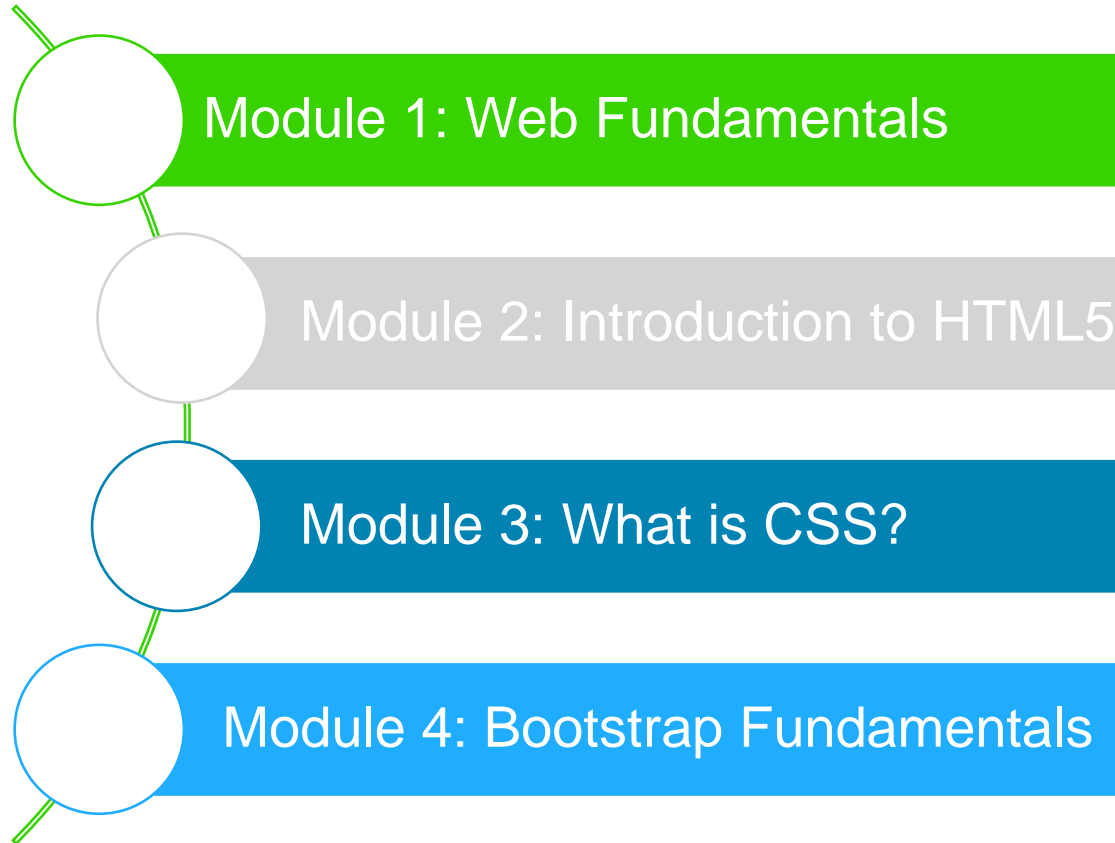


HTML, CSS and Bootstrap



Agenda

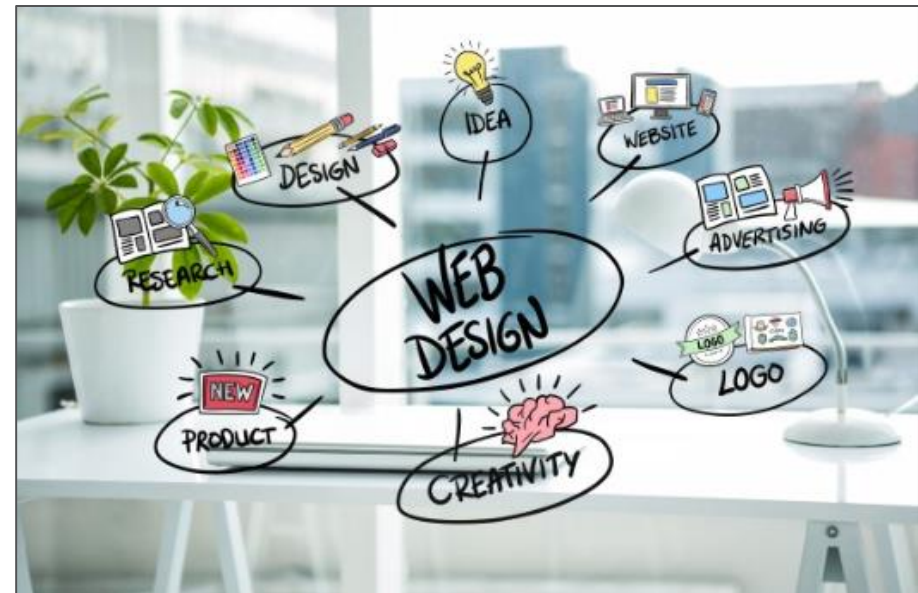


Web Fundamentals



Web Designer

- Design the look and feel of a website (creative side of website)
- Decides the layouts, fonts, colors, images etc.
- Creates the visual mock-up of website
- Rarely does the development of website



