



Responsive Web Design

BY USING BOOTSTRAP AND JQUERY

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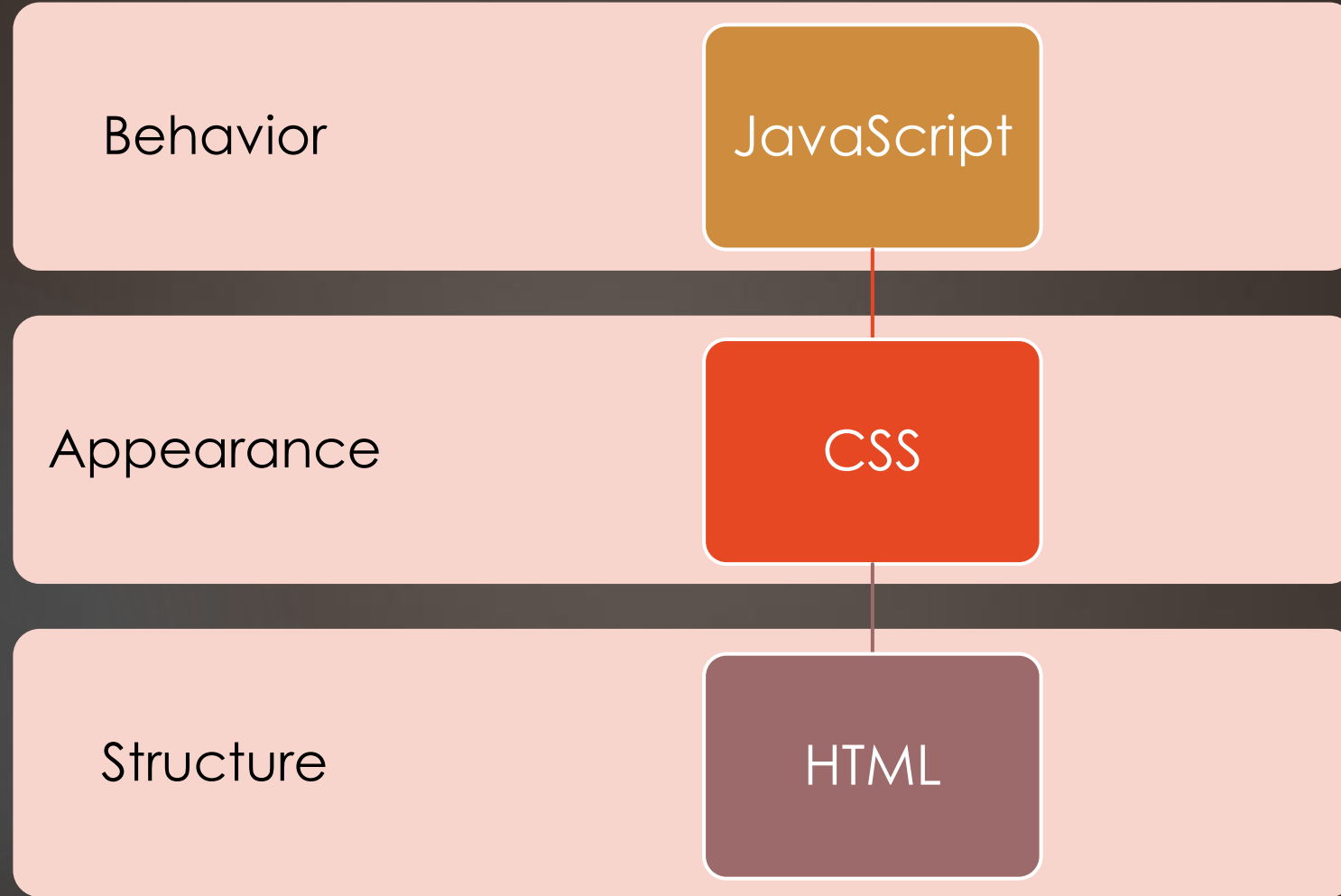


Outline - Day 1

- ▶ HTML and CSS in a nutshell
- ▶ What is Responsive web design ?
- ▶ Bootstrap CSS Framework introduction
- ▶ Grid system
- ▶ Media queries
- ▶ Typography, Table and Contextual color
- ▶ Basic elements, Forms and Utilities
- ▶ Workshops



