



Tema 2. Tecnologías del cliente. Bootstrap

Programación web

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Introducción

- Diseñar una página completa editando el CSS desde cero es una tarea de muy bajo nivel



- Los diseñadores gráficos se especializan en maquetación web para crear diseños que los desarrolladores podamos usar

Introducción

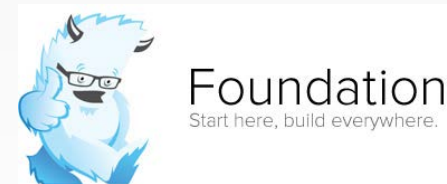
- Existen muchas librerías de componentes CSS que podemos usar para dar estilos de forma sencilla a nuestras aplicaciones web
- Algunos ejemplos son:

 **B Bootstrap**

<http://getbootstrap.com/>



<http://semantic-ui.com/>



<http://foundation.zurb.com/>

Introducción

¿Qué es Bootstrap?

- Bootstrap es un framework de software libre (licencia MIT) para el diseño del lado cliente de aplicaciones web
- Fue creado en 2011 por desarrolladores de Twitter con el objetivo de fomentar la coherencia de las herramientas internas de la compañía
- Ventajas de Bootstrap:
 - Fácil de usar
 - Permite la creación de aplicaciones web adaptables (*responsive*)
 - Orientado a dispositivos móviles en primer lugar (*mobile-first*)
 - Proporciona compatibilidad entre los principales navegadores (Chrome, Firefox, Internet Explorer, Safari y Opera)

<https://getbootstrap.com/docs/>

Introducción

¿Cómo usamos Bootstrap?

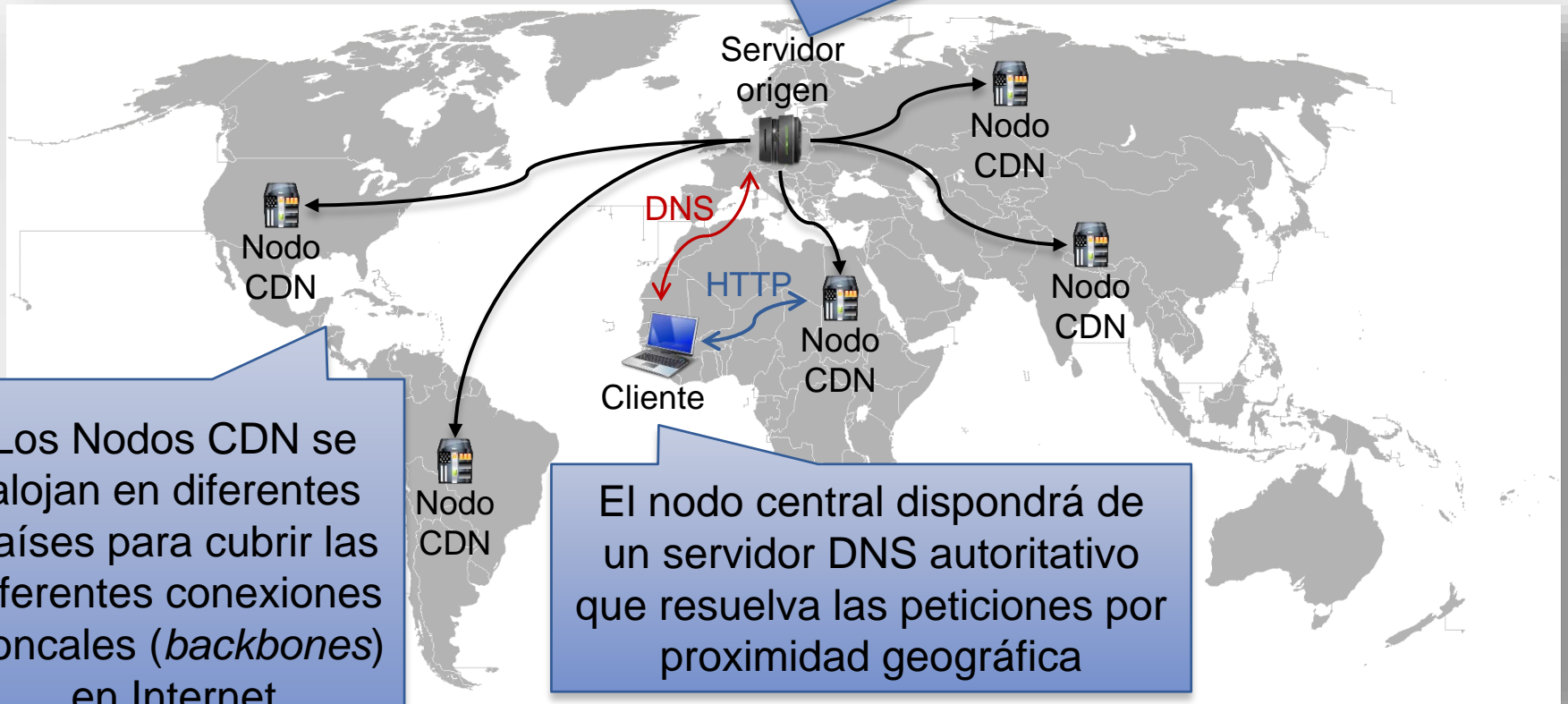
- La versión actual de Bootstrap (febrero de 2018) es la 4.0.0
- Una forma de usar Bootstrap es enlazando de la CDN (*Content Delivery Network*): <http://www.bootstrapcdn.com/>
- La versión actual de Bootstrap requiere el uso de 2 librerías JavaScript:
 - jQuery (librería cuyo objetivo es simplificar el uso de JavaScript): <https://jquery.com/>
 - PopperJS (librería cuyo objetivo es simplificar el posicionamiento de elementos en JavaScript): <https://popper.js.org/>
- Para usar Bootstrap insertamos las siguientes etiquetas:

```
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css" >
<script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js"></script>
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"></script>
```

Introducción

¿Qué es una CDN?

Hay un servidor central que distribuye los contenidos a través de una red de nodos distribuidos geográficamente



Los Nodos CDN se alojan en diferentes países para cubrir las diferentes conexiones troncales (*backbones*) en Internet

El nodo central dispondrá de un servidor DNS autoritativo que resuelva las peticiones por proximidad geográfica

Introducción

Primera página con Bootstrap

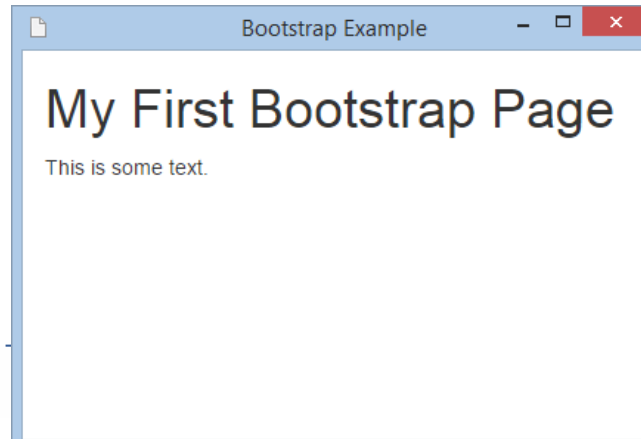
Esta etiqueta configura el área visible de una página web. Mediante estos valores preparamos al navegador para usar todo el ancho disponible y sin zoom inicial

```
<!DOCTYPE html>
<html lang="en">

<head>
<title>Bootstrap Example</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">
<script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js"></script>
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"></script>
</head>

<body>
<div class="container">
<h1>My First Bootstrap Page</h1>
<p>This is some text.</p>
</div>
</body>

</html>
```