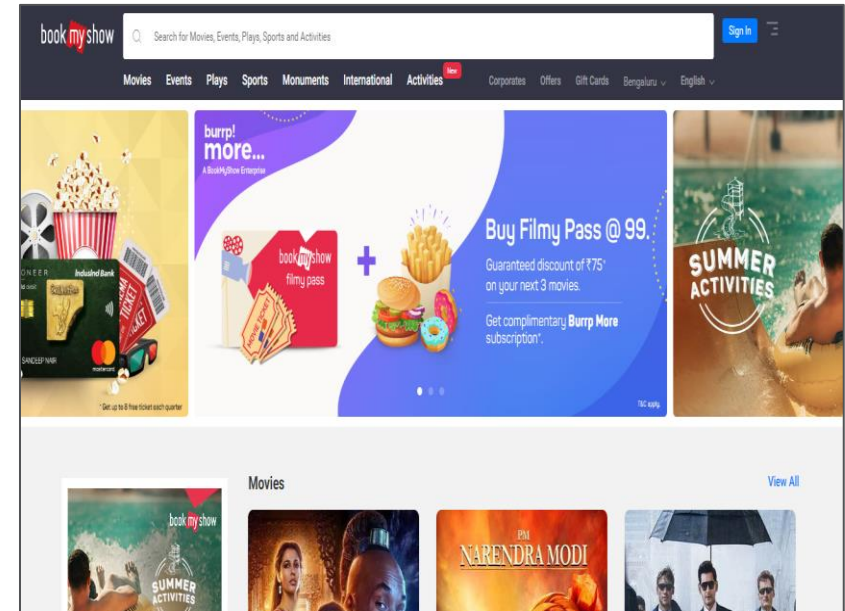
Web Programmer

- Brings the website mock-up to life on internet (development side of website)
- Develops the website and host onto server.
- Has web development skills: HTML, CSS, JavaScript, Java, NodeJS, ReactJS etc.



