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HTML5 - New Features

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Objectives

- To Understand:
  - New Features in HTML5
    - What is HTML5?
    - HTML5 Features
    - Semantic/ Structural Features
    - HTML5 Forms
      - New Form Elements and Attributes
    - HTML5 Media
      - Audio/Video Support
    - HTML5 Graphics
      - Canvas
      - SVG
    - HTML5 API
      - Drag and Drop
      - Web Storage
      - Web Workers
      - Geo Location

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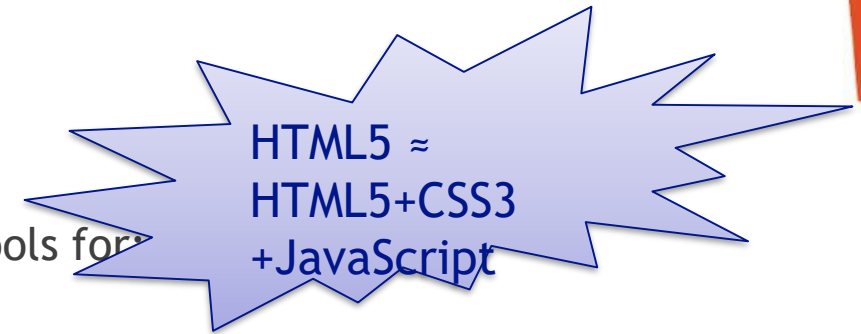
HTML 5 - New Features

- What is HTML5?
  - HTML5 is a spec in making web pages
  - Started at WHATWG – Web Hypertext Application Technology Working Group.



  - HTML5 is a suite of tools for:
    - Markup (HTML 5)
    - Presentation (CSS 3)
    - Interaction (DOM, Ajax, APIs)

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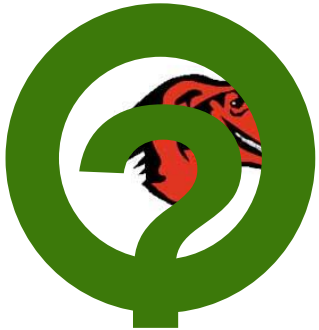
- What is WHATWG ?
  - **Web Hypertext Application Technology Working Group**
  - Founded by individuals from Apple, the Mozilla Foundation and Opera Software
  - Community interested in evolving HTML and related technologies



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Why HTML 5

- Search Engine Optimization
- Local Storage and cache
- Game Development
- Cross Browser Support
- Improved Semantics and Cleaner Code
- Inbuilt Multimedia Support
- Interactive
- Better data entry and form fields
- Simple Doctype
- Remote Updates
- Hybrid Apps
- Accessibility (Semantics and ARIA)
- Mobile

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HTML 5 - New Features

- What's New?
  - Semantic Elements
  - Form Elements
  - Graphic Elements
  - Audio and Video Support
  - Web Workers
  - Web Storage
  - Geolocation

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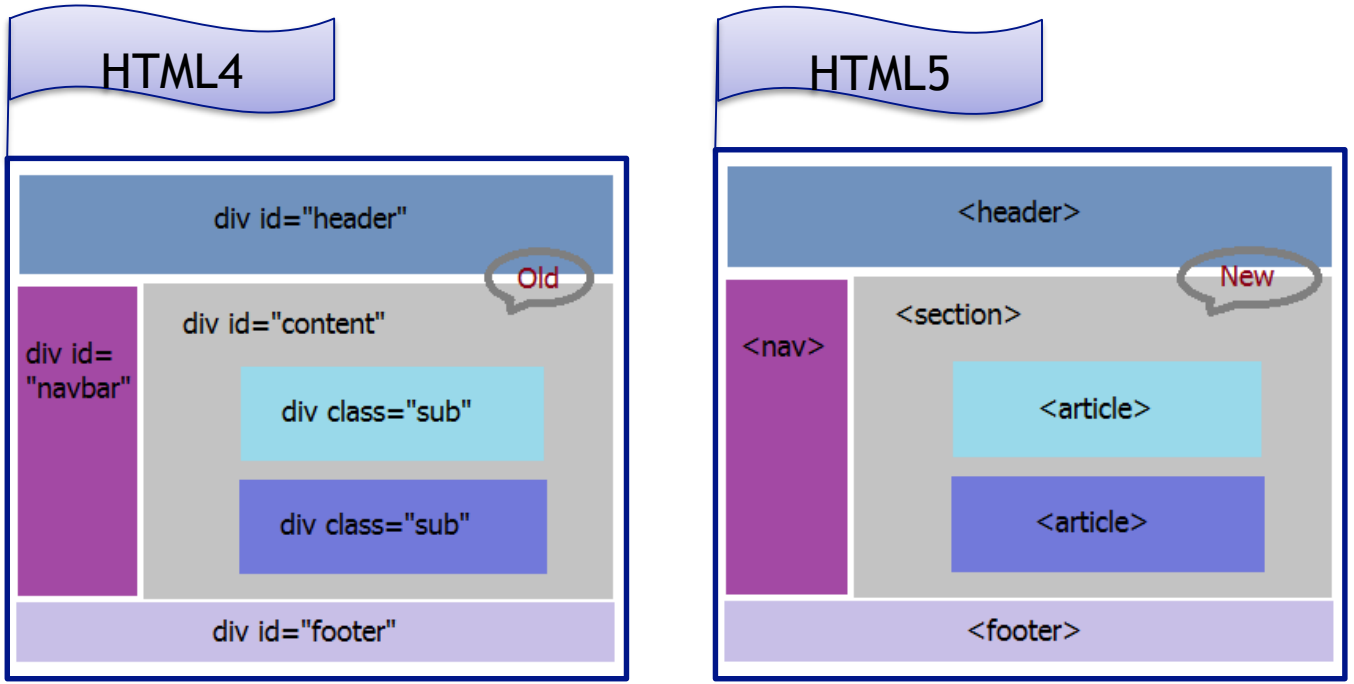
HTML 5 - New Features