Three components in Webpage Design

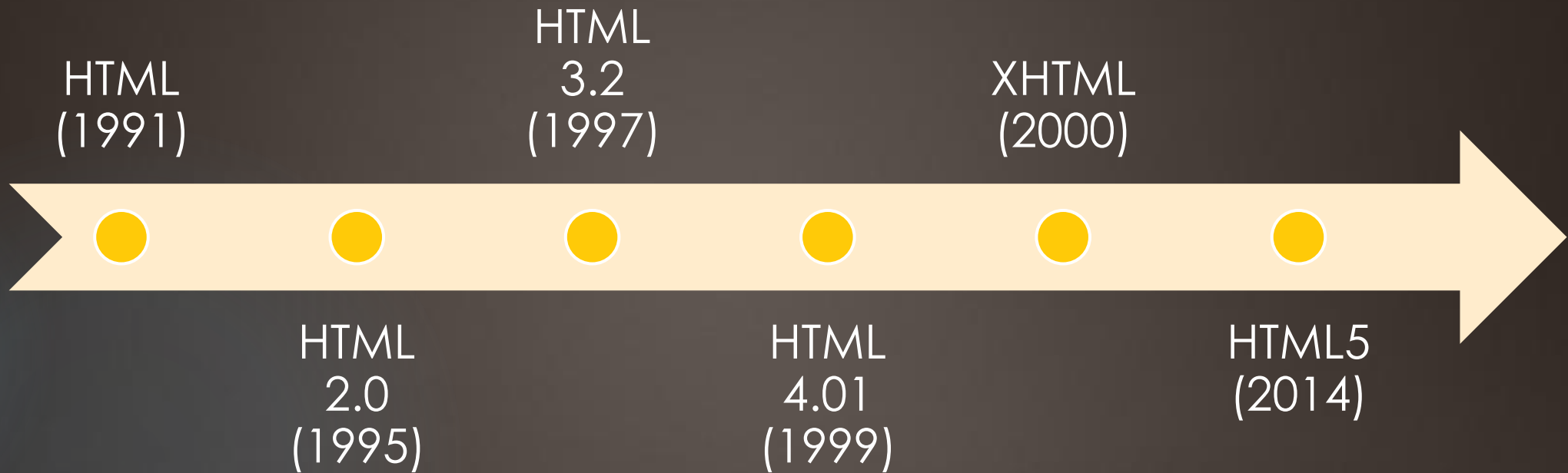


HTML

- ▶ Hyper Text Markup Language
- ▶ Describes the structure of Web pages using markup
- ▶ Elements are the building blocks of HTML pages
- ▶ Elements are represented by tags
- ▶ Elements will be rendered on the browser