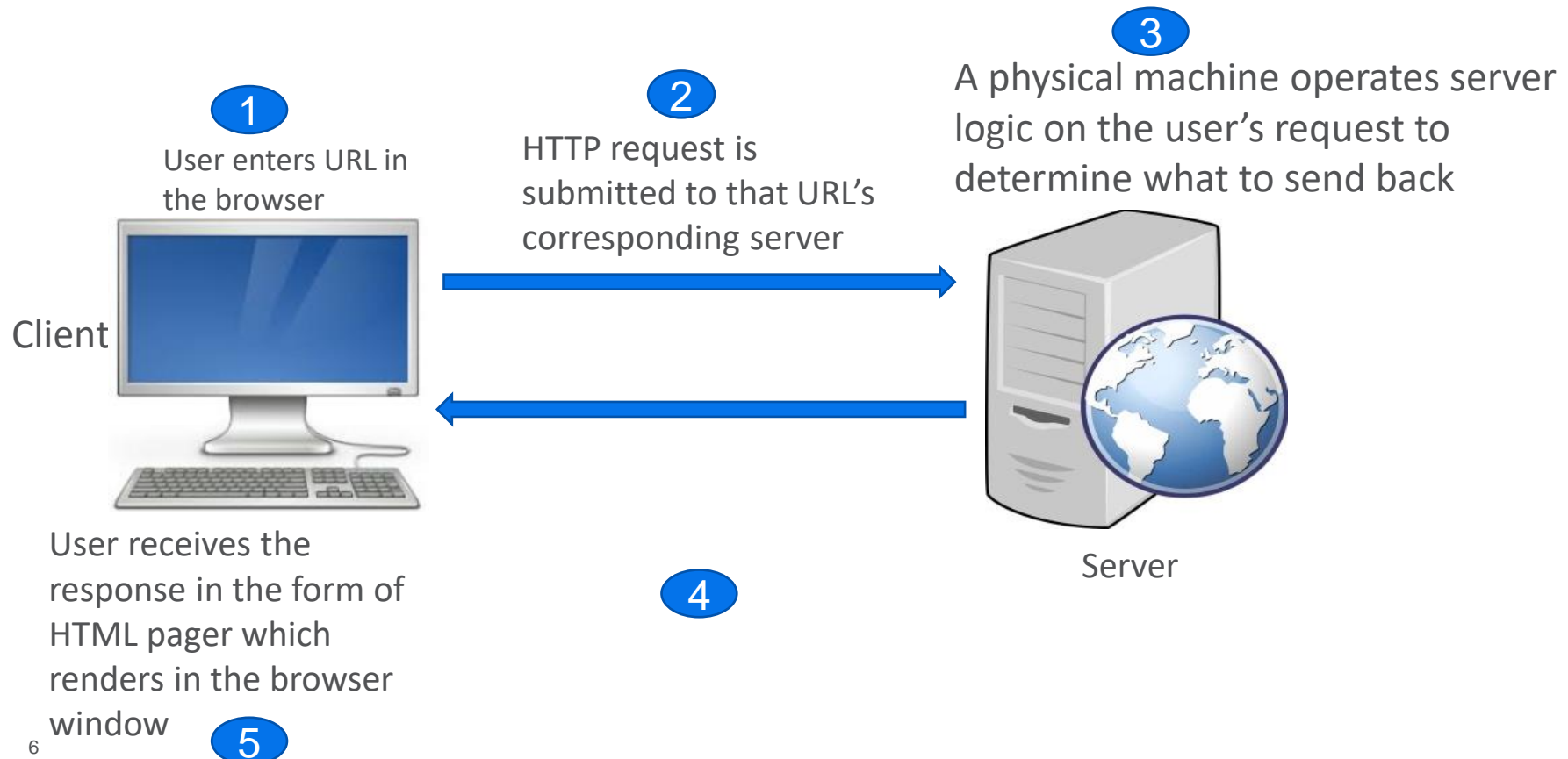
Web Site

- A collection of web pages which are grouped together and usually connected in various ways like hyperlinks, buttons etc .
- It creates first impression of your business
- It can bring business from any part of the world
- It reflects your expertise and reputation.



Client Server 2 tier Web Architecture




Typically, when you are browsing the Internet, you will be using *Web Browser* software such as Chrome, IE, Firefox etc. so computer which is running a browser is called a *client*, while the machine which is providing Web pages is called a *server*.





Introducing the Use Case



Build below web page using HTML and CSS

 You're in **India**  [Our Products](#) [Promotions](#) [Services](#) [Help](#) 

 **LOGIN** 

Welcome to Standard Chartered



Combating the illegal wildlife trade

See how we work with partners to fight money laundering and the illegal wildlife trade



Invest like you never left India

Invest on-the-go with NRI Banking.



Explore the world like a local #PayLikeALocal

Load up to 20 currencies on the Multi-Currency Forex card. Apply now



SC Edge app – Exclusive for salary accounts

One app for travel, dining, recharges, bill pay & managing expenses. Know more



Get 5% cashback at supermarket

With Manhattan Platinum credit card

Cheat Sheet references

Cheat Sheet for HTML : HTML Cheat Sheet.doc

Cheat Sheet for CSS: CSS Cheat Sheet.doc

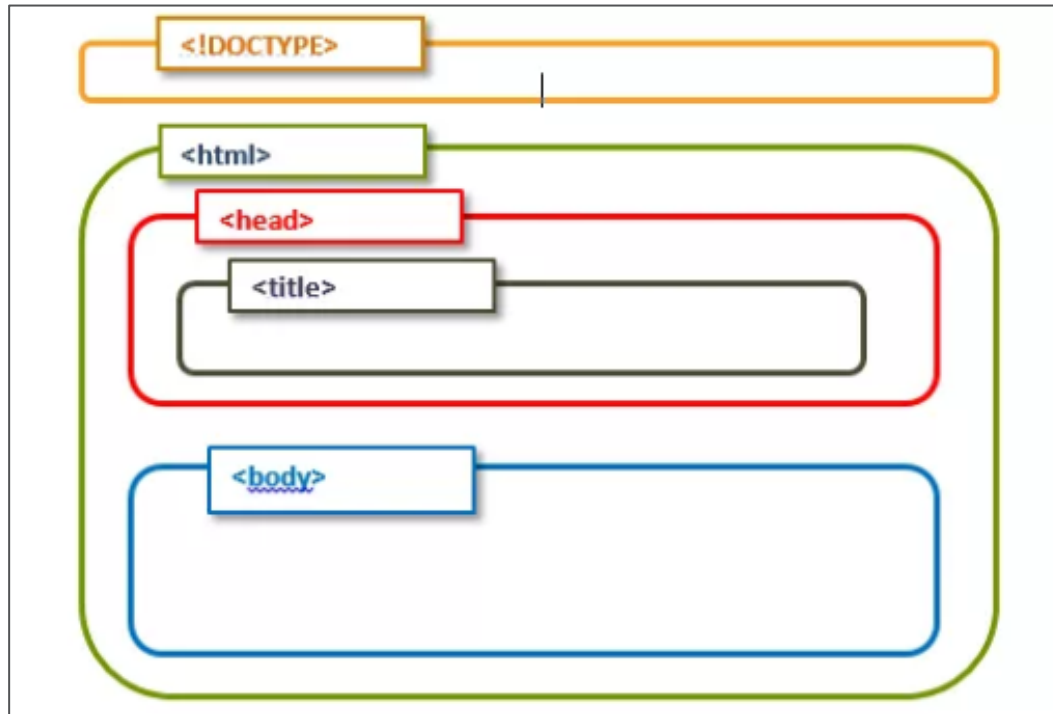
Introduction to HTML



What is HTML

- HTML5 is the standard markup language for creating Web pages.
- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

HTML5 Template



```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Main categories of elements

- Block level elements : <div>, <p>, <h1> to <h6>, <form>, <table> etc.
- Inline elements: , <a>, , <input> etc.

Attributes

- Attributes are something which give the additional information of the element. Ex. name, width, height, alt, title, id, class etc.
- The id and class attributes: id attribute is used to uniquely identify any element and class is to create a group of elements.
- Unique id attribute can be referred to single person in a class but class attribute is going to be same for all persons belonging to the class.

