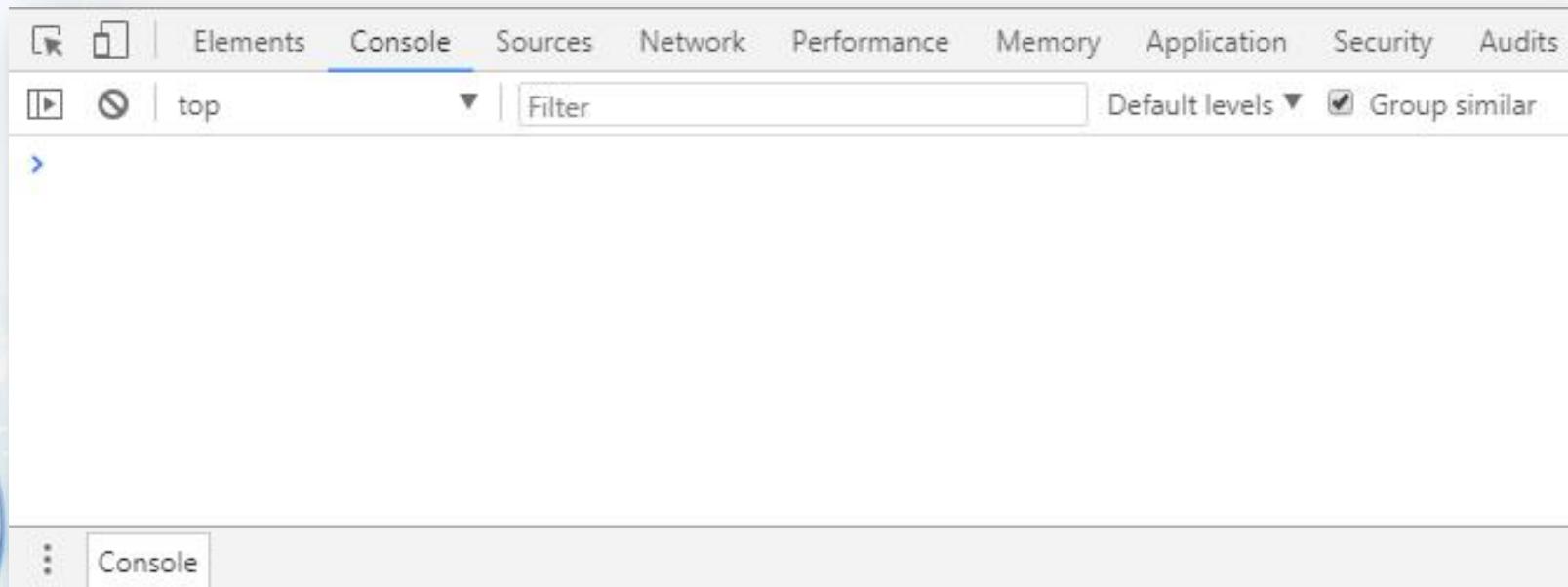
```
<!DOCTYPE html>
<html><head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width,
  initial-scale=1">
  <title>...</title>
  <link rel="stylesheet" href="css/bootstrap.min.css">
  <link rel="stylesheet" href="css/styles.css">
</head>
<body></body>
</html>
```

5. Link the js files to the end of the page.

Code

```
<body>  
.....  
.....  
.....  
</body>  
</html>
```

- 6. Run the file in the Google Chrome Browser.*
- 7. Open the console to check for any errors.*





Bootstrap - Grid System

What is a Grid?

- *Grids in web design organize and structure the content, makes the websites easy to scan.*

- *Bootstrap firstly starts by targeting smaller screens like mobile devices, tablets, and then “expands” components and grids for larger screens such as laptops, desktops.*

How Bootstrap Grid System works?

- *Bootstrap's grid systems are used to divide the page layout into a series of rows and columns.*
- *Bootstrap's grid system divides the page into 12 columns.*
- *Columns can be used individually or can be grouped together to create wider columns.*
- *Bootstrap's grid system is responsive, and the columns will rearrange automatically depending on the screen size.*

Bootstrap - Grid System

1	2	3	4	5	6	7	8	9	10	11	12				
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															

Using Bootstrap Grid System:

- *All the contents must be wrapped inside the “.container” class for proper alignment and padding.*
- *The “.row” class is used to create horizontal groups of columns.*
- *Columns classes must be created to be the immediate children of the row.*
- *Contents must be inserted into the columns classes.*

Bootstrap Container

- *In Bootstrap, container is used to create boxed content.*
- *It contains the rows that holds the columns.*
- *There are two container classes in Bootstrap:*
 - ✓ *container: used to set the content's margins dealing with the responsive behaviors of your layout.*
 - ✓ *container-fluid: used for a full width container. (100% wide all the time)*

Code

```
<!DOCTYPE html>
<html><head>.....</head>
<body>
    <div class="container">
        <div class="row">
            Columns goes here.....
        </div>
    </div>
    <script .....></script>
</body>
</html>
```

Grid Columns Classes

- *The Bootstrap has five main column classes:*
 - ✓ *.col-: (screen width < 576px) → Portrait phones.*
 - ✓ *.col-sm-: (screen width >= 576px) → Landscape Phones.*
 - ✓ *.col-md-: (screen width >= 768px) → Tablets.*
 - ✓ *.col-lg-: (screen width >= 992px) → Small Laps.*
 - ✓ *.col-xl-: (screen width >= 1200px) → Laps and desktops.*
- *Combining these classes creates more dynamic and flexible layouts.*

Bootstrap - Grid System

	<i>Extra small <576px</i>	<i>Small ≥576px</i>	<i>Medium ≥768px</i>	<i>Large ≥992px</i>	<i>Extra large ≥1200px</i>
<i>Container Max Width</i>	<i>auto</i>	<i>540px</i>	<i>720px</i>	<i>960px</i>	<i>1140px</i>
<i>Class Prefix</i>	<i>.col-</i>	<i>.col-sm-</i>	<i>.col-md-</i>	<i>.col-lg-</i>	<i>.col-xl-</i>
<i># Of Columns</i>	<i>12</i>				
<i>Gutter Width</i>	<i>30px (15px on each side of a column)</i>				
<i>Nestable</i>	<i>Yes</i>				

Ex 1

```
<div class="container">  
  <div class="row">  
    <div class="col-4">Content</div>  
    <div class="col-4">Content</div>  
    <div class="col-4">Content</div>  
  </div>  
</div>
```

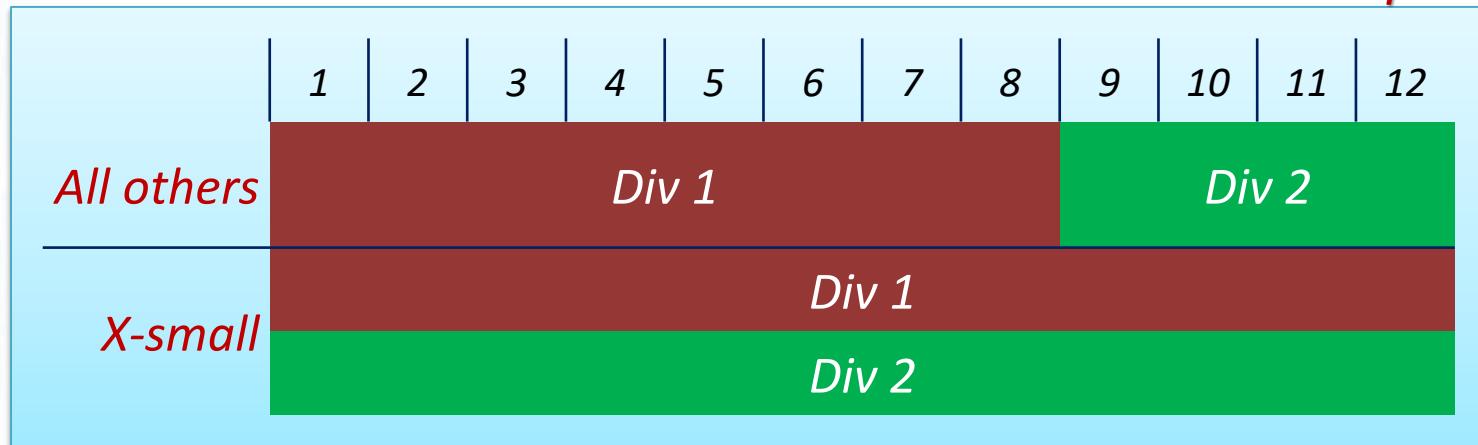
Output



Ex 2

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

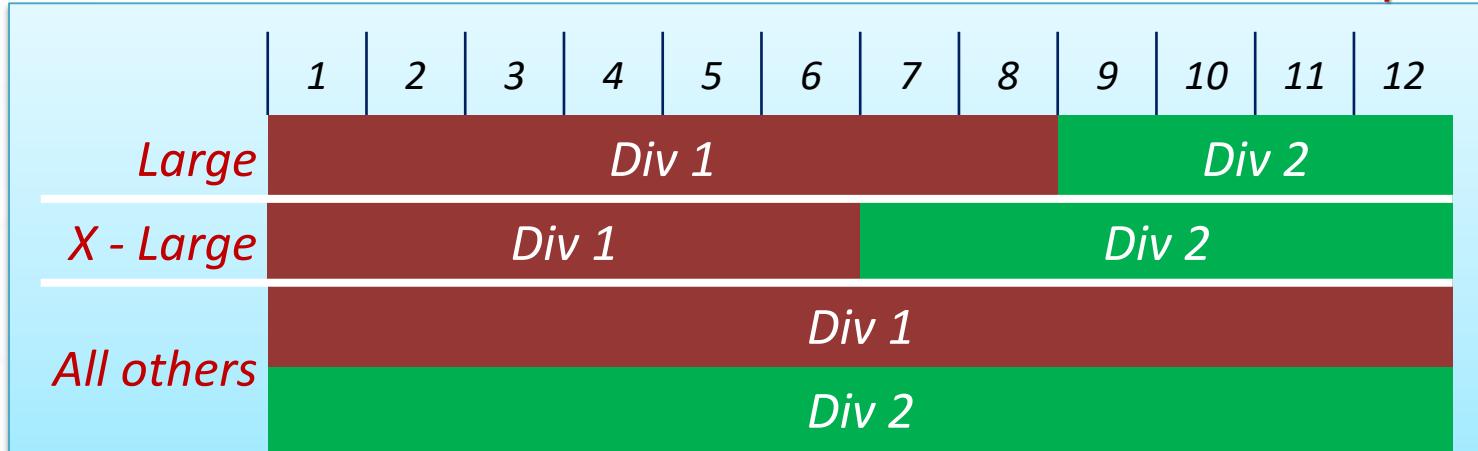
Output



Ex 3

```
<div class="container">  
  <div class="row">  
    <div class="col-lg-8 col-xl-6">Content</div>  
    <div class="col-lg-4 col-xl-6">Content</div>  
  </div>  
</div>
```