Semantic Elements

- New Elements to define the structure of the web page



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Semantic Elements

- Some of the new Elements are:
  - Header:
    - Specifies a header for a document or section.
  - Nav
    - Represents a major navigation block. It groups links to other pages or to parts of the current page.
  - Footer
    - Defines a footer for a document or section
  - Article
    - Defines an article
  - Aside:
    - The "aside" element is a section that somehow related to main content, but it can be separate from that content
  - Section
    - Defines a section in a document

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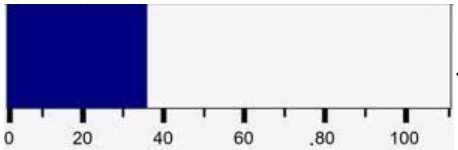
- Semantic Elements
  - Some of the new Elements are:
  - Progress:

created to indicate progress of a specific task

  - Meter:



To be used when the minimum value and maximum value are clearly defined.

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HTML 5 - New Features

- HTML Forms
  - New Input Types
  - Date, color, url, email, tel, range,etc…
  - These new features allow better input control and validation
  - New Form Elements
  - New Attributes
  - New Events

- Not all major browsers support all the new form elements.
- If they are not supported, they will behave as regular text fields.

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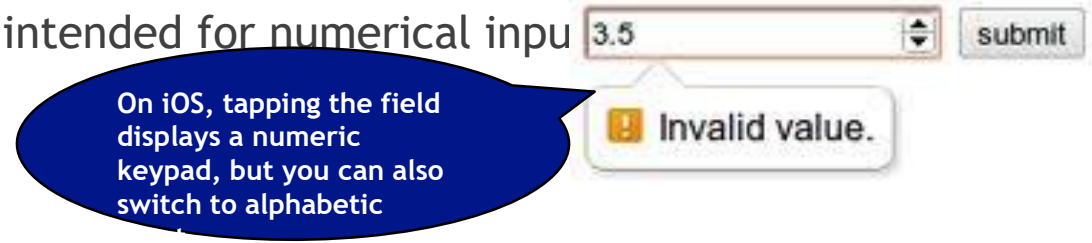
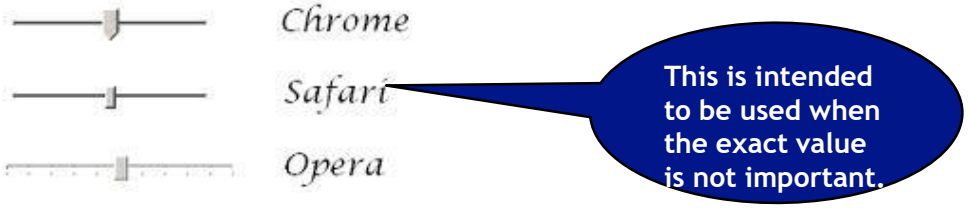
HTML 5 - New Features

- HTML Forms
  - Input Types:
  - Number:
    - creates a field intended for numerical inpu



  - Range:
    - creates a slider that allows the user to select a numeric value.



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HTML 5 - New Features

- HTML Forms
  - Input Types:
  - Tel:
    - Input fields that accept phone numbers use the "tel" type.
    - Due to inherent variances in phone number formats, it does not conform to any specific pattern.
    - By Default No attempt is made by the browser to validate the field. Validation against a pattern can be done using the “pattern” attribute.

Mainly used to optimize the keyboard on mobile devices.

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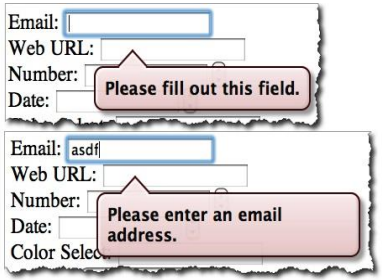
HTML 5 - New Features

- HTML Forms
  - Input Types:
  - email:
    - a control for editing a list of e-mail addresses given in the element's value.
      - Help in entering a valid email address.
    - When the user submits the form, the browser automatically performs RFC-compliant email validation, whether JavaScript is enabled or not, and displays a generic message



HTML 5 - New Features

- HTML Forms
  - Input Types:
  - URL:
    - A control for editing a list of e-mail addresses given in the element's value.
    - Help in entering a valid email address.

In the case of the url it adds a ".com" button

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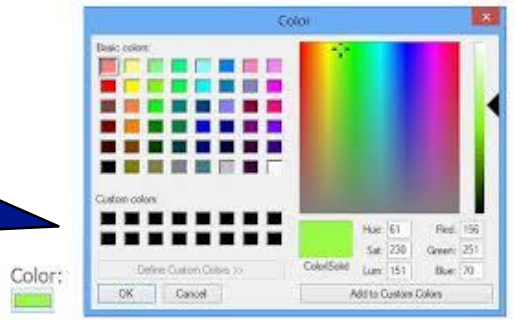
HTML 5 - New Features

- HTML Forms
  - Input Types:
  - Color:
    - For choosing color thro[illegible]ll con

Allows the user to select a color and returns the hex value for that color.



  - Date:

These date pickers aren't restricted to desktop devices; some Blackberry devices and Chrome for Android render its internal date

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HTML 5 - New Features

- HTML Forms
  - Input Types:
  - Datalist:
    - Allows to present the user with a range of options to use in a text input box, as well as being able to type in their own.
    - Simply use the list attribute to connect an ordinary input to a list of options

This is best used when there aren't too many options, because with no filter applied to the list as you type it doesn't get any shorter the more characters you input.