```

```

```
<div id="div1" class="cls1">First Div</div>  
<div id="div2" class="cls1">Second Div</div>  
<div id="div3" class="cls1">Third Div</div>
```

Types of elements

- Empty elements (
)
- Nesting elements (<p> This is myelement)
- Headings (h1 to h6)
- Paragraphs (<p>)
- Lists (ordered () and unordered ())
- Tables (<table>, <tr>, <td>, <th>)
- Images ()
- Links (<a>)
- Text formatting (<i>,<u>,,,)

List of elements contained inside a form

- Text Box (Single row)
- Radio Button (Single selection)
- Check Box (Multiple selection)
- Drop down (Multiple selection)
- Text area (Multiple rows)
- Click button
- Submit button
- Reset button

Form elements

S No.	Type	Code
1	Text Box	<code><input type="text" name="name" value="John"/></code>
2	Radio Button	<code><input type="radio" name="gender" value="M">Male</input></code>
3	CheckBox	<code><input type="checkbox" name="technology" value="Tech1">HTML</input></code>
4	textarea	<code><textarea rows="2" cols="2" name="address"></textarea></code>

Form elements cont...

S No.	Type	Code
5	Drop Down	<pre><select name="cities"> <option value="BGL">Bangalore</option> <option value="MYR">Mysore</option> </select></pre>
6	Click Button	<pre><input type="button" value="Click Me"/></pre>
7	Submit button	<pre><input type="Submit"/></pre>
8	Reset Button	<pre><input type="Reset"/></pre>

Form attributes

S No.	Type	Code
1	size	Changes the width of textboxes
2	maxlength	maximum no of chars entered in textbox
3	minlength	minimum no of chars entered in textbox
4	placeholder	display placeholder value
5	checked	makes checkboxes or radio buttons to be checked by default
6	selected	makes one option of dropdown selected by default

Form attributes cont...

S No.	Type	Code
7	multiple	allows to select multiple values from drop down
8	readonly	data is going to be processed
9	disabled	data is not going to be processed
10	action	defines the action to be performed when the form is submitted and If the action attribute is omitted, the action is set to the current page.
11	method	specifies the HTTP method (GET or POST) to be used when submitting the form data
12	target	specifies if the submitted result will open in a new browser tab or in the current window.

get vs post

Get	Post
Appends form-data into the URL in name/value pairs	The POST method does not display the submitted form data in the page address field.
The length of a URL is limited (about 3000 characters)	POST has no size limitations, and can be used to send large amounts of data.
Never use GET to send sensitive data! (will be visible in the URL)	Always use POST if the form data contains sensitive or personal information.
Useful for form submissions where a user want to bookmark the result	Form submissions with POST cannot be bookmarked
GET is better for non-secure data, like query strings in Google	POST is better for secure data, like password

HTML5 Forms – Input Types

S No.	Type	Description
1	color	used for input fields that should contain a color.
2	date	used for input fields that should contain a date.
3	datetime-local	specifies a date and time input field, with no time zone.
4	time	allows the user to select a time (no time zone).

S No.	Type	Description
5	week	allows the user to select a week and year.
6	month	allows the user to select a month and year.
7	email	used for input fields that should contain an e-mail address.
8	number	defines a numeric input field.
9	range	defines a control for entering a number whose exact value is not important (like a slider control). Default range is 0 to 100. However, you can set restrictions on what numbers are accepted with the min, max, and step attributes.

HTML5 Forms – Attributes

S No.	Type	Description