HTML Versions

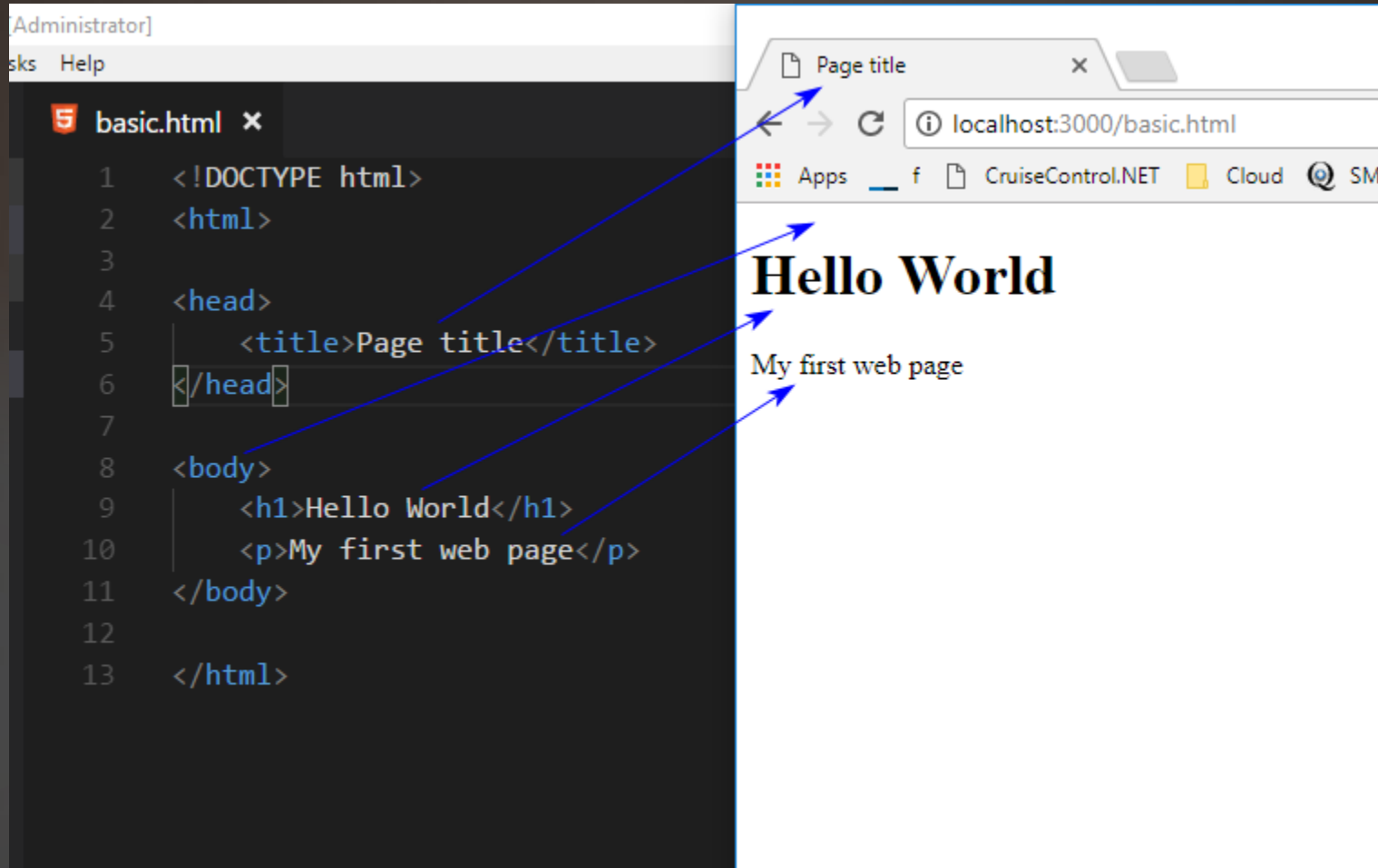


HTML – Basic structure

```
<!DOCTYPE html>
<html>
<head>
  <title>Page title</title>
</head>
<body>
  <h1>Hello World</h1>
  <p>My first web page</p>
</body>
</html>
```



HTML – Basic structure



HTML Elements

- ▶ Usually consists of a **start** tag and **end** tag, with the content inserted in between
- ▶ **recommends** lowercase in HTML

<tagname>content</tagname>



HTML attributes

- ▶ Attributes provide **additional information** about an element
- ▶ Attributes are always specified in **the start tag**
- ▶ Attributes usually come in name/value pairs like: **name="value"**



Common elements

<code><h?> heading </h?></code>	Heading (h1 for largest to h6 for smallest)
<code><p> paragraph </p></code>	Paragraph of Text
<code> bold </code>	Make text between tags bold
<code><i> italic </i></code>	Make text between tags <i>italic</i>
<code> link name </code>	Create a link to another page or website
<code><div> ... </div></code>	Divide up page content into sections, and applying styles
<code></code>	Show an image
<code> list </code>	Unordered, bullet-point list
<code>
</code>	Line Break (force a new line)
<code> red </code>	Use CSS style to change text color
<code><button>OK</button></code>	To display button for any actions



Text Formatting elements

<code><h?> ... </h?></code>	Heading (?= 1 for largest to 6 for smallest, eg h1)
<code> ... </code>	Bold Text
<code><i> ... </i></code>	Italic Text
<code><u> ... </u></code>	Underline Text
<code><strike> ... </strike></code>	Strikeout
<code><pre> ... </pre></code>	Pre-formatted Text
<code><blockquote> ... </blockquote></code>	Text Block Quote
<code> ... </code>	Strong - Shown as Bold in most browsers
<code> ... </code>	Emphasis - Shown as Italics in most browsers

Tables

```
<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
    <td>Mexico</td>
  </tr>
  <tr>
    <td>Ernst Handel</td>
    <td>Roland Mendel</td>
    <td>Austria</td>
  </tr>
  <tr>
    <td>Island Trading</td>
    <td>Helen Bennett</td>
    <td>UK</td>
  </tr>
```

HTML Table

Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Centro comercial Moctezuma	Francisco Chang	Mexico
Ernst Handel	Roland Mendel	Austria
Island Trading	Helen Bennett	UK
Laughing Bacchus Winecellars	Yoshi Tannamuri	Canada
Magazzini Alimentari Riuniti	Giovanni Rovelli	Italy

Styles

- ▶ Use style attribute to style elements

```
<tagname style="property:value;">
```

- ▶ Common used styles can be defined in CSS Classes

Example

```
<p style="background-color: red">  
    red paragraph  
</p>  
<span style="color:blue">blue text</span>
```



Styles and Classes

```
<body>
  <style>
    .post {
      padding: 5px;
      border: 1px solid red;
    }
  </style>
```

```
<p class="post">
```

Lorem ipsum dolor sit amet consectetur, adipisicing elit. Mollitia eius impedit
 provident fugit vel architecto optio, expedita
 reprehenderit iste quo.

```
</p>
```

```
<p class="post">
```

reprehenderit iste quo. Dolorum reiciendis exercitationem nihil molestiae, accusantium
 hic ab consequuntur iure.

```
</p>
```

```
</body>
```

Lorem ipsum dolor sit amet consectetur, adipisicing elit. Mollitia eius impedit provident fugit vel arc
reprehenderit iste quo. Dolorum reiciendis exercitationem nihil molestiae, accusantium hic ab conseq



Layout

- ▶ *DO NOT use tables for page layout*
- ▶ Use div or HTML5 semantics element (header, nav, section, footer) to create layout
- ▶ Technique
 - ▶ CSS Floating
 - ▶ CSS Flexbox
 - ▶ CSS Framework



```
<body>
  <header style="background: red">My website</header>
  <nav style="background: blue; float:left;width:20%; ">
    Main menu
  </nav>
  <div style="background: pink;float:right;width:80%; ">
    Lorem ipsum dolor sit amet consectetur adipisicing elit. Obcaecati autem minus
    corrupti odio id atque quasi, magni nam aliquid,
    vero dolore, ratione maiores. Sit voluptatem repellat iste tempora. Voluptas,
    possimus?
  </div>
  <footer style="clear: both;background:green;">
    Copy right: Company Co., Ltd.
  </footer>
</body>
```