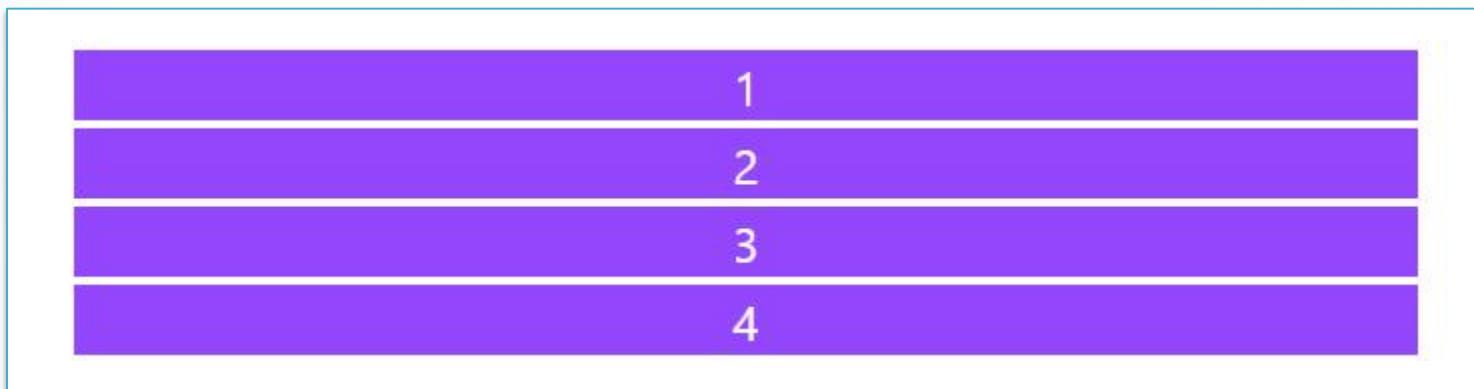
Output



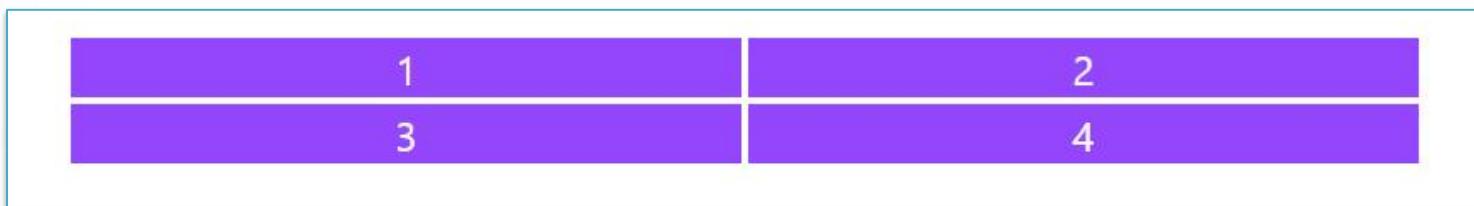
Ex 4

```
<div class="container">  
  <div class="row">  
    <div class="col-12 col-sm-6 col-md-6 col-lg-3  
        col-xl-3">Content</div>  
    <div class="col-12 col-sm-6 col-md-6 col-lg-3  
        col-xl-3">Content</div>  
    <div class="col-12 col-sm-6 col-md-6 col-lg-3  
        col-xl-3">Content</div>  
    <div class="col-12 col-sm-6 col-md-6 col-lg-3  
        col-xl-3">Content</div>  
  </div>  
</div>
```

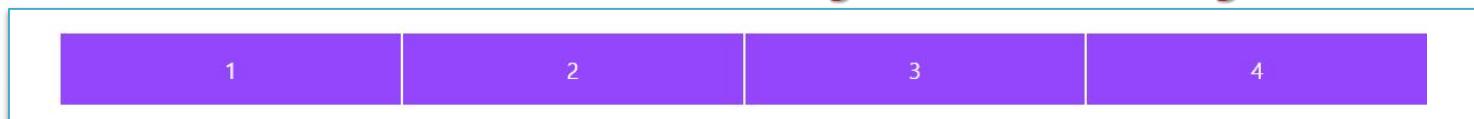
Extra Small



Small and Medium Screens



Large and Extra Large Screens

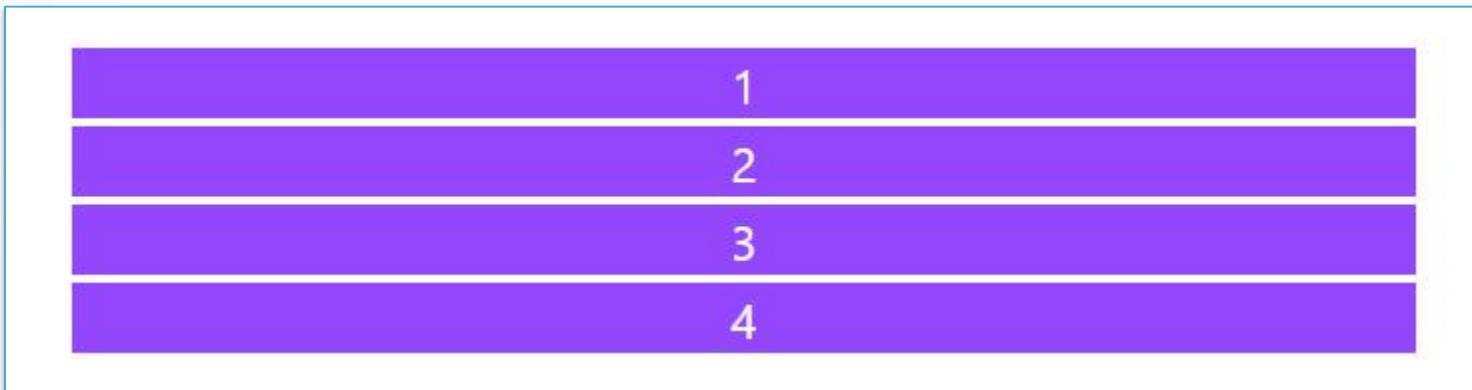


Auto Layout Columns

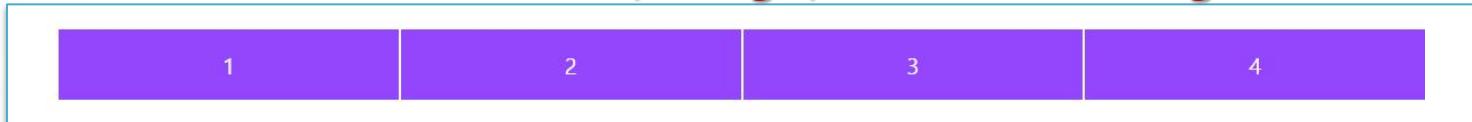
In Bootstrap 4, to create equal width columns for all devices: use the class without adding the numbers.

```
<div class="container">
  <div class="row">
    <div class="col-md">Content</div>
    <div class="col-md">Content</div>
    <div class="col-md">Content</div>
    <div class="col-md">Content</div>
  </div>
</div>
```

Extra Small and Small Screens



Medium, Large, and Extra Large Screens



Nested Columns

Example

```
<div class="row">  
  <div class="col-8">  
    <div class="row">  
      <div class="col-6">.col-6</div>  
      <div class="col-6">.col-6</div>  
    </div>  
  </div>  
  <div class="col-4">.col-4</div>  
</div>
```



No Gutters Columns

Example

```
<div class="row no">  
  
  <div class="row no-gutters">  
  
    <div class="col">Content</div>  
  
    <div class="col">Content</div>  
  
  </div>  
  
</div>
```

The background of the slide features a decorative design on the left side. It includes a blue and white globe showing continents and oceans. To the right of the globe is a white clock face with black numbers and hands, showing approximately 10:10. There are also some small, light blue bubbles scattered around the top left corner.

Content

Content

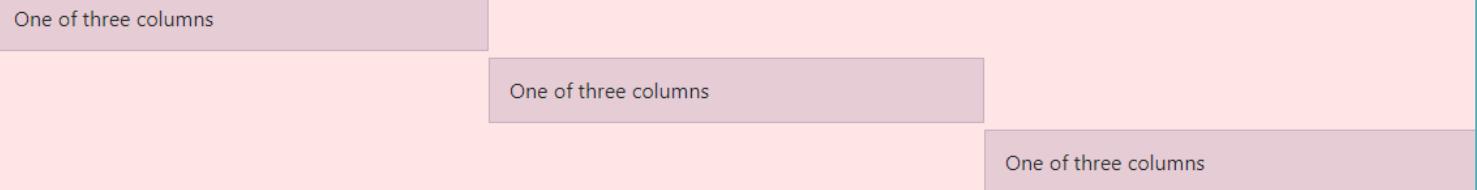
Vertical Alignment

One of three columns	One of three columns	One of three columns
<code><div class="row align-items-start"></code>		
One of three columns	One of three columns	One of three columns
<code><div class="row align-items-center"></code>		
One of three columns	One of three columns	One of three columns
<code><div class="row align-items-end"></code>		