1	autofocus	specifies that the input field should automatically get focus when the page loads.
2	autocomplete	When autocomplete is on, the browser automatically completes the input values based on values that the user has entered before.
3	placeholder	specifies a hint that describes the expected value of an input field (a sample value or a short description of the format).
4	required	specifies that an input field must be filled out before submitting the form.
5	pattern	specifies a regular expression that the <input> element's value is checked against before submitting form

HTML5 Forms – Attributes Cont...

S No.	Type	Code
6	multiple	specifies that the user is allowed to enter more than one value in the <input> element. The multiple attribute works with the following input types: email, and file.
7	list	refers to a <datalist> element that contains pre-defined options for an <input> element.
8	height and width attributes	specify the height and width of an <input type="image"> element.
9	step	specifies the legal number intervals for an <input> element.
10	min and max	specify the minimum and maximum values for an <input> element.

HTML5 forms - Pattern attribute

- Specifies a regular expression that the input value is checked against before submitting the form.
- Example 1: Entered name can only have alphabets.

pattern= "[A-Za-z]+"

- Example 2: Entered phone no can only have numbers of 10 digits.

pattern = "[7-9]{1}[0-9]{9}"

HTML5 Forms – Pattern Attribute

S No.	Type	Code
1	[0-9]	Find any of the digits between the brackets
2	[a-z]	Find any of the characters between the brackets
3	[0-9a-z]	Find any of the alphanumeric characters (small letters)between the brackets
4	[0-9a-zA-Z]	Find any of the alphanumeric characters between the brackets
5	[abc]	Find any of the characters between the brackets
6	[0-9*\$]	Find any of the digits and special chars (*\$)between the brackets

HTML5 Forms – pattern quantifiers

S. No.	Type	Description
1	[0-9]+	Matches any string that contains at least one <i>digit</i>
2	[0-9]*	Matches any string that contains zero or more occurrences of <i>n</i>
3	[0-9]?	Matches any string that contains zero or one occurrences of <i>n</i>
4	[0-9]{3}	Matches any string that contains exactly 3 occurrences of <i>n</i>
5	[0-9]{3,}	Matches any string that contains minimum 3 occurrences of <i>n</i>
6	[0-9]{3,6}	Matches any string that contains minimum 3 occurrences of <i>n</i> and max 6 occurrences

Hands-on for forms

- Design the page using HTML5.
- Validate first name (only alphabets), last name (only alphabets), contact number(10 digits) and email-id.
- Make sure all the fields are required.
- Once user submits the page, the new page should open saying “Welcome User”. Try http method as get and post also

First Name :

Last Name :

Gender : ☐ Male ☒ Female ☐ Others

Languages known: ☒ HTML ☐ CSS ☒ JS

Address:

Cities lived in:

Bangalore

Mysore

Kerala

Chennai

Contact Number :

My favorite color is :

Date is :

Birthday is :

Time is :

Week is :

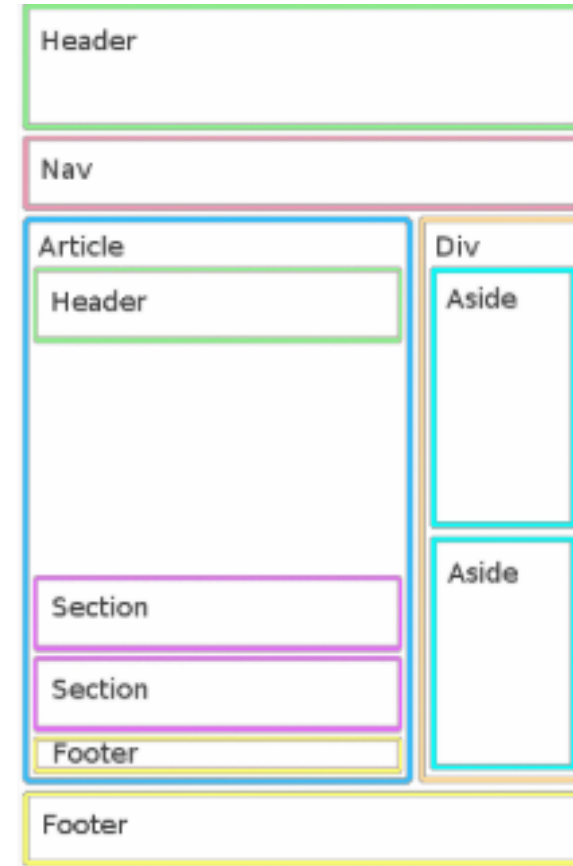
Month is :

Email id is :

HTML5 Semantic elements

Semantic elements = elements with a meaning.

- <article>
- <aside>
- <details>
- <figcaption>
- <figure>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <summary>
- <time>



What is CSS?



What is CSS

- CSS stands for Cascading Style Sheets
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media
- CSS saves a lot of work. It can control the layout of multiple web pages all at once
- External stylesheets are stored in CSS files

Selectors

Selectors are something using which we can select the HTML elements. Below are different types of selectors.

Syntax:

