



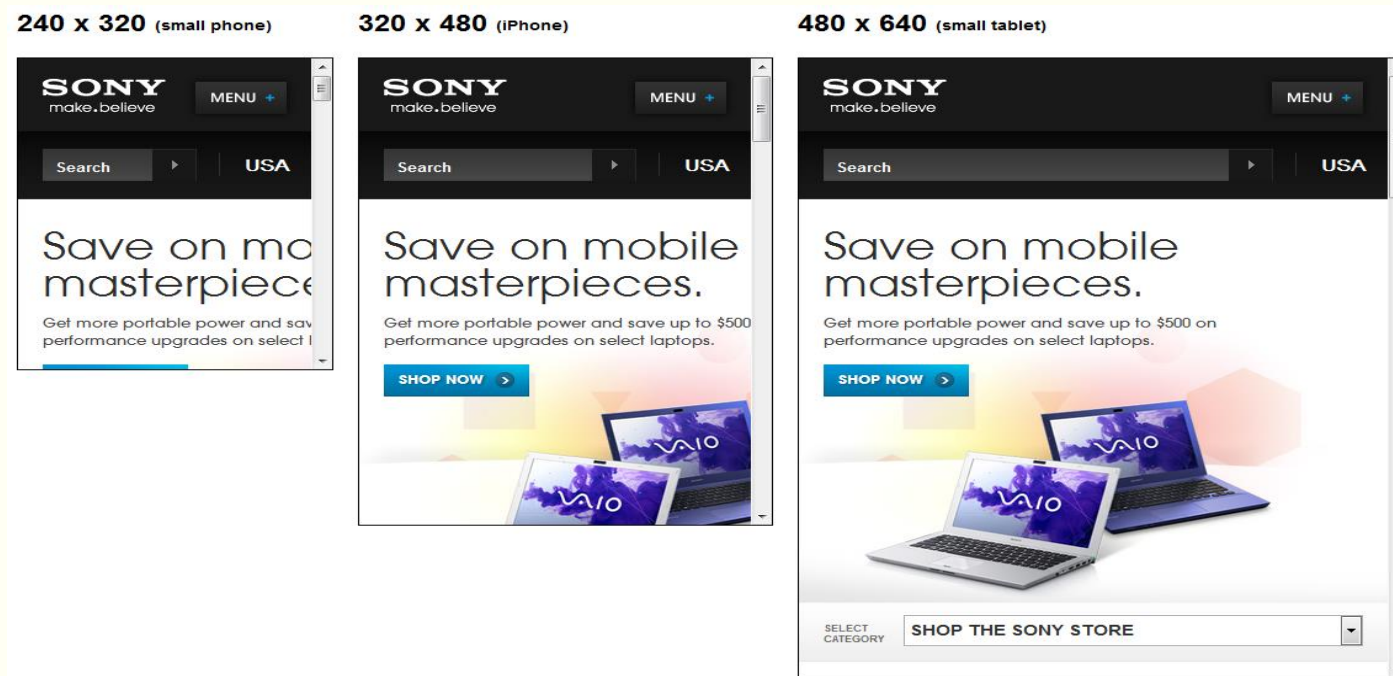
RESPONSIVE WEB DESIGN

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Responsive Web Design

- RWD is the concept of developing a website in a way that allows the layout to adjust according to the user's screen resolution (view port) using media queries
- Test [<http://www.responsinator.com/?url=sony.com>]



http://foodsense.is/



Why is it relevant?

- 1.8 billion internet connections in the world today.
- 6.8 billion people in the world today.
- 3.4 billion people with mobile devices today. (roughly $\frac{1}{2}$ the population of the planet)
- The future is now:
 - Babies have an easier time interacting with an iPad than with a magazine. To them a print magazine is just like a broken iPad.
 - Websites are not limited to laptops only.

Why is it relevant?

- RWD allows us to tweak the layout and present the relevant information first: hours, phone number, directions and perhaps a link to the menu.
- Meanwhile back at your desk, the restaurant's page has all the bells and whistles you didn't care for while browsing on your phone.

Viewport?

- A viewport is under your control. It lets you set pixel values in “CSS pixels” regardless of the device pixels.
- At 100% zoom, device pixels = CSS pixels. No big deal.
- As users zoom in with a gesture on a mobile device, less CSS pixels fit in the viewport, but the layout does not reflow.

Popular Viewport Sizes

- 320 x 480 px: Smartphone
- 480 x 320 px: Smartphone in landscape orientation
- 768 x 1024 px: ipad/ tablet
- 1024 x 768 px: ipad/ tablet in landscape orientation / netbook
- Anything larger: desktop/ laptop computer

How do we design for RWD

- Use the Mobile First Approach and favour Progressive Enhancement instead of the traditional Graceful Degradation
- Graceful Degradation
 - Focuses on building the website for the most advanced/capable browsers.
 - Older browsers are expected to have a poor, but passable experience.
 - Small fixes may be made to accommodate a particular browser (they are not the focus)
- Progressive Enhancement
 - basic content and functionality should be accessible to all web browsers
 - sparse, semantic markup contains all content
 - enhanced layout: external CSS
 - enhanced behavior : external JavaScript
 - end-user web browser preferences are respected

How do we design for RWD

- Use the **Mobile First Approach** and favor **Progressive Enhancement** instead of the traditional Graceful Degradation



Fundamental Techniques for RWD

- There are three parts in Responsive Web design:

- 1. Flexible, grid-based layouts**

The web sites are built **using percentage** for the widths

- 2. Media queries**

Use a module from the CSS3 specification

- 3. Flexible media & images**

When screen size begins to change, the media/images need to be flexible to suit the screen size

Techniques for RWD: Flexible, grid-based, Layout

- Proportion of each page element is the target element divided by the context
 - Example:
 - suppose your desktop layout has the main wrapper with the width of 960px and
 - suppose that the target element is 300px wide
 - then the proportion would be 31.25%
 - **$300\text{px} / 960\text{px} = 31.25\%$**

Responsive Web Design - Grid-View

■ What is a Grid-View?

- Many web pages are based on a grid-view, which means that the page is divided into columns.
- Using a grid-view is very helpful when designing web pages. It makes it easier to place elements on the page.
- A responsive grid-view often has 12 columns, and has a total width of 100%, and will shrink and expand as you resize the browser window.

Building a Responsive Grid-View

```
* {  
  box-sizing: border-box;  
}
```

- First ensure that all HTML elements have the box-sizing property set to border-box. This makes sure that the padding and border are included in the total width and height of the elements.
- Use a responsive grid-view with 12 columns, to have more control over the web page.
- First we must calculate the percentage for one column: $100\% / 12 \text{ columns} = 8.33\%$.
- Then we make one class for each of the 12 columns, class="col-" and a number defining how many columns the section should span

```
.col-1 {width: 8.33%;}  
.col-2 {width: 16.66%;}  
.col-3 {width: 25%;}  
.col-4 {width: 33.33%;}  
.col-5 {width: 41.66%;}  
.col-6 {width: 50%;}  
.col-7 {width: 58.33%;}  
.col-8 {width: 66.66%;}  
.col-9 {width: 75%;}  
.col-10 {width: 83.33%;}  
.col-11 {width: 91.66%;}  
.col-12 {width: 100%;}
```

Building a Responsive Grid-View

- All these columns should be floating to the left, and have a padding

```
[class*="col-"] {  
    float: left;  
    padding: 15px;  
    border: 1px solid red;  
}
```

- Each row should be wrapped in a <div>. The number of columns inside a row should always add up to 12:

```
<div class="row">  
    <div class="col-3">...</div>  
    <div class="col-9">...</div>  
</div>
```

Building a Responsive Grid-View

- The columns inside a row are all floating to the left, and are therefore taken out of the flow of the page, and other elements will be placed as if the columns does not exist. To prevent this, we will add a style that clears the flow:

```
.row::after {  
    content: "";  
    clear: both;  
    display: block;  
}
```

Building a Responsive Grid-View Example

Grid System Tutorial

banuprakashc@yahoo.co.in

HTML 5

CSS3

JavaScript

jQuery

jQuery

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.

Resize the browser window to see how the content respond to the resizing.

Grid System Tutorial

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Building a Responsive Grid-View Example (CSS)

```
* {  
  box-sizing: border-box;  
}  
.row::after {  
  content: "";  
  clear: both;  
  display: block;  
}  
[class*="col-"] {  
  float: left;  
  padding: 15px;  
}  
.col-1 {width: 8.33%;}  
.col-2 {width: 16.66%;}  
.col-3 {width: 25%;}  
.col-4 {width: 33.33%;}  
.col-5 {width: 41.66%;}  
.col-6 {width: 50%;}  
.col-7 {width: 58.33%;}  
.col-8 {width: 66.66%;}  
.col-9 {width: 75%;}  
.col-10 {width: 83.33%;}  
.col-11 {width: 91.66%;}  
.col-12 {width: 100%;}
```

```
html {  
  font-family: "Lucida Sans", sans-serif;  
}  
.header {  
  background-color: #9933cc;  
  color: #ffffff;  
  padding: 15px;  
}  
.menu ul {  
  list-style-type: none;  
  margin: 0;  
  padding: 0;  
}  
.menu li {  
  padding: 8px;  
  margin-bottom: 7px;  
  background-color: #33b5e5;  
  color: #ffffff;  
  box-shadow: 0 1px 3px rgba(0,0,0,0.12), 0 1px 2px rgba(0,0,0,0.24);  
}  
.menu li:hover {  
  background-color: #0099cc;  
}
```

Building a Responsive Grid-View Example (HTML)

```
<div class="header">
<h1>Grid System Tutorial</h1>
<h3>banuprakashc@yahoo.co.in</h3>
</div>

<div class="row">
  <div class="col-3 menu">
    <ul>
      <li>HTML 5</li>
      <li>CSS3</li>
      <li>JavaScript</li>
      <li>jQuery</li>
    </ul>
  </div>

  <div class="col-9">
    <h1>jQuery</h1>
    <p>jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.</p>
    <p>Resize the browser window to see how the content respond to the resizing.</p>
  </div>
</div>
```

Techniques for RWD: Media Queries

- Media queries is the backbone of RWD
- Media queries provide the ability to
 - Specify different styles for individual browser device circumstances
 - Specify the width of the viewport or device orientation
- Using Media queries in the CSS file to change the styling of the HTML elements is based on certain breakpoints.

The viewport meta tag

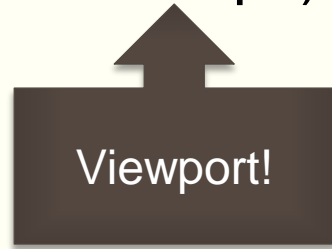
➤ Viewport meta tag:

- Tells the browser how to behave when rendering the page – you tell the browser how big the viewport will be
- Use the viewport meta tag in the <head> section
- If we are using RWD, it's good to have the meta tag viewport as

```
<meta name="viewport"  
content="width=device-width,  
initial-scale=1">
```

External Media Query

```
<link rel="stylesheet"      media="screen and (min-width:320px)  
and (max-width:480px)" href="css/mobile.css" />
```



The standard:

<http://www.w3.org/TR/css3-mediaqueries/>

Coding Media Queries

The following code will display the font-size at 100% if the width is at least 1024 px

```
@media screen and (min-width: 1024px) {  
    body {font-size: 100%;}  
}
```

The following code tests the orientation and the device-width

```
@media screen and (min-device-width: 480px)  
    and (orientation: landscape) {  
    body { font-size: 100%; }  
}
```

The following code renders a page that the body background color will change to blue only between 500px and 700px.

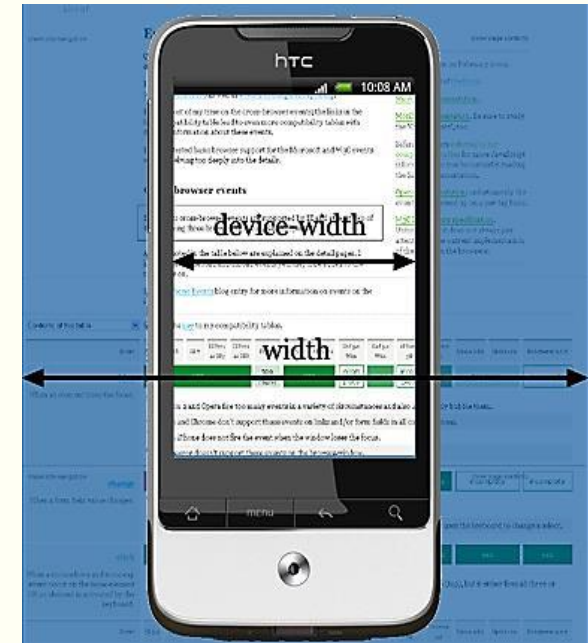
```
@media screen (min-width:500px)and (max-width:700px) {  
    body {background: blue;}  
}
```

The logical operators are pretty interchangeable:

- The operator “and” can be replaced with “not”. The orientation “portrait” with “landscape”.

