CSS3

Cascading Style Sheets - Importance

- Let’s do a simple experiment…
- Add **pendule**/**web developer toolbar** extensions to your Chrome browser before you start the experiment
- Load www.facebook.com or any other website of your choice
- Try disabling all the CSS styles from the web page you are viewing
- What did you learn??

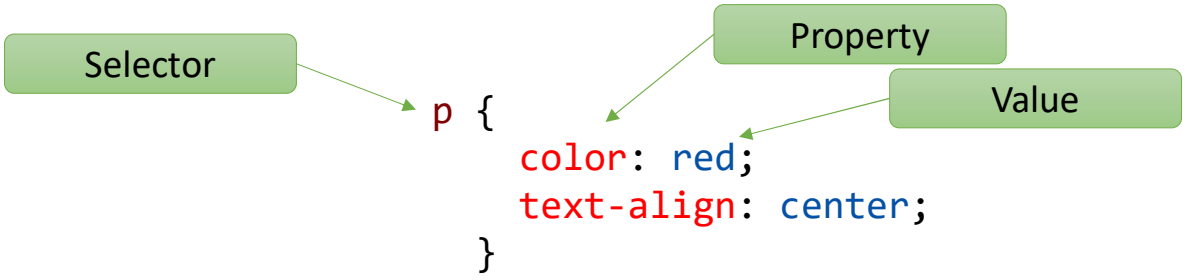
CSS describes how the HTML elements should be displayed

03_tables.html visit this

Fundamentals

- CSS Syntax
- CSS Comment

```
/* This is a comment */
```



- CSS selectors are used to select the HTML elements to be styled

Selector	Example	Example description
.class	.intro	Selects all elements with class="intro"
#id	#firstname	Selects the element with id="firstname"
*	*	Selects all elements
element	p	Selects all <p> elements
element,element,..	div, p	Selects all elements and all <p> elements

Ways to Add Styles

- Inline CSS
  - Can be used to apply a unique style to a single element

```
<!DOCTYPE html>
<html>
<body>

<h1 style="color:blue;text-align:center;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>

</body>
</html>
```

Ways to Add Styles

- Internal CSS
  - Can be used if one single HTML page has a unique style

```
<!DOCTYPE html>
<html>
<head>
<style>

body {
      background-color: linen;
}
h1 {
      color: maroon;
      margin-left: 40px;
}

</style>
</head>
<body>

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

</body>
</html>
```

Way to Add Styles

- An eternal .css file is maintained
- Every HTML file should reference it

```html
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>

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

</body>
</html>
```

style.css

```css
body {
    background-color: lightblue;
}

h1 {
    color: navy;
    margin-left: 20px;
}
```

Specifying Colors

Additionally, **alpha** values can be specified for rgb and hsl values to indicate transparency

Styling Text

- CSS Background Color

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
```

- CSS Text Color

```
<h1 style="color:Tomato;">Hello World</h1>
```

Backgrounds

- Background color

```
body { background-color: lightblue; }
```

- Background Image

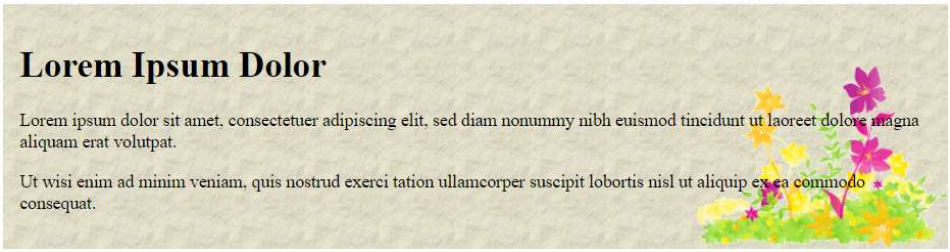
```
body {
    background-color: #ffffff;
    background-image: url("img_tree.png");
    background-repeat: no-repeat;
    background-attachment: fixed;
    background-position: right top;
}
```

Specific values can be found using the in-code help menus

Shorthand → `background: #ffffff url("img_tree.png") no-repeat fixed right top;`

Multiple Backgrounds

```
#example1 {
  background-image: url(img_flwr.gif), url(paper.gif);
  background-position: right bottom, left top;
  background-repeat: no-repeat, repeat;
}
```



Borders

- Border Style

```
border-style: dotted solid double dashed;
```

Try with 1, 2 and 3 values only

- top border is dotted
- right border is solid
- bottom border is double
- left border is dashed

- Border Width

```
border-width: 20px 5px;
```

- 20 px Top and Bottom
- 5 px Left and Right

- Border Color