```
selector { Property: value; }
```

- Example:

- Element Selector : `p {color:red;}`
- Class Selector : `.c1{color:red;}`
- Id Selector : `#id1{color:red;}`
- Universal Selector : `# {color:red;}`

Types of Styling

- Inline Styling are CSS declarations that affect one element only, contained within a style attribute.
- Internal Styling is where you don't have an external CSS file, but instead place your CSS inside a `<style>` element, contained inside the HTML head.
- An external stylesheet is when you have your CSS written in a separate file with a .css extension, and you reference it from an HTML `<link>` element.

```
<body>
  <p style="background-color: yellow; border: solid;"> My first CSS </p>
</body>
```

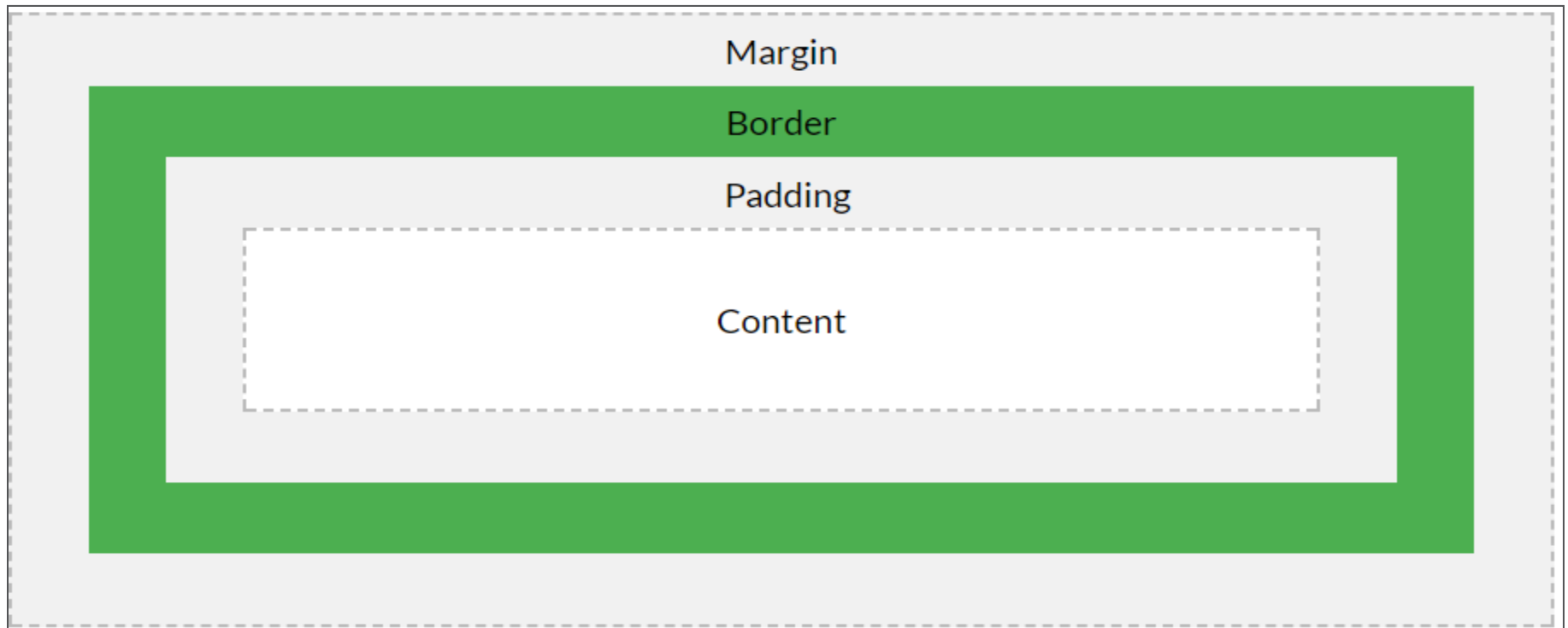
```
<head>
  <title>Page with CSS </title>
  p { background-color: yellow; border: solid; }
</head>
<body><p> My first CSS </p></body>
```

```
<link rel="stylesheet" href="mycss.css"/>
```

```
p{
  background-color: yellow;
  border: solid;
}
```

CSS Box Model

All HTML elements can be considered as boxes. In CSS, the term "box model" is used when talking about design and layout.



Font property

The CSS font properties define the font family, boldness, size, and the style of a text.

- font-family: "Times New Roman", Times, serif;
- font-style : normal | italic | oblique;
- font-size: 10px | 10%;
- font-weight: normal | bold | 100-900;
- font-variant: normal | small-caps;

Border property

The CSS border properties allow you to specify the style, width, and color of an element's border.

CSS border properties:

- border-width: 2px;
- border-style: solid;
- border-color: red;