A parte se pueden usar los atributos *integrity* y *crossorigin*

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Introducción

Política del mismo origen

- La **política del mismo origen** (*same-origin policy*) es una medida de seguridad implementada en los navegadores para evitar cargar scripts cuyo *origen* sea diferente
 - Se entiende origen como la parte inicial de la URL (combinación de protocolo + host + puerto)
- A veces esta política es demasiado restrictiva, y se puede relajar permitiendo orígenes cruzados (**CORS**, *Cross-origin Resource Sharing*) en los servidores web
 - Es un estándar del W3C que permite saltarse la política del mismo origen usando ciertas cabeceras HTTP (`Access-Control-Allow-Origin`)

<https://www.w3.org/TR/cors/>

Cuadrícula (*grid*)

- En Bootstrap la disposición de elementos dentro de una página (*layout*) se posiciona mediante una cuadrícula (***grid***)
- Esta cuadrícula se organiza en base a **filas** y **columnas**
 - Las filas (*rows*) deben ir contenidas siempre en un **contenedor**, que puede ser de dos tipos:
 - `class="container"` : ancho fijo
 - `class="container-fluid"` : ancho total
 - Las columnas (*cols*) van dentro de las filas

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

Cuadrícula (*grid*)

- La cuadrícula se divide en 12 columnas:

1	1	1	1	1	1	1	1	1	1	1	1
4				4				4			
4				8							
6						6					
12											

- La cuadrícula está formada por 4 clases:
 - xs*: para teléfonos (ancho < 768px)
 - sm*: para tabletas (768px ≤ ancho < 992px)
 - md*: para escritorios (992px ≤ ancho < 1200px)
 - lg*: para escritorios grandes (ancho ≥ 1200px)

Este sistema es adaptable (*responsive*) en Bootstrap, de modo que se organizará de forma relativa al tamaño de la pantalla

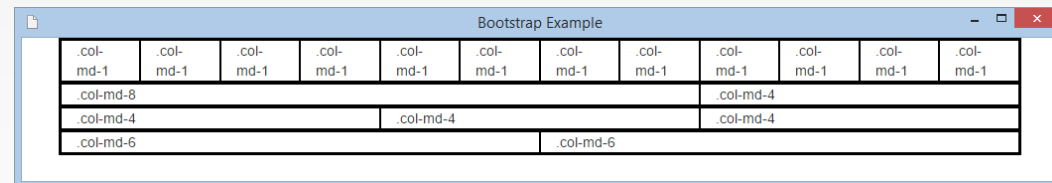
Cuadrícula (*grid*)

- Ancho para `class="container"` :

Tamaño	Ancho columna	Espacio entre columnas (<i>gutter</i>)
<i>lg</i>	70 px	30 px
<i>md</i>	42 px	20 px
<i>sm</i>	Columnas fluidas (no hay tamaño fijo)	
<i>xs</i>		

Cuadrícula (*grid*)

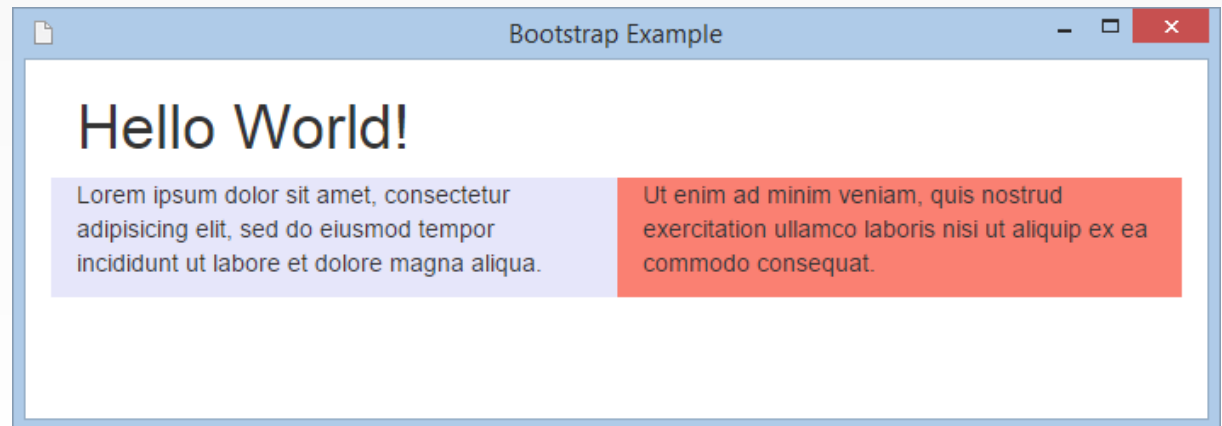
```
<div class="container">
  <div class="row">
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
    <div class="col-md-1">.col-md-1</div>
  </div>
  <div class="row">
    <div class="col-md-8">.col-md-8</div>
    <div class="col-md-4">.col-md-4</div>
  </div>
  <div class="row">
    <div class="col-md-4">.col-md-4</div>
    <div class="col-md-4">.col-md-4</div>
    <div class="col-md-4">.col-md-4</div>
  </div>
  <div class="row">
    <div class="col-md-6">.col-md-6</div>
    <div class="col-md-6">.col-md-6</div>
  </div>
</div>
```



Cuadrícula (*grid*)

```
<div class="container">  
  <h1>Hello World!</h1>  
  <div class="row">  
    <div class="col-xs-6" style="background-color:lavender;">  
      <p>Lorem ipsum ...</p>  
    </div>  
    <div class="col-xs-6" style="background-color:salmon;">  
      <p>Ut enim ...</p>  
    </div>  
  </div>  
</div>
```

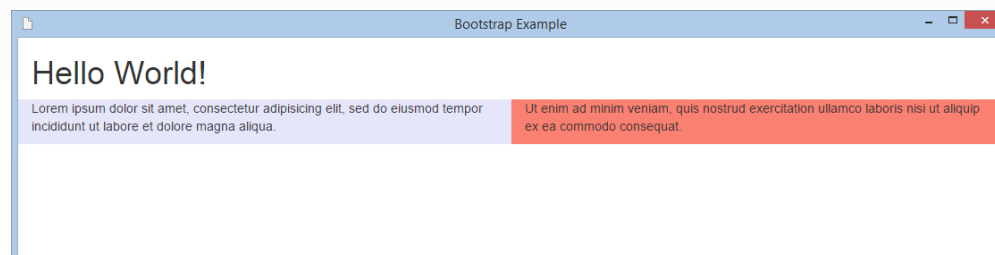
Fork me on GitHub



Cuadrícula (*grid*)

```
<div class="container-fluid">
  <h1>Hello World!</h1>
  <div class="row">
    <div class="col-sm-3 col-md-6" style="background-color:lavender;">
      <p>Lorem ipsum ...</p>
    </div>
    <div class="col-sm-9 col-md-6" style="background-color:salmon;">
      <p>Ut enim ...</p>
    </div>
  </div>
</div>
```