Vertical Alignment

Example

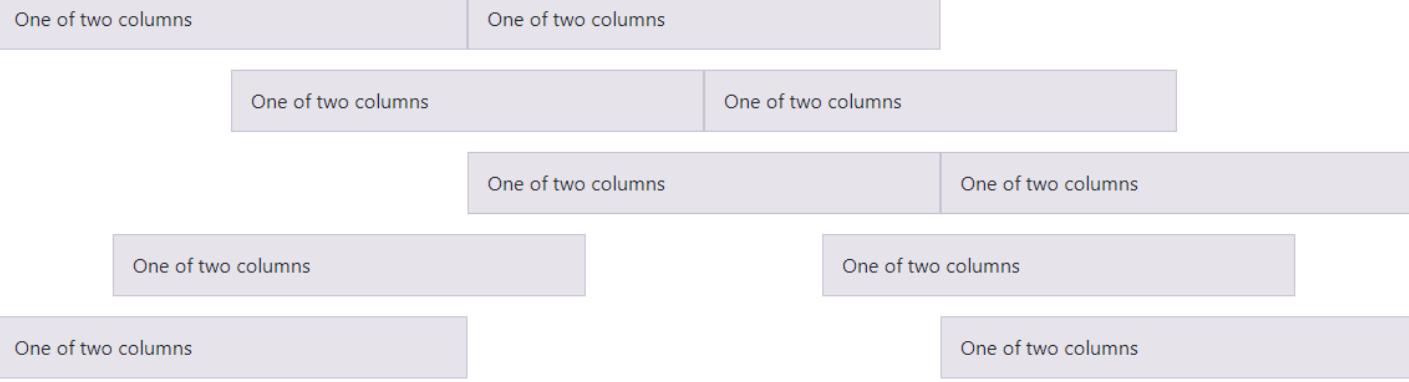
```
<div class="container">
  <div class="row">
    <div class="col align-self-start">One of three columns</div>
    <div class="col align-self-center"> One of three columns </div>
    <div class="col align-self-end"> One of three columns </div>
  </div>
</div>
```



Horizontal Alignment

Codes

```
<div class="row justify-content-start">  
<div class="row justify-content-center">  
<div class="row justify-content-end">  
<div class="row justify-content-around">  
<div class="row justify-content-between">
```



Offset Class

Moves columns to the right using to leave a blank columns

```
<div class="row">
    <div class="col-md-4">.col-md-4</div>
    <div class="col-md-4 offset-md-4">.col-md-4 .offset-md-4</div>
</div>
<div class="row">
    <div class="col-md-3 offset-md-3">.col-md-3 .offset-md-3</div>
    <div class="col-md-3 offset-md-3">.col-md-3 .offset-md-3</div>
</div>
<div class="row">
    <div class="col-md-6 offset-md-3">.col-md-6 .offset-md-3</div>
</div>
```

Offset Classes

Output

.col-md-4

.col-md-4 .offset-md-4

.col-md-3 .offset-md-3

.col-md-3 .offset-md-3

.col-md-6 .offset-md-3

Reset Offset Classes

Example

```
<div class="row">
  <div class="col-sm-5 col-md-6">.col-sm-5 .col-md-6</div>
  <div class="col-sm-5 offset-sm-2 col-md-6 offset-md-0">
    .col-sm-5 .offset-sm-2 .col-md-6 .offset-md-0</div>
</div>

<div class="row">
  <div class="col-sm-6 col-md-5 col-lg-6">.col-sm-6 .col-md-5 .col-lg-6</div>
  <div class="col-sm-6 col-md-5 offset-md-2 col-lg-6 offset-lg-0">
    .col-sm-6 .col-md-5 .offset-md-2 .col-lg-6 .offset-lg-0</div>
</div>
```



Bootstrap Typography

Typography

- *Bootstrap uses a default:*
 - ✓ *font-size:16px*
 - ✓ *line-height:1.5.*
- *The default font-family is "Helvetica Neue", Helvetica, Arial, sans-serif.*
- *All <p> elements have:*
 - ✓ *margin-top:0.*
 - ✓ *margin-bottom: 16px.*

Classes for <H1>

- *Display headings are used to stand out more than normal headings (larger font-size and lighter font-weight), and there are four classes to choose from:*
- ✓ *.display-1*
- ✓ *.display-2*
- ✓ *.display-3*
- ✓ *.display-4*

Classes for all text elements

- *.font-weight-bold* ➔ makes text bold
- *.font-weight-normal* ➔ makes text normal
- *.font-weight-light* ➔ Light weight text
- *.font-italic* ➔ makes text italic
- *.lead* ➔ Makes a paragraph stand out.
- *.text-left* ➔ aligns text to left
- *.text-center* ➔ aligns text to center
- *.text-right* ➔ aligns text to right

Classes for all text elements

- *.text-justify* ➔ Indicates justified text
- *.text nowrap* ➔ enforce no wrapping
- *.text-lowercase* ➔ Indicates lowercased text
- *.text-uppercase* ➔ Indicates uppercased text
- *.text-capitalize* ➔ capitalized each word in the text
- *.list-unstyled* ➔ Removes the list-style for **and **
- *.list-inline-item* ➔ Places all list items on a single line.

Text Colors Classes

```
class="text-muted"  
class="text-primary"  
class="text-success"  
class="text-info"  
class="text-warning"  
class="text-danger"  
class="text-secondary"  
class="text-dark"  
class="text-body"
```

```
.text-muted  
.text-primary  
.text-success  
.text-info  
.text-warning  
.text-danger  
.text-secondary  
.text-dark  
.text-body
```

Background Colors Classes

`class="bg-primary"`

`class="bg-success"`

`class="bg-info"`

`class="bg-warning"`

`class="bg-danger"`

`class="bg-secondary"`

`class="bg-dark"`

`class="bg-light"`

bg-primary

bg-success

bg-info

bg-warning

bg-danger

bg-secondary

bg-dark

bg-light



Bootstrap Tables

Basic Table

- The basic Bootstrap table has a light padding and only horizontal dividers. The “.table” class is used to add basic styling to a table.

Syntax

```
<table class="table">
```

Name	City
Tanmay	Bangalore
Sachin	Mumbai

Basic Table Class

```
<table class = "table">
```

Striped Table

- The “.table-striped” class is used to add zebra-stripes to a table.

Syntax

```
<table class="table table-striped">
```

Name	City	Pincode
Tanmay	Bangalore	560001
Sachin	Mumbai	400003
Uma	Pune	411027

Striped Table class

```
<table class = "table table-striped">
```

Bordered Table

- The “.table-bordered” class is used to add borders on all sides of the table and cells.

Syntax

```
<table class="table table-bordered">
```

Name	City	Pincode
Tanmay	Bangalore	560001
Sachin	Mumbai	400003
Uma	Pune	411027

Bordered Table Class

```
<table class = "table table-bordered">
```

Hover Table

- The “.table-hover” class is used to enable a hover state on table rows.

Syntax

```
<table class="table table-hover">
```

Name	City	Pincode
Tanmay	Bangalore	560001
Sachin	Mumbai	400003
Uma	Pune	411027

Hover Table Class

```
<table class = "table table- hover">
```

Black/Dark Table

- The “.table-dark” class is used to add a black background to the table.

Syntax

```
<table class="table table-dark">
```

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

Dark Table class

```
<table class = "table table-dark">
```

Dark Striped Table

- Combine the “.table-dark” class and “.table-striped” class to create a dark, striped table.

Syntax

```
<table class="table table-dark table-striped">
```

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

Dark Striped Table class

<table class =
"table table-dark table-striped">

Hoverable Dark Table

- Combine the “.table-dark” class and “.table-hover” class to create a grey hover effect.

Syntax

```
<table class="table table-dark table-hover">
```

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

Hoverable Dark Table class
<table class =
"table table-dark table-hover">

Table Contextual classes

- Used to color whole table or rows or cells.

Syntax

```
<table class="table ">  
  <tr class="table-primary"><td>1</td><td>primary</td></tr>  
  <tr class="table-success"><td>2</td><td>success</td></tr>  
  <tr class="table-danger"><td>3</td><td>danger</td></tr>  
  <tr class="table-info"><td>4</td><td>info</td></tr>  
  <tr class="table-warning"><td>5</td><td>warning</td></tr>  
  <tr class="table-active"><td>6</td><td>active</td></tr>  
  <tr class="table-secondary"><td>7</td><td>secondary</td></tr>  
  <tr class="table-light"><td>8</td><td>light</td></tr>  
  <tr class="table-dark"><td>9</td><td>dark</td></tr>  
</table>
```

Output →

Default	class=" "
Primary	class="table-primary"
Success	class="table-success"
Danger	class="table-danger"
Info	class="table-info"
Warning	class="table-warning"
Active	class="table-active"
Secondary	class="table-secondary"
Light	class="table-light"
Dark	class="table-dark"

The background features a light blue and white abstract design with various sized bubbles. On the left side, there is a graphic of a clock face with a globe instead of numbers. The globe shows the Americas, and the clock hands are black with a red second hand.

Bootstrap images

Image Shapes.

Rounded Corners



class="rounded"

Circle



class="rounded-circle"

Thumbnail



class="img-thumbnail"

Example

```



```

Aligning Images.

➤ **Left:**

- ✓ Class “float-left” floats the image to the left.

➤ **Right:**

- ✓ Class “float-right” floats the image to the right.

➤ **Center:**

- ✓ Both Classes “mx-auto” and “d-block” are used to set margin property to “auto” and display property to “block”

Example

```



```

Responsive Images.

- *Responsive images can be created by applying the class named “img-fluid” to the image tag.*
- *The “img-fluid” will set:*
 - ✓ *The “max-width” property to “100%”.*
 - ✓ *The “height” property. To “auto”.*

Example

```

```



Bootstrap Alerts

- Alert is a predefined messages.
- Alerts are created with the `.alert` class, followed by one of the contextual classes.

Available contextual classes

```
class="alert alert-success"  
class="alert alert-info"  
class="alert alert-warning"  
class="alert alert-danger"  
class="alert alert-primary"  
class="alert alert-secondary"  
class="alert alert-light"  
class="alert alert-dark"
```

Success!

Info!

Warning!

Danger!

Primary!

Secondary!

Dark!

Light!

Closing Alerts.

- *To create a closable alert:*
 - ✓ Add “.alert-dismissible” class is added to the alert div.
 - ✓ Create a link or a button inside the alert div containing these two attributes:
 - » class="close"
 - » data-dismiss="alert"
- ✓ To add fading effect on the alert box when closing
 - » Add the two classes “.fade” and “.show” to the alert div.

Closing Alerts.

Example

```
<div class="alert alert-success alert-dismissible fade show">
  <button type="button" class="close" data-dismiss="alert">
    &times;
  </button>
  Success! Click on X to close.
</div>
```

Success! click on X to close.