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HTML 5 - New Features

- HTML Forms
  - Form Attributes:
  - A series of new attributes for form controls are:
    - placeholder
    - autofocus
    - autocomplete
    - required
    - Pattern
    - novalidate ,formnovalidate
    - form
    - formaction
    - formenctype
    - formmethod
    - formtarget

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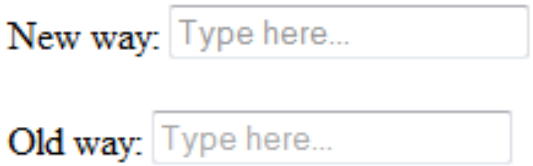
HTML 5 - New Features

- HTML Forms
  - Form Attributes:
  - placeholder:
    - Used to display hints inside text fields, usually in light gray.
    - When the field has focus, the hint disappears.




```
<script src="Placeholder.js"/>
<p>New way: <input type="text"
placeholder="Type here..."/></p>

<p>Old way: <input type="text"
value="Type here..." style="color:#aaa"
onfocus="this.value=''; "/></p>
<script>Placeholders.init();
</script>
```

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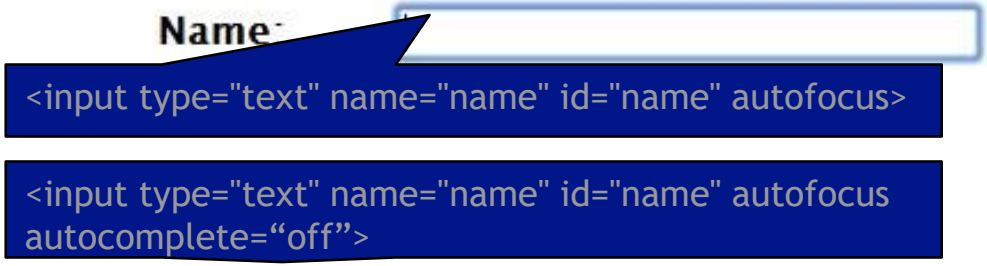
- HTML Forms
  - Form Attributes:
- autofocus:
  - Used to have a form field automatically focused when a page is loaded.
  - you shouldn't have more than one autofocus form control on a single page.



- autocomplete:
  - helps users complete forms based on earlier input.
  - The default state is set to on. This means that generally we won't have to use it..
  - To set it off use as :

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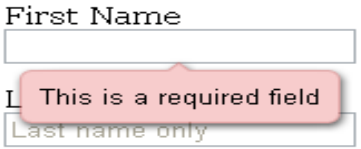
HTML 5 - New Features

```
<input type="text" id="given-name" name="given-name"
required>
```



- HTML Forms
  - Form Attributes:
  - required:
    - The browser requires the user to enter data into that field before submitting the form.
    - Replaces the basic form validation currently implemented with JavaScript.

```
<input type="text" … pattern="[a-z]{3}[0-9]{3}">
```

  - pattern:
    - specifies a JavaScript regular expression for the field's value to be checked against
    - makes it easy for us to implement specific validation for product codes, invoice numbers, and so on.

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HTML 5 - New Features

- HTML Forms
  - Form Attributes:
  - Novalidate and formnovalidate:
    - Indicate that the form shouldn't be validated when submitted
      -
```
<form action="login">
        <label for="email">Email:</label>
        <input type="text" name="email" value="go@example.com">
        <input type="submit" formnovalidate value="Submit">
</form>
```
      -
```
<form action="login" novalidate>
        <label for="email">Email:</label>
        <input type="text" name="email" value="go@example.com">
        <input type="submit" value="Submit">
</form>
```

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HTML 5 - New Features

- HTML Forms
  - Form Attributes:

```
<input type="button" name="sort-l-h" form="sort">
```

  - form:
    - used to associate an input, select, or textarea element with a form
    - It means that the element doesn't need to be a child of the associated form and can be moved away from it in the source.

```
<input type="submit" value="Submit" formaction="process.php">
```

  - **formaction, formenctype, formmethod, and formtarget**
    - formaction:
      - Specifies the file or application that will submit the form.
      - Has the same effect as the action attribute on the form element and can only be used with a submit or image button

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- formenctype:

HTML 5 - New Features

- HTML Forms
  - Form Attributes:
  - formmethod:
    - Specifies which HTTP method (GET, POST, PUT, DELETE) will be used to submit the form data.
  - formtarget:
    - Specifies the target window for the form results, submit or image button

formaction, formenctype, formmethod, formtarget

These new attributes have been introduced primarily because you may require alternative actions for different submit buttons, as opposed to having several forms in a document.

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HTML 5 - New Features

- Audio and Video:
  - Built-in media support via the <audio> and <video> elements, offering the ability to easily embed media into HTML documents.
  - A flash fallback could be provided for browsers that don't support HTML5 media
  - Most commonly used formats :
- Audio: ogg, mp3 and wav
- Video: Ogg, mpeg4

```
<video src="movie.ogg“  id="video">...</video>
<button onclick="video.play();">   Play </button>
```

Media playback can be controlled via JS and media events

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HTML 5 - New Features

- Audio and Video(Contd..):
  - Pros
  - Greater compatibility
  - Better performance
  - simple browser coding makes HTML5 videos more searchable and indexable

It will be possible to serve and play back hardware-accelerated video in the browser, on a smartphone or tablet, or in an embedded device, all without having to do lots of special coding.

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HTML 5 – New Features

- Canvas and SVG
- Canvas:
  - <canvas> element is used to draw graphic
  - Canvas is a container on which graphics is by using javascript

- SVG:
  - SVG stands for Scalable Vector Graphics which is used to draw graphics on the web.
  - <svg> element is a container for SVG graphics.
  - SVG has several methods for drawing boxes, circles, text, and graphic images

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HTML 5 – New Features

- Difference between Canvas and SVG

Canvas	SVG
Resolution dependent	Resolution independent
2D graphics with javascript	2D graphics in XML
No support for event handlers	Support for event handlers
Poor text rendering capabilities	Best suited for applications with large rendering areas
Well suited for graphic-intensive games	Not suited for game applications
Raster based (composed of pixel)	Vector based (composed of shapes)
Modified through script only	Modified through script and CSS
Single HTML element similar to <img> in behavior	Multiple graphical elements, which become the part of the DOM

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HTML 5 - New Features

- Web Storage
  - Web pages can store data locally within the user's browser.
  - Is more secure and faster.
  - The data is not included with every server request, but used ONLY when asked for.
  - Possible to store large amounts of data, without affecting the website's performance.
  - Storage items are available on the entire domain.
  - Two categories of Storage:
- Local Storage - stores data with no expiration date
- Session Storage - stores data for one session.
  - Data saved as key/value pairs.