```
border-color: red;
border-color: red green yellow;
```

- Rounded Borders

```
border-radius: 5px;
```

Margins

- Margins are used to create space around elements
- All the margin and following few properties can have the following values:
  - auto - the browser calculates the margin
  - *length* - margin in px, pt, cm, etc.
  - *%* - margin in % of the width of the containing element
  - inherit - margin should be inherited from the parent element

```
p {
  margin-top: 100px;
  margin-bottom: 100px;
  margin-right: 150px;
  margin-left: 80px;
}
```

Shorthand → `margin: 25px 50px 75px 100px;`

Padding

- The CSS Padding properties are used to generate space around elements content inside of any defined borders

```
div {
  padding-top: 50px;
  padding-right: 30px;
  padding-bottom: 50px;
  padding-left: 80px;
}
```

Height and Width

- Height and Width properties are used to set the height and width of an element

```
div {
  height: 200px;
  width: 50%;
  background-color: powderblue;
}
```

The Box Model

- All HTML elements can considered as boxes.
- Box models refers to specifying margins, border and padding within which actual content is placed

```
div {
  width: 300px;
  border: 15px solid green;
  padding: 50px;
  margin: 20px;
}
```

Text

- Several properties can be applied to text:

```
h1 {
    background-color: black;
    color: white;
    text-align: center;
    direction: rtl;
    vertical-align: top;
    text-decoration: underline;
    text-transform: capitalize;
    text-indent: 50px;
    letter-spacing: 3px;
    line-height: 0.8;
    word-spacing: 10px;
    white-space: nowrap;
    text-shadow: 2px 2px 5px red;
}
```

In-line help in IDE gives you more options

Font

- Font family, boldness, size and style can be specified using the following attributes
- The font-family property should hold several font names as a "fallback" system, to ensure maximum compatibility between browsers/operating systems.
- If the browser does not support the first font, it tries the next font.

```
h1{
  font-family: "Times New Roman", Times, serif;
  font-style: normal;
  font-weight: normal;
  font-variant: small-caps;
  font-size: 40px;
}
```

Google Fonts

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Sofia">
<style>
body {
  font-family: "Sofia";
  font-size: 22px;
}
</style>
</head>
<body>

<h1>Sofia Font</h1>
<p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit.</p>

</body>
</html>
```

Google fonts has **900+** choices. Create a stylesheet link and refer to a font family of your choice

Links

- Links can be styled using **color**, **font-family**, **background**, etc.,
- Also, they can be styled differently depending on their state
- The four links states are:
  - **a:link** - a normal, unvisited link
  - **a:visited** - a link the user has visited
  - **a:hover** - a link when the user hovers over
  - **a:active** - a link the moment it is clicked

Follow the same sequence to be effective

```
/* unvisited link */
a:link {
  color: red;
  text-decoration: none;
}
```

Removes Underline

```
/* visited link */
a:visited {
  color: green;
}

/* mouse over link */
a:hover {
  color: hotpink;
  background-color: lightgreen;
}
```

Changes background on hover

```
/* selected link */
a:active {
  color: blue;
}
```

Other link text properties can be changed as well

Link Button


```
<!DOCTYPE html>
<html>
<head>
<style>
a:link, a:visited {
  background-color: #f44336; color: white;
  padding: 14px 25px; text-align: center;
  text-decoration: none; display: inline-block;
}
a:hover, a:active {
  background-color: red;
}
</style>
</head>
<body>

<h2>Link Button</h2>
<p>A link styled as a button:</p>
<a href="default.asp" target="_blank">This is a link</a>

</body>
</html>
```

Lists

- The table shows all the list properties that can be set

Property	Description
list-style	Sets all the properties for a list in one declaration
list-style-image	Specifies an image as the list-item marker
list-style-position	Specifies the position of the list-item markers (bullet points)
list-style-type	Specifies the type of list-item marker; none value with remove default settings

- Anything added to the <ol> or <ul> tag, affects the entire list, while properties added to the <li> tag will affect the individual list items

```
ol {
  background: #ff9999;
  padding: 20px;
}
```

```
ol li {
  background: #ffe5e5;
  padding: 5px;
  margin-left: 35px;
}
```

Tables

```
table {
  border: 1px solid black;
}
```

Firstname	Lastname
Peter	Griffin
Lois	Griffin

```
table, th, td {
  border: 1px solid black;
}
```

Firstname	Lastname
Peter	Griffin
Lois	Griffin

```
table {
  border-collapse: collapse;
}
```

Firstname	Lastname
Peter	Griffin
Lois	Griffin

Width, Height and Alignment of Lists

```
table {
  width: 100%;
}

th {
  height: 50px;
}
```

```
th {
  text-align: left;
}
```

```
td {
  height: 50px;
  vertical-align: bottom;
}
```

```
th, td {
  padding: 15px;
  text-align: left;
}
```