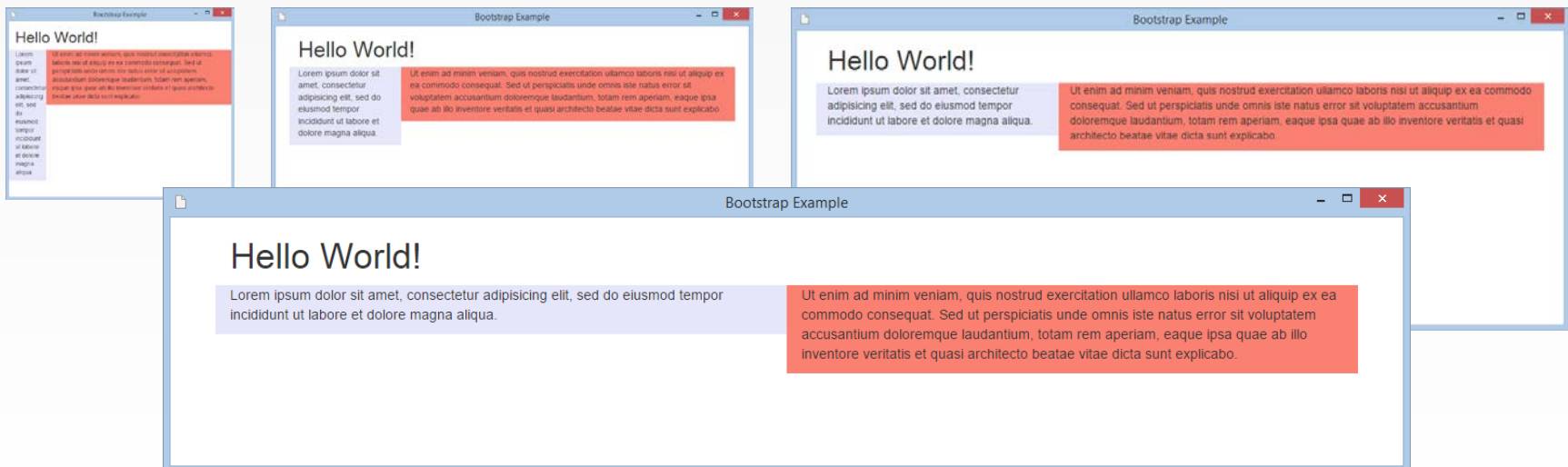
Fork me on GitHub



Cuadrícula (*grid*)

```
<div class="container">
  <h1>Hello World!</h1>
  <div class="row">
    <div class="col-xs-2 col-sm-3 col-md-4 col-lg-6" style="background-color: lavender;">
      <p>Lorem ipsum ...</p>
    </div>
    <div class="col-xs-10 col-sm-9 col-md-8 col-lg-6" style="background-color: salmon;">
      <p>Ut enim ...</p>
    </div>
  </div>
</div>
```

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Cuadrícula (*grid*)

- Podemos visualizar como se ajusta nuestra plantilla a diferentes tamaños de pantalla usando las herramientas integradas en Google Chrome
- Además, existen herramientas online para ver nuestra aplicación web en diferentes dispositivos/pantallas:
 - <http://quirktools.com/screenfly/>
 - <http://www.viewlike.us/>
 - <http://www.infobyip.com/testwebsiteresolution.php>

Texto

Cabeceras

- Etiquetas `h1` a `h6`

```
<div class="container">  
  <h1>h1 Bootstrap heading (36px)</h1>  
  <h2>h2 Bootstrap heading (30px)</h2>  
  <h3>h3 Bootstrap heading (24px)</h3>  
  <h4>h4 Bootstrap heading (18px)</h4>  
  <h5>h5 Bootstrap heading (14px)</h5>  
  <h6>h6 Bootstrap heading (12px)</h6>  
</div>
```

h1 Bootstrap heading (36px)

h2 Bootstrap heading (30px)

h3 Bootstrap heading (24px)

h4 Bootstrap heading (18px)

h5 Bootstrap heading (14px)

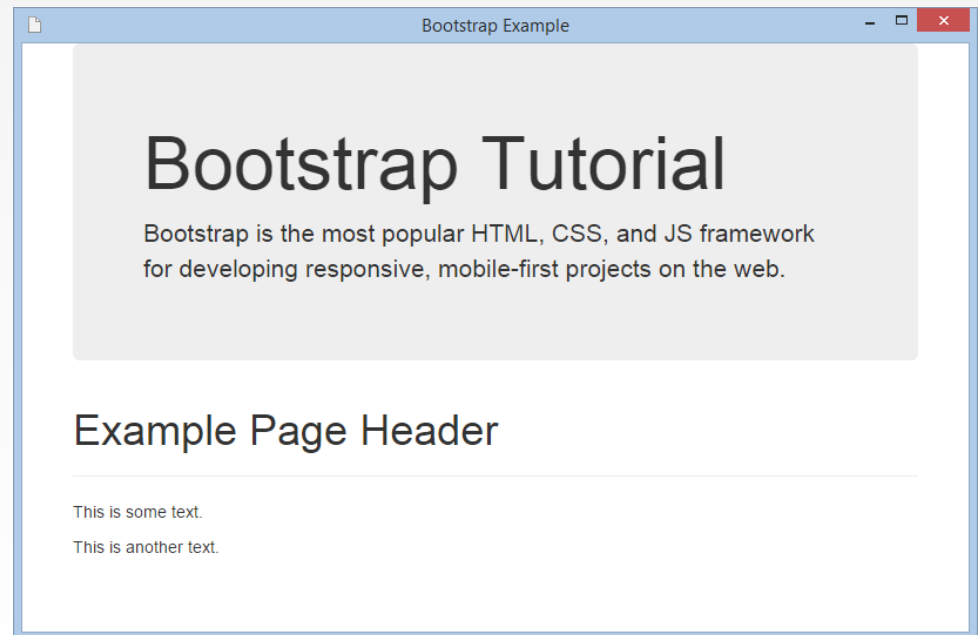
h6 Bootstrap heading (12px)

Texto

Titulares

- Clases *jumbotron* y *page-header*:

```
<div class="container">  
  <div class="jumbotron">  
    <h1>Bootstrap Tutorial</h1>  
    <p>Bootstrap is the most popular  
HTML, CSS, and JS framework for  
developing responsive, mobile-first  
projects on the web.</p>  
  </div>  
  <div class="page-header">  
    <h1>Example Page Header</h1>  
  </div>  
  <p>This is some text.</p>  
  <p>This is another text.</p>  
</div>
```



Texto

Efectos de texto

- Etiquetas `mark`, `abbr`, `blockquote`, `footer`:

```
<p>Use the mark element to <mark>highlight</mark> text.</p>
<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>
<blockquote>
  <p>For 50 years, WWF has been protecting the future of nature. The world's leading
  conservation organization, WWF works in 100 countries and is supported by 1.2 million
  members in the United States and close to 5 million globally.</p>
  <footer>From WWF's website</footer>
</blockquote>
```

Use the mark element to highlight text.