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HTML 5 - New Features

- Web Storage
  - Local Storage:
    - Local Storage provides a persistent data store of up to 5MB.Each browser will have its own, individual 5MB store.
    - Secure as data is not shared between browsers.
    - Is available through the localStorage object

Localstorage is much more generous in size.

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HTML 5 - New Features

- Web Storage
  - Session Storage:
    - Stores the data for only one session.
    - The data is deleted when the user closes the browser window.
    - Session Storage, we have a separate data store for *each* window or tab that's open.
    - Is available through the sessionStorage object

Session Storage solves a problem that's plagued with cookies:

Assume that you're shopping for plane tickets online, and you have multiple windows open to try and find the best deal. Even though you have multiple windows open, if the site is using cookies to track your orders, the cookies are all shared across the multiple windows. This could result in accidentally purchasing the same ticket twice.

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Test your Memory…

- Can localStorage replace Cookies?

- No, Cookies and local storage really serve difference purposes. Cookies are primarily for reading server-side, local storage can only be read client-side.

- So depending upon the needs:
- If it's your client (your JavaScript), then by all means switch. You're wasting bandwidth by sending all the data in each HTTP header.

- If it's your server, local storage isn't so useful because you'd have to forward the data along somehow (with Ajax or hidden form fields or something). This might be okay if the server only needs a small subset of the total data for each request.

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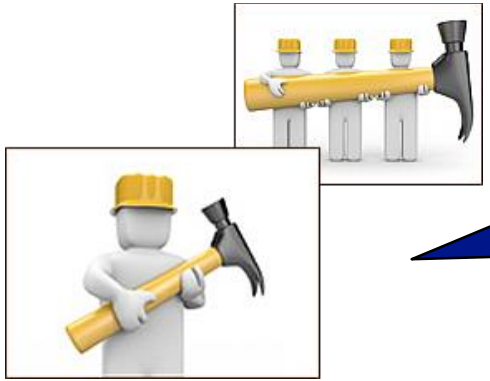
HTML 5 - New Features

- Web Workers:
  - Defines an API for spawning background scripts
  - Allows to fire up long-running scripts to handle computationally intensive tasks, but without blocking the UI or other scripts to handle user interactions.
  - Web Workers run in an isolated thread. As a result, the code that they execute needs to be contained in a separate file



Making JavaScript multi-threaded would require a lot of architectural changes, so Web Workers offers a way around this, enabling the language to be extended so that it can appear to be multi-threaded in certain cases.

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HTML 5 - New Features

- Drag and Drop:
  - Powerful User Interface concept
  - Provides the ability to natively drag, drop, and transfer data to HTML elements.
  - Drag and Drop (DnD) API provides the support

```
<div id="boxA" draggable="true"
                    ondragstart="returnragStart(event)">
```

To drag an element, you need to set the draggable attribute to true for that element.

- dragstart
- dragenter
- dragover
- dragleave
- drag
- drop
- dragend

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HTML 5 – New Features

- Geolocation:
  - Geolocation API is used to get the geographical position of a user.
  - Since this can compromise privacy, the position is not available unless the user approves it
  - getCurrentPosition() - method is used to return the user's position.
  - watchPosition() - Returns the current position of the user and continues to return updated position as the user moves (like the GPS in a car).
  - clearWatch() - Stops the watchPosition() method

- *Geolocation is most accurate for devices with GPS, like iPhone*

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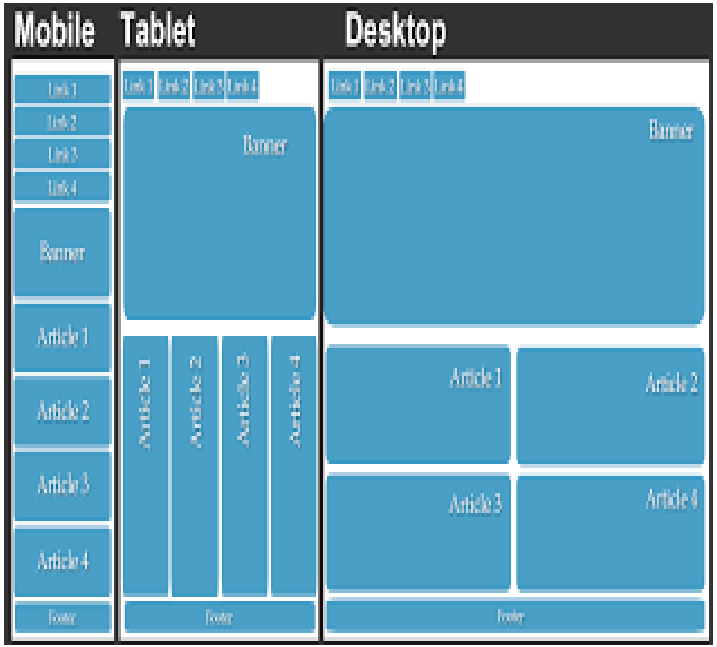
Responsive Web Design



Web Design Techniques

- AWD (Adaptive Web Design)
  - Refers to the way of representing the same website by using separate URLs.