Specifying horizontal dividers

```
th, td {
  border-bottom: 1px solid #ddd;
}
```

Hover-able and Striped Lists

- Use the :hover selector on <tr> to highlight table rows on mouse over

```
tr:hover {background-color: #f5f5f5;}
```

- For zebra-striped tables, use the nth-child() selector and add a background-color to all even (or odd) table rows

```
tr:nth-child(even) {background-color: #f2f2f2;}
```

- Table colors can be set using the regular attributes for text and color discussed earlier

```
th {
  background-color: #4CAF50;
  color: white;
}
```

Responsive Table

- A responsive table will display a horizontal scroll bar if the screen is too small to display the full content

```
<div style="overflow-x:auto;">

<table>
... table content ...
</table>

</div>
```

Displaying a Long List in Limited Space

- Using the **`overflow-y`** property a long list can be displayed as a scrollable list a limited space is allotted in the web page

```
<div style="overflow-y:scroll; height: 80px;">
  <input type="checkbox" name="volley" value="Volley"> Volley Ball <br>
  <input type="checkbox" name="foot" value="Foot"> Foot Ball<br>
  <input type="checkbox" name="basket" value="Basket"> Basket Ball <br>
  <input type="checkbox" name="base" value="Base"> Base Ball<br>
  <input type="checkbox" name="badminton" value="Badminton"> Badminton <br>
  <input type="checkbox" name="tennis" value="Tennis"> Tennis<br>
  <input type="checkbox" name="chess" value="Chess"> Chess <br>
  <input type="checkbox" name="pool" value="Pool"> Pool <br>
</div>
```

Forms – Styling Input Fields

- Use width property to determine the width of the input field

```
input { width: 100%; }
```

- For specific input types, you can use attribute selectors

```
input[type=text][type=password] { width: 100%; }
```

- Padding and margins can also be used

```
input[type=text] {
  width: 100%;
  padding: 12px 20px;
  margin: 8px 0;
  box-sizing: border-box;
}
```

Styling Input Fields

- Inputs can be styles with borders along with style, size and color

```
input[type=text] {
  border: 2px solid red;
  border-radius: 4px;
}
```

- If only a bottom border is required, use the border-bottom property

```
input[type=text] {
  border: none;
  border-bottom: 2px solid red;
}
```

Styling Input Fields

- Text and background color

```
input[type=text] {
  background-color: #3CBC8D;
  color: white;
}
```

- Use the :focus selector to do something with the input field when it gets focus

```
input[type=text]:focus {
  background-color: lightblue;
}
```

- **`outline:none`** can be used to remove the automatic highlighting by some browsers

Styling Input Fields

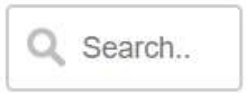
- Input with icon/image can be done using the **background-image** property positioned using the **background-position** property

```
input[type=text] {
  background-color: white;
  background-image: url('searchicon.png');
  background-position: 10px 10px;
  background-repeat: no-repeat;
  padding-left: 40px;
}
```

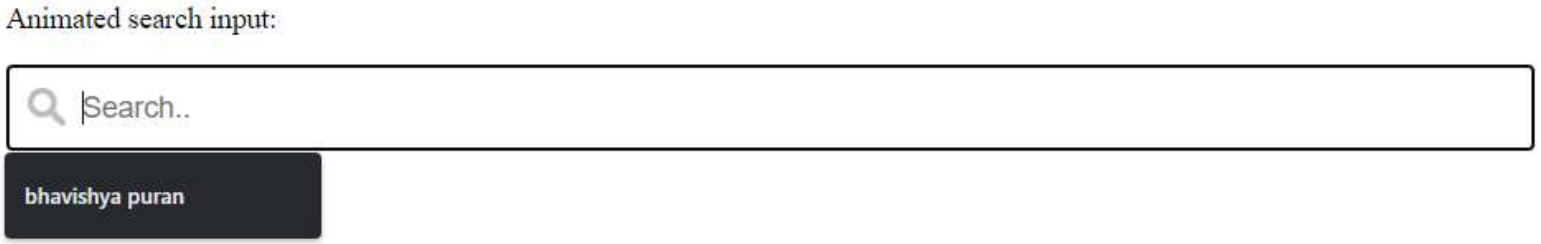
Styling Input Fields

- Animated search input field can be created using the **transition** property

Before Focus



After Focus




```
input[type=text] {
  transition: width 0.4s ease-in-out;
}

input[type=text]:focus {
  width: 100%;
}
```

Styling Text Areas, Select Menus, Buttons

```css
textarea {
  width: 100%;
  height: 150px;
  padding: 12px 20px;
  box-sizing: border-box;
  border: 2px solid #ccc;
  border-radius: 4px;
  background-color: #f8f8f8;
  resize: none;
}
```