The WHO was founded in 1948.

For 50 years, WWF has been protecting the future of nature. The world's leading conservation organization, WWF works in 100 countries and is supported by 1.2 million members in the United States and close to 5 million globally.

— From WWF's website

Texto

Efectos de color

- Clases `text-*` y `bg-*`:

```
<h2>Contextual Colors</h2>
<p>Use the contextual classes to provide "meaning through colors":</p>
<p class="text-muted">This text is muted.</p>
<p class="text-primary">This text is important.</p>
<p class="text-success">This text indicates success.</p>
<p class="text-info">This text represents some information.</p>
<p class="text-warning">This text represents a warning.</p>
<p class="text-danger">This text represents danger.</p>

<h2>Contextual Backgrounds</h2>
<p>Use the contextual background classes to provide "meaning through colors":</p>
<p class="bg-primary">This text is important.</p>
<p class="bg-success">This text indicates success.</p>
<p class="bg-info">This text represents some information.</p>
<p class="bg-warning">This text represents a warning.</p>
<p class="bg-danger">This text represents danger.</p>
```

Contextual Colors

Use the contextual classes to provide "meaning through colors":

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.

Contextual Backgrounds

Use the contextual background classes to provide "meaning through colors":

This text is important.

This text indicates success.

This text represents some information.

This text represents a warning.

This text represents danger.

Texto

Efectos de código

- Etiquetas `kbd` y `pre`:

```
<p>Use <kbd>ctrl + p</kbd> to open  
the Print dialog box.</p>  
<p>For multiple lines of code, use  
the pre element:</p>  
<pre>  
Text in a pre element  
is displayed in a fixed-width  
font, and it preserves  
both      spaces and  
line breaks.  
</pre>
```

Use `ctrl + p` to open the Print dialog box.

For multiple lines of code, use the pre element:

```
Text in a pre element  
is displayed in a fixed-width  
font, and it preserves  
both      spaces and  
line breaks.
```

Tablas

Tabla básica

- Clase *table*:

Basic Table

The `.table` class adds basic styling (light padding and only horizontal dividers) to a table:

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

```
<h2>Basic Table</h2>
<p>The .table class adds basic styling (light padding and only horizontal dividers) to a table:</p>
<table class="table">
  <thead>
    <tr>
      <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>
    <tr>
      <td>July</td>
      <td>Dooley</td>
      <td>july@example.com</td>
    </tr>
  </tbody>
</table>
```


Tablas

Tabla estilo cebra

- Clase *table-striped*:

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

```
<h2>Striped Rows</h2>
<p>The .table-striped class adds
zebra-stripes to a table:</p>
<table class="table table-striped">
  <thead>
    <tr>
      <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>
    <tr>
      <td>July</td>
      <td>Dooley</td>
      <td>july@example.com</td>
    </tr>
  </tbody>
</table>
```

Tablas

Tabla con borde

- Clase *table-bordered*:

Bordered Table

The `.table-bordered` class adds borders to a table:

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

```
<h2>Bordered Table</h2>
<p>The .table-bordered class adds
borders to a table:</p>
<table class="table table-bordered">
  <thead>
    <tr>
      <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>
    <tr>
      <td>July</td>
      <td>Dooley</td>
      <td>july@example.com</td>
    </tr>
  </tbody>
</table>
```

Tablas

Tabla con efecto *roll-over*

- Clase *table-hover*:

Hover Rows

The `.table-hover` class enables a hover state on table rows:

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

```
<h2>Hover Rows</h2>
<p>The .table-hover class enables a
hover state on table rows:</p>
<table class="table table-hover">
  <thead>
    <tr>
      <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>
    <tr>
      <td>July</td>
      <td>Dooley</td>
      <td>july@example.com</td>
    </tr>
  </tbody>
</table>
```

Tablas

Tabla condensada

- Clase *table-condensed*:

Condensed Table

The `.table-condensed` class makes a table more compact by cutting cell padding in half:

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

```
<h2>Condensed Table</h2>
<p>The .table-condensed class makes a
table more compact by cutting cell
padding in half:</p>
<table class="table table-condensed">
  <thead>
    <tr>
      <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>
    <tr>
      <td>July</td>
      <td>Dooley</td>
      <td>july@example.com</td>
    </tr>
  </tbody>
</table>
```

Tablas

Tabla con color de fondo

- Clases de fila *success*, *danger*, *info*:

Contextual Classes

Contextual classes can be used to color table rows or table cells. The classes that can be used are: `.active`, `.success`, `.info`, `.warning`, and `.danger`.

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

```
<h2>Contextual Classes</h2>
<p>Contextual classes can be used to
color table rows or table cells. The
classes that can be used are: .active,
.success, .info, .warning, and
.danger.</p>
<table class="table">
  <thead>
    <tr>
      <th>Firstname</th>
      <th>Lastname</th>
      <th>Email</th>
    </tr>
  </thead>
  <tbody>
    <tr class="success">
      <td>John</td>
      <td>Doe</td>
      <td>john@example.com</td>
    </tr>
    <tr class="danger">
      <td>Mary</td>
      <td>Moe</td>
      <td>mary@example.com</td>
    </tr>
    <tr class="info">
      <td>July</td>
      <td>Dooley</td>
      <td>july@example.com</td>
    </tr>
  </tbody>
</table>
```

Imágenes

Bordes redondeados

- Clase *rounded*:

Rounded Corners

The `.img-rounded` class adds rounded corners to an image (not available in IE8):



```
<h2>Rounded Corners</h2>
<p>The .rounded class adds rounded corners to an image (not available in IE8):</p>

```

Imágenes

Marco circular

- Clase *rounded-circle*:

Circle

The `.img-circle` class shapes the image to a circle (not available in IE8):



```
<h2>Circle</h2>
<p>The .rounded-circle class
shapes the image to a circle
(not available in IE8):</p>