- RWD (Responsive Web Design)
  - Helps designers to create device independent web content.
  - It follows the one-Web approach

- Factors distinguishing the web pages
  - Screen size
  - Touch capability
  - Navigation
  - Content , Whitespaces
  - Images
  - Advertising

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Difference between AWD and RWD

AWD	RWD
Uses separate URLs	One-Web approach i.e. single URL
AWD is server side. Server performs the tasks of detecting various devices, loading the appropriate template or CSS according to the device attributes and changing the layout as per the device screen.	RWD is client side. Web page is directly sent to the device's browser. The browser then adjusts the appearance of the web page as per the CSS and the browser window of the device
Different versions of the web pages are created for varied set of devices.	New concepts such as media queries, flexible images and fluid grids are used.
Website gets loaded faster because different designs for different devices are available for on different domains and only the code/CSS is sent by the server rather than the entire responsive codebase.	The web page gets loaded slowly because the website is available on the same domain name and the device is loaded with the entire responsive codebase which may make it heavy.

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Considerations for RWD

- Design
  - Should look similar on all devices and environment.
- Image size and screen layout
  - Images of different sizes so that they can be accommodated as per the screen size.
- Mobile first
  - To optimize a website as per the device, it is advised to first present the content for small screens and then enhance it for the large screens.
- Website Navigation
  - Navigation must be accomodable for different devices. Smartphones can have collpasible or expandable menu

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Benefits of RWD

- Minimal maintenance
- Social sharing
- Adaptation to new devices
- Better viewing experience
- Saves time and reduce cost of development and management
- Ease of tracking the website

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Limitations of RWD

- Web page loading is slow as compared to AWD

- The average development time of designing a Responsive Website is more than the time of designing a standard web site.

- RWD cannot be implemented on existing websites.

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What is Responsive Web Design

- RWD is simply a fluid grid.
- Optimized for viewing experience.
- RWD makes web page look good on all devices (desktop, tablets and phones)
- It is using CSS and HTML to resize, hide, shrink, enlarge, or move the content to make it look good on any screen.
- Responsive web design provides an optimal experience, easy reading and easy navigation with a minimum of resizing on different devices such as desktops, mobiles and tabs

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What is Responsive Web Design

- **Adaptive**
  - Media queries to target various devices
- **Fluid**
  - Flexible grids/ percentages rather than fixed
- **Responsive Design**
  - Uses media queries and fluid grid to control the scaling of the contents on various devices

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Responsive Web Design Core Components

- **Flexible Grids**
  - Logical division of contents. Any number of columns/grid which scale to any width. Dimensions relative to the parent element.

- **Flexible Media (Images)**
  - For accommodating the images on the screen using percentages so that images adjust to the parent container without cropping.

- **Media Queries (Styling capabilities)**
  - Getting the characteristics of the target device, how website should be rendered on the device based on the type of the device.

```
@media screen and (max-width:980px){
    /* Styles*/
    }

@media screen and (max-width:700px){
    /* Styles*/
    }

@media screen and (max-width:480px){
    /* Styles*/
    }
```

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Architecture of RWD

- Content layer by using HTML.
- Presentation layer that comprises CSS for styling.
- Client side scripting layer that comprises Javascript/JQuery

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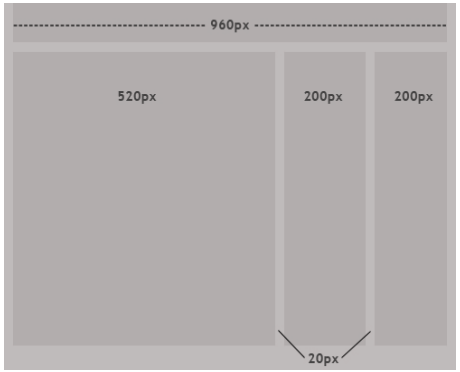
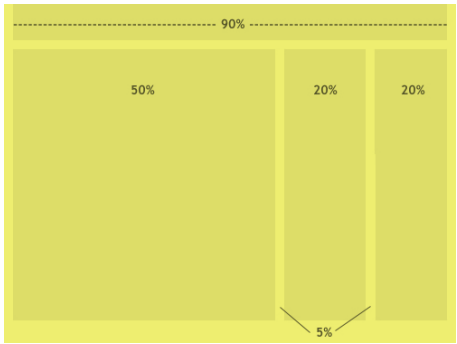
Fixed and Fluid Layouts

- **Fixed Layout**
  - Has a wrapper that is a fixed width, and the components inside it have either percentage widths or fixed widths. The container element is set not to move irrespective of the screen resolution.



- **Fluid or Liquid Layout**
  - The majority of the components inside have percentage widths and thus adjust to the users screen resolution.