Definitions

- width = width of the display area
- device-width = width of device
- orientation = orientation of the device
- aspect-ratio = ratio of width to height
 - It is expressed by two numbers separated by a slash
- device-aspect-ratio = ratio of device-width to device-height
- resolution – density of pixels of output device (dpi)



Adjusting for a Mobile Device

```
#logo { background: url(images/logo.png); width: 600px; border: 1px #ccc solid; }
```

```
@media only screen and (max-device-width: 480px) {  
    #logo { background: url(images/logo_mobile.png); width: 440px; }  
}
```



Adjust logo for small
viewport

Resize the screen to see it working:

http://www.htmlgoodies.com/imagesvr_ce/3028/mq_demo.html

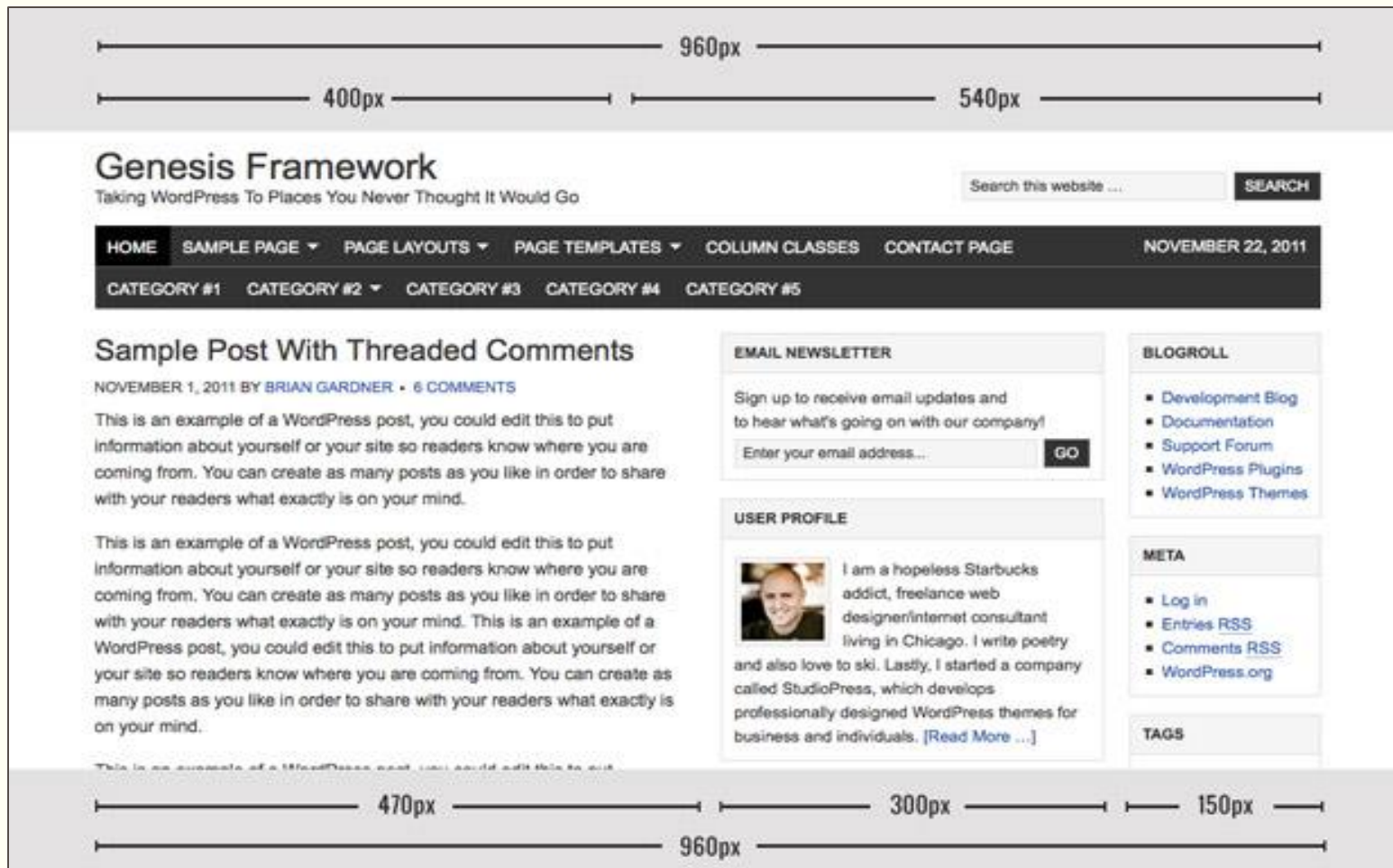
Design for Mobile First example

```
/* For mobile phones: */
[class*="col-"] {
    width: 100%;
}
@media only screen and (min-width: 600px) {
    /* For tablets: */
    .col-m-1 {width: 8.33%;}
    .col-m-2 {width: 16.66%;}
    .col-m-3 {width: 25%;}
    .col-m-4 {width: 33.33%;}
    .col-m-5 {width: 41.66%;}
    .col-m-6 {width: 50%;}
    .col-m-7 {width: 58.33%;}
    .col-m-8 {width: 66.66%;}
    .col-m-9 {width: 75%;}
    .col-m-10 {width: 83.33%;}
    .col-m-11 {width: 91.66%;}
    .col-m-12 {width: 100%;}
}
```

```
@media only screen and (min-width: 768px) {
    /* For desktop: */
    .col-1 {width: 8.33%;}
    .col-2 {width: 16.66%;}
    .col-3 {width: 25%;}
    .col-4 {width: 33.33%;}
    .col-5 {width: 41.66%;}
    .col-6 {width: 50%;}
    .col-7 {width: 58.33%;}
    .col-8 {width: 66.66%;}
    .col-9 {width: 75%;}
    .col-10 {width: 83.33%;}
    .col-11 {width: 91.66%;}
    .col-12 {width: 100%;}
}
```

```
<div class="row">
<div class="col-3 col-m-3">...</div>
<div class="col-6 col-m-9">...</div>
<div class="col-3 col-m-12">...</div>
</div>
```

Converting an Existing Page to RWD



Converting an Existing Page to RWD

- Assume the existing page has the following basic structure of HTML code

```
<div id="wrap">
  <div id="header">
    <div id="title-area"></div>
    <div class="widget-area"></div>
  </div>
  <div id="inner">
    <div id="content-sidebar-wrap">
      <div id="content"></div>
      <div id="sidebar"></div>
    </div>
    <div id="sidebar-alt"></div>
  </div>
</div>
```

Converting an Existing page to RWD

- Assume the existing page has the following basic structure of CSS code

```
#wrap {width: 960px; }  
#header {width: 960px;}  
#title-area {width: 400px;}  
#header .widget-area {width: 540px;}  
#inner {width: 960px;}  
#content-sidebar-wrap {width: 790px;}  
#content {width: 470px;}  
#sidebar {width: 300px;}  
#sidebar-alt {width: 150px;}
```

Converting an Existing page to RWD

- Suppose the target goal is 960px wide

```
#wrap {width: 100%; }  
#header {width: 100%;}  
#title-area {width: 41.666667%;}  
#header .widget-area {width: 56.25%;}  
#inner {width: 100%;}  
#content-sidebar-wrap {width: 82.291667%;}  
#content {width: 48.958333%;}  
#sidebar {width: 31.25%;}  
#sidebar-alt {width: 15.625%;}
```

- **Formula: (original pixels/target goal pixels)* 100%**
- **Example for the #title-area: (400px/960px)*100% = 41.666667%**

Converting an existing page to RWD

- The ul in the sidebar

- `/*The pixel for the margin is 25px */`

```
.widget-area ul {  
    margin: 10px 0 0 25px;}  
}
```

- `/*the percentage conversion of the target margin*/`

```
.widget-area ul {  
    margin: 10px 0 0 16.666667%;}  
}
```

This pixel is 150 because that is the width of the sidebar.

`(25/150) * 100%= 16.666667%;\`

Flexible images: `img { max-width: 100%; }`

inserting media queries

- Add two media query break points at the end of the style section

```
@media screen and (max-width:830px) {  
  #content {  
    float: left;  
    width: 98%;  
    margin-top:5px;  
  }  
  nav li;  
  nav a {  
    display:block;  
  }  
}  
@media screen and (max-width:480px) {  
  #content {  
    float: none;  
    width:95%;  
  }  
}
```

Techniques for RWD: Flexible Media & Images

- Using media queries, designers are able to:
 - Extend the media declarations to include various media properties, based on device being used. Such as:
 - screen size, orientation, and color
 - write a rule that prevents images from exceeding the width of their container

Scalable images

- Scale to size of containing element
- `ul#image-icons li img { max-width:100%;}`



Background Images

- Background images can also respond to resizing and scaling.
 - If the background-size property is set to "contain", the background image will scale, and try to fit the content area. However, the image will keep its aspect ratio (the proportional relationship between the image's width and height)
 - If the background-size property is set to "100% 100%", the background image will stretch to cover the entire content area:
 - If the background-size property is set to "cover", the background image will scale to cover the entire content area. Notice that the "cover" value keeps the aspect ratio, and some part of the background image may be clipped

HTML5 <picture> Element

- HTML5 introduced the <picture> element, which lets you define more than one image.

<picture>

<source srcset="img_smallflower.jpg" media="(max-width: 400px)">

<source srcset="img_flowers.jpg">

</picture>

GETTING FLEXIBLE

```
body {  
    font: normal 100% Helvetica, Arial, sans-serif;  
}
```

- With a font-size of 100%, all the elements in our page are sized relative to the browser's default type size, which in most cases is 16px.
- And thanks to the browser's default stylesheet, the h1 is big, bold, and beautiful—but still in Helvetica, and much too large.

GETTING FLEXIBLE (EM)

- With ems, we take the target value for each element's font-size in pixels and divide it by the font-size of its container (that is, its context).
- We're left with the desired font-size, expressed in relative, em-friendly terms.
 - $\text{target} \div \text{context} = \text{result}$
- If we assume the body's default type size to be 16px, we can plug each desired font-size value into this formula. So to properly match our header to the comp, we divide the target value (24px) by the font-size of its container (16px):

$$24 \div 16 = 1.5$$

So the header is 1.5 times the default body size, or 1.5em, which we can plug directly into our stylesheet.

```
h1 {  
  font-family: Georgia, serif;  
  font-size: 1.5em;    /* 24px / 16px = 1.5em */  
}
```

GETTING FLEXIBLE (EM)

- To size the list to the em-equivalent of 14px, we can use the same formula. Assuming again that the body's font-size is roughly 16px, we simply divide that target by the context:

$$14 \div 16 = 0.875$$

And we're left with a value of 0.875em, which we can again drop into our CSS.

```
ul {  
    font-size: 0.875em;    /* 14px / 16px = 0.875em */  
}
```


Frameworks



Bootstrap from twitter

Bootstrap is a toolkit from Twitter designed to kickstart development of webapps and sites. It includes base CSS and HTML for typography, forms, buttons, tablets, grids, navigation and more.



Skeleton

Minimal responsive framework includes wordpress theme

Skeleton is a WordPress theme aimed at helping you build simple, uncluttered, useable, and mobile-friendly WordPress sites. Skeleton is simple, lightweight and easy to work with for WordPress designers and developers.

Frameworks



Foundation

Flexible 6 & 12 grid framework

Foundation, is an advanced, lightweight, responsive, front-end framework. Based on a flexible, 12-column grid that can scale to an arbitrary size (defined by the max width of the row) that's easily nested. This means you can build complicated layouts without creating a lot of custom elements.