```
p{  
  border: 2px solid yellow;  
}
```

Display property

The display property is the most important CSS property for controlling layout. The display property specifies if/how an element is displayed.

The possible values of display are:

- inline
- block
- none
- inline-block

Position property

The position property specifies the type of positioning method used for an element. Elements are then positioned using the top, bottom, left, and right properties. However, these properties will not work unless the position property is set first.

There are four different position values:

- Static (default)
- Relative
- Fixed
- Absolute

Combinators

- A combinator is something that explains the relationship between the selectors.
- A CSS selector can contain more than one simple selector. Between the simple selectors, we can include a combinator.

There are four different combinators in CSS:

- descendant selector (space) : `div p {}`
- child selector (`>`): `div >p { }`
- adjacent sibling selector (`+`): `div+p {}`
- general sibling selector (`~`): `div~p {}`

Bootstrap fundamentals



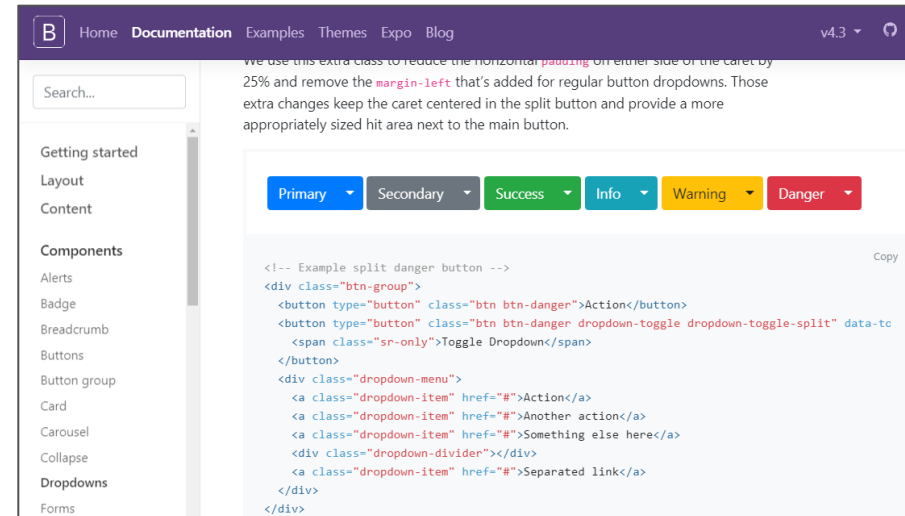
What is Responsive web design

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



What is Bootstrap

- Bootstrap is an open source front-end framework developed by Twitter for faster and easier web development
- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels, dropdown and many other, as well as optional JavaScript plugins.
- Bootstrap also gives you the ability to easily create responsive designs
- Current version of Bootstrap is 4.3.1 released on February 2019.
- Official website is <http://getbootstrap.com>



Advantages of Bootstrap

- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** Bootstrap 3 onwards mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Edge, Safari, and Opera)

Prerequisite

There are three ways to start using Bootstrap on your own web site:

- Download Bootstrap from getbootstrap.com
- Download using NPM
- Include Bootstrap from a CDN (Content Delivery Network)

```
<meta name="viewport" content="width=device-width, initial-scale=1">  
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/css/bootstrap.min.css">  
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"></script>  
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/js/bootstrap.min.js"></script>
```

Hello World page using Bootstrap

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Bootstrap</title>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/js/bootstrap.min.js"></script>
</head>

<body>

<div class="container">
  Hello world
</div>

</body>
</html>
```

Hello, world!

- | | | | | | | | | | | | |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 | span 1 |
| span 4 | | | | span 4 | | | | span 4 | | | |
| span 4 | | | | span 8 | | | | | | | |
| span 6 | | | | | | span 6 | | | | | |
| span 12 | | | | | | | | | | | |

Grid System Classes

The Bootstrap 3 grid system has four classes:

Class	Device	Width
.col-sm	Phones	width<768px
.col-md	Laptops	768px<= width<992px
.col-lg	Desktops	992px<=width<1200 px
.col-xl	Smart TV	width >=1200px

The classes above can be combined to create more dynamic and flexible layouts.

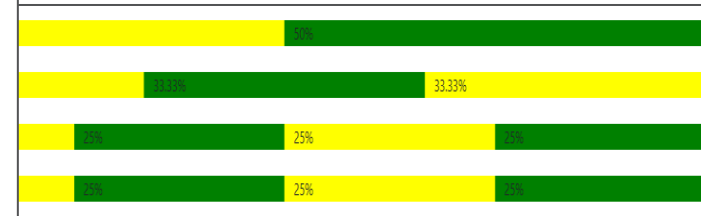
Tip: Each class scales up, so if you wish to set the same widths for sm and md, you only need to specify sm.

Basic Grid Structure

```
<div class="container-fluid">

  <div class="row">
    <div class="col-sm-8 col-md-4" style="background-color:green">
      First div
    </div>
    <div class="col-sm-4 col-md-4" style="background-color:yellow">
      Second div
    </div>
    <div class="col-sm-8 col-md-4" style="background-color:orange">
      Third div
    </div>
  </div>

  <div class="row">
    <div class="col-sm-4" style="background-color:green">
      First div
    </div>
    <div class="col-sm-4" style="background-color:yellow">
      Second div
    </div>
    <div class="col-sm-4" style="background-color:orange">
      Third div
    </div>
  </div>
</div>
```



Table

- The .table class adds basic styling to a table: A basic Bootstrap table has a light padding and only horizontal dividers.
- The .table-striped class adds zebra-stripes to a table.
- The .table-bordered class adds borders on all sides of the table and cells.
- The .table-hover class adds a hover effect (grey background color) on table rows.
- The .table-condensed class makes a table more compact by cutting cell padding in half.

Firstname	Lastname
John	Doe
Mary	Kom
Harry	Potter

```
<table class="table table-striped">
  <thead>
    <tr>
      <th>Firstname</th>
      <th>Lastname</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td>John</td>
      <td>Doe</td>
    </tr>
  </tbody>
</table>
```

Buttons

- To achieve the different background color for button, Bootstrap has the following classes.