Prevents textarea from being resized

```css
select {
  width: 100%;
  padding: 16px 20px;
  border: none;
  border-radius: 4px;
  background-color: #f1f1f1;
}

input[type=button], input[type=submit],
input[type=reset] {
  background-color: #4CAF50;
  border: none;
  color: white;
  padding: 16px 32px;
  text-decoration: none;
  margin: 4px 2px;
  cursor: pointer;
}
```

Combinators

Selector	Example	Example description
element element	div p	Selects all <p> elements inside elements
element>element	div > p	Selects all <p> elements where the parent is a element
element+element	div + p	Selects all <p> elements that are placed immediately after elements
element1~element2	p ~ ul	Selects every element that are preceded by a <p> element

```
/* example */
div ~ p {
  background-color: yellow;
}
```

Pseudo-Class

- A pseudo-class is used to define a special state of an element.
- For example, it can be used to:
  - Style an element when a user mouses over it
  - Style visited and unvisited links differently
  - Style an element when it gets focus

```
/* example */
selector:pseudo-class {
  property: value;
}
```

Makes an anchor tag with class highlight change colour when hovered over

```
<!DOCTYPE html>
<html>
<head>
<style>
a.highlight:hover {color: #ff0000;}
</style>
</head>
<body>
<p><a class="highlight" href="css_syntax.asp">
CSS Syntax</a></p>
<p><a href="default.asp">CSS Tutorial</a></p>
</body>
</html>
```

CSS Pseudo Class Summary

Selector	Example	Example description
:active	a:active	Selects the active link
:checked	input:checked	Selects every checked <input> element
:disabled	input:disabled	Selects every disabled <input> element
:empty	p:empty	Selects every <p> element that has no children
:enabled	input:enabled	Selects every enabled <input> element
:first-child	p:first-child	Selects every <p> elements that is the first child of its parent
:first-of-type	p:first-of-type	Selects every <p> element that is the first <p> element of its parent
:focus	input:focus	Selects the <input> element that has focus
:hover	a:hover	Selects links on mouse over
:in-range	input:in-range	Selects <input> elements with a value within a specified range
:invalid	input:invalid	Selects all <input> elements with an invalid value
:lang(*language*)	p:lang(it)	Selects every <p> element with a lang attribute value starting with "it"
:last-child	p:last-child	Selects every <p> elements that is the last child of its parent

CSS Pseudo Class Summary

Selector	Example	Example Description
:last-of-type	p:last-of-type	Selects every <p> element that is the last <p> element of its parent
:link	a:link	Selects all unvisited links
:not(selector)	:not(p)	Selects every element that is not a <p> element
:nth-child(n)	p:nth-child(2)	Selects every <p> element that is the second child of its parent
:nth-last-child(n)	p:nth-last-child(2)	Selects every <p> element that is the second child of its parent, counting from the last child
:nth-last-of-type(n)	p:nth-last-of-type(2)	Selects every <p> element that is the second <p> element of its parent, counting from the last child
:nth-of-type(n)	p:nth-of-type(2)	Selects every <p> element that is the second <p> element of its parent
:only-of-type	p:only-of-type	Selects every <p> element that is the only <p> element of its parent
:only-child	p:only-child	Selects every <p> element that is the only child of its parent
:optional	input:optional	Selects <input> elements with no "required" attribute
:out-of-range	input:out-of-range	Selects <input> elements with a value outside a specified range
:read-only	input:read-only	Selects <input> elements with a "readonly" attribute specified
:read-write	input:read-write	Selects <input> elements with no "readonly" attribute
:required	input:required	Selects <input> elements with a "required" attribute specified
:root	root	Selects the document's root element

CSS Pseudo Class Summary

Selector	Example	Example Description
:target	#news:target	Selects the current active #news element (clicked on a URL containing that anchor name)
:valid	input:valid	Selects all <input> elements with a valid value
:visited	a:visited	Selects all visited links

```
<style>
#news1:target {
  border: 2px solid #D4D4D4;
  background-color: #e5eecc;
}
</style>

<body>
<h1>This is a heading</h1>
<p><a href="#news1">Jump to New content 1</a></p>
<p><a href="#news2">Jump to New content 2</a></p>

<p>Click on the links above and the :target selector highlight the current active HT
ML anchor.</p>

<p id="news1"><b>New content 1...</b></p>
<p id="news2"><b>New content 2...</b></p>
</body>
```

This will target both anchors

```
:target {
  border: 2px solid #D4D4D4;
  background-color: #e5eecc;
}
```

Pseudo-Elements

- A CSS pseudo-element is used to style specified parts of an element.
- For example, it can be used to:
  - Style the first letter, or line, of an element
  - Insert content before, or after, the content of an element