Introduction to CSS3

- **CSS (Cascading Style Sheets)** is a language which describes how a document written in a markup language looks and how it is formatted.
- Giving layout, colors and fonts to a document and its elements can change how your website looks and how people think about it.
- CSS has evolved over time from CSS1 to CSS2 (which is the current standard) to **CSS3** (which is still in development).
- Modern browser support CSS1 and CSS2 but for CSS3 the support is still limited.

Layout Engine Support

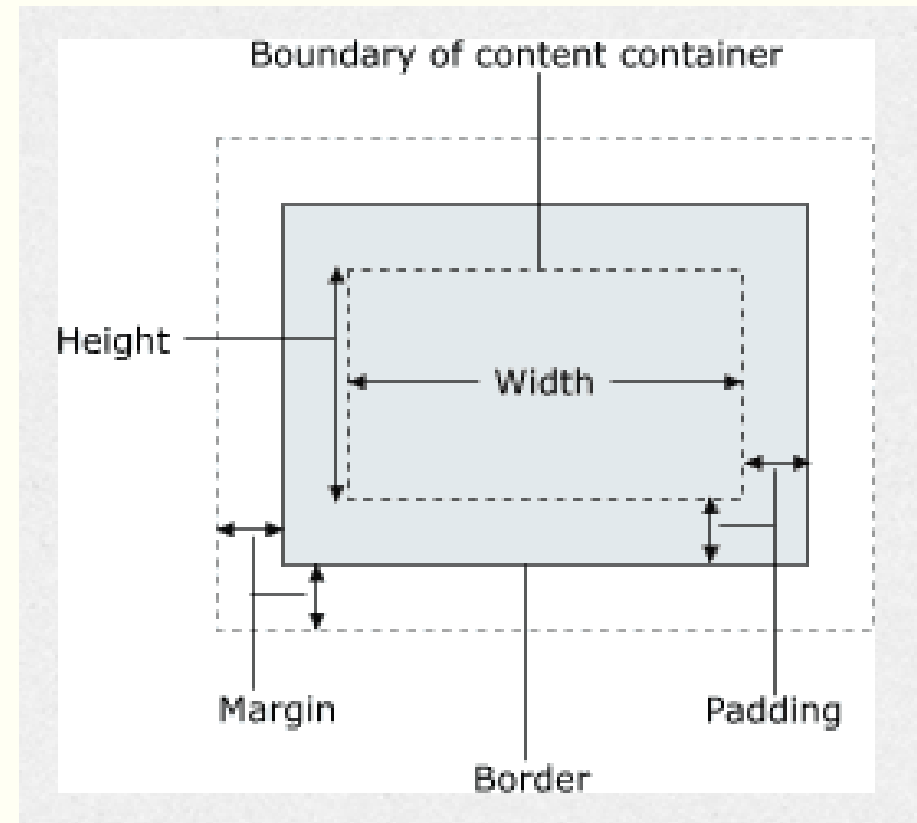
- There are a number of Layout Engines available, each rendering the marked up content and formatting information in its own way.
 - Leading in support is the Webkit Engine, used by Google Chrome
 - Safari and the Gecko Webkit Engine for Mozilla Firefox
- Some of the CSS3 properties which are still in experimental phase are lead by a prefix:
 - Trident (Microsoft Internet Explorer) : -ms-
 - Gecko (Google Chrome & Safari) : -webkit-
 - WebKit (Mozilla Firefox): -moz-
- Over time these prefixes will diminish when they are no longer in experimental phase.

CSS3 Modules

- Some of the most important CSS3 modules are:
 - Selectors
 - Box Model
 - Backgrounds and Borders
 - Image Values and Replaced Content
 - Text Effects
 - 2D/3D Transformations
 - Animations
 - Multiple Column Layout

The 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.
- The CSS box model is essentially a box that wraps around HTML elements, and it consists of: margins, borders, padding, and the actual content.



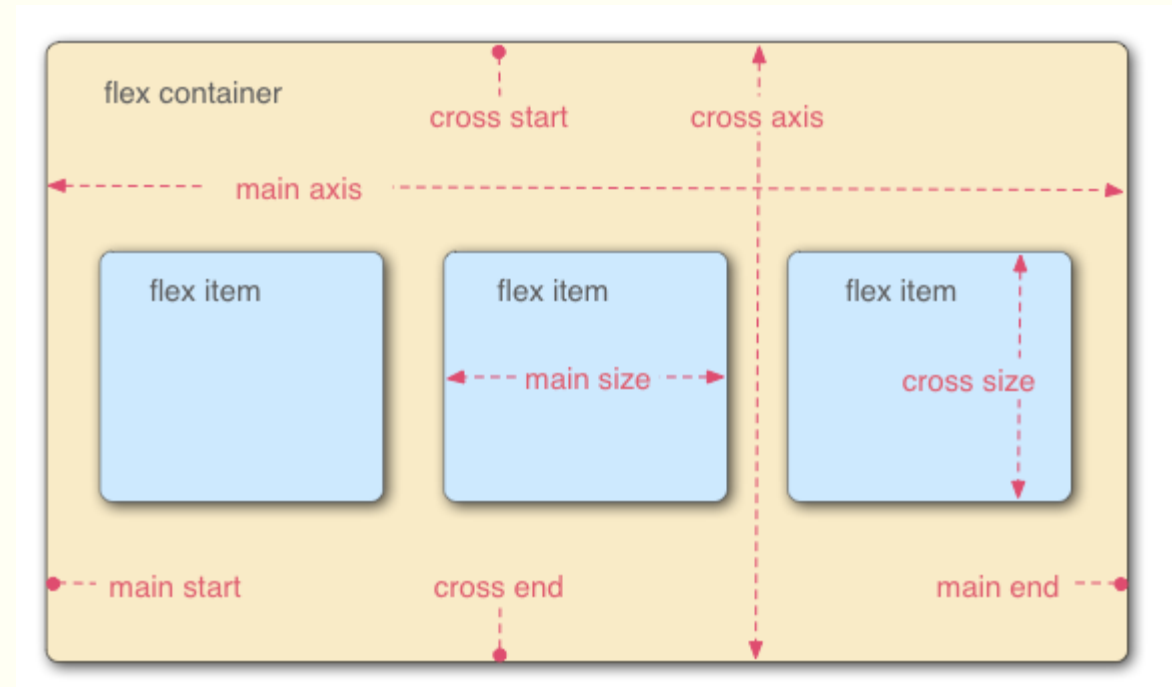
CSS3 Box Model

- CSS3 Flexible Box Module

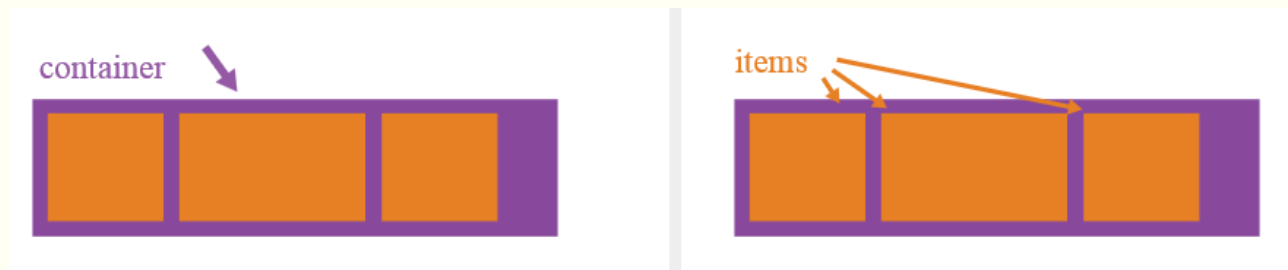
- The Flexbox Layout (Flexible Box) module aims at providing a more efficient way to lay out, align and distribute space among items in a container, even when their size is unknown and/or dynamic (thus the word "flex").
- The main idea behind the flex layout is to give the container the ability to alter its items' width/height (and order) to best fill the available space (mostly to accommodate to all kind of display devices and screen sizes).
- A flex container expands items to fill available free space, or shrinks them to prevent overflow.
- Most importantly, the flexbox layout is direction-agnostic as opposed to the regular layouts (block which is vertically-based and inline which is horizontally-based).

CSS3 Flexible Box Module

- Flex container
 - The parent element in which flex items are contained. A flex container is defined using the flex or inline-flex values of the display property.
- Flex item
 - Each child of a flex container becomes a flex item. Text directly contained in a flex container is wrapped in an anonymous flex item.
- Axes
 - Every flexible box layout follows two axes. The main axis is the axis along which the flex items follow each other. The cross axis is the axis perpendicular to the main axis.



CSS3 Flexible Box Module



- Properties for the Parent (flex container)
- **display**
 - This defines a flex container;
 - The flex value makes the flex container a block-level element. The inline-flex value makes the flex container an atomic inline-level element.

```
.container {  
  
    display: flex; /* or inline-flex */  
  
}
```

CSS3 Flexible Box Module

■ flex-direction

- This establishes the main-axis, thus defining the direction flex items are placed in the flex container.
- Think of flex items as primarily laying out either in horizontal rows or vertical columns.

.container {

flex-direction: row | row-reverse | column | column-reverse;

}

- row (default): left to right
- row-reverse: right to left
- column: same as row but top to bottom
- column-reverse: same as row-reverse but bottom to top



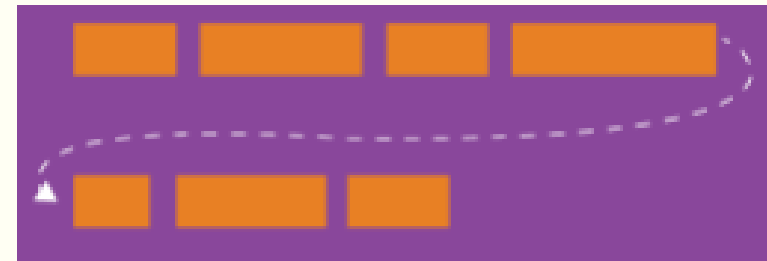
CSS3 Flexible Box Module

■ flex-wrap

- By default, flex items will all try to fit onto one line.
- You can change that and allow the items to wrap as needed with this property.
- Direction also plays a role here, determining the direction new lines are stacked in.

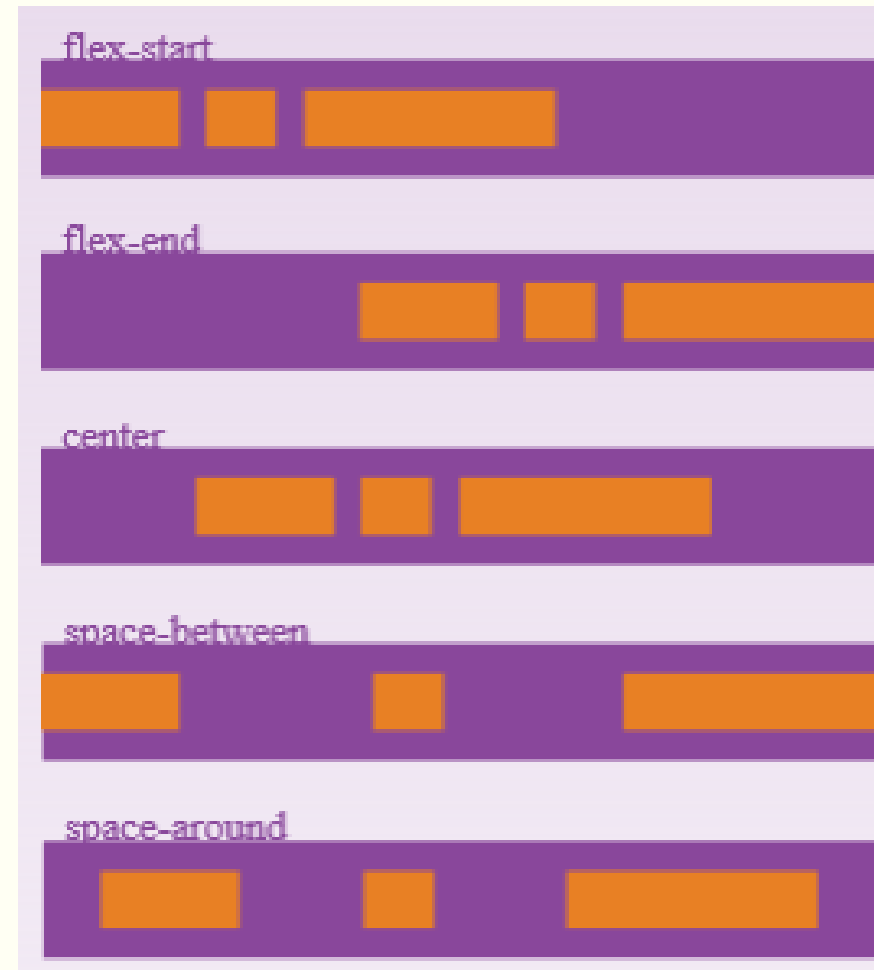
```
.container{  
    flex-wrap: nowrap | wrap | wrap-reverse;  
}
```