.btn

.btn-default

.btn-primary

.btn-success

.btn-info

.btn-warning

.btn-danger

.btn-link

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



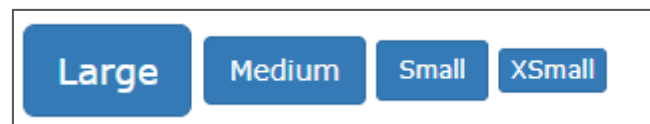
- Bootstrap provides different button sizes. The classes that define the different sizes are:

.btn-lg

.btn-md

.btn-sm

.btn-xs



Bootstrap Forms

Bootstrap provides three types of form layouts:

- Vertical form (this is default)
- Horizontal form
- Inline form

Standard rules for all three form layouts:

- Wrap labels and form controls in `<div class="form-group">` (needed for optimum spacing)
- Add class `.form-control` to all textual `<input>`, `<textarea>`, and `<select>` elements
- All textual `<input>`, `<textarea>`, and `<select>` elements with class `.form-control` have a width of 100%.

Types of Bootstrap Forms

Vertical Form (default)

User Name

Please enter name

Password

Please enter password

Login

Inline Form

User Name

Please enter name

Password

Please enter password

Login

Horizontal Form

User Name

Please enter name

Password

Please enter password

Login

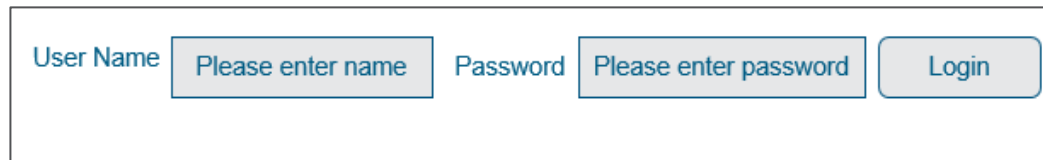
Bootstrap Inline Forms

In an inline form, all of the elements are inline, left-aligned, and the labels are alongside.

Note: This only applies to forms within viewports that are at least 768px wide!

Additional rule for an inline form:

- Add class `.form-inline` to the `<form>` element



The image shows a Bootstrap inline form. It consists of two labels, 'User Name' and 'Password', each followed by a text input field. The input fields have placeholder text 'Please enter name' and 'Please enter password' respectively. To the right of the password input is a 'Login' button. The entire form is contained within a single container.

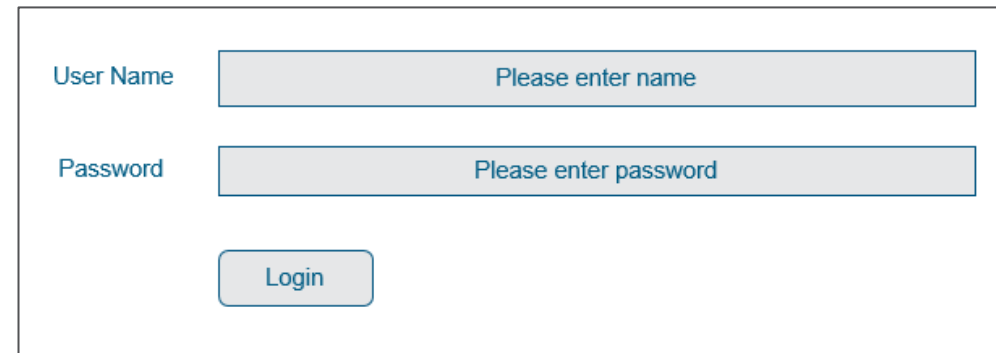
```
<form class="form-inline" action="/action_page.php">
  <div class="form-group">
    <label>Email address:</label>
    <input type="email" class="form-control" id="email">
  </div>
</form>
```

Bootstrap Horizontal Forms

A horizontal form means that the labels are aligned next to the input field (horizontal) on large and medium screens. On small screens (767px and below), it will transform to a vertical form (labels are placed on top of each input).

Additional rules for a horizontal form:

- Add class `.form-horizontal` to the `<form>` element
- Add class `.control-label` to all `<label>` elements



The image shows a horizontal form layout. It has two rows of input fields. The first row is labeled 'User Name' and contains a text input field with the placeholder text 'Please enter name'. The second row is labeled 'Password' and contains a text input field with the placeholder text 'Please enter password'. Below these fields is a rounded rectangular button labeled 'Login'.

```
<form class="form-horizontal" action="/action_page.php">
  <div class="form-group">
    <label class="control-label col-sm-2" >Email:</label>
    <div class="col-sm-10">
      <input type="email" class="form-control" id="email" placeholder="Enter
email">
    </div>
  </div>
</form>
```


Enhance web page using bootstrap



Make the web page responsive using bootstrap



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Cheat Sheet references

Cheat Sheet for bootstrap : [bootstrap-3-cheat-sheet.pdf](#)

Thank You