HTML Forms

- ▶ **<form>** element defines a form that is used to collect user input
- ▶ **action** attribute is a form-handler on a server side
- ▶ **method** attribute (GET/POST) to specify HTTP method to submit data to a server side
- ▶ Each input field must have a **name** attribute to be submitted

```
<form action="/process.php">
```

Input, Form elements

```
</form>
```

Input & Form elements

<code><input type="text"></code>	Input for any text (one-line)
<code><input type="password"></code>	Input for password (with mask typing)
<code><input type="radio"></code>	Defines a radio button (for selecting one of many choices)
<code><input type="submit"></code>	Defines a submit button (for submitting the form)
<code><input type="checkbox"></code>	Input for boolean condition (0/1, True/False)
<code><select></code>	To display drop-down list, contains <code><option></code> for possible items selection

Network captures in Chrome during Form Submitting

The screenshot displays the Chrome DevTools Network tab during a form submission. The top panel shows the HTML source code of the form, with blue arrows indicating the mapping between the form fields and the data in the network request. The form fields are:

```
<form action="/action_page.php" method="POST">  
  First name:<br>  
  <input type="text" name="firstname" value="Mickey">  
  <br>  
  Last name:<br>  
  <input type="text" name="lastname" value="Mouse">  
  <br><br>  
  <input type="submit" value="Submit">  
</form>
```

The Network tab shows a list of requests, with `action_page.php` selected. The right-hand pane displays the request details, including headers and form data. The form data is as follows:

Field	Value
firstname	Mickey
lastname	Mouse

Additional details visible in the headers include:

- Content-type: application/x-www-form-urlencoded
- Cookie: __gads=ID=f3c8a4de5abd429e:T=1498586474:S=ALNI...
- Origin: https://www.w3schools.com
- Pragma: no-cache
- Referer: https://www.w3schools.com/html/tryit.asp?file...
- Upgrade-insecure-requests: 1
- User-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) A...

CSS

- ▶ Cascading **Style Sheets**
- ▶ Described how HTML elements to be display on screen (color, font-size, decoration, etc..)
- ▶ External stylesheets are stored in **CSS files (.css)**
- ▶ A Style definitions can be re-use in other elements



Ways to insert CSS

- ▶ External style sheet

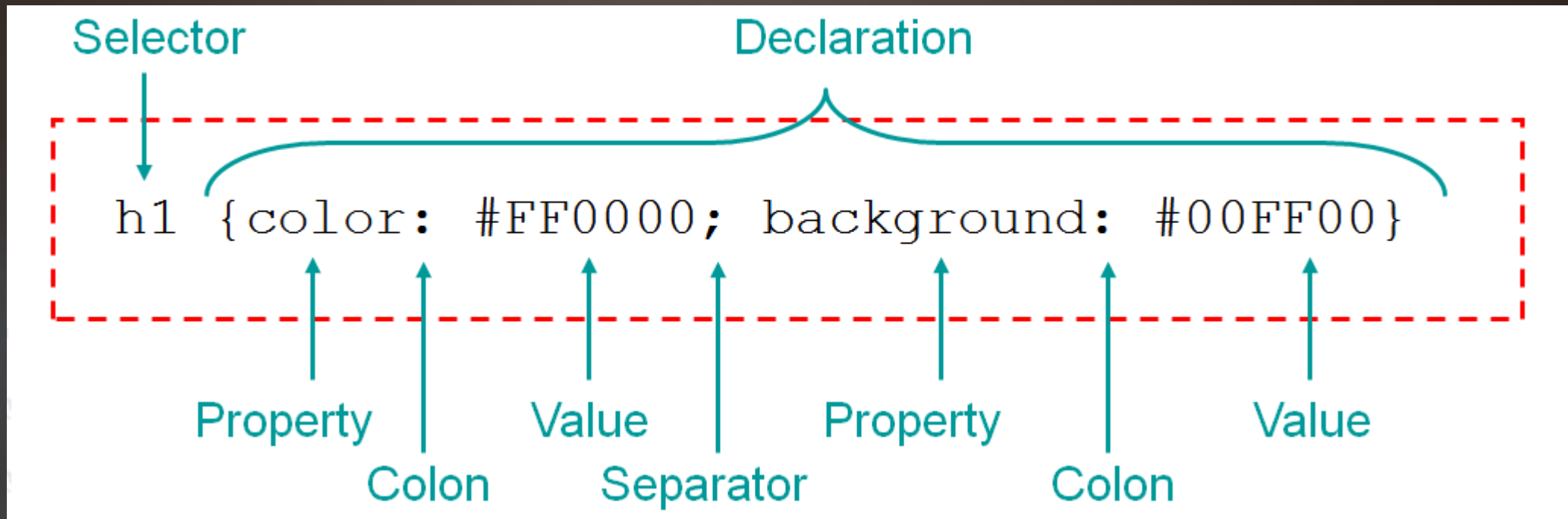
```
<head>  
  <link rel="stylesheet" type="text/css" href="mystyle.css">  
</head>
```