- nowrap (default): single-line / left to right
- wrap: multi-line / left to right
- wrap-reverse: multi-line / right to left



CSS3 Flexible Box Module

- justify-content
 - .container {
 - justify-content: flex-start |
 - flex-end |
 - center |
 - space-between |
 - space-around;



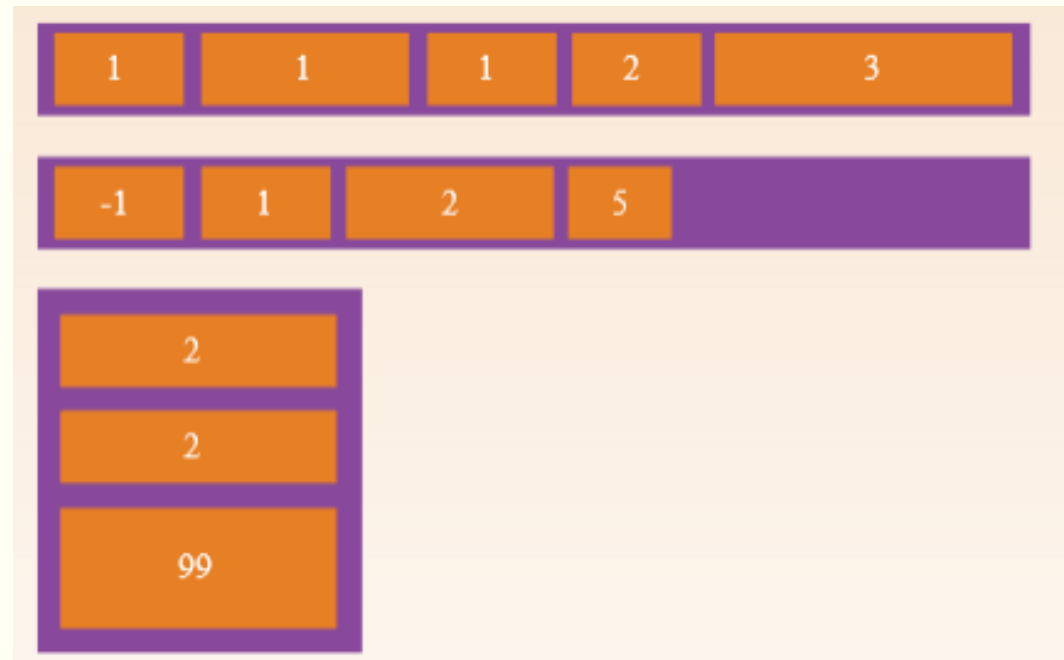
CSS3 Flexible Box Module

- **Properties for the Children**

- **Order**

- By default, flex items are laid out in the source order. However, the order property controls the order in which they appear in the flex container.

```
.item {  
  order: <integer>;  
}
```



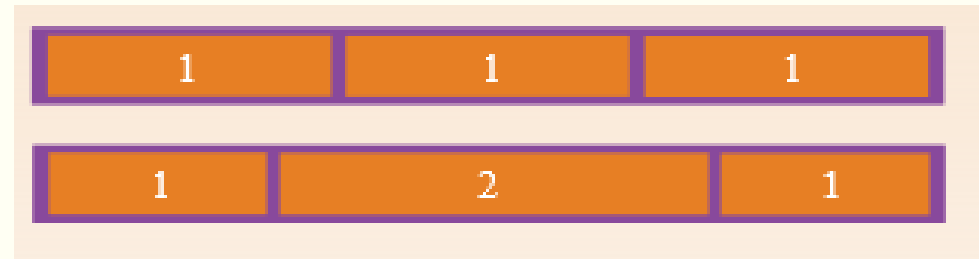
CSS3 Flexible Box Module

■ Properties for the Children

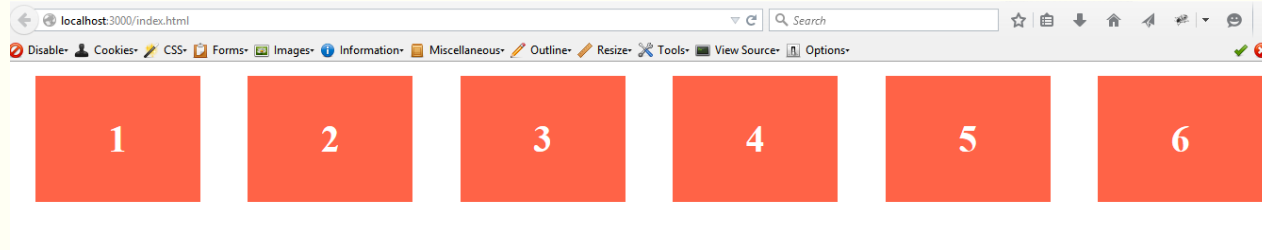
■ **flex-grow**

- This defines the ability for a flex item to grow if necessary. It accepts a unit-less value that serves as a proportion. It dictates what amount of the available space inside the flex container the item should take up.
- If all items have flex-grow set to 1, every child will set to an equal size inside the container. If you were to give one of the children a value of 2, that child would take up twice as much space as the others.

```
.item {  
  flex-grow: <number>; /* default 0 */  
}
```



CSS3 Flexible Box Module example



```
<ul class="flex-container">
  <li class="flex-item">1</li>
  <li class="flex-item">2</li>
  <li class="flex-item">3</li>
  <li class="flex-item">4</li>
  <li class="flex-item">5</li>
  <li class="flex-item">6</li>
</ul>
```

```
.flex-container {
  padding: 0;
  margin: 0;
  list-style: none;
  display: -webkit-box;
  display: -moz-box;
  display: -ms-flexbox;
  display: -webkit-flex;
  display: flex;
  -webkit-flex-flow: row wrap;
  justify-content: space-around;
}
```

```
.flex-item {
  background: tomato;
  padding: 5px;
  width: 200px;
  height: 150px;
  margin-top: 10px;
  line-height: 150px;
  color: white;
  font-weight: bold;
  font-size: 3em;
  text-align: center;
}
```

CSS3 @media Rule

- The @media rule is used to define different style rules for different media types/devices.
- In CSS2 this was called media types, while in CSS3 it is called media queries.
- Media queries look at the capability of the device, and can be used to check many things, such as:
 - width and height of the browser window
 - width and height of the device
 - orientation (is the tablet/phone in landscape or portrait mode?)
 - resolution
 - and much more

CSS3 @media Rule

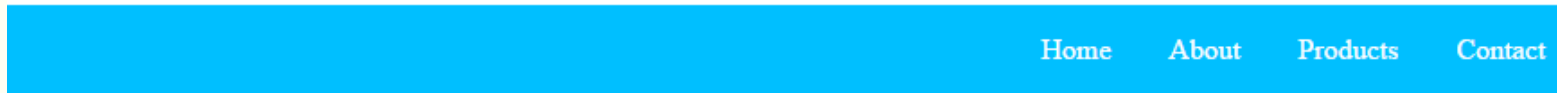
▪ Media Types

- all Used for all media type devices
- print Used for printers
- screen Used for computer screens, tablets, smart-phones etc.
- speech Used for screenreaders that "reads" the page out loud

```
@media screen and (max-width: 300px) {  
  body {  
    background-color: lightblue;  
  }  
}
```

CSS3 Flexible Box Module example -2

- Navigation Menu
 - When on medium sized screens, we center it by evenly distributing empty space around items



```
.navigation {  
  list-style: none;  
  margin: 0;  
  background: deepskyblue;  
  display: -webkit-box;  
  display: -moz-box;  
  display: -ms-flexbox;  
  display: -webkit-flex;  
  display: flex;  
  -webkit-flex-flow: row wrap;  
  justify-content: flex-end;  
}
```

```
@media all and (max-width: 800px) {  
  .navigation {  
    justify-content: space-around;  
  }  
}
```


CSS3 Flexible Box Module example -2

- On small screens, we are no longer using row direction but column

```
@media all and (max-width: 600px) {  
  .navigation {  
    -webkit-flex-flow: column wrap;  
    flex-flow: column wrap;  
    padding: 0;  
  }  
  
  .navigation a {  
    text-align: center;  
    padding: 10px;  
    border-top: 1px solid rgba(255, 255, 255, 0.3);  
    border-bottom: 1px solid rgba(0, 0, 0, 0.1);  
  }  
  
  .navigation li:last-of-type a {  
    border-bottom: none;  
  }  
}
```



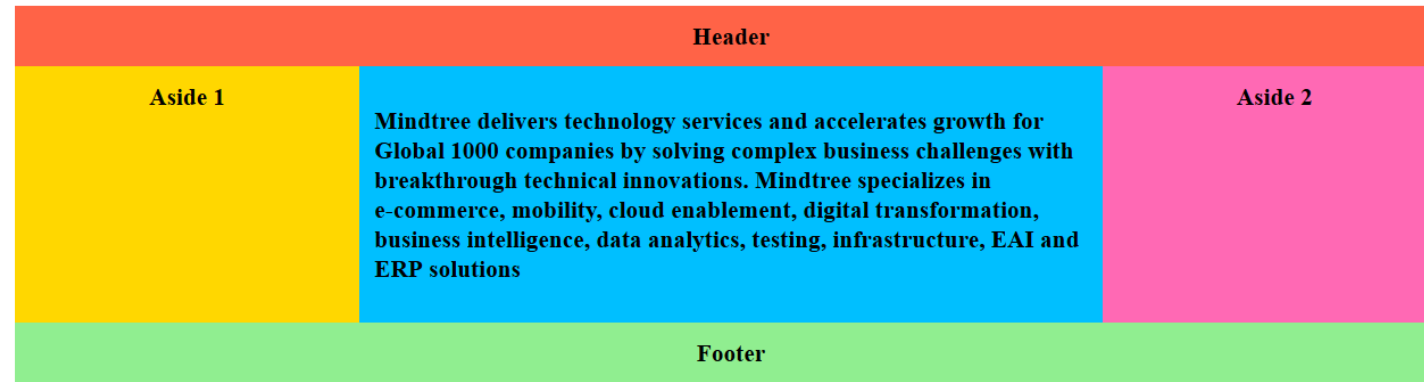
CSS3 Flexible Box Module example - 3

- Mobile-first 3-columns layout with full-width header and footer.
- Page Content

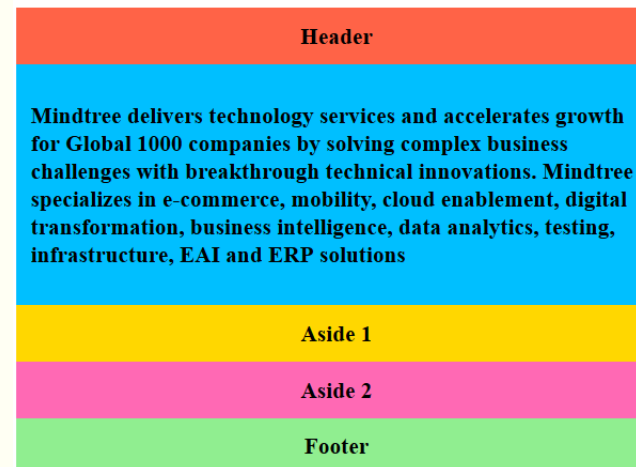
```
<div class="wrapper">
  <header class="header">Header</header>
  <article class="main">
    <p>Mindtree delivers technology services and accelerates growth
      for Global 1000 companies by solving complex business challenges
      with breakthrough technical innovations. Mindtree specializes in
      e-commerce, mobility, cloud enablement, digital transformation,
      business intelligence, data analytics, testing, infrastructure, EAI
      and ERP solutions</p>
  </article>
  <aside class="aside aside-1">Aside 1</aside>
  <aside class="aside aside-2">Aside 2</aside>
  <footer class="footer">Footer</footer>
</div>
```