```

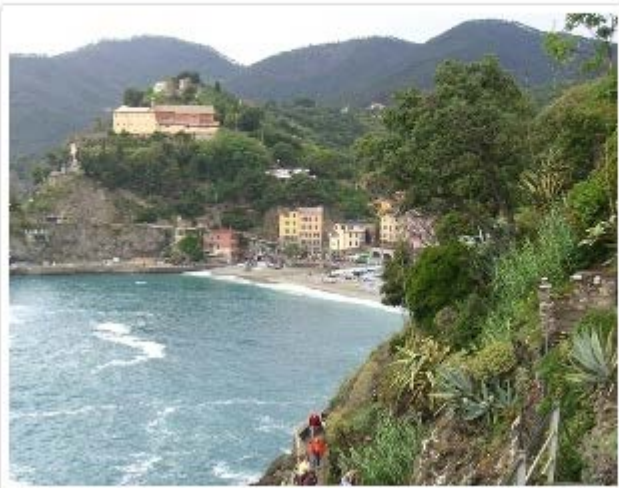
Imágenes

Miniatura

- Clase *img-thumbnail*:

Thumbnail

The `.img-thumbnail` class creates a thumbnail of the image:



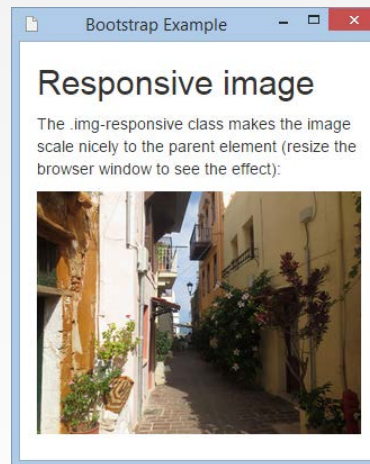
```
<h2>Thumbnail</h2>
<p>The .img-thumbnail class
creates a thumbnail of the
image:</p>

```


Imágenes

Imagen adaptable

- Clase *img-fluid*:



```
<h2>Responsive image</h2>
<p>The .img-fluid class makes
the image scale nicely to the
parent element (resize the
browser window to see the
effect):</p>

```

Botones

Estilos de botones

- Clases *btn*, *btn-default*, *btn-primary*, *btn-success*, *btn-info*, *btn-warning*, *btn-danger*, *btn-link*:

```
<h2>Button Styles</h2>
<button type="button" class="btn btn-default">Default</button>
<button type="button" class="btn btn-primary">Primary</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-link">Link</button>
```

Button Styles



Botones

Etiquetas usadas para botones

- Las clases `btn` y `btn-*` se pueden asociar a las etiquetas `a`, `button`, `input type="button"`, `input type="submit"`:

```
<h2>Button Tags</h2>
<a href="#" class="btn btn-info" role="button">Link Button</a>
<button type="button" class="btn btn-info">Button</button>
<input type="button" class="btn btn-info" value="Input Button">
<input type="submit" class="btn btn-info" value="Submit Button">
```

Button Tags

Link Button

Button

Input Button

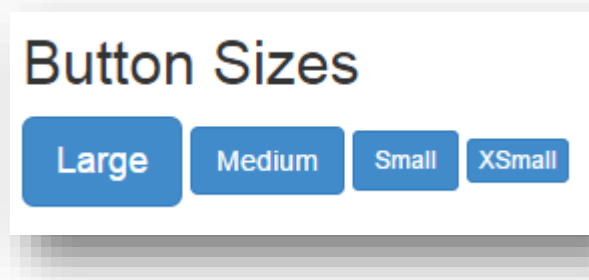
Submit Button

Botones

Tamaño de botones

- Clases *btn-lg*, *btn-md*, *btn-sm*, *btn-xs*:

```
<h2>Button Sizes</h2>  
<button type="button" class="btn btn-primary btn-lg">Large</button>  
<button type="button" class="btn btn-primary btn-md">Medium</button>  
<button type="button" class="btn btn-primary btn-sm">Small</button>  
<button type="button" class="btn btn-primary btn-xs">XSmall</button>
```



Botones

Estado de botones

- Clases *active*, *disabled*:

```
<h2>Button States</h2>  
<button type="button" class="btn btn-primary">Primary Button</button>  
<button type="button" class="btn btn-primary active">Active Primary</button>  
<button type="button" class="btn btn-primary disabled">Disabled Primary</button>
```

Button States

Primary Button

Active Primary

Disabled Primary

Botones

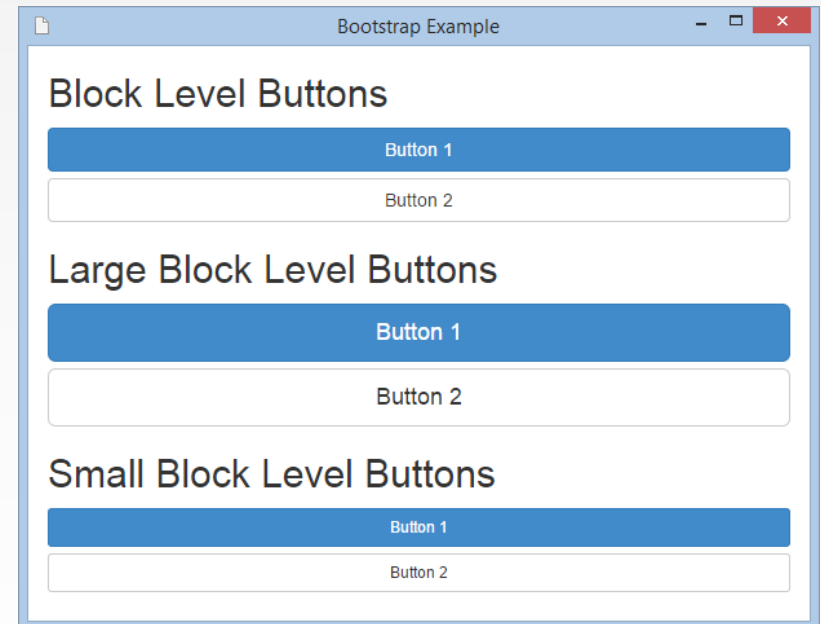
Botones tamaño bloque

- Clase *btn-block*:

```
<h2>Block Level Buttons</h2>
<button type="button" class="btn btn-primary
btn-block">Button 1</button>
<button type="button" class="btn btn-default
btn-block">Button 2</button>

<h2>Large Block Level Buttons</h2>
<button type="button" class="btn btn-primary
btn-lg btn-block">Button 1</button>
<button type="button" class="btn btn-default
btn-lg btn-block">Button 2</button>

<h2>Small Block Level Buttons</h2>
<button type="button" class="btn btn-primary
btn-sm btn-block">Button 1</button>
<button type="button" class="btn btn-default
btn-sm btn-block">Button 2</button>
```



Botones

Grupos de botones

- Clases *btn-group* y *btn-group-vertical*:

```
<h2>Button Group</h2>
<div class="btn-group">
  <button type="button" class="btn btn-primary">Apple</button>
  <button type="button" class="btn btn-primary">Samsung</button>
  <button type="button" class="btn btn-primary">Sony</button>
</div>
```

Button Group

Apple Samsung Sony

```
<h2>Vertical Button Group</h2>
<div class="btn-group-vertical">
  <button type="button" class="btn btn-primary">Apple</button>
  <button type="button" class="btn btn-primary">Samsung</button>
  <button type="button" class="btn btn-primary">Sony</button>
</div>
```