Pseudo-Elements

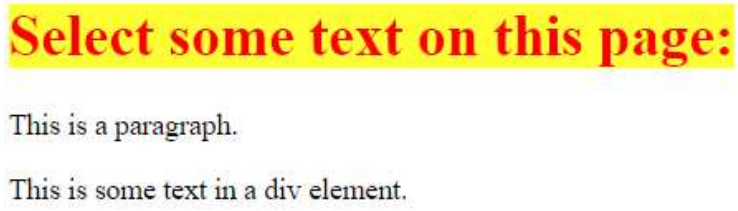
Selector	Example	Example description
::after	p::after	Insert content after every <p> element
::before	p::before	Insert content before every <p> element
::first-letter	p::first-letter	Selects the first letter of every <p> element, only block level elements
::first-line	p::first-line	Selects the first line of every <p> element
::selection	p::selection	Selects the portion of an element that is selected by a user

```
p::after {
  content: " - Remember this";
}
```

```
<p>My name is Donald</p>
<p>I live in Johannesburg </p>
…
```

My name is Donald – Remember This
I live in Johannesburg – Remember This

```
<style>

::selection {
  color: red;
  background: yellow;
}
</style>
<body>

<h1>Select some text on this page:</h1>

<p>This is a paragraph.</p>
<div>This is some text in a div element.</div>

</body>
```



Attribute Selectors

Selector	Example	Example description
[*attribute*]	[target]	Selects all elements with a target attribute
[*attribute=value*]	[target=_blank]	Selects all elements with target="_blank"
[*attribute~=value*]	[title~=flower]	Selects all elements with a title attribute containing the word "flower"
[*attribute|=value*]	[lang|=en]	Selects all elements with a lang attribute value starting with "en"
[*attribute^=value*]	a[href^="https"]	Selects every <a> element whose href attribute value begins with "https"
[*attribute$=value*]	a[href$=".pdf"]	Selects every <a> element whose href attribute value ends with ".pdf"
[*attribute*=value*]	a[href*="select"]	Selects every <a> element whose href attribute value contains the substring “select“

```
a[target] {
  background-color: yellow;
}
```

```
a[target="_blank"] {
  background-color: yellow;
}
```

Opacity

- Opacity defines the transparency of the element
- Opacity can take value from 0.0 to 1.0
- Opacity is often used together with :hover selector to change opacity on mouse-over

```
img {
  opacity: 0.5;
}

img:hover {
  opacity: 1.0;
}
```

Display

- Block level elements starts on a new line and takes up the full width
  - , <h1>..<h2>, <p>, <form>, <header>, <footer>, <section>
- Inline elements does not start on a new line and only takes up as much width as necessary
  - ,<a>,<img>
- Display property specifies if/how an element is displayed

```
li { display: inline; }
```
Causes <li> element to be displayed horizontally

```
span { display: block; }
```
Causes element to be a block

```
h1.hidden { display: none; }
```
Causes <h1> with hidden class to be invisible

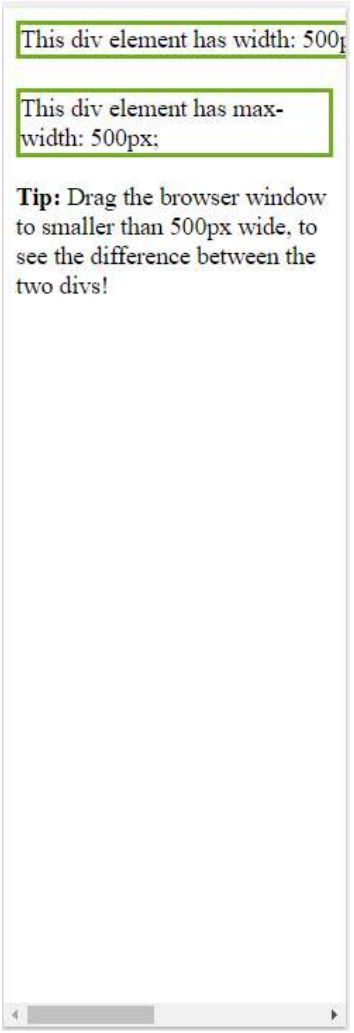
Visibility

- **visibility:hidden** hides the element, but it still takes up space in the layout.
- **display:none** removes the element from the document. It does not take up any space.

Max Width

- Using **max-width** will improve the browser's handling of small windows. This is important when making a site usable on small devices

```
div.ex1 {
  width: 500px;
  margin: auto;
  border: 3px solid #73AD21;
}

div.ex2 {
  max-width: 500px;
  margin: auto;
  border: 3px solid #73AD21;
}
```



Float

- The CSS float property specifies how an element should float.

```
<style>
img {
  float: right;
}
</style>

<p><img src="pineapple.jpg" alt="Pineapple" style="width:170px;height:170px;
margin-left:15px;">
The text in this example will wrap around the image. The image will float to
 the right. Float can be used to arrange elements in a block.
</p>
```

The text in this example will wrap around the image. The image will float to the right. Float can be used to arrange elements in a block.