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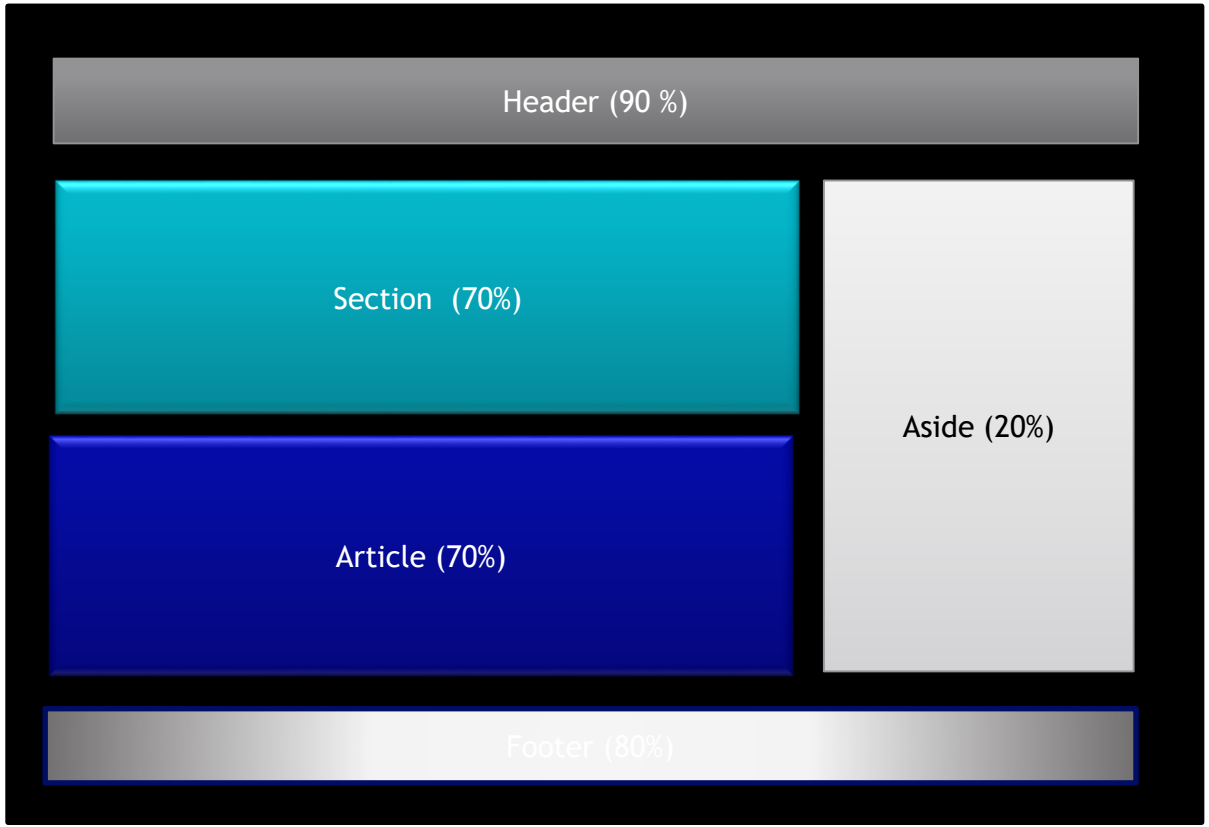
Converting fixed to percentage



Percentage = target/context

Eg: For header

Context = 940 px
Target = 850 px

Percentage = 850/940 *100 %

CSS Grid Framework or Grid Generator like
- Tiny fluid grid
- Variable grid system
- Fluid grid calculators
- Fluid Grid by Bootstrap

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Fixed Vs. Fluid Web Page Design

FLUID	FIXED
Fluid web page design can be more user-friendly, because it adjusts to the user's set up.	Fixed-width layouts are much easier to use and easier to customize in terms of design.
The amount of extra white space is similar between all browsers and screen resolutions, which can be more visually appealing.	Widths are the same for every browser, so there is less hassle with images, forms, video and other content that are fixed-width.
If designed well, a fluid layout can eliminate horizontal scroll bars in smaller screen resolutions.	There is no need for min-width or max-width, which isn't supported by every browser anyway.
The designer has less control over what the user sees and may overlook problems because the layout looks fine on their specific screen resolution.	Smaller screen resolutions may require a horizontal scroll bar, depending the fixed layout's width.
Images, video and other types of content with set widths may need to be set at multiple widths to accommodate different screen resolutions.	Fixed-width layouts generally have a lower overall score when it comes to usability.

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Measurements for Responsiveness

- percentages
- em
- viewport units (The viewport is the user's visible area of a web page.)
  - vw(viewport width): 1vw=1% of viewport width (1/100th viewport width)
  - vh(viewport height) : 1vw=1% of viewport height
  - vmin: 1vmin=the smallest of the values of 1vw or 1vh
  - vmax: 1vmax=the highest of the values of 1vw or 1vh

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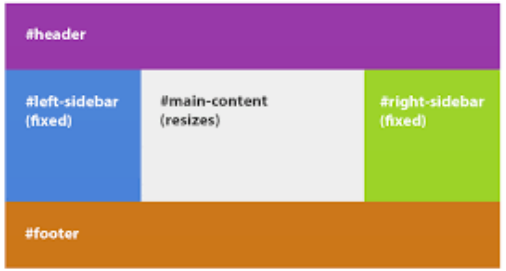
CSS3 Flexible Box

- Use of flexbox ensures that elements behave predictably when the page layout must accommodate different screen sizes and different display devices.

- Flexbox consists of **flex containers** and **flex items**.

- **Flex container: Is** declared by setting the ***display*** property of an element to either ***flex*** (rendered as a block) or ***inline-flex*** (rendered as inline)



- **Flex item** is a child of flex container. Text directly contained in a flex container is wrapped in an anonymous flex item.

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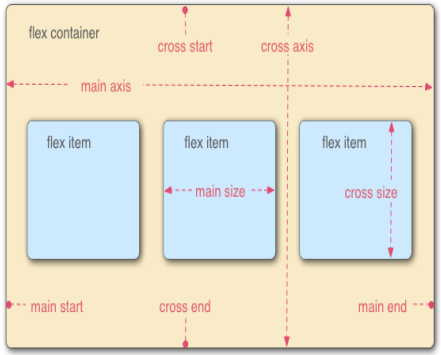
CSS3 Flexible Box contd…



- **Axes**: Every flexible box layout follows two axis.
  - Main axis: Along which the flex items follow each other.
  - Cross axis: It is perpendicular to the main axis.

- **Directions:** The main start/main end and cross start/cross end sides of the flex container describe the origin and terminus of the flow of flex items.

- **Lines:** Flex items can be laid out on either a single line or on several lines according to the ***flex-wrap*** property which controls the direction of the cross axis and the direction in which new lines are stacked.

- **Dimensions:** The flex items agnostic equivalents of height and width are **main size** and **cross size,** which respectively follow the main axis and cross axis of the flex container.