X



Bootstrap Buttons

Bootstrap provides different styles of buttons that can be used with `<input>` `<a>` `<button>` tags.

```
<button type="button" class=".....">.....</button>
```

Available classes

`class="btn"`

`class="btn btn-primary"`

`class="btn btn-secondary"`

`class="btn btn-success"`

`class="btn btn-info"`

`class="btn btn-warning"`

`class="btn btn-danger"`

`class="btn btn-dark"`

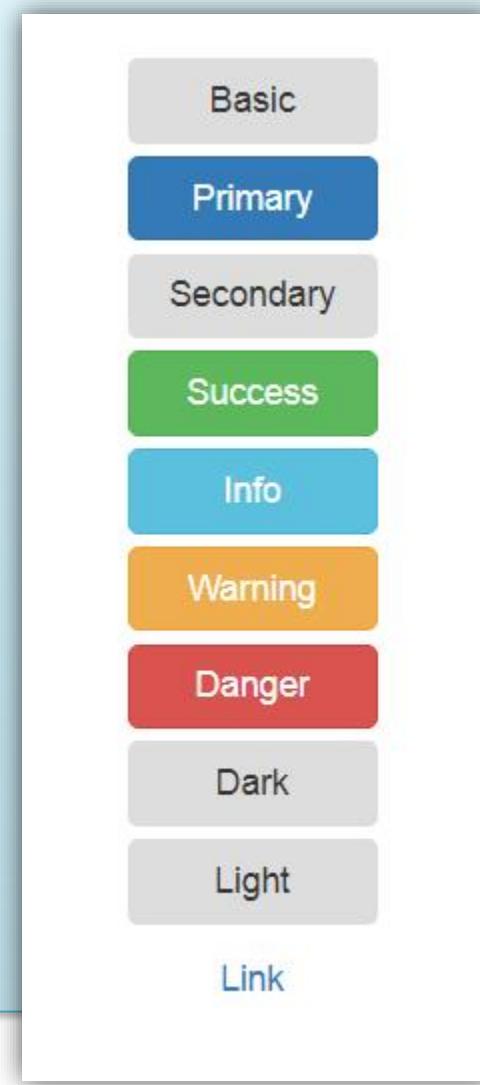
`class="btn btn-light"`

`class="btn btn-link"`

Example

```
<button type="button" class="btn btn-primary">.....</button>
```

```
class="btn"  
class="btn btn-primary"  
class="btn btn-secondary"  
class="btn btn-success"  
class="btn btn-info"  
class="btn btn-warning"  
class="btn btn-danger"  
class="btn btn-dark"  
class="btn btn-light"  
class="btn btn-link"
```



Bootstrap, provides three button sizes.

Syntax

```
<button type="button" class=". ....">>....</button>
```

Available classes

`class="btn btn-primary btn-lg"`
`class="btn btn-primary"`
`class="btn btn-primary btn-sm"`

Large Default Small

Example

```
<button type="button" class="btn btn-primary btn-lg">....</button>
```

Bootstrap Active/Disable Buttons

- “.active” class is used to make a button appear pressed.

Syntax

```
<button type="button" class="btn btn-primary active">  
.....</button>
```

Active Primary

- “.disabled” class makes the button unclickable.

Syntax

```
<button type="button" class="btn btn-primary disabled">  
.....</button>
```

Disabled Primary

- “.btn-block” class is used to make a button appears with full width of the parent. (width:100%)

Syntax

```
<button type="button" class="btn btn-primary btn-block">  
    </button>
```



full width button

Bootstrap provides eight outline/bordered buttons.

Syntax

```
<button type="button" class="btn btn-outline-primary">.....</button>
```

Available classes

`class="btn btn-outline-primary"`

`class="btn btn-outline-secondary"`

`class="btn btn-outline-success"`

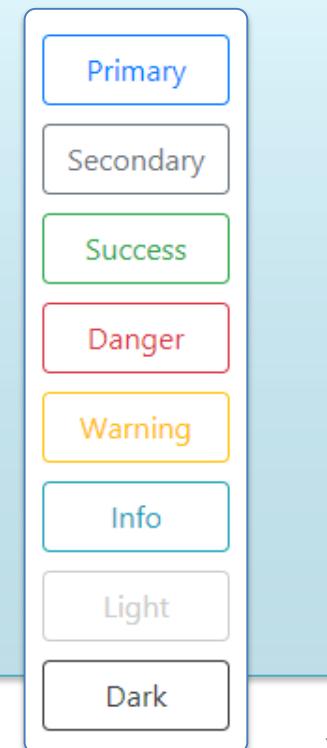
`class="btn btn-outline-info"`

`class="btn btn-outline-warning"`

`class="btn btn-outline-danger"`

`class="btn btn-outline-dark"`

`class="btn btn-outline-light text-dark"`

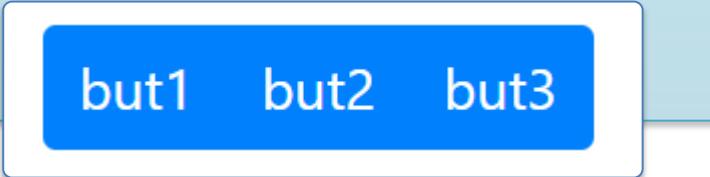


Button Groups.

- Two or more buttons grouped together on a single line to form a group.

Example

```
<div class="btn-group">  
  
  <button type="button" class="btn btn-primary">but1</button>  
  
  <button type="button" class="btn btn-primary">but2</button>  
  
  <button type="button" class="btn btn-primary">but3</button>  
  
</div>
```



but1 but2 but3

Button Group Sizes.

- To change the buttons sizes for all buttons inside a group, use “`btn-group-lg`” or “`btn-group-sm`” classes within the group tag.

Example

```
<div class="btn-group btn-group-sm">  
    <button type="button" class="btn btn-primary">but1</button>  
    <button type="button" class="btn btn-primary">but2</button>  
    <button type="button" class="btn btn-primary">but3</button>  
</div>
```

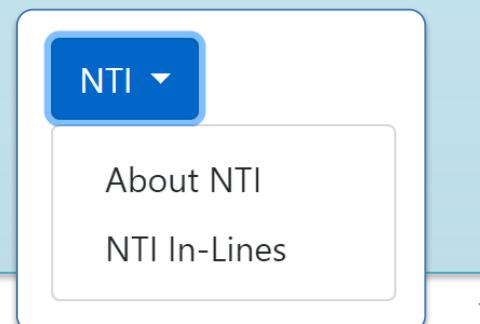
but1 but2 but3

Drop Button.

- Also Drop button are supported in Bootstrap 4 as follows:

Example

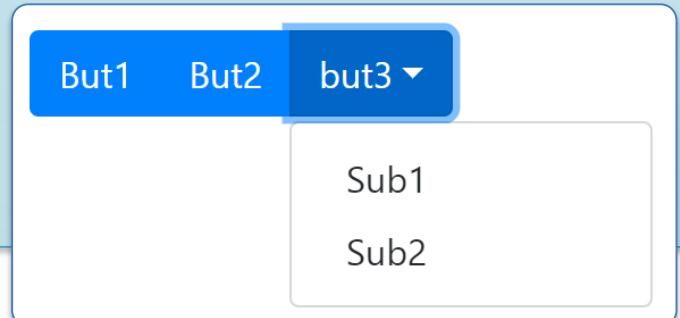
```
<div class="container">  
  <button type="button" class="btn btn-primary dropdown-toggle"  
         data-toggle="dropdown"> NTI </button>  
  <div class="dropdown-menu">  
    <a class="dropdown-item" href="#">About NTI</a>  
    <a class="dropdown-item" href="#">NTI In-Lines</a>  
  </div>  
</div>
```



Adding a Drop Button to a button group

Example

```
<div class="btn-group">  
  <button type="button" class="btn btn-primary">But1</button>  
  <button type="button" class="btn btn-primary">But2</button>  
  <div class="btn-group">  
    <button type="button" class="btn btn-primary dropdown-toggle"  
           data-toggle="dropdown">but3</button>  
    <div class="dropdown-menu">  
      <a class="dropdown-item" href="#">Sub1</a>  
      <a class="dropdown-item" href="#">Sub2</a>  
    </div>  
  </div>  
</div>
```





Bootstrap Badges

Badges are used to add small count and labeling component.

Available classes

`class="badge badge-primary"`

`class="badge badge-secondary"`

`class="badge badge-success"`

`class="badge badge-danger"`

`class="badge badge-warning"`

`class="badge badge-info"`

`class="badge badge-light"`

`class="badge badge-dark"`

Primary

Secondary

Success

Danger

Warning

Info

Light

Dark

To create more rounded badges a class named “badge-pill” is added.

Example 1

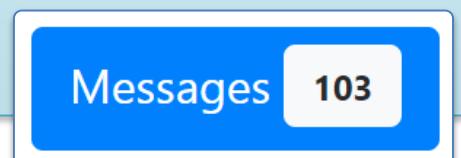
```
<span class="badge badge-pill badge-primary">100</span>
```



Primary Secondary Success Danger Warning Info Light Dark

Example 2

```
<button type="button" class="btn btn-primary"> Messages  
    <span class="badge badge-light">103</span>  
</button>
```



Messages 103

Badges with links

Examples

```
<a href="#" class="badge badge-primary">Primary</a>
<a href="#" class="badge badge-secondary">Secondary</a>
<a href="#" class="badge badge-success">Success</a>
<a href="#" class="badge badge-danger">Danger</a>
<a href="#" class="badge badge-warning">Warning</a>
<a href="#" class="badge badge-info">Info</a>
<a href="#" class="badge badge-light">Light</a>
<a href="#" class="badge badge-dark">Dark</a>
```

Primary

Secondary

Success

Danger

Warning

Info

Light

Dark

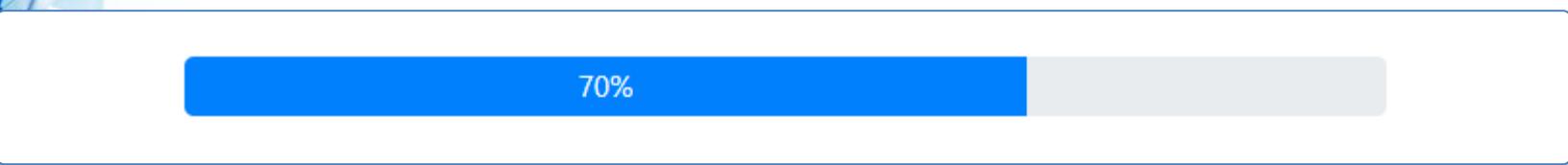


Bootstrap Progress Bars

- Progress bar components are inserted using two HTML elements, (HTML5 <progress> element) is not used.
- Use the “progress” class inside a wrapper. (parent div)
- Use the “progress-bar” inside the inner element to indicate the progress. (Child div)
- The “progress-bar” class requires an inline style, to set their width.