Style Images

```
img {
  border: 1px solid #ddd;
  border-radius: 4px;
  padding: 5px;
  width: 150px;
}
```

```
img:hover {
  box-shadow: 0 0 2px 1px rgba(0, 140, 186, 0.5);
}
```

```
<a href="paris.jpg">
  <img src="paris.jpg" alt="Paris">
</a>
```

```
img {
  width: 200px;
  height: 400px;
  object-fit: cover;
}
```

Cuts off the sides of image, preserves aspect ratio and fits the space

```
img {
  border-radius: 50%;
}
```

Style Images - Polaroids

```css
div.polaroid {
  width: 80%;
  background-color: white;
  box-shadow: 0 4px 8px 0 rgba(0, 0, 0, 0.2), 0 6px 20px 0 rgba(0, 0, 0, 0.19);
  margin-bottom: 25px;
}

div.container {
  text-align: center;
  padding: 10px 20px;
}
```

Makes it responsive

```html
<div class="polaroid">
  <img src="img_5terre.jpg" alt="5 Terre" style="width:100%">
  <div class="container">
  <p>Cinque Terre</p>
  </div>
</div>
```

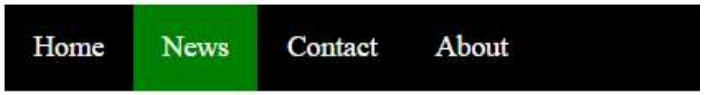
Navigation Bar

- Navigation Bar is a list of links

```
<ul>
  <li><a href="default.asp">Home</a></li>
  <li><a href="news.asp">News</a></li>
  <li><a href="contact.asp">Contact</a></li>
  <li><a href="about.asp">About</a></li>
</ul>
```

```css
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
  width: 200px;
  background-color: #f1f1f1;
}

li a {
  display: block;
  color: #000;
  padding: 8px 16px;
  text-decoration: none;
}

li a:hover {
  background-color: #555;
  color: white;
}
```

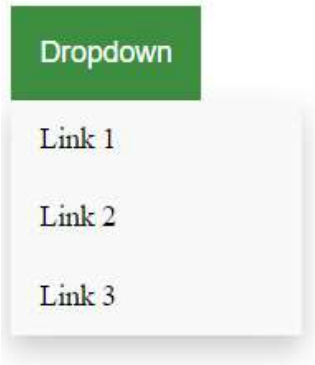
```css
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
  overflow: hidden;
  background-color: Black;
}

li {
  float: left;
}

li a {
  display: block;
  color: white;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
}

li a:hover {
  background-color: Green;
}
```



Drop downs

- Dropdown menus can be created employing some of the CSS styling

```
<div class="dropdown">
  <button class="dropbtn">Dropdown</button>
  <div class="dropdown-content">
  <a href="#">Link 1</a>
  <a href="#">Link 2</a>
  <a href="#">Link 3</a>
  </div>
</div>
```



```css
.dropbtn {
  background-color: #4CAF50;
  color: white;
  padding: 16px;
  font-size: 16px;
  border: none;
  cursor: pointer;
}

.dropdown {
  position: relative;
  display: inline-block;
}

.dropdown-content {
  display: none;
  position: absolute;
  background-color: #f9f9f9;
  min-width: 160px;
  box-shadow: 0px 8px 16px 0px rgba(0,0,0,0.2);
  z-index: 1;
}

.dropdown-content a {
  color: black;
  padding: 12px 16px;
  text-decoration: none;
  display: block;
}

.dropdown-content a:hover {background-color: #f1f1f1}

.dropdown:hover .dropdown-content {
  display: block;
}

.dropdown:hover .dropbtn {
  background-color: #3e8e41;
}
```

Dropdown Image

```
<div class="dropdown">
  <img src="img_5terre.jpg" alt="Cinque Terre" width="100" height="50">
  <div class="dropdown-content">
  <img src="img_5terre.jpg" alt="Cinque Terre" width="300" height="200">
  <div class="desc">Beautiful Cinque Terre</div>
  </div>
</div>
```

```css
.dropdown {
  position: relative;
  display: inline-block;
}

.dropdown-content {
  display: none;
  position: absolute;
  background-color: #f9f9f9;
  min-width: 160px;
  box-shadow: 0px 8px 16px 0px rgba(0,0,0,0.2);
  z-index: 1;
}

.dropdown:hover .dropdown-content {
  display: block;
}

.desc {
  padding: 15px;
  text-align: center;
}
```