- ▶ Internal style sheet

- ▶ Inline style



Syntax



CSS Selectors

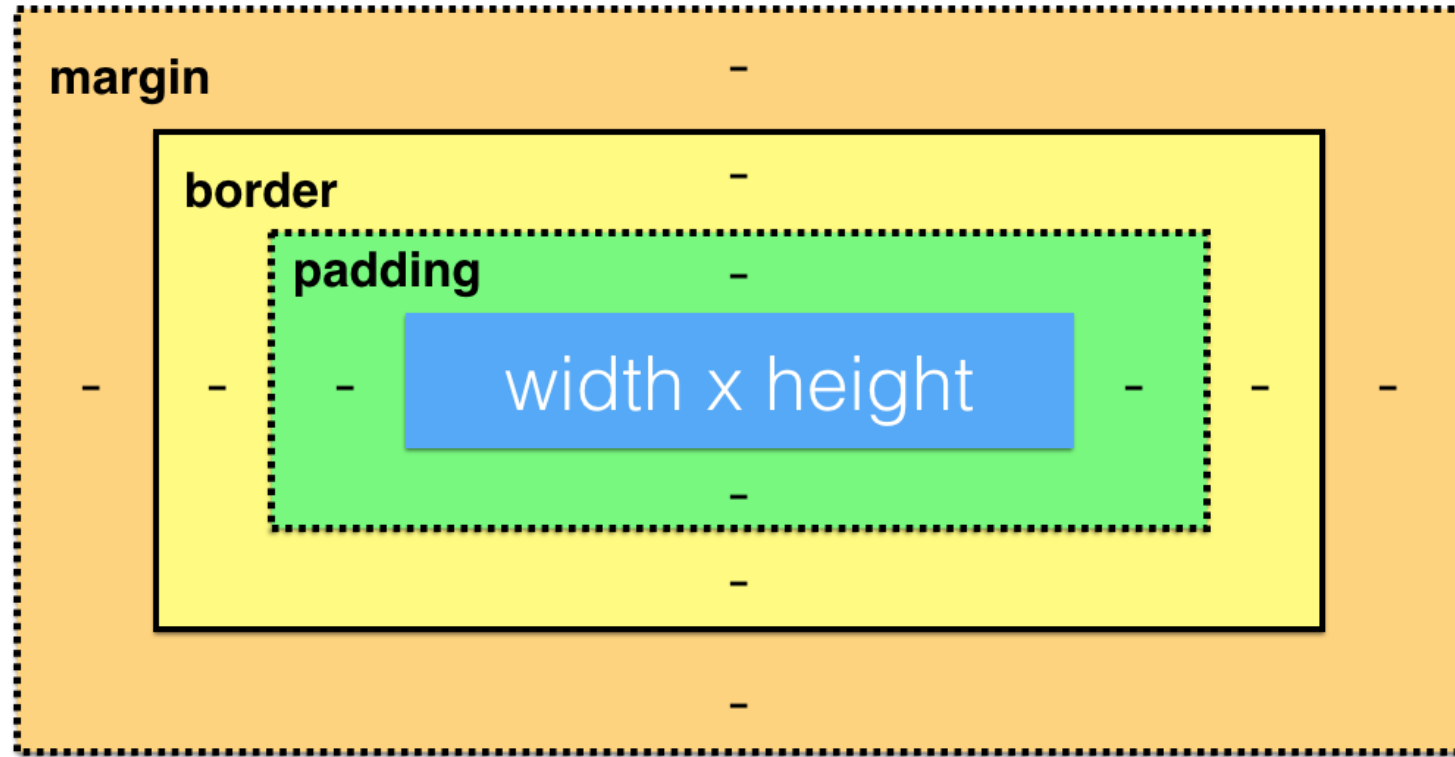
<u>Selector</u>	<u>Example</u>	<u>Example description</u>
.class	.intro	Selects all elements with class="intro"
#id	#firstname	Selects the element with id="firstname"
*	*	Selects all elements
element	p	Selects all <p> elements
element,element	div, p	Selects all <div> elements and all <p> elements
element element	div p	Selects all <p> elements inside <div> elements
element>element	div > p	Selects all <p> elements where the parent is a <div> element
element+element	div + p	Selects all <p> elements that are placed immediately after <div> elements
[attribute=value]	[target=_blank]	Selects all elements with target="_blank"

CSS Properties - Common

- ▶ color
- ▶ background
- ▶ border
- ▶ padding
- ▶ margin
- ▶ text-align
- ▶ font-size
- ▶ font-family
- ▶ display
- ▶ cursor



CSS Properties – Margin, Border and Padding



Responsive Web Design

- ▶ RWD is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops
- ▶ fluid grids, flexible images and media queries