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Browser Prefixes

Browser	Prefix
Chrome	-webkit-
Mozilla	-moz-
Opera	-o-
IE	-ms-
iOS	-webkit-
Android	-webkit-
Safari	-webkit-

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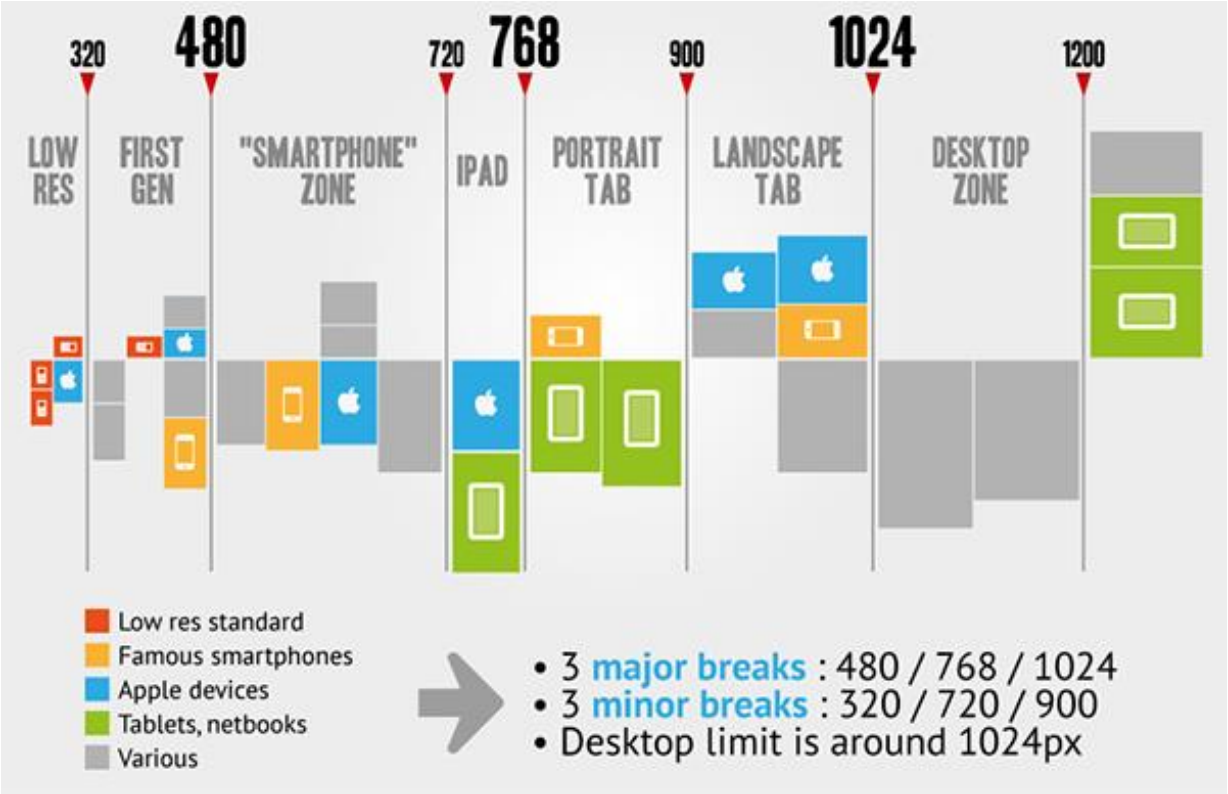
Media Queries Breakpoints



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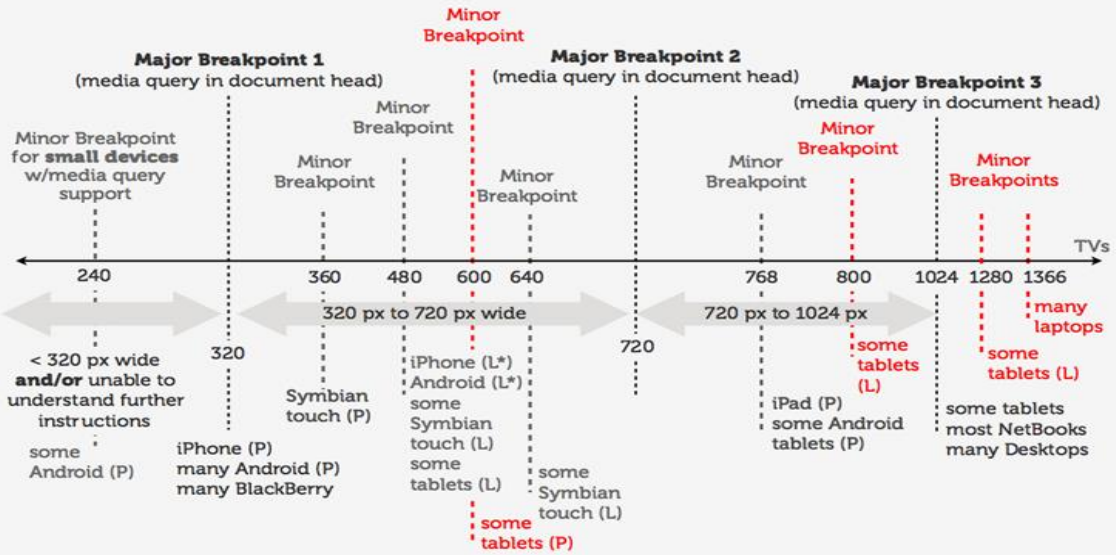
Breakpoints for Responsive Design



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RWD using Bootstrap

- Bootstrap is a powerful front-end framework (HTML, CSS and JS) for faster and easier responsive web development.

- It is used to create responsive, interactive and feature rich websites with much less effort.

- It includes HTML and CSS based design templates for common user interface components like Typography, Forms, Buttons, Tables, Navigations, Dropdowns, Alerts, Modals, Tabs, Accordion, Carousel and many other as well as optional JavaScript extensions.

- Bootstrap comes equipped with HTML,CSS and JavaScript for various web and user interface components.

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Advantages of Bootstrap

➢ Embedded tools for creating flexible and responsive web layouts and interface components. Bootstrap Data API's used for creating advanced interface components.