Vertical Button Group

Apple

Samsung

Sony

Botones

Tamaño del grupos de botones

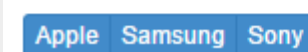
- Clases `btn-group-lg` y `btn-group-xs`:

```
<h2>Button Groups - Set Sizes</h2>
<p>Add class .btn-group-* to size all buttons in a button
group.</p>
<h3>Large Buttons:</h3>
<div class="btn-group btn-group-lg">
  <button type="button" class="btn btn-primary">Apple</button>
  <button type="button" class="btn btn-
primary">Samsung</button>
  <button type="button" class="btn btn-primary">Sony</button>
</div>
<h3>Extra Small Buttons:</h3>
<div class="btn-group btn-group-xs">
  <button type="button" class="btn btn-primary">Apple</button>
  <button type="button" class="btn btn-
primary">Samsung</button>
  <button type="button" class="btn btn-primary">Sony</button>
</div>
```

Large Buttons:



Extra Small Buttons:



Botones

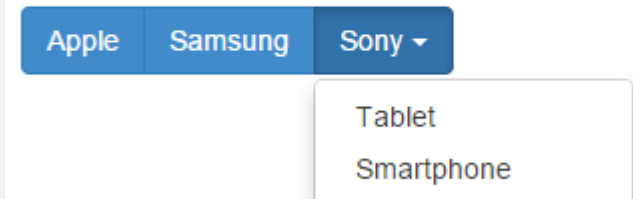
Botones anidados

- Clases *dropdown-toggle* y *dropdown*:

```
<h2>Nesting Button Groups</h2>
<p>Nest button groups to create drop down menus:</p>
<div class="btn-group">
  <button type="button" class="btn btn-primary">Apple</button>
  <button type="button" class="btn btn-primary">Samsung</button>
  <div class="btn-group">
    <button type="button" class="btn btn-primary dropdown-
toggle" data-toggle="dropdown">
      Sony <span class="caret"></span>
    </button>
    <ul class="dropdown-menu" role="menu">
      <li><a href="#">Tablet</a>
      </li>
      <li><a href="#">Smartphone</a>
      </li>
    </ul>
  </div>
</div>
</div>
```

Nesting Button Groups

Nest button groups to create drop down menus:



Barras de progreso

- Clases `progress` y `progress-bar` en elementos `<div>`:

```
<h2>Basic Progress Bar</h2>
<div class="progress">
  <div class="progress-bar" role="progressbar"
aria-valuenow="70" aria-valuemin="0" aria-
valuemax="100" style="width:70%">
  <span class="sr-only">70% Complete</span>
</div>
</div>
```

Basic Progress Bar



WAI-ARIA = *Web Accessibility Initiative*
- *Accessible Rich Internet Applications*

```
<h2>Progress Bar With Label</h2>
<div class="progress">
  <div class="progress-bar" role="progressbar"
aria-valuenow="70" aria-valuemin="0" aria-
valuemax="100" style="width:70%">
  70%
</div>
</div>
```

Progress Bar With Label



Barras de progreso

Barras coloreadas

- Clases *bg-**:

```
<h2>Colored Progress Bars</h2>
<p>The contextual classes colors the progress bars:</p>
<div class="progress">
  <div class="progress-bar bg-success" role="progressbar"
aria-valuenow="40" aria-valuemin="0" aria-valuemax="100"
style="width:40%">40% Complete (success)</div>
</div>
<div class="progress">
  <div class="progress-bar bg-info" role="progressbar" aria-
valuenow="50" aria-valuemin="0" aria-valuemax="100"
style="width:50%">50% Complete (info)</div>
</div>
<div class="progress">
  <div class="progress-bar bg-warning" role="progressbar"
aria-valuenow="60" aria-valuemin="0" aria-valuemax="100"
style="width:60%">60% Complete (warning)</div>
</div>
<div class="progress">
  <div class="progress-bar bg-danger" role="progressbar"
aria-valuenow="70" aria-valuemin="0" aria-valuemax="100"
style="width:70%">70% Complete (danger)</div>
</div>
```

Colored Progress Bars

The contextual classes colors the progress bars:

40% Complete (success)

50% Complete (info)

60% Complete (warning)

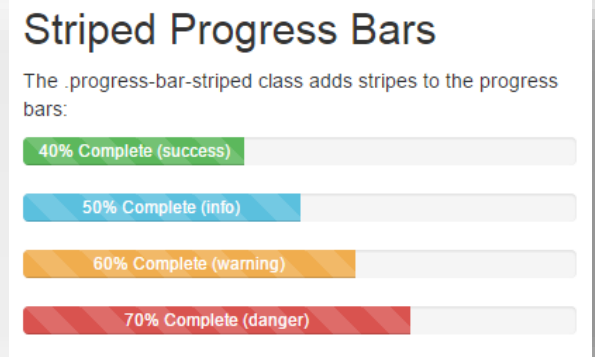
70% Complete (danger)

Barras de progreso

Barras coloreadas

- Clase *progress-bar-striped*:

```
<h2>Striped Progress Bars</h2>
<p>The .progress-bar-striped class adds stripes to the progress bars:</p>
<div class="progress">
  <div class="progress-bar bg-success progress-bar-striped"
  role="progressbar" aria-valuenow="40" aria-valuemin="0" aria-valuemax="100"
  style="width:40%">
    40% Complete (success)</div>
</div>
<div class="progress">
  <div class="progress-bar bg-info progress-bar-striped" role="progressbar"
  aria-valuenow="50" aria-valuemin="0" aria-valuemax="100" style="width:50%">
    50% Complete (info)</div>
</div>
<div class="progress">
  <div class="progress-bar bg-warning progress-bar-striped"
  role="progressbar" aria-valuenow="60" aria-valuemin="0" aria-valuemax="100"
  style="width:60%">
    60% Complete (warning) </div>
</div>
<div class="progress">
  <div class="progress-bar bg-danger progress-bar-striped" role="progressbar"
  aria-valuenow="70" aria-valuemin="0" aria-valuemax="100" style="width:70%">
    70% Complete (danger)</div>
</div>
```



Barras de progreso

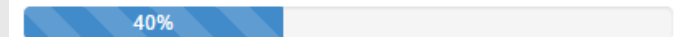
Barras animadas

- Clase `progress-bar-animated`:

```
<h2>Animated Progress Bar</h2>
<p>The .active class animates the progress bar:</p>
<div class="progress">
  <div class="progress-bar progress-bar-striped progress-bar-animated" role="progressbar" aria-valuenow="40" aria-valuemin="0" aria-valuemax="100" style="width:40%">40%</div>
</div>
```

Animated Progress Bar

The .active class animates the progress bar:



Barras compuesta

- Múltiple `<div class="progress-bar">` :

```
<h2>Stacked Progress Bars</h2>
<p>Create a stacked progress bar by placing multiple bars into the same div with class .progress:</p>
<div class="progress">
  <div class="progress-bar bg-success" role="progressbar" style="width:40%">Free Space</div>
  <div class="progress-bar bg-warning" role="progressbar" style="width:10%">Warning</div>
  <div class="progress-bar bg-danger" role="progressbar" style="width:20%">Danger</div>
</div>
```