Bootstrap CSS Framework

- ▶ Bootstrap is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites
- ▶ Current version is Bootstrap 4



Where to get bootstrap

- ▶ CDN : <https://cdnjs.com/libraries/twitter-bootstrap>
- ▶ NPM : <https://www.npmjs.com/package/bootstrap>
- ▶ YARN : <https://yarnpkg.com/en/package/bootstrap>



```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <title>Document</title>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link href="https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/4.0.0/css/bootstrap.css"
rel="stylesheet">
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
```



Container

▶ .container



▶ .container-fluid

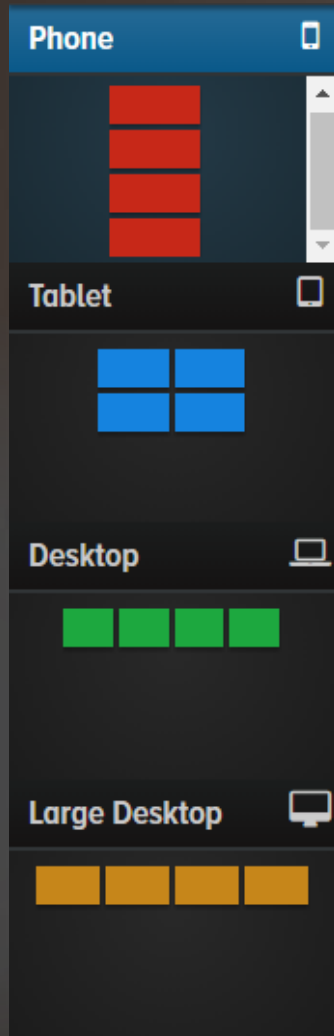


Layout by using Grid System

- ▶ Possible 12 columns per row
- ▶ Define column size by CSS class `col-*` (ex. `col-xs-3`, `col-md-4`)



Grid System – Mix and Match



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


Media queries

```
/* Extra small devices (phones, less than 768px) */  
/* No media query since this is the default in Bootstrap */  
/* Small devices (tablets, 768px and up) */  
@media (min-width: @screen-sm-min) { ... }  
/* Medium devices (desktops, 992px and up) */  
@media (min-width: @screen-md-min) { ... }  
/* Large devices (large desktops, 1200px and up) */  
@media (min-width: @screen-lg-min) { ... }
```



Media queries

🖥️ **Large** - @screen-lg: 1200px;






💻 **Desktop** - @screen-md: 992px;

📱 **Tablet** - @screen-sm: 768px;

📱 **Mobile** - @screen-xs: 480px;



Media queries

xs	Extra small <576px	 portrait mobile
sm	Small ≥576px	 landscape mobile
md	Medium ≥768px	 portrait tablets <i>navbar collapse</i>
lg	Large ≥992px	 landscape tablets
xl	Extra large ≥1200px	 laptops, desktops, TVs