Code

```
<div class="progress">  
  <div class="progress-bar" style="width:70%">70%</div>  
</div>
```



70%

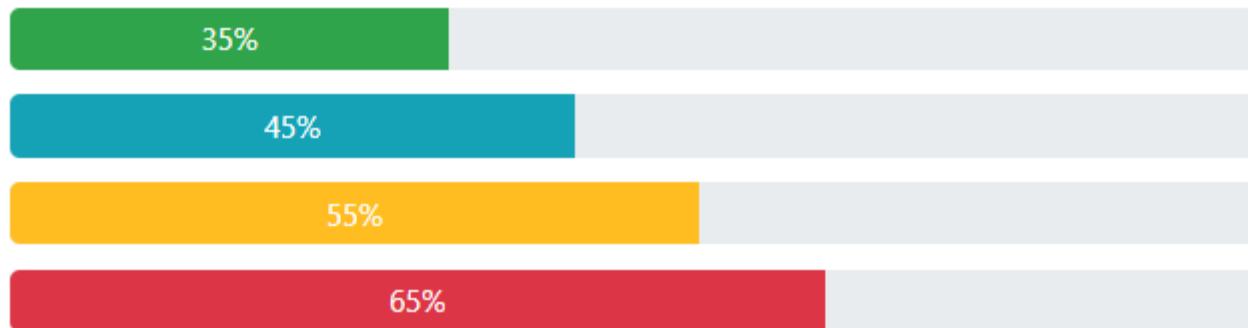
Coloring Progress Bars

Code

```
<div class="progress">
    <div class="progress-bar bg-success" style="width:35%">35%</div>
</div>
<div class="progress">
    <div class="progress-bar bg-info" style="width:45%">45%</div>
</div>
<div class="progress">
    <div class="progress-bar bg-warning"
style="width:55%">55%</div>
</div>
<div class="progress">
    <div class="progress-bar bg-danger" style="width:65%">65%</div>
</div>
```

Coloring Progress Bars

Output



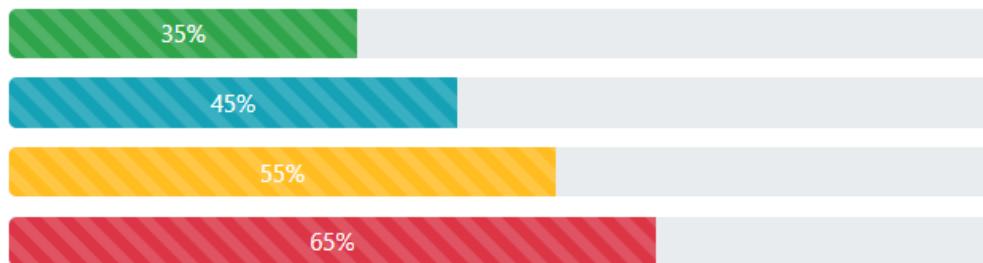
Striped Progress Bars

Code

```
<div class="progress">
    <div class="progress-bar bg-success progress-bar-striped"
        style="width:35%">35%</div></div>
<div class="progress">
    <div class="progress-bar bg-info progress-bar-striped"
        style="width:45%">45%</div></div>
<div class="progress">
    <div class="progress-bar bg-warning progress-bar-striped"
        style="width:55%">55%</div></div>
<div class="progress">
    <div class="progress-bar bg-danger progress-bar-striped"
        style="width:65%">65%</div></div>
```

Striped Progress Bars

Output



Animated Progress Bars

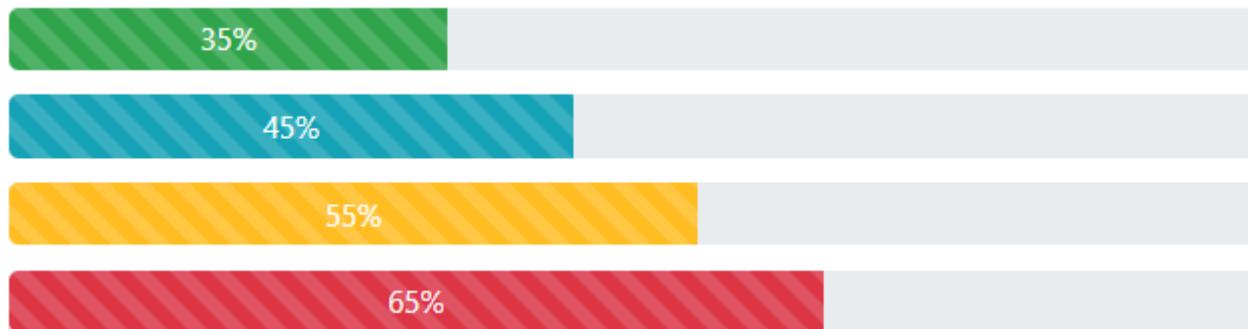
- Also you can add the class “progress-bar-animated” to create animated progress bar

Code

```
<div class="progress">  
  <div  
    class="progress-bar bg-success  
    progress-bar-striped progress-bar-animated"  
    style="width:35%">35%</div>  
  </div>
```

Animated Progress Bars

Output





Bootstrap Pagination

Pagination

The links pagination is created in bootstrap as follows:

- Use `` wrapper with class “pagination”.
- Use `<a>` with class “page-link” inside `` with class “page-item” for each item of the pagination.

```
<ul class="pagination">
<li class="page-item"><a class="page-link" href="#">Previous</a></li>
<li class="page-item"><a class="page-link" href="#">1</a></li>
<li class="page-item"><a class="page-link" href="#">2</a></li>
<li class="page-item"><a class="page-link" href="#">3</a></li>
<li class="page-item"><a class="page-link" href="#">Next</a></li>
</ul>
```

Previous 1 2 3 Next

Pagination disabled state

Any link in pagination can be disabled using the class “disabled” inside the `` tag.

```
<ul class="pagination">
<li class="page-item disabled">
    <a class="page-link" href="#">Previous </a></li>
<li class="page-item"><a class="page-link" href="#">1</a></li>
<li class="page-item"><a class="page-link" href="#">2</a></li>
<li class="page-item"><a class="page-link" href="#">3</a></li>
<li class="page-item"><a class="page-link" href="#">Next</a></li>
</ul>
```

Previous 1 2 3 Next

Pagination Active state

Any link in a pagination can be highlighted as an active link by using the class “active” inside the `` tag”.

Example

```
<ul class="pagination">
<li class="page-item"><a class="page-link" href="#">Previous </a></li>
<li class="page-item active">
    <a class="page-link" href="#">1</a></li>
<li class="page-item"><a class="page-link" href="#">2</a></li>
<li class="page-item"><a class="page-link" href="#">3</a></li>
<li class="page-item"><a class="page-link" href="#">Next</a></li>
</ul>
```

Previous 1 2 3 Next

Pagination Sizing

The size of the pagination can be changed by adding one of the two classes “*pagination-lg*” or “*pagination-sm*” to the ** tag.

Example 1

```
<ul class="pagination pagination-lg">
```

Previous	1	2	3	Next
----------	---	---	---	------

Example 2

```
<ul class="pagination pagination-sm">
```

Previous	1	2	3	Next
----------	---	---	---	------

Pagination Alignment

The horizontal alignment of the pagination can be changed by adding one of the two classes “justify-content-center” or “justify-content-end” to the `` tag.

```
<ul class="pagination justify-content-center">
```



```
Previous 1 2 3 Next
```

```
<ul class="pagination justify-content-end">
```



```
Previous 1 2 3 Next
```



Bootstrap Breadcrumb

Breadcrumb

Indicate the current page's location within a navigational hierarchy.

- Use `` wrapper with class “`breadcrumb`”.
- Use `<a>` inside `` with class “`breadcrumb-item`” for each item of the Breadcrumb.
- To make active item add `active` class to the `` tag.

```
<ol class="breadcrumb">
  <li class="breadcrumb-item"><a href="#">Home</a></li>
  <li class="breadcrumb-item"><a href="#">Library</a></li>
  <li class="breadcrumb-item active">Data</li>
</ol>
```

Home / Library / Data



Bootstrap Cards

Bootstrap Card

- A card is a flexible and extensible content container.
- Can Include headers, footers, content, contextual background colors, and powerful display options.

```
<div class="card">  
  <div class="card-header">Header</div>  
  <div class="card-body">Content</div>  
  <div class="card-footer">Footer</div>  
</div>
```



Additional contents for Bootstrap Card

```
<div class="card">  
  <div class="card-body">  
    <h2 class="card-title">NTI</h2>  
    <p class="card-text">The National Telecommunications  
      Institute (NTI) was founded in 1984.</p>  
    <a href="#" class="card-link">Visit our website</a>  
  </div>  
</div>
```

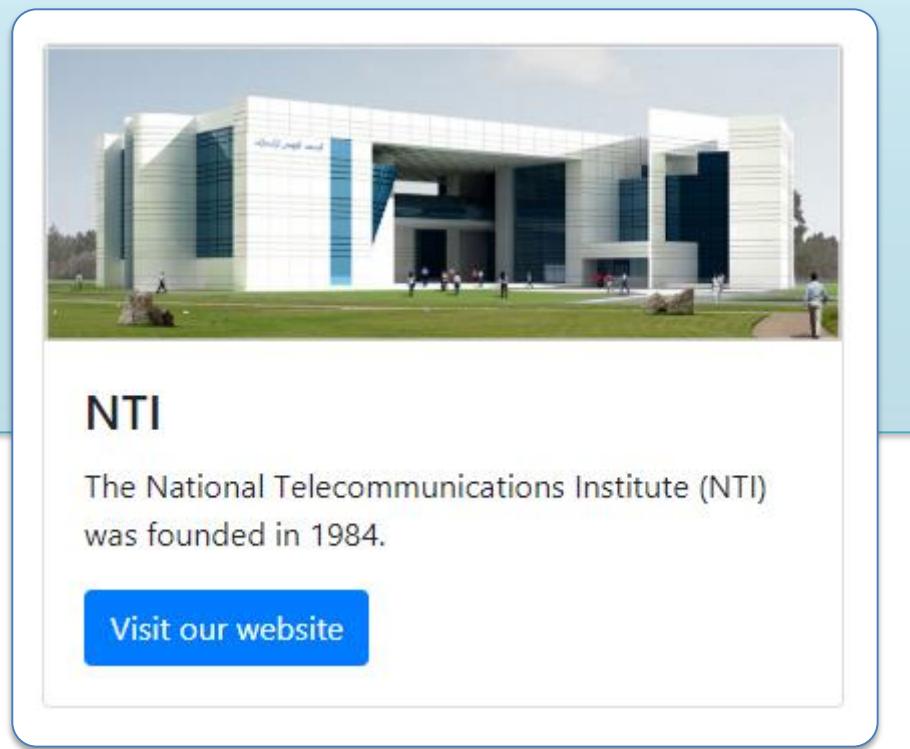
NTI

The National Telecommunications Institute (NTI) was founded in 1984.