Stacked Progress Bars

Create a stacked progress bar by placing multiple bars into the same div with class .progress:



Paginación

- Clases *pagination*, *page-item*, *page-link* :

```
<h2>Pagination</h2>
<p>The .pagination class provides pagination links:</p>
<ul class="" >
  <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>
```

Pagination

The .pagination class provides pagination links:

Previous 1 2 3 Next

Listas

- Clases *list-group* y *list-group-item* aplicado a `ul`:

```
<h2>Basic List Group</h2>
<ul class="list-group">
  <li class="list-group-item">First item</li>
  <li class="list-group-item">Second item</li>
  <li class="list-group-item">Third item</li>
</ul>
```

Basic List Group

First item

Second item

Third item

- Clases *list-group* y *list-group-item* aplicado a `div` y `a`:

```
<h2>List Group With a Disabled Item</h2>
<div class="list-group">
  <a href="#" class="list-group-item disabled">First item</a>
  <a href="#" class="list-group-item">Second item</a>
  <a href="#" class="list-group-item">Third item</a>
</div>
```

List Group With a Disabled Item

First item

Second item

Third item

Listas

- Clases *list-group-item-** aplicado a `ul`:

```
<h2>List Group With Contextual Classes</h2>
<ul class="list-group" >
  <li class="list-group-item list-group-item-success">First item</li>
  <li class="list-group-item list-group-item-info">Second item</li>
  <li class="list-group-item list-group-item-warning">Third item</li>
  <li class="list-group-item list-group-item-danger">Fourth item</li>
</ul>
```

List Group With Contextual Classes

First item

Second item

Third item

Fourth item

- Clases *list-group-item-** aplicado a `div` y `a`:

```
</ul>
<h2>Linked Items With Contextual Classes</h2>
<div class="list-group">
  <a href="#" class="list-group-item list-group-item-success">First item</a>
  <a href="#" class="list-group-item list-group-item-info">Second item</a>
  <a href="#" class="list-group-item list-group-item-warning">Third item</a>
  <a href="#" class="list-group-item list-group-item-danger">Fourth item</a>
</div>
```

Linked Items With Contextual Classes

First item

Second item

Third item

Fourth item

Formularios

- Bootstrap proporciona tres layouts para formularios:
 - Vertical (por defecto)
 - En línea (*inline*)
 - Horizontal
- Se deben seguir las siguientes reglas:
 - Usar siempre `<form role="form">`
 - Agrupar elementos usando `<div class="form-group">`
 - Usar la clase `form-control` en elementos de formulario textuales (`input`, `textarea`, `select`)

Formularios

Formulario vertical

```
<h2>Vertical (basic) form</h2>
<form role="form">
  <div class="form-group">
    <label for="email">Email:</label>
    <input type="email" class="form-control" id="email" placeholder="Enter email">
  </div>
  <div class="form-group">
    <label for="pwd">Password:</label>
    <input type="password" class="form-control" id="pwd" placeholder="Enter password">
  </div>
  <div class="checkbox">
    <label><input type="checkbox"> Remember me</label>
  </div>
  <button type="submit" class="btn btn-default">Submit</button>
</form>
```

Vertical (basic) form

Email:

Password:

Remember me

Las etiquetas se apilan con respecto a los elementos de formulario



Formularios

Formulario en línea

- Clase *form-inline*:

```
<h2>Inline form</h2>
<form class="form-inline" role="form">
  <div class="form-group">
    <label for="email">Email:</label>
    <input type="email" class="form-control" id="email" placeholder="Enter email">
  </div>
  <div class="form-group">
    <label for="pwd">Password:</label>
    <input type="password" class="form-control" id="pwd" placeholder="Enter password">
  </div>
  <div class="checkbox">
    <label>
      <input type="checkbox"> Remember me</label>
  </div>
  <button type="submit" class="btn btn-default">Submit</button>
</form>
```

Todas las etiquetas y elementos de formulario se colocan en línea

Inline form

Email: Password: Remember me

Formularios

Formulario horizontal

- Clase *form-horizontal*:

```
<h2>Horizontal form</h2>
<form class="form-horizontal" role="form">
  <div class="form-group">
    <label class="control-label col-sm-2" for="email">Email:</label>
    <div class="col-sm-10"><input type="email" class="form-control" id="email" placeholder="Enter email"></div>
  </div>
  <div class="form-group">
    <label class="control-label col-sm-2" for="pwd">Password:</label>
    <div class="col-sm-10"><input type="password" class="form-control" id="pwd" placeholder="Enter password"></div>
  </div>
  <div class="form-group">
    <div class="col-sm-offset-2 col-sm-10"><div class="checkbox"><label><input type="checkbox"> Remember me</label></div></div>
  </div>
  <div class="form-group">
    <div class="col-sm-offset-2 col-sm-10"><button type="submit" class="btn btn-default">Submit</button></div>
  </div>
</form>
```

Horizontal form

Email:

Password:

Remember me

Las etiquetas van en la misma fila que los elementos. Se usan las clases *col-*-** para definir la cuadrícula

Formularios

Validación de formulario

- Atributo *required* (nativo de HTML5):

```
<div class="form-group" >  
  <label for="email">Email:</label>  
  <input type="email" class="form-control" id="email" placeholder="Enter email" required>  
</div>
```

Email:

Enter email



Completa este campo

Email:

aaa



Incluye un signo "@" en la dirección de correo electrónico. La dirección "aaa" no incluye el signo "@".

Formularios

Validación de formulario

- Atributo *pattern* (nativo de HTML5)
- Este atributo acepta expresiones regulares JavaScript. Por ejemplo:
 - `[0-9]+` : dígitos
 - `[A-Za-z]` : letra mayúscula o minúscula
 - Más información en http://www.w3schools.com/js/js_regexp.asp
 - Validador online de expresiones regulares: <https://regex101.com/>

```
<div class="form-group">  
  <label for="date">Country code:</label>  
  <input type="text" class="form-control" id="country" placeholder="Two letter country code" pattern="[A-Za-z]{2}" required>  
</div>
```

Country code:

111



Utiliza un formato que coincida
con el solicitado

Formularios

Validación de formulario


- Tipos especiales (nativo de HTML5)
- Hay que usarlos con precaución porque no están soportados en todos los navegadores
 - Más información en http://www.w3schools.com/tags/att_input_type.asp
 - Para verificar si un navegador lo implementa visitar <http://caniuse.com/>

```
<div class="form-group" >
  <label for="color">Color:</label>
  <input type="color" class="form-control" id="color" placeholder="Select color">
</div>


<div class="form-group" >
  <label for="date">Date:</label>
  <input type="date" class="form-control" id="date" placeholder="Select date">
</div>

<div class="form-group" >
  <label for="date">URL:</label>
  <input type="url" class="form-control" id="url" placeholder="Select URL" required>
</div>
```