Typography

h1. Bootstrap heading

h2. Bootstrap heading

h3. Bootstrap heading

h4. Bootstrap heading

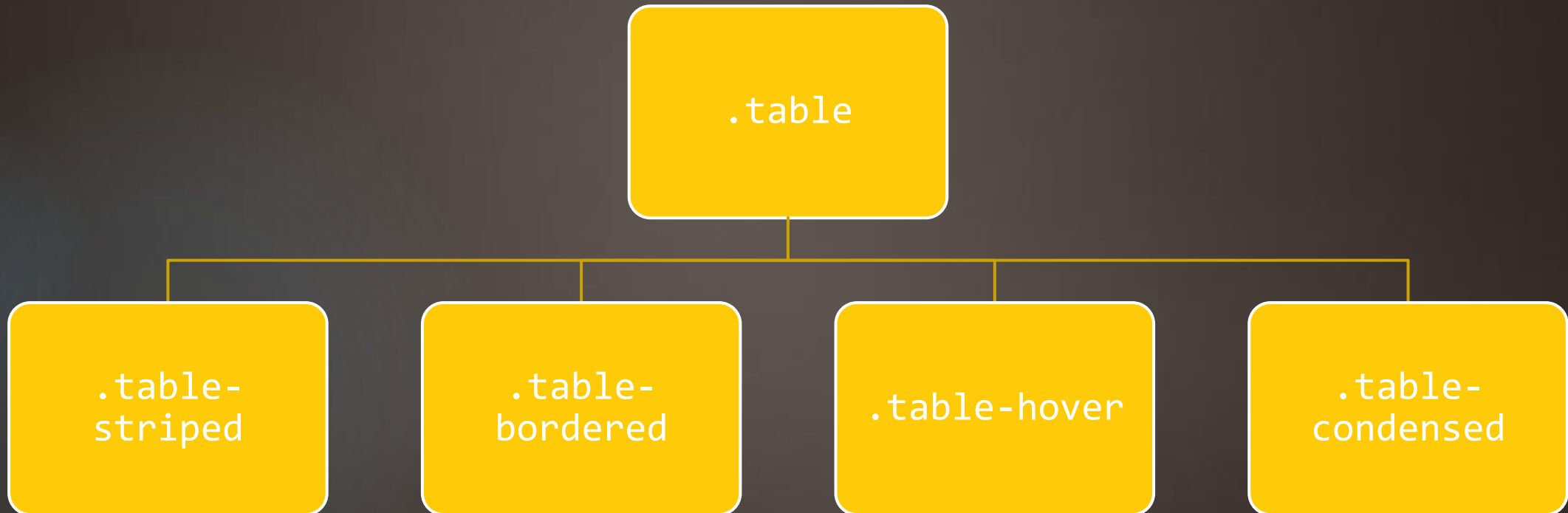
h5. Bootstrap heading

h6. Bootstrap heading

```
<body>  
  <h1>h1. Bootstrap heading</h1>  
  <h2>h2. Bootstrap heading</h2>  
  <h3>h3. Bootstrap heading</h3>  
  <h4>h4. Bootstrap heading</h4>  
  <h5>h5. Bootstrap heading</h5>  
  <h6>h6. Bootstrap heading</h6>  
</body>
```

Tables

- Use class **table** to styling table



Contextual classes

Class suffixes
*-default
*-primary
*-success
*-info
*-warning
*-danger




```
<span class="badge badge-primary">Primary</span>
<span class="badge badge-secondary">Secondary</span>
<span class="badge badge-success">Success</span>
<span class="badge badge-danger">Danger</span>
<span class="badge badge-warning">Warning</span>
<span class="badge badge-info">Info</span>
<div class="alert alert-primary" role="alert">
  This is a primary alert—check it out!
</div>
<div class="alert alert-secondary" role="alert">
  This is a secondary alert—check it out!
</div>
<div class="alert alert-success" role="alert">
  This is a success alert—check it out!
</div>
<div class="alert alert-danger" role="alert">
  This is a danger alert—check it out!
</div>
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-secondary">Secondary</button>
```

Components

- ▶ Navbar
- ▶ List
- ▶ Badge
- ▶ Progress
- ▶ Card
- ▶ Images




Forms

Email address 

We'll never share your email with anyone else.