[Visit our website](#)

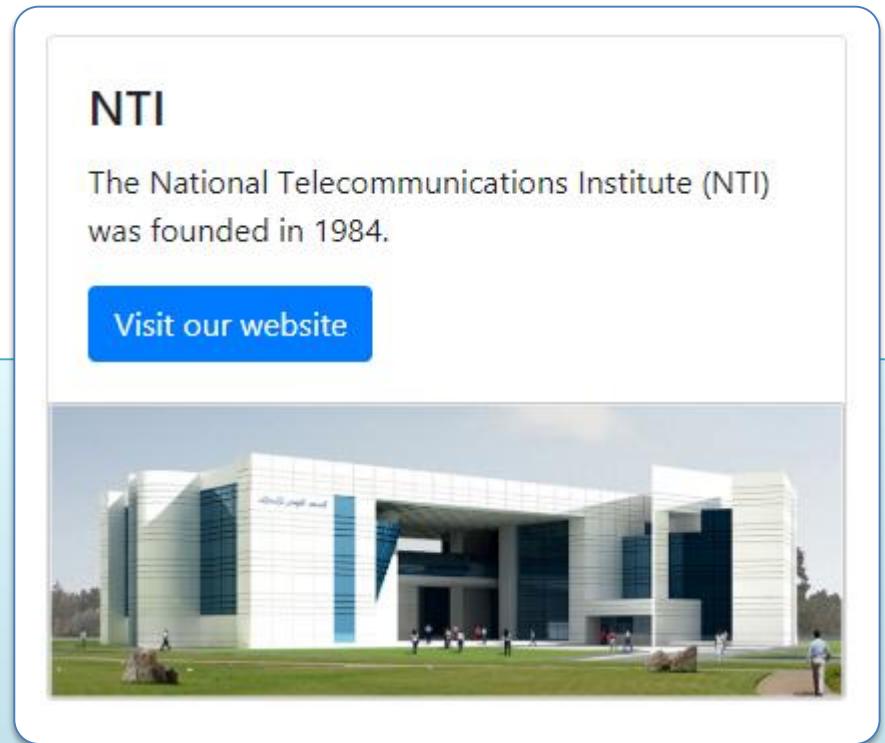
Bootstrap Card with image (aligned top)

```
<div class="card">  
    
  <div class="card-body">  
    .....  
  </div>  
</div>
```



Bootstrap Card with image (aligned bottom)

```
<div class="card">  
<div class="card-body">  
.....  
</div>  
  
</div>
```





Bootstrap Collapse

Collapse

Toggle the visibility of content on a page using JavaScript plugins.

- Using links as a button.

```
<a class="btn btn-primary" data-toggle="collapse" href="#ex1">  
    Show Div</a>  
<div class="collapse" id="ex1">  
    <div>The National Telecommunications Institute.....</div>  
</div>
```

Show Div

The National Telecommunications Institute (NTI) was founded in 1984 to be a center for telecommunications systems, technologies, policies and management.

Collapse

- Using a button.

```
<button class="btn btn-primary" type="button"  
       data-toggle="collapse" data-target="#ex2">  
  Show Div</button>  
  
<div class="collapse" id="ex2">  
  <div>The National Telecommunications Institute.....</div>  
</div>
```

Show Div

The National Telecommunications Institute (NTI) was founded in 1984 to be a center for telecommunications systems, technologies, policies and management.

Multiple Collapse

```
<button class="btn btn-primary" type="button"  
       data-toggle="collapse" data-target=".xyz">  
  Show Divs</button>  
  
<div class="collapse xyz">  
  <div> MCIT is .....</div>  
</div>  
  
<div class="collapse xyz">  
  <div> NTI is.....</div>  
</div>
```

Show Divs

MCIT is

NTI is

Accordion

To create an accordion using bootstrap 4, you need a main wrapper class named “accordion” and a bootstrap card for each item in the accordion.

Step 1: add a div with “accordion” class and assign an id attribute to it (ex: id=xyz), to be the wrapper for all the accordion items

```
<div class="accordion" id="xyz">  
.....  
</div>
```

Accordion

Step 2: add a div with “card” class for the first item in the accordion containing the following:

- ✓ A div with “card-header” class containing a button with `data-toggle="collapse"` and `data-target="#item1"`, to create the first item header.
- ✓ A div with attributes `class="collapse show"` and `data-parent="#xyz"` and `id="item1"`, containing a div with “card-body” class for holding the content of the first item.

Accordion

Step 2:

```
<div class="card">  
  <div class="card-header">  
    <button class="btn btn-link" type="button"  
           data-toggle="collapse" data-target="#item1">  
      Item #1</button>  
  </div>  
  
<div id="item1" class="collapse show" data-parent="#xyz">  
  <div class="card-body">Content for item 1 .....</div>  
  </div>  
</div>
```

Accordion

Step 3: repeat step two to create the second accordion item by adding a new “card” class tag but this time make sure to do the following:

- ✓ Add the “collapsed” class to the button element.
- ✓ Don’t use the “show” class with any div contents.

Step 3: repeat step three to create the third accordion item by adding a new “card” class tag, and so on for more accordion elements.

Accordion

Step 2:

```
<div class="card">  
  <div class="card-header">  
    <button class="btn btn-link collapsed" type="button"  
           data-toggle="collapse" data-target="#item2">  
      Item #2</button>  
  </div>  
  
  <div id="item2" class="collapse" data-parent="#xyz">  
    <div class="card-body">Content for item 1 .....</div>  
  </div>  
</div>
```

Accordion

Output

The screenshot displays an accordion interface with three items. Item #1 is expanded, showing its content: "Content for item 1". Items #2 and #3 are collapsed, showing only their titles: "Item #2" and "Item #3".

Item #1
Content for item 1
Item #2
Item #3



Bootstrap Navigation Bar

Navigation Bar

Is responsive navigation header placed at the top of the page,
Includes support for branding, navigation, and support for collapsed
plugins.

- The navigation bar is created using this code: (vertically)

```
<nav class="navbar"> .... </nav>
```

- Or use this code to create horizontal navigation bar according to the screen size.

```
<nav class="navbar-expand-xl|lg|md|sm"> .... </nav>
```

Navigation Bar

To add links to the navbar:

- Add `` tag with `class="navbar-nav"`.
- Add `` tag with `class="nav-item"` inside the `` tag.
- Add `<a>` element with `class="nav-link"`, inside the `` tag.

```
<nav class="navbar navbar-expand-sm">
<ul class="navbar-nav">
    <li class="nav-item"><a class="nav-link" href="#">Link 1 </a></li>
    <li class="nav-item"><a class="nav-link" href="#">Link 2</a></li>
    <li class="nav-item"><a class="nav-link" href="#">Link 3</a></li>
</ul>
</nav>
```

Link 1 Link 2 Link 3

Coloring Navigation Bar

To change navbar background use:

- `.bg-primary, .bg-success, .bg-info, .bg-warning, .bg-danger, .bg-secondary, .bg-dark and .bg-light.`

To change navbar text color use:

- `.navbar-dark` ➔ white text color
- `.navbar-light` ➔ black text color

```
<nav class="navbar navbar-expand-sm bg-dark navbar-dark">
```

Link 1 Link 2 Link 3

Active or disabled Navigation Bar element

To make a navbar element active:

- Add class="active" to the <a> tag of the element.

To make a navbar element disabled:

- Add class="disabled" to the <a> tag of the element.

```
<nav class="navbar navbar-expand-sm bg-dark navbar-dark">
  <ul class="navbar-nav">
    <li class="nav-item">
      <a class="nav-link active" href="#">Link 1 </a></li>
    <li class="nav-item">
      <a class="nav-link disabled" href="#">Link 2</a></li>
  </ul>
</nav>
```

Link 1 Link 2

Navigation Bar Brand

Used to add a brand or logo for a page:

- An `<a>` tag with `class="navbar-brand"` is added at the very beginning of the `<nav>` tag.

```
<nav class="navbar navbar-light bg-light">
  <a class="navbar-brand" href="#">Navbar</a>
</nav>
```

- Also the brand can be an image:

```
<nav class="navbar navbar-light bg-light">
  <a class="navbar-brand" href="#">
    </a>
</nav>
```