CSS3 Flexible Box Module example - 3

- Page output on wide screen



- Page output in Mobile screen



CSS3 Flexible Box Module example - 3

- Medium screens
 - We tell both sidebars to share a row
- Large screens
 - the main element to take thrice as much width as the other two sidebars

```
.wrapper {  
    display: -webkit-box;  
    display: -moz-box;  
    display: -ms-flexbox;  
    display: -webkit-flex;  
    display: flex;  
    -webkit-flex-flow: row wrap;  
    flex-flow: row wrap;  
    font-weight: bold;  
    text-align: center;  
}
```

```
@media all and (min-width: 600px) {  
    .aside {  
        flex: 1 auto;  
    }  
}  
  
@media all and (min-width: 800px) {  
    .main {  
        flex: 3 0px;  
    }  
    .aside-1 {  
        order: 1;  
    }  
    .main {  
        order: 2;  
    }  
    .aside-2 {  
        order: 3;  
    }  
    .footer {  
        order: 4;  
    }  
}
```

CSS3 Multiple Columns

- CSS3 Create Multiple Columns
- Multiple column properties:
 - column-count
 - column-gap
 - column-rule

```
{  
    -webkit-column-count: 3;  
    column-count: 3; /*IE*/  
    -webkit-column-gap: 40px;  
    column-gap: 40px; /*IE*/  
    -webkit-column-rule: 4px outset #ff00ff;  
    column-rule: 4px outset #ff00ff; /*IE*/  
}
```

CSS3 Selectors

1. element1~element2

Selects an element that is a general next sibling of another element

- *Example:*

```
section ~ footer {  
    color: #CB000F;  
}
```

- *All footer elements declared after section will have color of red. the <footer> element doesn't have to be the direct preceding element*

CSS3 Selectors

- Pseudo elements/classes
 - :first-of-type
 - :last-of-type
 - :only-of-type
 - *Select elements that are first, last, or only child of its type of its parent*

```
table tr:first-of-type {  
    background-color: blue;  
    color: white  
}  
  
table tr:last-of-type {  
    background-color: black;  
    color: yellow  
}
```

Name	Occupation
Banu Prakash	Corporate Trainer
Kavitha	HR
Rahul	Student
Bharath	Network Eng
Swetha	House Wife
Karthik	Maint. Eng
Sample List of People	

CSS3 Selectors

- Pseudo elements/classes
 - :first-child
 - :only-child
 - :last-child
 - *Selects an element that is the first, only, or last child of its parent*

```
table tr:first-child {  
    background-color: green;  
    color: black  
}
```

```
table tr:last-child {  
    background-color: black;  
    color: yellow  
}
```


CSS3 Selectors

- `nth-child(n)`
- `:nth-of-type(n)`
 - *Allows you to select elements with a formula.*
 - *The syntax is `:nth-child(an+b)`, where you replace *a* and *b* are numbers.*
 - *For instance, `:nth-child(3n+1)` selects the 1st, 4th, 7th etc. child.*
 - *`:nth-of-type()` works the same, except that it only considers element of the given type*

```
table tr:nth-child(2n+1) {  
    background-color: green;  
    color: white  
}
```

```
table tr:nth-of-type(2n+1) {  
    background-color: red;  
    color: white  
}
```

- `:nth-last-child(n)`
- `:nth-last-of-type(n)`
 - *Work same as `nth-child`, except that they start counting at the last element instead of the first.*

CSS3 Gradients

- **CSS3 Linear Gradients**

- background: linear-gradient(*direction*, *color-stop1*, *color-stop2*, ...);
- A linear gradient from top to bottom:
 - background: -webkit-linear-gradient(red, blue);
- A linear gradient from left to right:
 - background: -webkit-linear-gradient(left, red , blue);
- A linear gradient that starts at top left (and goes to bottom right):
 - background: -webkit-linear-gradient(left top, red , blue);

CSS3 Gradients

- A linear gradient from left to right, with transparency
 - `background: -webkit-linear-gradient(left, rgba(255,0,0,0), rgba(255,0,0,1));`
- repeating linear gradient
 - `background: -webkit-repeating-linear-gradient(red, yellow 10%, green 20%);`
- A radial gradient with evenly spaced color stops
 - `background: -webkit-radial-gradient(red, green, blue);`
- A radial gradient with differently spaced color stops
 - `background: -webkit-radial-gradient(red 5%, green 15%, blue 60%);`

Web fonts

- Allows a page to use fonts not installed on a users computer
- @font-face rule is not part of CSS3.
 - @font-face first spec'd in CSS2
 - It was a part of CSS2, but it was basically *Dead on arrival (DOA)* thanks to licensing issues around fonts.
 - Understandably, font designers did not want their work available to be freely downloaded.
- Now a push by the web design community for open-source fonts, and the arrival of services like typekit and Font Squirrel have changed the picture a lot.

Web fonts






- When to use web fonts?
 - Great for headlines, pull quotes, etc., especially when limiting font styles to limit file size
 - Be careful with body copy. Not all fonts are readable at body copy size
 - Keep in mind that different browsers will render differently, so avoid line-breaks and accommodate re-flow of text
 - They draw attention and can help guide the reader through the page.
 - They add spice, basically.
- Not every font works for extended reading, and some of them render poorly, especially at small sizes, in certain browsers (Internet Explorer).

Web Fonts

- Different Font Formats:
- **TrueType Fonts (TTF)** : TrueType is a font standard developed by Apple and Microsoft. TrueType is the most common font format for both the Mac OS and Microsoft Windows operating systems.
- **OpenType Fonts (OTF)** : OpenType is a format for scalable computer fonts. It was built on TrueType, and is a registered trademark of Microsoft. OpenType fonts are used commonly today on the major computer platforms.
- **The Web Open Font Format (WOFF)** : WOFF is a font format for use in web pages. WOFF is essentially OpenType or TrueType with compression and additional metadata. The goal is to support font distribution from a server to a client over a network with bandwidth constraints.
- **Embedded OpenType Fonts (EOT)** : EOT fonts are a compact form of OpenType fonts designed by Microsoft for use as embedded fonts on web pages

Web Fonts

- Browser support

Font format					
TTF/OTF	9.0*	4.0	3.5	3.1	10.0
WOFF	9.0	5.0	3.6	5.1	11.1
WOFF2	Not supported	36.0	35.0*	Not supported	26.0
SVG	Not supported	4.0	Not supported	3.2	9.0
EOT	6.0	Not supported	Not supported	Not supported	Not supported

Web Fonts

- How to use @font-face
 - Hosted services require a script tag and configuration via their website
 - Local code (generated by Font Squirrel):
 - Visit
 - <http://www.fontsquirrel.com/tools/webfont-generator>

```
@font-face {  
    font-family: myFirstFont;  
    src: url(sansation_light.woff);  
}
```

```
div { font-family:myFirstFont; }
```


CSS3 transform

- **CSS3 transform Property**

- The transform property applies a 2D or 3D transformation to an element. This property allows you to rotate, scale, move, skew, etc., elements
- **Syntax**
 - transform: property_value;

CSS3 transform- CSS3 transform Property

Value	Description
translate(x,y) / translate3d(x,y,z)	Defines a 2D/3D translation
translateX(x)/ translateY(y)/ translateZ(z)	Defines a translation, using value for the X-axis. Y-axis and/or Z-axis
scale(x,y)	Defines a 2D scale transformation
scale3d(x,y,z)	Defines a 3D scale transformation
scaleX(x) /scaleY(y) / scaleZ(z)	Defines a scale transformation by giving a value for the axis
rotate(angle)	Defines a 2D rotation, the angle is specified in the parameter
rotate3d(x,y,z,angle)	Defines a 3D rotation
rotateX(angle) / rotateY(angle) / rotateZ(angle)	Defines a 3D rotation
skew(x-angle,y-angle)	Defines a 2D skew transformation along the X- and the Y-axis

CSS3 transform- **CSS3 transform Property**

- Usage

- `-webkit-transform: rotate(30deg);`
- `-webkit-transform: translate(50px, 100px);`
- `-webkit-transform: scale(2, 4);`
- `-webkit-transform: skew(30deg, 20deg);`

CSS3 transitions

- The transition property is a shorthand property for the four transition properties:
 - transition-property, transition-duration, transition-timing-function, and transition-delay.

Value	Description
transition-property	Specifies the name of the CSS property the transition effect is for
transition-duration	Specifies how many seconds or milliseconds the transition effect takes to complete
transition-timing-function	Specifies the speed curve of the transition effect
transition-delay	Defines when the transition effect will start

CSS3 transitions

- Example

- Below example shows a 100px * 100px red <div> element. The <div> element has also specified a transition effect for the width property, with a duration of 2 seconds because of below specified transition

```
div {  
    width:100px; height:100px;  
    background:red;  
    -webkit-transition:width 2s;  
}
```

- When a user moves mouse over the <div> element, div width changes to 300px in 2s

```
div: hover  
{  
    width:300px;  
}
```

CSS3 animations

- **CSS animations** make it possible to animate transitions from one CSS style configuration to another.
- Animations consist of two components, a style describing the CSS animation and a set of keyframes that indicate the start and end states of the animation's style, as well as possible intermediate waypoints along the way.
- There are three key advantages to CSS animations over traditional script-driven animation techniques:
 - They're easy to use for simple animations; you can create them without even having to know JavaScript.
 - The animations run well, even under moderate system load. Simple animations can often perform poorly in JavaScript (unless they're well made).

CSS3 animations

■ The @keyframes Rule

- When you specify CSS styles inside the @keyframes rule, the animation will gradually change **from** the current style **to** the new style.

```
/* The animation code */  
/* Chrome, Safari, Opera */  
@-webkit-keyframes example {  
    from {background-color: red;}  
    to {background-color: yellow;}  
}
```

```
/* Standard syntax */  
@keyframes example {  
    from {background-color: red;}  
    to {background-color: yellow;}  
}
```

```
/* apply to div */  
div {  
    width: 100px;  
    height: 100px;  
    background-color: red;  
    /* Chrome, Safari, Opera */  
    -webkit-animation-name: example;  
    -webkit-animation-duration: 4s;  
    animation-name: example;  
    animation-duration: 4s;  
}
```

CSS3 animations

- Change the background color when the animation is 25%, and 50%, and again when the animation is 100% complete

```
@-webkit-keyframes myfirst
{
0%    {background: red;}
25%   {background: yellow;}
50%   {background: blue;}
100%  {background: green;}
}
```


Using animation events

- You can get additional control over animations as well as useful information about them by making use of animation events.
- These events, represented by the **AnimationEvent** object, can be used to detect when animations start, finish, and begin a new iteration.
- Each event includes the time at which it occurred as well as the name of the animation that triggered the event.

```
// set the var here
var watchme = document.querySelector("#watchme");

// listen for animation start
watchme.addEventListener("animationstart",function(e){
    console.log("log at beginning of watchme animation");
},false);

// listen for animation iteration
watchme.addEventListener("animationiteration",function(e){
    console.log("log at beginning of each subsequent iteration");
},false);

// listen for animation end
watchme.addEventListener("animationend",function(e){
    console.log("log at end of watchme animation");
},false);
```

CSS3 User Interface

- CSS3 has new user interface features such as resizing elements, outlines, and box sizing

- **CSS3 Resizing**

- The `resize` property specifies whether or not an element should be resizable by the user.

```
div {  
    resize: vertical;  
    overflow: auto;  
}
```

- **CSS3 Outline Offset**

- Outlines differ from borders in two ways:
 - An outline is a line drawn around elements, outside the border edge
 - An outline does not take up space

```
div {  
    border: 1px solid black;  
    outline: 1px solid red;  
    outline-offset: 15px;  
}
```

CSS3 User Interface

- **Without the CSS3 box-sizing Property**

- By default, the width and height of an element is calculated like this:
- width + padding + border = actual width of an element
height + padding + border = actual height of an element

- **CSS3 box-sizing**

- The CSS3 box-sizing property allows us to include the padding and border in an element's total width and height.
- If you set **box-sizing: border-box;** on an element padding and border are included in the width and height

```
.div2 {  
  width: 300px;  
  height: 100px;  
  padding: 50px;  
  border: 1px solid red;  
  box-sizing: border-box;  
}
```



BOOTSTRAP

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Objectives

- Understand Grid System,
- Understand container, rows
- Understand fixed and fluid layouts
- Understand typography, buttons, glyphicons
- Understand bootstrap tables, list, forms, images, media objects,
- Understand navigation components, navbar, panels
- Understand Accordion, breadcrumbs, Carousel

What is Bootstrap?