Image Gallery

Image 1

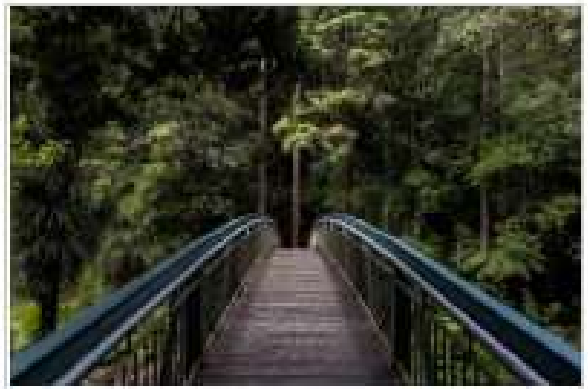


Image 2

Image 3

Image Gallery - HTML

```
<div class="gallery">
  <a target="_blank" href="img_5terre.jpg">
    <img src="img_5terre.jpg" alt="Cinque Terre" width="600" height="400">
  </a>
  <div class="desc">Image 1</div>
</div>

<div class="gallery">
  <a target="_blank" href="img_forest.jpg">
    <img src="img_forest.jpg" alt="Forest" width="600" height="400">
  </a>
  <div class="desc">Image 2</div>
</div>

<div class="gallery">
  <a target="_blank" href="img_lights.jpg">
    <img src="img_lights.jpg" alt="Northern Lights" width="600" height="400">
  </a>
  <div class="desc">Image 3</div>
</div>
```

Image Gallery - CSS

```css
div.gallery {
  margin: 5px;
  border: 1px solid #ccc;
  float: left;
  width: 180px;
}

div.gallery:hover {
  border: 1px solid #777;
}

div.gallery img {
  width: 100%;
  height: auto;
}

div.desc {
  padding: 15px;
  text-align: center;
}
```

Website Layout

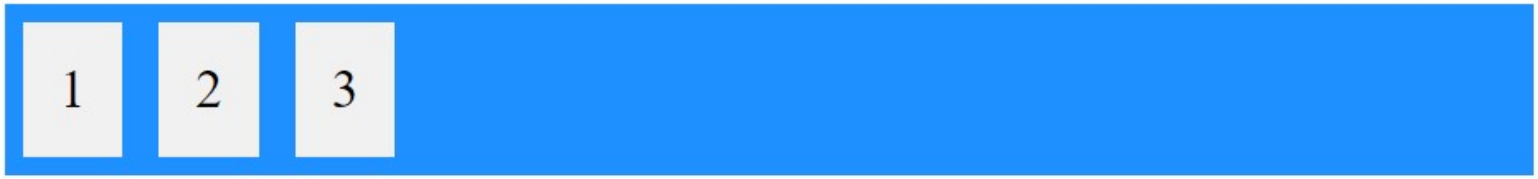
- A website is generally divided into headers, menus, content and a footer:

Flex Box

- The Flexible Box Layout Module, makes it easier to design flexible responsive layout structure without using float or positioning
- First, define a flex container
- Next, set the flex parameters

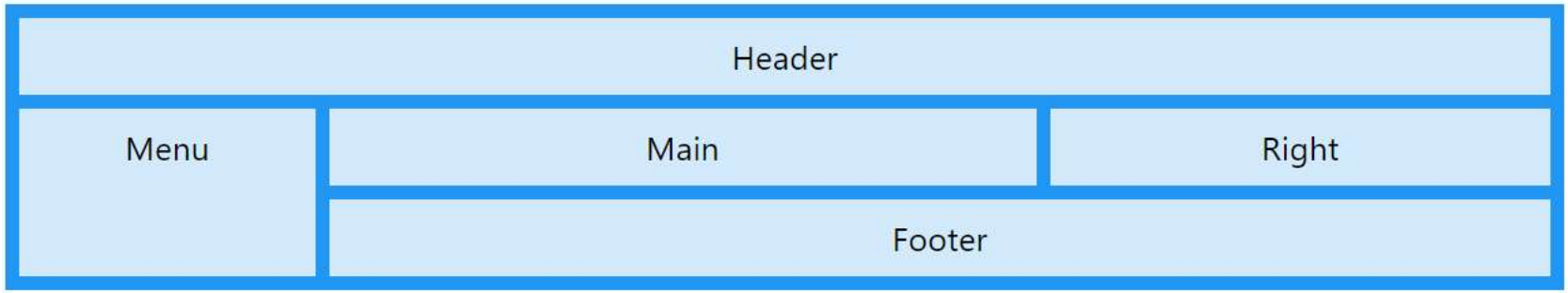
```html
<div class="flex-container">
  <div>1</div>
  <div>2</div>
  <div>3</div>
</div>
```

```css
.flex-container {
  display: flex;
  background-color: DodgerBlue;
}

.flex-container > div {
  background-color: #f1f1f1;
  margin: 10px;
  padding: 20px;
  font-size: 30px;
}
```