Collapsing The Navigation Bar

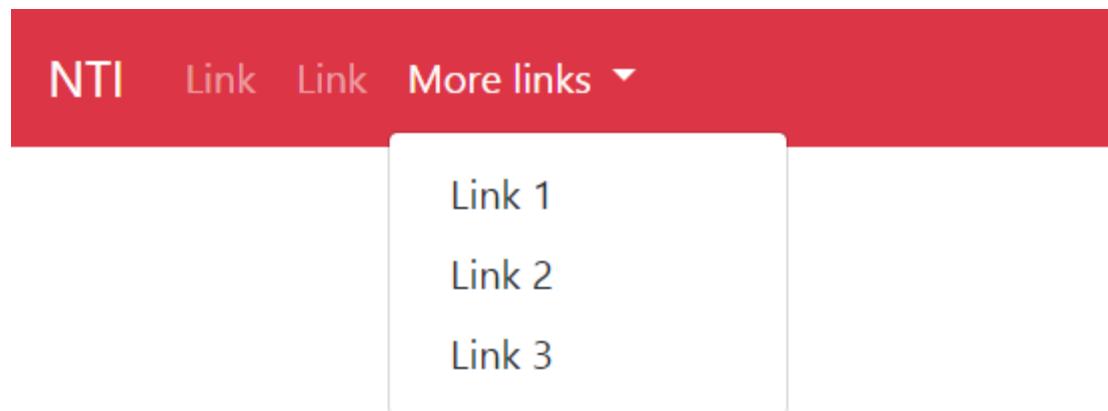


Collapsing The Navigation Bar

```
<nav class="navbar navbar-expand-md bg-danger navbar-dark">
  <a class="navbar-brand" href="#">NTI</a>
  <button class="navbar-toggler" type="button" data-toggle="collapse"
    data-target="#xyz">
    <span class="navbar-toggler-icon"></span></button>

  <div class="collapse navbar-collapse" id="xyz">
    <ul class="navbar-nav">
      <li class="nav-item"><a class="nav-link" href="#">Link</a> </li>
      .....
    </ul>
  </div>
</nav>
```

Navigation Bar with drop down



Navigation Bar with drop down

```
<nav class="navbar navbar-expand-sm bg-danger navbar-dark">
  <a class="navbar-brand" href="#">NTI</a>
  <ul class="navbar-nav">
    <li class="nav-item"><a class="nav-link" href="#">Link</a> </li>
    <li class="nav-item"><a class="nav-link" href="#">Link</a> </li>
      <li class="nav-item dropdown">
        <a class="nav-link dropdown-toggle" href="#" data-toggle="dropdown"> More links</a>
        <div class="dropdown-menu">
          <a class="dropdown-item" href="#">Link 1</a>
          <a class="dropdown-item" href="#">Link 2</a>
        </div>
      </li>
    </ul>
  </nav>
```

Fixed Navigation Bar

A navigation bar can have a fixed position on the page

- To Create a fixed top navigation bar

```
<nav class="navbar navbar-light bg-light fixed-top">  
.....  
</nav>
```

- To Create a fixed bottom navigation bar

```
<nav class="navbar navbar-light bg-light fixed-bottom">  
.....  
</nav>
```

Sticky Navigation Bar

A sticky navigation bar appears after some page contents, it scrolls normally with the page, until it reaches the top, then it sticks.

```
<nav class="navbar navbar-light bg-light sticky-top">  
.....  
</nav>
```

Sticky Navigation Bar

```
<nav class="navbar navbar-expand-sm  
      bg-danger navbar-dark sticky-top">  
  <ul class="navbar-nav">  
    <li class="nav-item">  
      <a class="nav-link" href="#">Link 1 </a></li>  
    <li class="nav-item">  
      <a class="nav-link" href="#">Link 2</a></li>  
  </ul>  
</nav>
```



Bootstrap Form controls

Textual form controls like <input>s, <select>s, and <textarea>s—are styled with the `.form-control` class. Which applies styles for general appearance, focus state, sizing, and more.

Email address

Example select

Example textarea

```
<form>
  <div class="form-group">
    <label>Email address</label>
    <input type="email" class="form-control"></div>
  <div class="form-group">
    <label>Example select</label>
    <select class="form-control">
      <option> </option><option>1</option><option>2</option>
    </select></div>
  <div class="form-group">
    <label>Example textarea</label>
    <textarea class="form-control" rows="3"></textarea></div>
  </form>
```

File Inputs

For file inputs, the “`.form-control-file`” class is used.

```
<form>
  <div class="form-group">
    <label>Example file input</label>
    <input type="file" class="form-control-file">
  </div>
</form>
```

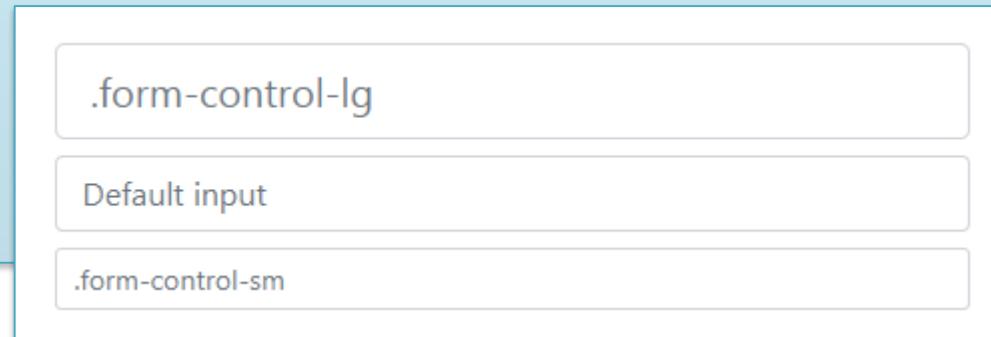
Example file input
Choose File No file chosen

Form Controls Sizing

The sizes of the form controls are set using these classes:

- `.form-control-lg`
- `.form-control-sm`

```
<input class="form-control form-control-lg" type="text">  
<input class="form-control" type="text">  
<input class="form-control form-control-sm" type="text">
```



Checkboxes

By default, checkboxes will be vertically stacked and appropriately spaced using:

“*.form-check-input*” class → for the check box or the radio button.

“*.form-check-label*” class → for the labels.

```
<div class="form-check">  
  <input class="form-check-input" type="checkbox">  
  <label class="form-check-label">checkbox 1</label></div>  
<div class="form-check">  
  <input class="form-check-input" type="checkbox">  
  <label class="form-check-label">checkbox 2</label></div>
```

- checkbox 1
- checkbox 2

Radio Buttons

Also By default, Radio Buttons will be vertically stacked and appropriately spaced using:

“*.form-check-input*” class → for the check box or the radio button.

“*.form-check-label*” class → for the labels.

```
<div class="form-check">  
  <input class="form-check-input" type="radio">  
  <label class="form-check-label">Radio 1</label></div>  
  
<div class="form-check">  
  <input class="form-check-input" type="radio">  
  <label class="form-check-label">Radio 2</label></div>
```

- Radio 1
- Radio 2

In-line Checkboxes or Radio Buttons

To group checkboxes or radio buttons on the same horizontal row use the “`.form-check-inline`” class with the wrapper div.

```
<div class="form-check-inline">  
  <input class="form-check-input" type="radio">  
  <label class="form-check-label">Radio 1</label></div>  
<div class="form-check-inline">  
  <input class="form-check-input" type="radio">  
  <label class="form-check-label">Radio 2</label></div>
```

Radio 1 Radio 2

Custom Checkboxes

A base64 embedded SVG icons can be used to provide the best control for styling and positioning across browsers and devices.

```
<div class="custom-control custom-checkbox">  
  <input type="checkbox" class="custom-control-input"  
    id="customCheck1">  
  <label class="custom-control-label"  
    for="customCheck1">Custom checkbox</label>  
</div>
```



Custom checkbox

Custom Radio Buttons

Same as Checkboxes

```
<div class="custom-control custom-radio">  
  <input type="radio" id="x1" name="cr"  
        class="custom-control-input">  
  <label class="custom-control-label" for="x1">  
    Custom Radio 1</label></div>
```



Custom Radio

In-line Custom Checkboxes or Radio Buttons

For In-line Custom Checkboxes or Radio Buttons you can use the ".custom-control-inline":

```
<div class="custom-control custom-checkbox  
custom-control-inline">
```

```
<div class="custom-control custom-radio  
custom-control-inline">
```

Custom Select Menu

```
<select class="custom-select">  
  <option selected>--- Select ---</option>  
  <option value="1">One</option>  
  <option value="2">Two</option>  
  <option value="3">Three</option>  
</select>
```



A custom select menu component. It features a light gray rectangular input field with the placeholder text "--- Select ---". To the right of the input field is a small, downward-pointing triangle icon, which is a standard Bootstrap icon for indicating a dropdown menu.

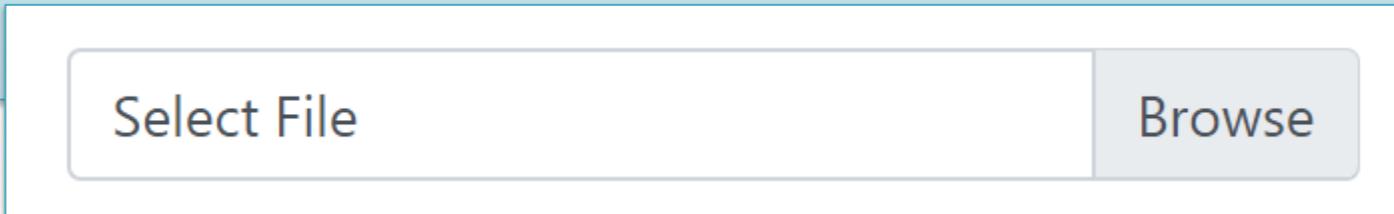
Custom Range Input

```
<input type="range" class="custom-range">
```



Custom File Input

```
<div class="custom-file">  
  <input type="file" class="custom-file-input" id="file1">  
  <label class="custom-file-label" for="file1">Select File</label>  
</div>
```





Bootstrap Forms

Form Layouts

- *Bootstrap offers two types of forms:*
 - ✓ *The full width form.*
 - ✓ *The inline form.*

The full width form.

```
<form>
  <div class="form-group">
    <label>Email:</label>
    <input type="email" class="form-control"></div>
  <div class="form-group">
    <label>Password:</label>
    <input type="password" class="form-control"></div>
    <input type="submit" class="btn" value="Send">
</form>
```

The full width form.