Scaffolding

- Layouts
- Grid System
- Fluid Grid System
- Responsive Design

Base CSS

- Typography
- Tables
- Forms
- Buttons
- Icons

Components

- Dozens of reusable components
- Dropdowns
- Navbar
- Breadcrumbs
- Alerts
- Progress Bars

JavaScript Plugins

- 13 plugins
- Modal Dialog Windows
- Tabs
- Typeahead
- Carousel

Mobile First

- Since Bootstrap 3, Bootstrap has become mobile first.
 - It means mobile first styles can be found throughout the entire library instead of in separate files.
 - You need to add the viewport meta tag to the <head> element, to ensure proper rendering and touch zooming on mobile devices
 - `<meta name="viewport" content="width=device-width, initial-scale=1.0">`
 - width property controls the width of the device. Setting it to device-width will make sure that it is rendered across various devices (mobiles, desktops, tablets...) properly.
 - initial-scale=1.0 ensures that when loaded, your web page will be rendered at a 1:1 scale, and no zooming will be applied out of the box
 - Add maximum-scale=1.0 with user-scalable=no to the content attribute to disable zooming capabilities

Containers

- Use class `.container` to wrap a page's content and easily center the content

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

```
.container {  
  padding-right: 15px;  
  padding-left: 15px;  
  margin-right: auto;  
  margin-left: auto;  
}
```

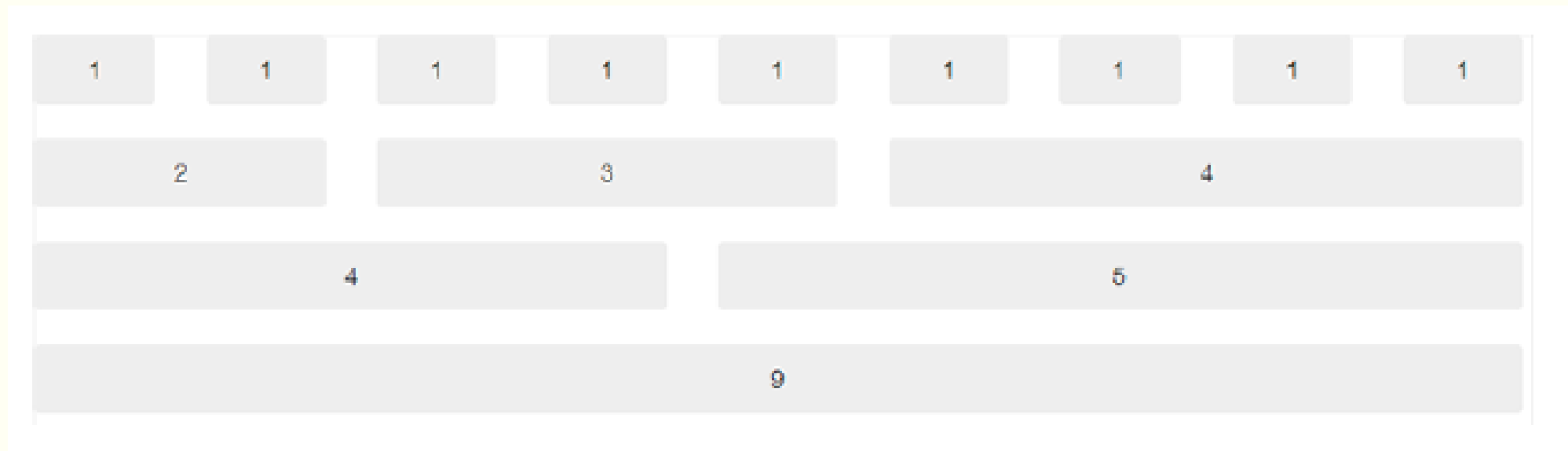

Grid System

- Twitter Bootstrap grid system provides the fastest and easy way to create layouts of web pages
- Twitter Bootstrap 3 introduces the responsive mobile first fluid grid system that appropriately scales up to 12 columns as the device or viewport size increases.
- Twitter Bootstrap 3 includes predefined grid classes for quickly making grid layouts for different types of devices like cell phones, tablets, desktops, etc.



Grid System

- Bootstrap grid system is 12 columns



Grid Options

Features	Extra small devices	Small devices	Medium devices	Large devices
Bootstrap 3 Grid System	Phones (<768px)	Tablets (≥768px)	Desktops (≥992px)	Desktops (≥1200px)
Max container width	None (auto)	750px	970px	1170px
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)			

- Applying any .col-sm- class to an element will not only affect its styling on small devices like tablets, but also on medium and large devices having screen size greater than or equal to 768px (i.e. ≥768px) if .col-md- and .col-lg- class is not present.
- Similarly the .col-md- class will not only affect the styling of elements on medium devices, but also on large devices if a .col-lg- class is not present.

Grid options

- In a laptop or desktop having screen or viewport width greater than or equal to 992px and less than 1200px you will find it has 4 rows where each row has 3 equal columns resulting in 3x4 grid layout

```
<div class="container">
  <div class="row">
    <div class="col-md-4"><p>Box 1</p></div>
    <div class="col-md-4"><p>Box 2</p></div>
    <div class="col-md-4"><p>Box 3</p></div>
    <div class="col-md-4"><p>Box 4</p></div>
    <div class="col-md-4"><p>Box 5</p></div>
    <div class="col-md-4"><p>Box 6</p></div>
    <div class="col-md-4"><p>Box 7</p></div>
    <div class="col-md-4"><p>Box 8</p></div>
    <div class="col-md-4"><p>Box 9</p></div>
    <div class="col-md-4"><p>Box 10</p></div>
    <div class="col-md-4"><p>Box 11</p></div>
    <div class="col-md-4"><p>Box 12</p></div>
  </div>
</div>
```

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

- Actual content like text, images, videos, etc. should be placed within columns, and only columns may be the immediate children of rows.

Grid options

- Customize our layout for all devices.

```
<div class="container">
  <div class="row">
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 1</p></div>
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 2</p></div>
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 3</p></div>
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 4</p></div>
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 5</p></div>
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 6</p></div>
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 7</p></div>
    <div class="col-sm-6 col-md-4 col-lg-3"><p>Box 8</p></div>
  </div>
</div>
```

Large device				Medium device			Small device	
Box 1	Box 2	Box 3	Box 4	Box 1	Box 2	Box 3	Box 1	Box 2
Box 5	Box 6	Box 7	Box 8	Box 4	Box 5	Box 6	Box 3	Box 4
				Box 7	Box 8		Box 5	Box 6
							Box 7	Box 8

Columns on extra small devices are always horizontal and rendered as one column grid layout by default

Jumbotron

- A jumbotron indicates a big box for calling extra attention to some special content or information.
- A jumbotron is displayed as a grey box with rounded corners. It also enlarges the font sizes of the text inside it.
- Use a `<div>` element with class `.jumbotron` to create a jumbotron.

Web Development with Banu Prakash

In today's world internet is the most popular way of connecting with the people. Learn the essential of web development technologies, so that you can create your own website to connect with the people around the world.

Creating Fixed Layout

- Rows must be placed within a `.container` for proper alignment and padding.
- Columns can be created inside the rows using the predefined grid classes like
 - `.col-xs-*`, `.col-sm-*`, `.col-md-*` and `.col-lg-*` where `*` represent grid number and should be from 1 to 12.

```
<div class="container">
  <div class="row">
    <div class="col-xs-4">
      <h2>HTML and CSS</h2>
      ....
    </div>
    <div class="col-xs-4">
      <h2>Angular JS</h2>
      ....
    </div>
    <div class="col-xs-4">
      <h2>Bootstrap</h2>
      ....
    </div>
  </div>
</div>
```

HTML and CSS

HTML is a markup language that is used for creating web pages. The HTML tutorial section will help you understand the basics of HTML, so that you can create your own web pages or website. CSS is used for describing the presentation of web pages. The CSS tutorial section will help you learn the essentials of CSS, so that you can fine control the style and layout of your HTML document.

Angular JS

A client-side JavaScript Framework for adding interactivity to HTML. Angular helps you organize your JavaScript. Angular helps create responsive (as in fast) websites. Angular plays well with jQuery. Angular is easy to test.

Bootstrap

Bootstrap is a powerful front-end framework for faster and easier web development. The Bootstrap tutorial section will help you learn the techniques of Bootstrap so that you can quickly create your own website.

Creating Fixed Layout

- The illustrated code in previous slide creates a fixed width responsive layout that is:
 - 750px pixels wide on small devices like tablet having screen width $\geq 768\text{px}$
 - 970px wide on medium devices like desktop and laptop having screen width $\geq 992\text{px}$
 - 1170px wide on large devices like large desktops having screen width $\geq 1200\text{px}$.
 - However the layout width will be automatically calculated for devices that has screen width $< 768\text{px}$ like cell phones.

Creating Fluid Layout

- In Twitter Bootstrap (version 3.2+), you can use the class **.container-fluid** 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`.
- Use `<div class="container-fluid">` instead of `<div class="container">`

Creating Responsive Layout

- `<div class="col-sm-6 col-md-4 col-lg-2">`
 - 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.
 - the orientation of content boxes changes when viewport width crossing or approaching the certain limit

Web Development with Banu Prakash

In today's world internet is the most popular way of connecting with the people. Learn the essential of web development technologies, so that you can create your own website to connect with the people around the world.

HTML and CSS

HTML is a markup language that is used for creating web pages. The HTML tutorial section will help you understand the basics of

Angular JS

A client-side JavaScript Framework for adding interactivity to HTML. Angular helps you organize your JavaScript. Angular helps create responsive (as in fast) websites. Angular plays well

Bootstrap

Bootstrap is a powerful front-end framework for faster and easier web development. The Bootstrap tutorial section will help you learn the techniques of Bootstrap so that you can quickly create your own

Java

Java is a technology

Restful services

Note on restful services

jQuery

JavaScript framework.

Bootstrap Text/Typography

- Bootstrap's global default font-size is 14px, with a line-height of 1.428.
- HTML elements will be styled a little bit different by Bootstrap than browser defaults.

h1 Bootstrap heading (36px)

h2 Bootstrap heading (30px)

h3 Bootstrap heading (24px)

h4 Bootstrap heading (18px)

h5 Bootstrap heading (14px)

h6 Bootstrap heading (12px)

Bootstrap Text/Typography

- `<mark>`

- Bootstrap will style the HTML `<mark>` element in the following way:

Use the mark element to highlight text.

- `<blockquote>`

- Bootstrap will style the HTML `<blockquote>` element in the following way:

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

Bootstrap Text/Typography

- `<kbd>`
 - Bootstrap will style the HTML `<kbd>` element in the following way:

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

Bootstrap Text/Typography

- Contextual Colors and Backgrounds

- The classes for text colors are:
- `.text-muted`, `.text-primary`, `.text-success`, `.text-info`, `.text-warning`,
- and `.text-danger`:

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.

Bootstrap Text/Typography

- The classes for background colors are:
 .bg-primary, **.bg-success**, **.bg-info**, **.bg-warning**, and **.bg-danger**:

This text is important.

This text indicates success.

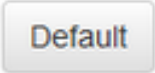






This text represents some information.

This text represents a warning.

This text represents danger.

Buttons

- `<button type="button" class="btn btn-default">Default</button>`

Button	Class	Description
	<code>btn btn-default</code>	Default gray button with gradient.
	<code>btn btn-primary</code>	Provides extra visual weight to indicate primary action button in a set of buttons.
	<code>btn btn-info</code>	Can be used as an alternative to the default button.
	<code>btn btn-success</code>	Indicates a successful or positive action.
	<code>btn btn-warning</code>	Indicates caution should be taken with this action.
	<code>btn btn-danger</code>	Indicates a dangerous or potentially negative action.
	<code>btn btn-link</code>	Deemphasize a button by making it look like a link while maintaining button behavior.