➢ Advantages:

- **Saves time**: Predefined design templates and classes
- **Consistent design**: Design templates and styles through a central library.
- **Responsive features**: Web pages for different devices and screen resolutions without any change in markup.
- **Easy to use**
- **Compatible with browsers:** Compatible with all modern browsers.
- **Open source**

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Bootstrap Files

- Two versions of the file
  - **Compiled Bootstrap**

    Compiled download contain compiled and minified version of CSS and JavaScript files as well as icons in font format for faster and easier web development. Increase the performance of your website and saves the precious bandwidth when you decided to move your site on production because of lesser HTTP request and download size since files are compiled and minified

  - **Bootstrap source**

    Contains original source files for all CSS and JavaScript, along with a local copy of the docs.

- https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css

ttps://ajax.googleapis.com/ajax/libs/jquery/3.2.0/jquery.min.js

- https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js

- https://ajax.googleapis.com/ajax/libs/jquery/3.2.0/jquery.min.js

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Bootstrap Grid System

- Bootstrap grid system provides the quick and easy way to create responsive website layouts.
- Bootstrap 3 introduces the responsive mobile first fluid grid system that appropriately scales up to 12 columns as the device or viewport size increases.

Features Bootstrap Grid System	Extra small devices Phones (<768px)	Small devices Tablets (≥768px)	Medium devices Desktops (≥992px)	Large devices Desktops (≥1200px)
Max container width	None (auto)	750px	970px	1170px
Grid behavior	Horizontal at all times	Collapsed to start, horizontal above breakpoints		
Class prefix	.col-xs-	.col-sm-	.col-md-	.col-lg-
Max column width	Auto	~62px	~81px	~97px
Gutter width	15px on each side of a column (i.e. 30px)			

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Bootstrap Fluid Layout

- ***.container-fluid*** class is used to create the fluid layouts in order to utilize the 100% width of the viewport.

- The class ***.container-fluid*** simply applies the horizontal margin with the value *auto* and left and right padding of 15px on element to offset the left and right margin of -15px. (i.e. margin: 0 -15px;) used on the *.row*.

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Bootstrap Responsive Layout

- With the new Bootstrap 3 mobile first grid system creating the responsive and mobile friendly websites has become much easier.

- Bootstrap 3 is responsive and mobile friendly from the start.

- Its four tiers grids classes provides better control over the layout as well as how it will be rendered on different types of devices like cell phones, tablets, desktop and laptops, large screen devices etc.

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Bootstrap Responsive Tables

➢ With Bootstrap 3 you can also create responsive tables to enable horizontal scrolling on small devices (screen width under 768px).

➢ To make any table responsive place the table inside a ** ** element and apply the class ***.table-responsive*** on it.

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Bootstrap List Groups

- The list groups are very useful and flexible component for displaying lists of elements.

- A list group is simply an unordered list with the class ***.list-group*** and list items having the class ***.list-group-item.***

- List group items can be hyperlinked. ***Icons*** and ***Badges*** can be added to the list group to make It more elegant.

- Contextual classes can be added to the list group to apply extra emphasis on them.

Contextual States
list-group-item-success
list-group-item-info
list-group-item-warning
list-group-item-danger

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Bootstrap Forms

- Bootstrap provides three different types of form layouts:
  - Vertical form (default)
    - *.form-control*
  - Horizontal form
    - *.form-horizontal to form element*
    - *.form-group to div element*
    - *.control-label to label element*
  - Inline form
    - *.form-inline to the form element*

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Bootstrap Input Groups and Button Groups

- Input Groups are used for creating interactive form controls for textual input.

- Button Groups are used to create series of buttons together in a single line through the button group component.

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Bootstrap Images, Media Objects and Icons

- Images can be made responsive by adding
  - *.img-responsive to img tag*

- Bootstrap thumbnail is very useful for creating grids of images or videos , list of products, portfolios etc…

- Bootstrap includes more than 250 Glyphicons which are available in font format for better usability and scalability. CSS color property can be applied to these icons.

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Bootstrap Navigation and Panels

- Navs:
  - Its an easy and quick way to create basic components like tabs and pills.

- Navbar:
  - It is used for creating responsive navigation header for a website.
  - Different variations of the Navbar can be created:
    - ✓ Navbar with dropdown menus and search boxes.
    - ✓ Fixed position navbar.

- Panels:
  - It is used to place the content in a box for better presentation.

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Bootstrap Pagination and Breadcrumbs

- Pagination is the process of organizing content by dividing it into separate pages.
- It is used for displaying a limited number of results on search results pages, or showing a limited number of posts for each page.

- A breadcrumb is a navigation scheme that indicates current page's location to the user within a website.
- It is used for enhancing the accessibility of the websites having a large number of pages.
- ***.breadcrumb*** class is used to create breadcrumbs.

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Bootstrap Progress Bars and Wells

- Progress bars can be used for showing the progress of a task or action to the users.
  - Simple progress bar
  - Stripped progress bar
  - Stacked progress bar
  - Progress bars with emphasis classes
  - Stripped progress bars with emphasis classes

- Well component provides a quick way to apply a simple inset effect to an element. It is useful to place some content inside a box to make it look different from rest of the contents.

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Bootstrap 3 vs Bootstrap4

Component	Bootstrap 3	Bootstrap 4
Source CSS Files	LESS	SCSS
Primary CSS Unit; Global Font Size	Px | 14 px	Rem | 16 px
Media Queries Unit	px	Px
Default Fonts	Helvetica Neue, Helvetica, Arial, sans-serif	Uses a "native font stack" (user's system fonts), with a fallback to Helvetica Neue, Arial, and sans-serif
Grid Tiers	4 tier grid system (xs, sm, md, lg)	5 tier grid system (xs, sm, md, lg, xl)
Offsetting Columns	Uses col-*-offset-* classes to offset columns. For example, col-md-offset-4	Uses offset-*-* classes to offset columns. For example, offset-md-4

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References

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- Websites:
  - HTML5Demos.com
  - Html5rocks.com
  - Netmagazine.com
- Books:
  - Pro HTML5 Programming
  - Dive into HTML5
  - Beginning HTML5 and CSS3: Next Generation Web Standards
  - Cookbook CSS, JQuery and Bootstrap (from Tradepub)

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