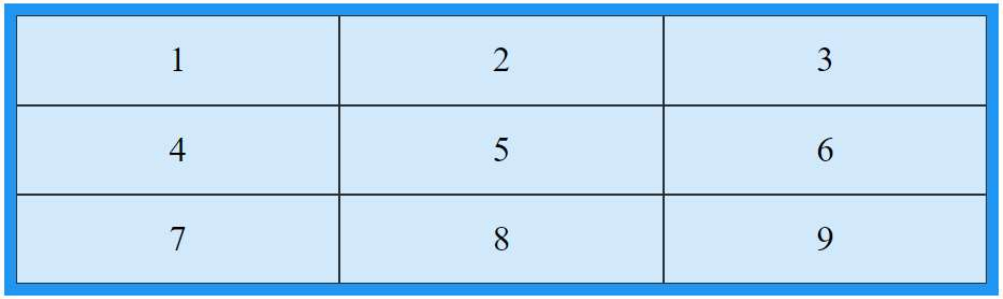
CSS Grid

- The CSS Grid Layout Module offers a grid-based layout system, with rows and columns, making it easier to design web pages without having to use floats and positioning



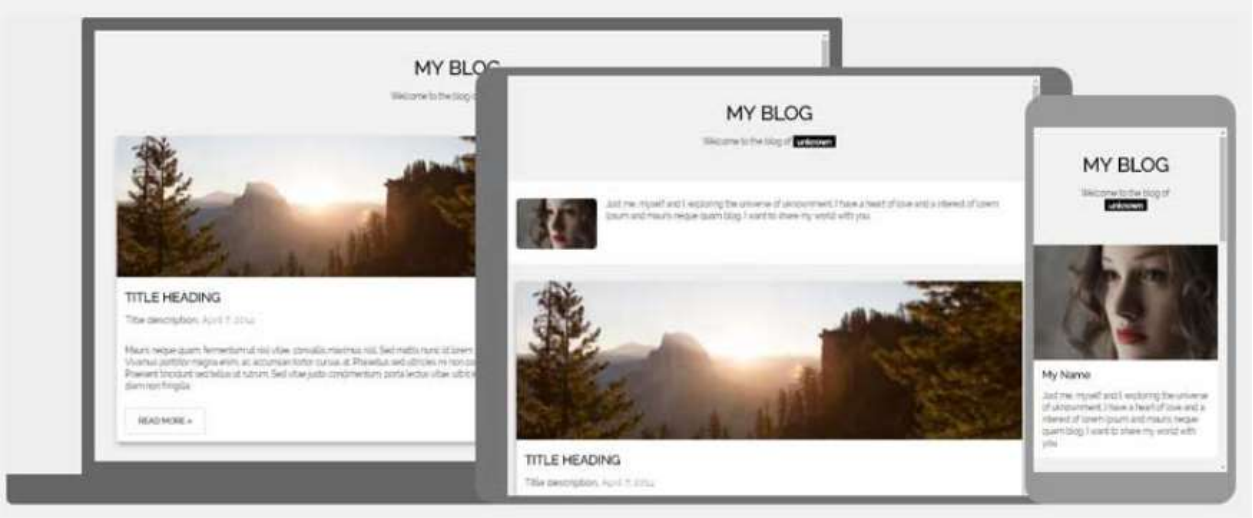
```html
<div class="grid-container">
  <div class="grid-item">1</div>
  <div class="grid-item">2</div>
  <div class="grid-item">3</div>
  <div class="grid-item">4</div>
  <div class="grid-item">5</div>
  <div class="grid-item">6</div>
  <div class="grid-item">7</div>
  <div class="grid-item">8</div>
  <div class="grid-item">9</div>
</div>
```

```css
.grid-container {
  display: grid;
  grid-template-columns: auto auto auto;
  background-color: #2196F3;
  padding: 10px;
}
.grid-item {
  background-color: rgba(255, 255, 255, 0.8);
  border: 1px solid rgba(0, 0, 0, 0.8);
  padding: 20px;
  font-size: 30px;
  text-align: center;
}
```



CSS Responsive

- Needed to create the best experience for all users
  - Responsive web design makes your web page look good on all devices.
  - Responsive web design uses only HTML and CSS.
  - Responsive web design is not a program or a JavaScript.



CSS Responsive

- Set the viewport
  - Viewport is the users visible area of the webpage

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

- Use the grid view
  - Pages are divided into columns
  - 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
- Use media queries
- Adopt the “Mobile First” approach

https://www.w3schools.com/css/css_rwd_mediaqueries.asp : use example under Design for Mobile First