Glyphicons

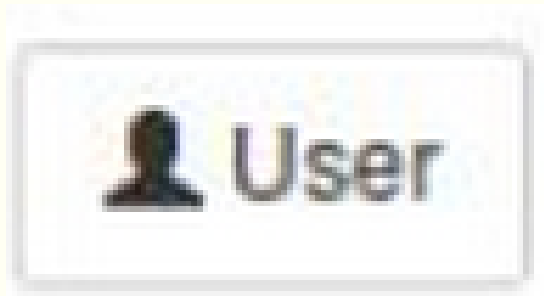
- What are Glyphicons?
- Glyphicons are icon fonts which you can use in your web projects.
- Glyphicons are not free and require licensing, however their creator has made them available for Bootstrap projects free of cost.
 - It is recommended, as a thank you, we ask you to include an optional link back to GLYPHICONS whenever practical.
- Where to find Glyphicons?
 - `glyphicons-halflings-regular.eot`
 - `glyphicons-halflings-regular.svg`
 - `glyphicons-halflings-regular.ttf`
 - `glyphicons-halflings-regular.woff`
- Associated CSS rules are present within `bootstrap.css` and `bootstrap-min.css` files within `css` folder of `dist` folder.

Glyphicons

■ Usage

































- To use the icons, simply use the following code just about anywhere in your code.
- Leave a space between the icon and text for proper padding.

```
<button type="button" class="btn btn-default btn-lg">  
  <span class="glyphicon glyphicon-user"></span> User  
</button>
```











































Glyphicons [260 glyphs in font format]

- Available Glyphicons

 glyphicon glyphicon- asterisk	 glyphicon glyphicon-plus	 glyphicon glyphicon-euro	 glyphicon glyphicon-eur	 glyphicon glyphicon- minus	 glyphicon glyphicon- cloud	 glyphicon glyphicon- envelope	 glyphicon glyphicon- pencil
 glyphicon glyphicon- glass	 glyphicon glyphicon- music	 glyphicon glyphicon- search	 glyphicon glyphicon- heart	 glyphicon glyphicon-star	 glyphicon glyphicon-star- empty	 glyphicon glyphicon-user	 glyphicon glyphicon-film
 glyphicon glyphicon-th- large	 glyphicon glyphicon-th	 glyphicon glyphicon-th- list	 glyphicon glyphicon-ok	 glyphicon glyphicon- remove	 glyphicon glyphicon- zoom-in	 glyphicon glyphicon- zoom-out	 glyphicon glyphicon-off
 glyphicon glyphicon- signal	 glyphicon glyphicon-cog	 glyphicon glyphicon- trash	 glyphicon glyphicon- home	 glyphicon glyphicon-file	 glyphicon glyphicon-time	 glyphicon glyphicon-road	 glyphicon glyphicon- download-alt









































Glyph icons [260 glyphs in font format]

■ Available Glyphicons

 glyphicon glyphicon-download	 glyphicon glyphicon-upload	 glyphicon glyphicon-inbox	 glyphicon glyphicon-play-circle	 glyphicon glyphicon-repeat	 glyphicon glyphicon-refresh	 glyphicon glyphicon-list-alt	 glyphicon glyphicon-lock
 glyphicon glyphicon-flag	 glyphicon glyphicon-headphones	 glyphicon glyphicon-volume-off	 glyphicon glyphicon-volume-down	 glyphicon glyphicon-volume-up	 glyphicon glyphicon-qrcode	 glyphicon glyphicon-barcode	 glyphicon glyphicon-tag
 glyphicon glyphicon-tags	 glyphicon glyphicon-book	 glyphicon glyphicon-bookmark	 glyphicon glyphicon-print	 glyphicon glyphicon-camera	 glyphicon glyphicon-font	 glyphicon glyphicon-bold	 glyphicon glyphicon-italic
 glyphicon glyphicon-text-height	 glyphicon glyphicon-text-width	 glyphicon glyphicon-align-left	 glyphicon glyphicon-align-center	 glyphicon glyphicon-align-right	 glyphicon glyphicon-align-justify	 glyphicon glyphicon-list	 glyphicon glyphicon-indent-left
 glyphicon glyphicon-indent-right	 glyphicon glyphicon-facetime-video	 glyphicon glyphicon-picture	 glyphicon glyphicon-map-marker	 glyphicon glyphicon-adjust	 glyphicon glyphicon-tint	 glyphicon glyphicon-edit	 glyphicon glyphicon-share









































Glyph icons [260 glyphs in font format]

■ Available Glyphicons

 glyphicon glyphicon- folder-open	 glyphicon glyphicon- resize-vertical	 glyphicon glyphicon- resize- horizontal	 glyphicon glyphicon-hdd	 glyphicon glyphicon- bullhorn	 glyphicon glyphicon-bell	 glyphicon glyphicon- certificate	 glyphicon glyphicon- thumbs-up
 glyphicon glyphicon- thumbs-down	 glyphicon glyphicon- hand-right	 glyphicon glyphicon- hand-left	 glyphicon glyphicon- hand-up	 glyphicon glyphicon- hand-down	 glyphicon glyphicon- circle-arrow- right	 glyphicon glyphicon- circle-arrow- left	 glyphicon glyphicon- circle-arrow-up
 glyphicon glyphicon- circle-arrow- down	 glyphicon glyphicon- globe	 glyphicon glyphicon- wrench	 glyphicon glyphicon- tasks	 glyphicon glyphicon-filter	 glyphicon glyphicon- briefcase	 glyphicon glyphicon- fullscreen	 glyphicon glyphicon- dashboard
 glyphicon glyphicon- paperclip	 glyphicon glyphicon- heart-empty	 glyphicon glyphicon-link	 glyphicon glyphicon- phone	 glyphicon glyphicon- pushpin	 glyphicon glyphicon-usd	 glyphicon glyphicon-gbp	 glyphicon glyphicon-sort
 glyphicon glyphicon-sort- by-alphabet	 glyphicon glyphicon-sort- by-alphabet-alt	 glyphicon glyphicon-sort- by-order	 glyphicon glyphicon-sort- by-order-alt	 glyphicon glyphicon-sort- by-attributes	 glyphicon glyphicon-sort- by-attributes- alt	 glyphicon glyphicon- unchecked	 glyphicon glyphicon- expand

Glyph icons [260 glyphs in font format]

- Available Glyphicons

 glyphicon glyphicon-collapse-down	 glyphicon glyphicon-collapse-up	 glyphicon glyphicon-log-in	 glyphicon glyphicon-flash	 glyphicon glyphicon-log-out	 glyphicon glyphicon-new-window	 glyphicon glyphicon-record	 glyphicon glyphicon-save
 glyphicon glyphicon-open	 glyphicon glyphicon-saved	 glyphicon glyphicon-import	 glyphicon glyphicon-export	 glyphicon glyphicon-send	 glyphicon glyphicon-floppy-disk	 glyphicon glyphicon-floppy-saved	 glyphicon glyphicon-floppy-remove
 glyphicon glyphicon-floppy-save	 glyphicon glyphicon-floppy-open	 glyphicon glyphicon-credit-card	 glyphicon glyphicon-transfer	 glyphicon glyphicon-cutlery	 glyphicon glyphicon-header	 glyphicon glyphicon-compressed	 glyphicon glyphicon-earphone
 glyphicon glyphicon-phone-alt	 glyphicon glyphicon-tower	 glyphicon glyphicon-stats	 glyphicon glyphicon-sd-video	 glyphicon glyphicon-hd-video	 glyphicon glyphicon-subtitles	 glyphicon glyphicon-sound-stereo	 glyphicon glyphicon-sound-dolby
 glyphicon glyphicon-sound-5-1	 glyphicon glyphicon-sound-6-1	 glyphicon glyphicon-sound-7-1	 glyphicon glyphicon-copyright-mark	 glyphicon glyphicon-registration-mark	 glyphicon glyphicon-cloud-download	 glyphicon glyphicon-cloud-upload	 glyphicon glyphicon-tree-conifer

Bootstrap tables

- Bootstrap's class `.table` `<table class="table">`

Product ID	Name	Price
PRD1234	HP Laptop 15" screen, Core i5	45000.00
PRD9883	Logitech Mouse	350.00
PRD9800	Track Pad	1234.44

- Tables with Alternate Background
 - Bootstrap's class `.table-striped` to base class `.table`

Product ID	Name	Price
PRD1234	HP Laptop 15" screen, Core i5	45000.00
PRD9883	Logitech Mouse	350.00
PRD9800	Track Pad	1234.44

Bootstrap tables

- Optional Emphasis Classes for Table Rows

- There are some contextual classes to emphasize the row or individual cells data like success, warning, danger, etc. through colouring its background.
- Example: `<tr class="success">`

Row	Bill	Payment Date	Payment Status
1	Credit Card	04/07/2014	Call in to confirm
2	Water	01/07/2014	Paid
3	Internet	05/07/2014	Change plan
4	Electricity	03/07/2014	Pending
5	Telephone	06/07/2014	Due

Bootstrap tables

- Table with Borders

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

- Enable Hover State on Table Rows

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

- Responsive tables

- Responsive tables enable scrolling on small devices (screen width under 768px).
 - However viewing responsive tables on other devices having screen width larger than 768px, you will not see any difference
 - `<div class="table-responsive"> <table class="table">`

Bootstrap List

```
<ul class="list-unstyled">
  <li>Home</li>
  <li>Products</li>
    <ul>
      <li>Gadgets</li>
      <li>Accessories</li>
    </ul>
  </li>
  <li>About Us</li>
  <li>Contact</li>
</ul>
```

```
<ul class="list-group">
  <li class="list-group-item">Pictures</li>
  <li class="list-group-item">Documents</li>
  <li class="list-group-item">Music</li>
  <li class="list-group-item">Videos</li>
</ul>
```

Home

Products

- Gadgets
- Accessories

About Us

Contact

Pictures

Documents

Music

Videos



Bootstrap List

```
<ul class="list-inline">  
  <li>Home</li>  
  <li>Products</li>  
  <li>About Us</li>  
  <li>Contact</li>  
</ul>
```

Home Products About Us Contact

Bootstrap List using <div>

```
<div class="list-group">
  <a href="#" class="list-group-item active">
    <span class="glyphicon glyphicon-camera"></span> Pictures
    <span class="badge">25</span>
  </a>
  <a href="#" class="list-group-item">
    <span class="glyphicon glyphicon-file"></span> Documents
    <span class="badge">145</span>
  </a>
  <a href="#" class="list-group-item">
    <span class="glyphicon glyphicon-music"></span> Music
    <span class="badge">50</span>
  </a>
  <a href="#" class="list-group-item">
    <span class="glyphicon glyphicon-film"></span> Videos
    <span class="badge">8</span>
  </a>
</div>
```

 Pictures	25
 Documents	145
 Music	50
 Videos	8

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:
 - Always use `<form role="form">`
 - 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

Bootstrap forms

- Vertical form

```
<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>
```

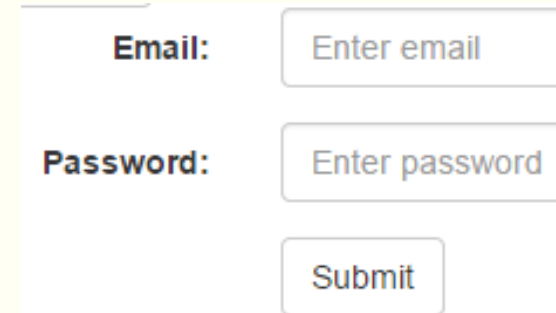
- If you don't include a label for every input, screen readers will have trouble with your forms.
- You can hide the labels for all devices, except screen readers, by using the .sr-only class
 - [<label class="sr-only" for="pwd">Password:</label>]

Bootstrap forms

■ Bootstrap Horizontal Form

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

```
<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">
      <button type="submit" class="btn btn-default">Submit</button>
    </div>
  </div>
</form>
```



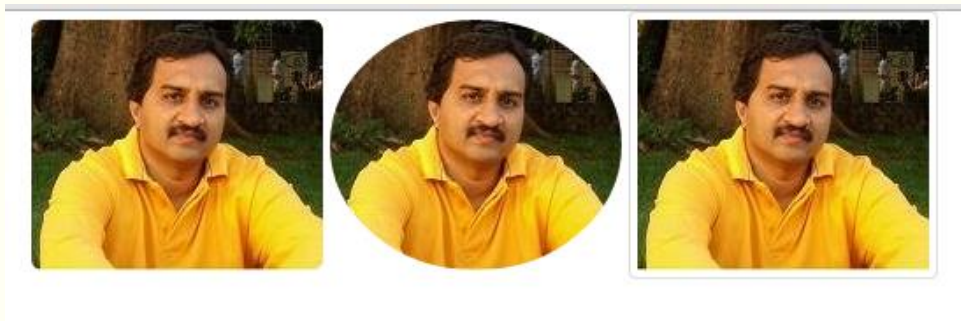
Email:	<input type="text" value="Enter email"/>
Password:	<input type="password" value="Enter password"/>
<input type="submit" value="Submit"/>	

Styling Images

- Using the Bootstrap built-in classes you can easily style images such as making the round cornered or circular images, or give them effect like thumbnails.

```
  
  

```



Media Objects

- To create a layout that contains left- or right-aligned image along with the textual content like blog comments



Amitabh Bachchan *Posted on Feb 6, 2015*

Back from the first trial public show of #Shamitabh .. the applause at Interval and twice at end of film says it all .. !!.