Password

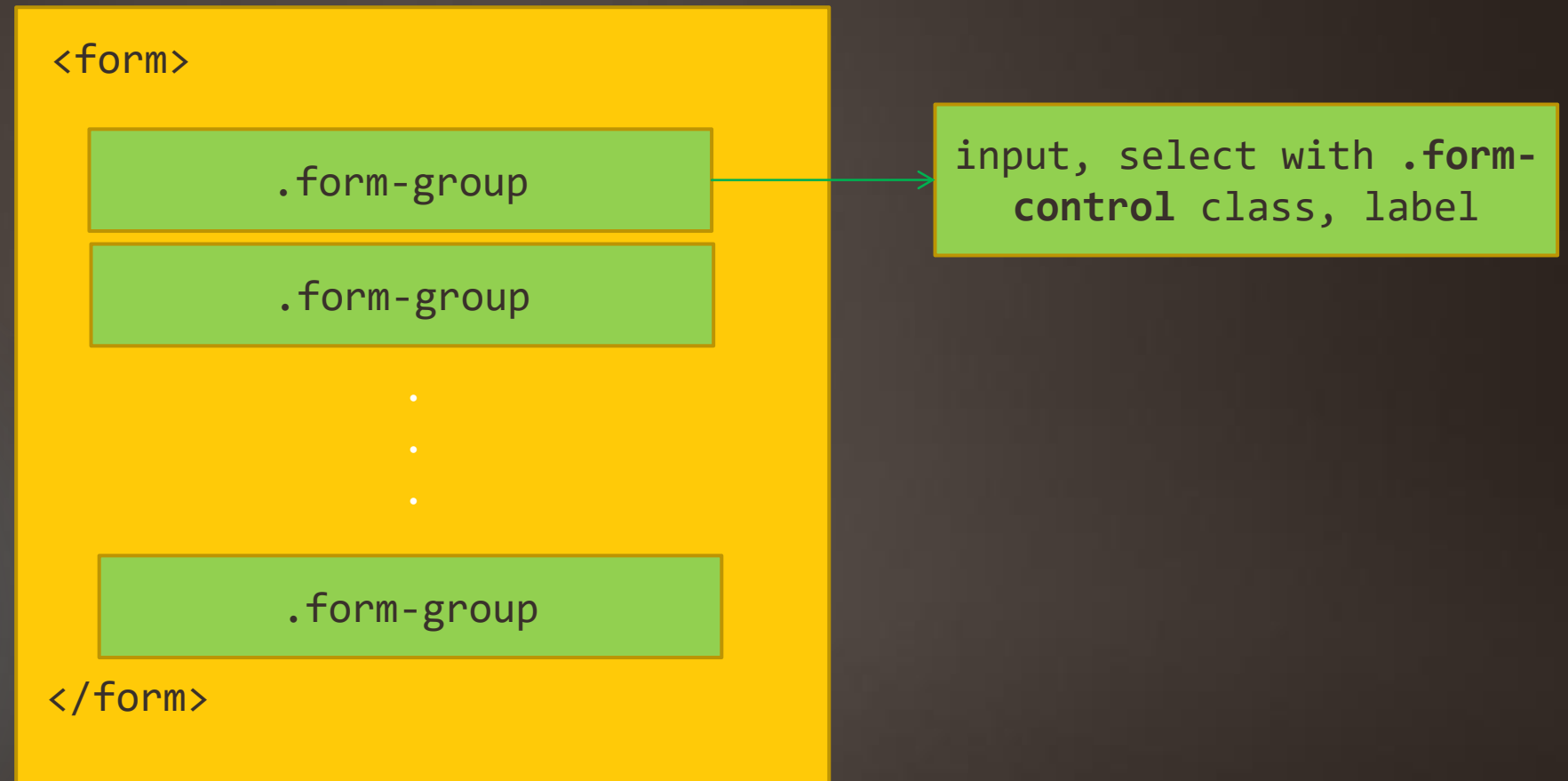
 

☐ Check me out

Recording network activity
Perform a request or hit **F5** to reload

```
2 <div class="form-group">
3   <label for="exampleInputEmail1">Email address</label>
4   <input type="email" class="form-control"
5     id="exampleInputEmail1" aria-describedby="emailHelp"
6     placeholder="Enter email">
7 </div>
8 <div class="form-group">
9   <label for="exampleInputPassword1">Password</label>
10  <input type="password" class="form-control"
11    id="exampleInputPassword1" placeholder="Password">
12 </div>
13 <div class="form-check">
14   <input type="checkbox" class="form-check-input"
15     id="exampleCheck1">
16   <label class="form-check-label" for="exampleCheck1">Check
    out</label>
17 </div>
18 <button type="submit" class="btn btn-primary">Submit</button>
19 </form>
```

Forms Anatomy



Forms inline layout

- ▶ **.form-inline** to display a series of labels, form controls, and buttons on a single horizontal row

```
<form class="form-inline">
```

Input, label, select..

Input, label, select..

Input, label, select..

```
</form>
```

Forms Validation

- ▶ Use `.is-valid` with `.form-control`, to indicate that the control is valid (green)
- ▶ Use `.is-invalid` with `.form-control` to indicate that the control is invalid (red)
- ▶ `.invalid-feedback`, `.valid-feedback` can show the contextual message

Email address

admin

User already exists

Password

.....

Password is ok

☐ Check me out

Submit

```
2 <div class="form-group">
3   <label for="exampleInputEmail">Email
4   address</label>
5   <input type="email" class="form-control is-inv
6   id="exampleInputEmail"
7   aria-describedby="emailHelp" placeholder="Ente
8   email">
9   <div class="invalid-feedback">
10    User already exists
11  </div>
12 </div>
13 <div class="form-group">
14   <label for="exampleInputPassword1">Password</l
15   <input type="password" class="form-control
16   is-valid" id="exampleInputPassword1"
17   placeholder="Password">
18   <div class="valid-feedback">
19    Password is ok
20  </div>
21 </div>
```



Workshop #1 – User Registration form

- ▶ Create a form as a mock-up page
- ▶ To provide a form for end-user to input account, personal information
- ▶ Must validate on required fields such as username, password, email etc..



Workshop #2 – E-Commerce backoffice

The screenshot displays the nopCommerce backoffice interface. The top navigation bar includes the nopCommerce logo, a user profile for John Smith with a Logout button, and a settings gear icon. A left sidebar contains a search bar and a menu with options: Dashboard, Catalog (expanded), Products (selected), Categories, Manufacturers, Bulk edit products, Product reviews, Product tags, Low stock report, Attributes, Sales, Customers, Promotions, Content management, and Configuration. The main content area is titled 'Products' and features several action buttons: 'Add new', 'Download catalog as PDF', 'Export', 'Import', and 'Delete (selected)'. Below these are filter sections for Product name, Category, Search sub categories, Manufacturer, Vendor, Store, Warehouse, Product type, and Published. A 'Go directly to product SKU' section with a 'Go' button is also present. A 'Search' button is located below the filters. At the bottom, a table lists products with columns for selection, picture, product name, SKU, price, stock quantity, product type, published status, and edit options.

	Picture	Product name	SKU	Price	Stock quantity	Product type	Published	Edit
<input type="checkbox"/>		\$100 Physical Gift Card	PG_CR_100	100		Simple	✓	Edit
<input type="checkbox"/>		\$25 Virtual Gift Card	VG_CR_025	25		Simple	✓	Edit



To be bootstrap mastering

- ▶ Try to use built-in bootstrap component, classes as much as possible
- ▶ <http://codepen.io> is your friend
- ▶ <http://shoelace.io/> for grid layout designing
- ▶ <https://scotch.io/search?q=bootstrap> provided nice article not only bootstrap but also other web development-related