URL:

 Completa este campo

URL:

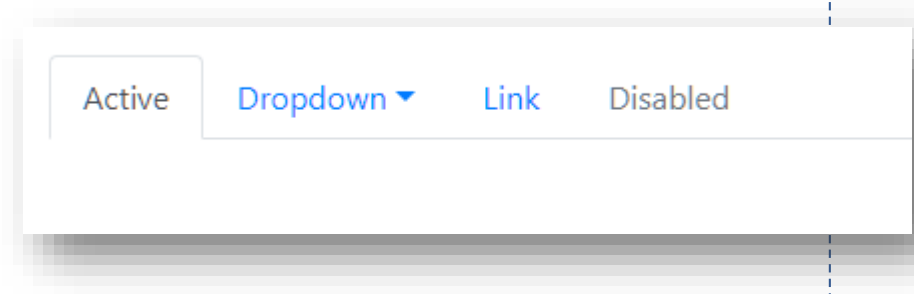
 Introduce una URL

Elementos de navegación

Pestañas

- Clases *nav*, *nav-tabs*, *dropdown*, *dropdown-toggle*, *item*:

```
<ul class="nav nav-tabs" >
  <li class="nav-item" >
    <a class="nav-link active" href="#">Active</a>
  </li>
  <li class="nav-item dropdown" >
    <a class="nav-link dropdown-toggle" data-toggle="dropdown" href="#" role="button">Dropdown</a>
    <div class="dropdown-menu" >
      <a class="dropdown-item" href="#">Action</a>
      <a class="dropdown-item" href="#">Another action</a>
      <a class="dropdown-item" href="#">Something else here</a>
      <div class="dropdown-divider"></div>
      <a class="dropdown-item" href="#">Separated link</a>
    </div>
  </li>
  <li class="nav-item" >
    <a class="nav-link" href="#">Link</a>
  </li>
  <li class="nav-item" >
    <a class="nav-link disabled" href="#">Disabled</a>
  </li>
</ul>
```

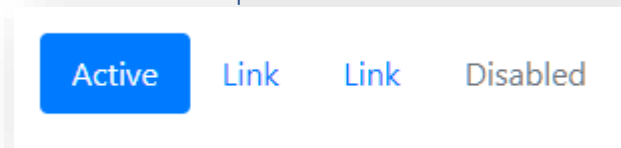


Elementos de navegación

Menú por píldoras

- Clases *nav*, *nav-pills*, *nav-item*, *nav-link*:

```
<ul class="nav nav-pills">  
  <li class="nav-item">  
    <a class="nav-link active" href="#">Active</a>  
  </li>  
  <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">  
    <a class="nav-link disabled" href="#">Disabled</a>  
  </li>  
</ul>
```



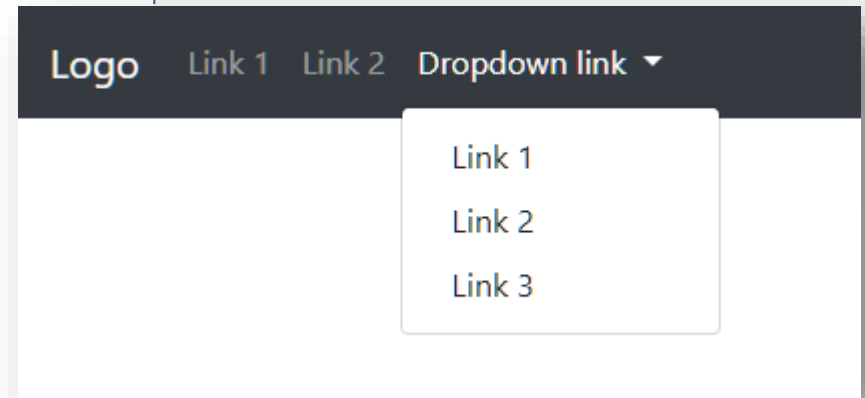
Se convertiría en un menú vertical simplemente añadiendo la clase *flex-column* en el elemento `ul`

Elementos de navegación

Menú horizontal

- Clases *navbar*, *navbar-item*, etc:

```
<nav class="navbar navbar-expand-sm bg-dark navbar-dark">
  <a class="navbar-brand" href="#">Logo</a>
  <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 dropdown">
      <a class="nav-link dropdown-toggle" href="#"
      id="navbardrop" data-toggle="dropdown">
        Dropdown link
      </a>
      <div class="dropdown-menu">
        <a class="dropdown-item" href="#">Link 1</a>
        <a class="dropdown-item" href="#">Link 2</a>
        <a class="dropdown-item" href="#">Link 3</a>
      </div>
    </li>
  </ul>
</nav>
```

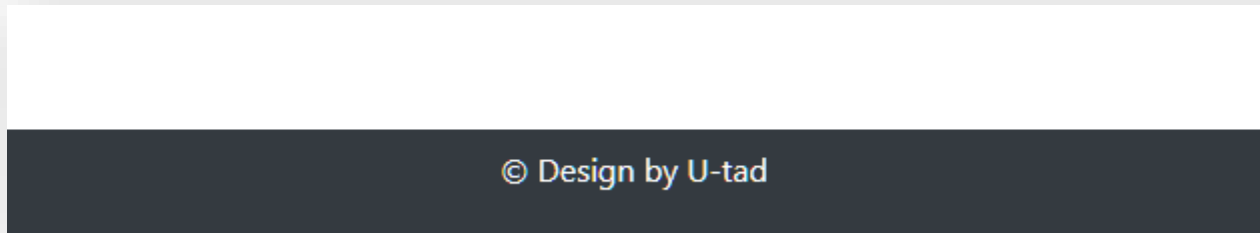


Elementos de navegación

Pie de página

- Clase *navbar*, *fixed-bottom*, etc:

```
<nav class="navbar fixed-bottom navbar-light bg-dark">  
  <p class="col text-center text-white">&copy; Design by U-tad</p>  
</nav>
```



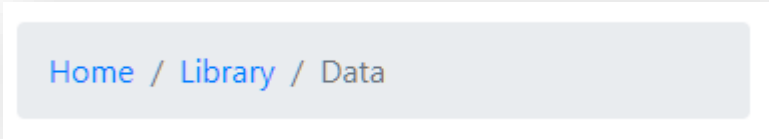
- Algunos ejemplos más avanzados de pie de página:
 - <https://getbootstrap.com/docs/4.0/examples/sticky-footer/>
 - <http://getbootstrap.com/docs/4.0/examples/sticky-footer-navbar/>

Elementos de navegación

Migas de pan

- Clase *breadcrumb*:

```
<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

Plantillas

- Algunas plantillas gratuitas de Bootstrap:
 - <http://www.bootstrapzero.com/>
 - <http://bootswatch.com>
 - <http://bootstraptor.com>
 - <http://bootstrapstyler.com>
 - <https://wrapbootstrap.com>
 - <http://startbootstrap.com>