Amitabh Bachchan *Posted on Feb 5, 2015*

Thank you Times Now and Arnab for your hospitality and creativity. All raving !! Done a great session with THE Arnab Goswami at Times Now for the NEWS HOUR TONIGHT !! for #Shamitabh .. do watch ...!!



```
<div class="media">
  <a href="#" class="pull-left">
    
  </a>
  <div class="media-body">
    <h4 class="media-heading">Amitabh Bachchan <small><i>Posted on Feb 6,
    2015</i></small></h4>
    <p>Back from the first trial public show of #Shamitabh .. the applause
    at
      Interval and twice at end of film says it all .. !!.</p>
  </div>
</div>
```

Navigation Components

- class="nav nav-tabs"



```
<ul class="nav nav-tabs">
  <li class="active">
    <a href="#"><span class="glyphicon glyphicon-home"></span> Home</a>
  </li>
  <li>
    <a href="#"><span class="glyphicon glyphicon-user"></span> Profile</a>
  </li>
  <li>
    <a href="#"><span class="glyphicon glyphicon-envelope"></span> Messages</a>
  </li>
</ul>
```

Navigation Components

- `class="nav nav-pills"`



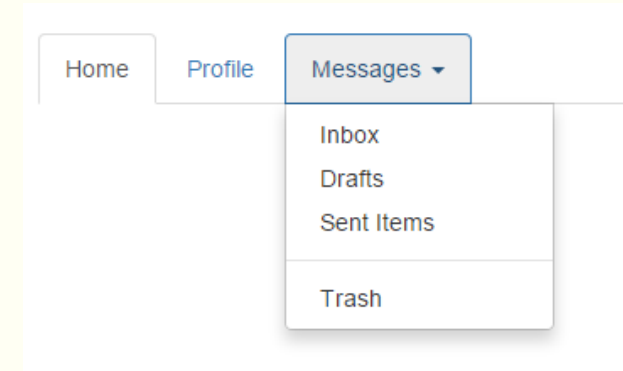
- `class="nav nav-pills nav-stacked"`



Navigation Components

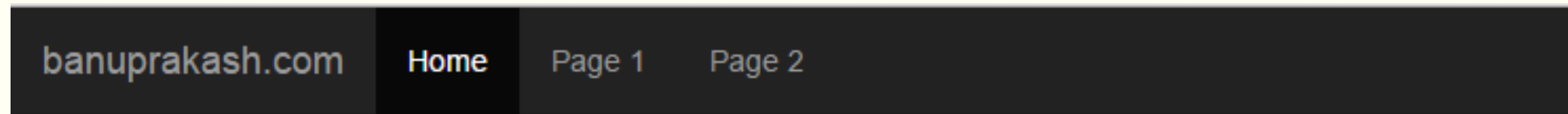
- class="dropdown" and
- class="dropdown-menu"

```
<ul class="nav nav-tabs">
  <li class="active"><a href="#">Home</a></li>
  <li><a href="#">Profile</a></li>
  <li class="dropdown">
    <a href="#" data-toggle="dropdown" class="dropdown-toggle">
      Messages <b class="caret"></b>
    </a>
    <ul class="dropdown-menu">
      <li><a href="#">Inbox</a></li>
      <li><a href="#">Drafts</a></li>
      <li><a href="#">Sent Items</a></li>
      <li class="divider"></li>
      <li><a href="#">Trash</a></li>
    </ul>
  </li>
</ul>
```



Navigation Bars

- A navigation bar is a navigation header that is placed at the top of the page.
- With Bootstrap, a navigation bar can extend or collapse, depending on the screen size.



Navigation Bars

```
<nav class="navbar navbar-inverse navbar-fixed-top">
  <div class="navbar-header">
    <a class="navbar-brand" href="#">banuprakash.com</a>
    <button type="button" data-target="#navbarCollapse" data-toggle="collapse" class="navbar-toggle">
      <span class="icon-bar"></span>
      <span class="icon-bar"></span>
      <span class="icon-bar"></span>
    </button>
  </div>

  <div id="navbarCollapse" class="collapse navbar-collapse">
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Page 1</a></li>
      <li><a href="#">Page 2</a></li>
    </ul>
  </div>
</div>
</nav>
```

Panels

- Panel component are used when you want to put your DOM component in a box. To get a basic panel, just add **class .panel** to the <div> element.

```
<div class="panel panel-default">
  <div class="panel-heading">This Page is Disabled</div>
  <div class="panel-body">This page is temporarily disabled by the site administrator for some reason.<br>
  <a href="#">Click here</a> to enable the page.</div>
</div>

<div class="panel panel-primary">
  <div class="panel-heading">
    <h3 class="panel-title">301 Moved Permanently</h3>
  </div>
  <div class="panel-body">The requested page has been permanently moved to a new location.</div>
</div>
```

This Page is Disabled

This page is temporarily disabled by the site administrator for some reason.
[Click here](#) to enable the page.

301 Moved Permanently

The requested page has been permanently moved to a new location.

Accordion

- Accordion menus or navigation are widely used on the website to manage large content and navigation lists.

1. What is HTML?


2. What is Twitter Bootstrap?

Twitter Bootstrap is a powerful front-end framework for faster and easier web development. It is a collection of CSS and HTML conventions. [Learn more.](#)

3. What is CSS?

Accordion

```
<div id="accordion" class="panel-group">
  <div class="panel panel-default">
    <div class="panel-heading">
      <h4 class="panel-title">
        <a data-toggle="collapse" data-parent="#accordion" href="#collapseOne">1. What is HTML?</a>
      </h4>
    </div>
    <div id="collapseOne" class="panel-collapse collapse">
      <div class="panel-body">
        <p>HTML stands for...</p>
      </div>
    </div>
  </div>
  <div class="panel panel-default">
    <div class="panel-heading">
      <h4 class="panel-title">
        <a data-toggle="collapse" data-parent="#accordion" href="#collapseTwo">2. What is Twitter
        Bootstrap?</a>
      </h4>
    </div>
    <div id="collapseTwo" class="panel-collapse collapse in">
      <div class="panel-body">
        <p>Twitter Bootstrap is a....</a></p>
      </div>
    </div>
  </div>
</div>
```



Breadcrumbs

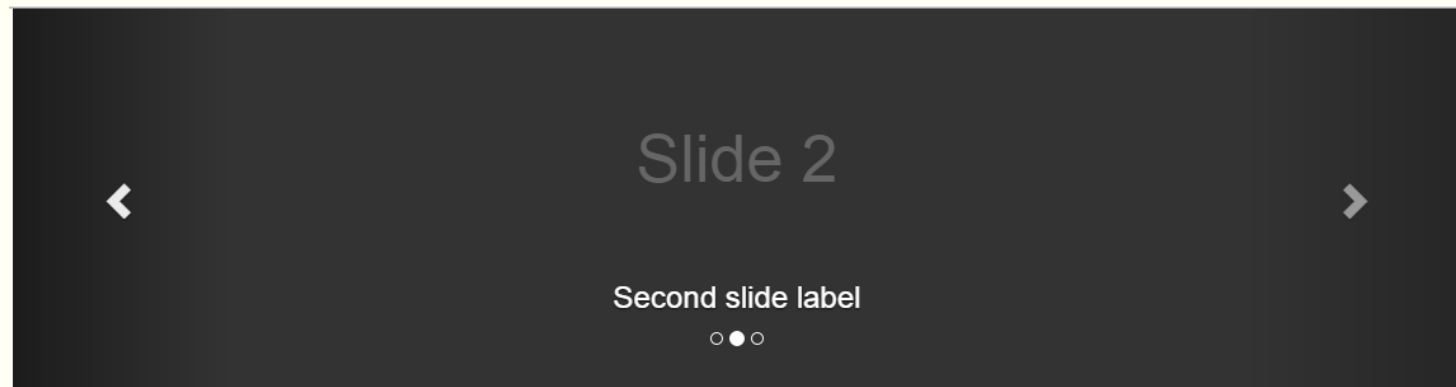
- A breadcrumb is a navigation scheme that indicates the user's location in a website or web application. Breadcrumb navigation can greatly enhance the accessibility of websites having large number of pages.

```
<ul class="breadcrumb">
  <li><a href="#">Home</a></li>
  <li><a href="#">Products</a></li>
  <li class="active">Accessories</li>
</ul>
```

Home / Products / Accessories

Carousel

- Carousels popularly known as slide shows are some of the best ways of showcasing huge amount of contents within a small space on the web pages



Carousel

- **The outermost <div>:**

- Carousels require the use of an id (in this case id="myCarousel") for carousel controls to function properly.
- The class="carousel" specifies that this <div> contains a carousel.
- The .slide class adds a CSS transition and animation effect, which makes the items slide when showing a new item. Omit this class if you do not want this effect.
- The data-ride="carousel" attribute tells Bootstrap to begin animating the carousel immediately when the page loads.

- **The "Indicators" part:**

- The indicators are the little dots at the bottom of each slide (which indicates how many slides there is in the carousel, and which slide the user are currently viewing).
- The indicators are specified in an ordered list with class .carousel-indicators.
- The data-target attribute points to the id of the carousel.
- The data-slide-to attribute specifies which slide to go to, when clicking on the specific dot.

Carousel

- The "Wrapper for slides" part:
 - The slides are specified in a `<div>` with class `.carousel-inner`.
 - The content of each slide is defined in a `<div>` with class `.item`. This can be text or images.
 - The `.active` class needs to be added to one of the slides. Otherwise, the carousel will not be visible.
 - The "Left and right controls" part:
 - This code adds "left" and "right" buttons that allows the user to go back and forth between the slides manually.
 - The `data-slide` attribute accepts the keywords "prev" or "next", which alters the slide position relative to its current position
- Captions to Slides
 - Add `<div class="carousel-caption">` within each `<div class="item">` to create a caption for each slide:.

Carousel

```
<div id="myCarousel" class="carousel slide" data-interval="3000" data-ride="carousel">
  <!-- Carousel indicators -->
  <ol class="carousel-indicators">
    <li data-target="#myCarousel" data-slide-to="0" class="active"></li>
    <li data-target="#myCarousel" data-slide-to="1"></li>
    <li data-target="#myCarousel" data-slide-to="2"></li>
  </ol>
  <!-- Carousel items -->
  <div class="carousel-inner">
    <div class="active item">
      <h2>Slide 1</h2>
      <div class="carousel-caption">
        <h3>First slide label</h3>
      </div>
    </div>
    <div class="item">
      <h2>Slide 2</h2>
      <div class="carousel-caption">
        <h3>Second slide label</h3>
      </div>
    </div>
  </div>
  <!-- Carousel nav -->
  <a class="carousel-control left" href="#myCarousel" data-slide="prev">
    <span class="glyphicon glyphicon-chevron-left"></span>
  </a>
  <a class="carousel-control right" href="#myCarousel" data-slide="next">
    <span class="glyphicon glyphicon-chevron-right"></span>
  </a>
</div>
```

```
h2{
  color: #666;
  padding-top: 90px;
  font-size: 52px;
}
.item{
  background: #333;
  text-align: center;
  height: 300px ;
}
```