Email:

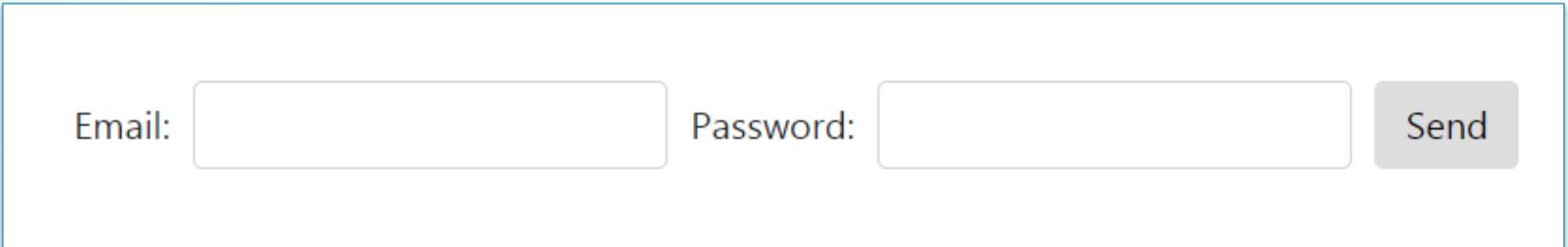
Password:

Send

The In-line form.

```
<form class="form-inline">
  <div class="form-group">
    <label>Email:</label>
    <input type="email" class="form-control"></div>
  <div class="form-group">
    <label>Password:</label>
    <input type="password" class="form-control"></div>
    <input type="submit" class="btn" value="Send">
</form>
```

The In-line form.



Email: Password: Send

- This type of forms will applied only on screens that are larger than 576px wide. But on screens smaller than 576px, it will stack horizontally.



Bootstrap Utilities

Borders.

- *Border utilities is used to quickly style the border and border-radius of an element. Great for images, buttons, or any other element.*

Additive

Adds a border to an element

```
<span class="border"></span>
<span class="border-top"></span>
<span class="border-right"></span>
<span class="border-bottom"></span>
<span class="border-left"></span>
```



Subtractive

Subtract a border from an element

```
<span class="border border-0"></span>
<span class="border border-top-0"></span>
<span class="border border-right-0"></span>
<span class="border border-bottom-0"></span>
<span class="border border-left-0"></span>
```



Border Colors

```
<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>
```



Border Radius

```
  
  
  
  
  
  

```



Float

The CSS float property can be applied with bootstrap in a responsive way using one of these classes.

.float-left

.float-sm-none

.float-lg-right

.float-right

.float-md-left

.float-lg-none

.float-none

.float-md-right

.float-xl-left

.float-sm-left

.float-md-none

.float-xl-right

.float-sm-right

.float-lg-left

.float-xl-none

Clearfix

“.clearfix” is a class used to clear the wrapping of the an element that comes after a floated element.

```
<div class="clearfix">  
  <div class="float-left">floated left div</div>  
  <div class="float-right">floated right div</div>  
</div>
```

floated left div

floated right div

Display

The CSS display property can be applied with bootstrap, using these classes:

.d-none → Hides the element with “display:none”.

.d-block → Displays the element as a block element.

.d-inline → Displays the element as an inline element.

.d-inline-block → Displays the element as an inline-block element.

Display

Also the `display` property can be applied responsively by adding the screen sizes to the class:

`.d-sm-none`

`.d-md-none`

`.d-lg-none`

`.d-xl-none`

`.d-sm-block`

`.d-md-block`

`.d-lg-block`

`.d-xl-block`

`.d-sm-inline`

`.d-md-inline`

`.d-lg-inline`

`.d-xl-inline`

`.d-sm-inline-block`

`.d-md-inline-block`

`.d-lg-inline-block`

`.d-xl-inline-block`

Embeds

With bootstrap you can embed a responsive video or slideshow based on the width of the parent by creating aspect ratio that scales on any device.

```
<div class="embed-responsive embed-responsive-16by9">  
  <iframe class="embed-responsive-item"  
    src="https://www.youtube.com/embed/"></iframe>  
</div>
```

Embeds

- *The classes for the valid aspect ratios are:*

`.embed-responsive-21by9`

`.embed-responsive-16by9`

`.embed-responsive-4by3`

`.embed-responsive-1by1`

Visibility

- The CSS visibility is supported by Bootstrap as two classes:

`class="visible"> ➔ {visibility:visible}`

`class="invisible" ➔ {visibility:hidden}`

Example

```
<div class="visible">...</div>
```

```
<div class="invisible">...</div>
```

Center alignment for block element

- The two CSS properties “margin-left:auto” and “margin-right:auto” are supported by Bootstrap as one class:

```
class="mx-auto">
```

Syntax

```
<div class="mx-auto">This is a centered div</div>
```

Responsive width classes

- Bootstrap provides five pre-defined responsive classes to change the width of an element:

- .w-25 ➔ {width:25%}
- .w-50 ➔ {width:50%}
- .w-75 ➔ {width:75%}
- .w-100 ➔ {width:100%}
- .mw-100 ➔ {max-width:100%}

Responsive height classes

- Bootstrap also provides five pre-defined responsive classes to change the height of an element:

```
.h-25 ➔ {height:25%}  
.h-50 ➔ {height:50%}  
.h-75 ➔ {height:75%}  
.h-100 ➔ {height:100%}  
.mh-100 ➔ {max-height:100%}
```

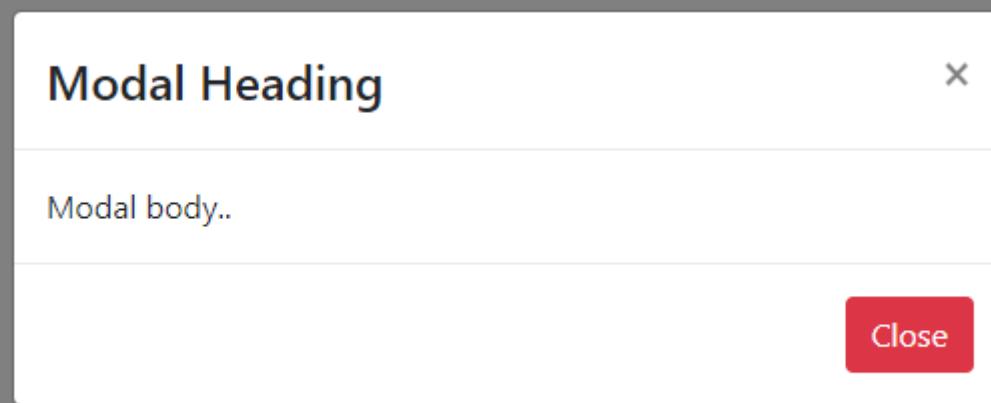


Bootstrap Modal

Modal

- *Use Bootstrap's JavaScript modal plugin to add dialogs to your site for lightboxes, user notifications, or completely custom content.*
- *Modals are built with HTML, CSS, and JavaScript. They're positioned over everything else in the document and remove scroll from the <body> so that modal content scrolls instead.*
- *Clicking on the modal "backdrop" will automatically close the modal.*

```
<button type="button" class="btn btn-primary"
  data-toggle="modal" data-target="#myModal">Open</button>
<div class="modal" id="myModal">
  <div class="modal-dialog"><div class="modal-content">
    <div class="modal-header">
      <h4 class="modal-title">Modal Heading</h4>
      <button type="button" class="close" data-
        dismiss="modal">&times;</button></div>
    <div class="modal-body">Modal body..</div>
    <div class="modal-footer">
      <button type="button" class="btn btn-danger"
        data-dismiss="modal">Close</button></div>
  </div></div></div>
```



Add fading animation

```
<button type="button" class="btn btn-primary"  
data-toggle="modal" data-target="#myModal">Open</button>  
<div class="modal fade" id="myModal">  
  <div class="modal-dialog"><div class="modal-content">  
    <div class="modal-header">  
      <h4 class="modal-title">Modal Heading</h4>  
      <button type="button" class="close" data-  
        dismiss="modal">&times;</button></div>  
    <div class="modal-body">Modal body..</div>  
    <div class="modal-footer">  
      <button type="button" class="btn btn-danger"  
        data-dismiss="modal">Close</button></div>  
  </div></div></div>
```

Modal Size

- For small-sized modal:

```
<div class="modal fade" id="myModal">  
  <div class="modal-dialog modal-sm">  
    ...  
  </div></div>
```

- For large-sized modal:

```
<div class="modal fade" id="myModal">  
  <div class="modal-dialog modal-lg">  
    ...  
  </div></div>
```

Modal centering

- To center the modal vertically and horizontally within the page:

```
<div class="modal fade" id="myModal">  
  <div class="modal-dialog modal-dialog-centered">  
    ...  
  </div></div>
```



Bootstrap Carousel

Basic Bootstrap Carousel

```
<div class="carousel slide" data-ride="carousel">  
  <div class="carousel-inner">  
    <div class="carousel-item active">  
      </div>  
    <div class="carousel-item">  
      </div>  
    <div class="carousel-item">  
      </div>  
  </div>  
</div>
```

Bootstrap Carousel with Controls

```
<div class="carousel slide" data-ride="carousel" id="xyz">  
  <div class="carousel-inner">..... </div>  
  
  <a class="carousel-control-prev" href="#xyz" data-slide="prev">  
    <span class="carousel-control-prev-icon"></span></a>  
  
  <a class="carousel-control-next" href="#xyz" data-slide="next">  
    <span class="carousel-control-next-icon"></span></a>  
</div>
```

Bootstrap Carousel with indicators

```
<div class="carousel slide" data-ride="carousel" id="xyz">  
  
  <ol class="carousel-indicators">  
  
    <li data-target="#xyz" data-slide-to="0" class="active"></li>  
  
    <li data-target="#xyz" data-slide-to="1"></li>  
  
    <li data-target="#xyz" data-slide-to="2"></li>  
  
  </ol>  
  
  <div class="carousel-inner">..... </div>  
  
</div>
```

Bootstrap Carousel with captions

```
<div class="carousel slide" data-ride="carousel" id="xyz">  
  
  <ol class="carousel-indicators">  
  
    <li data-target="#xyz" data-slide-to="0" class="active"></li>  
  
    <li data-target="#xyz" data-slide-to="1"></li>  
  
    <li data-target="#xyz" data-slide-to="2"></li>  
  
  </ol>  
  
  <div class="carousel-inner">..... </div>  
  
</div>
```

Bootstrap Carousel with captions

```
<div class="carousel-inner">  
  <div class="carousel-item">  
      
  
    <div class="carousel-caption d-none d-md-block">  
      <h5>This is a title for the image</h5>  
      <p>This is a paragraph description for the image</p>  
    </div>  
  </div>  
</div>
```

Bootstrap Carousel Speed Control

```
$('.carousel').carousel({  
    interval: 2000  
})
```