

# Lecture 4 Cascading Style Sheet (CSS)

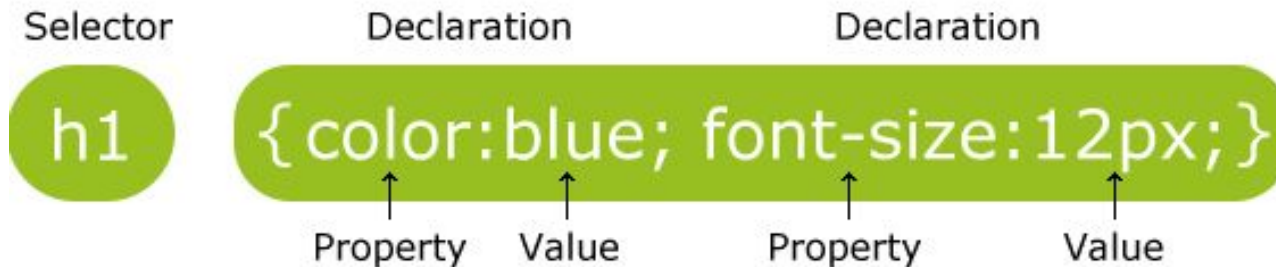


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- When a browser reads a style sheet, it will format the HTML document according to the information in the style sheet.
- CSS is a language that describes the style of an HTML document.
- CSS describes how HTML elements should be displayed.
- How many ways to insert CSS?

# CSS Syntax

- A CSS rule-set consists of selector and a declaration block:



- The selector points to the HTML element you want to style.
- The declaration block contains one or more declarations separated by semicolons.
- Each declaration includes a CSS property name and a value, separated by a colon.
- A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces

# For several elements

- First three heading levels have blue letters:

`h1,h2, h3{color: blue}`

# Inheritance

- In HTML document one element can contain other elements.
- Example: unordered list contained list item elements
- `<p>` can contain character formatting elements like: `<b>`, `<i>`, and `<body>` elements contains the whole document.
- Thanks to inheritance, when you apply formatting instructions to an element that contains *other elements*, *that formatting rule applies to every one of those other elements*.
- For example, if you set a `<body>` element to the font Verdana (as in the resume style sheet shown earlier), every element inside that `<body>` element, including all the headings, paragraphs, lists, and so on, gets the Verdana font.

# Class Selectors

- First, you single out specific elements in your page by giving them the same *class name*. Then, you tell your browser to apply formatting to all the elements that carry that class name. Make sure that the first character is always a letter.
- You use the class name, preceded by a period (.)  
h3.FancyTitle{  
color: red;  
font-weight: bolder;  
}  
<h3 class = “FancyTitle”> Learning to Embodier </h3>

# Id Selector

- Like a Class selector an ID selector lets you format just the elements you choose.
- In HTML: `<div id = “Menu”>.....</div>`
- In CSS: 

```
#Menu{  
    border-width: 2px;  
    boder-style:solid;  
}
```

# Color properties

Colors in CSS are most often specified by:

- a valid color name - like "red"
- an RGB value - like "rgb(255, 0, 0)"
- a HEX value - like "#ff0000"

Property	Description	Common Values	Can Be Inherited?
color	The color of the text. This is a handy way to make headings or emphasized text stand out.	A color name, color code, or RGB color value.	Yes
background-color	The color behind the text for just that element.	A color name, color code, or RGB color value. You can also use the word "transparent."	No <sup>1</sup>



# CSS Backgrounds

The CSS background properties are used to define the background effects for elements.

CSS background properties:

- **background-color** --- specifies the background color of an element

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

- **background-image** ---sp.an image to use the background of an element(by defaults, the image is repeated so it covers the entire element.)

- **background-repeat** –repeat h

```
body {  
  background-image: url("paper.gif");  
}
```

```
body {  
  background-image: url("gradient_bg.png");  
  background-repeat: repeat-x;  
}
```

- **background-attachment** – to specify the background image should be fixed(will not scroll with the rest of the page) use the background-attachment property

```
background-attachment: fixed;
```

- **background-position** --- right, top,

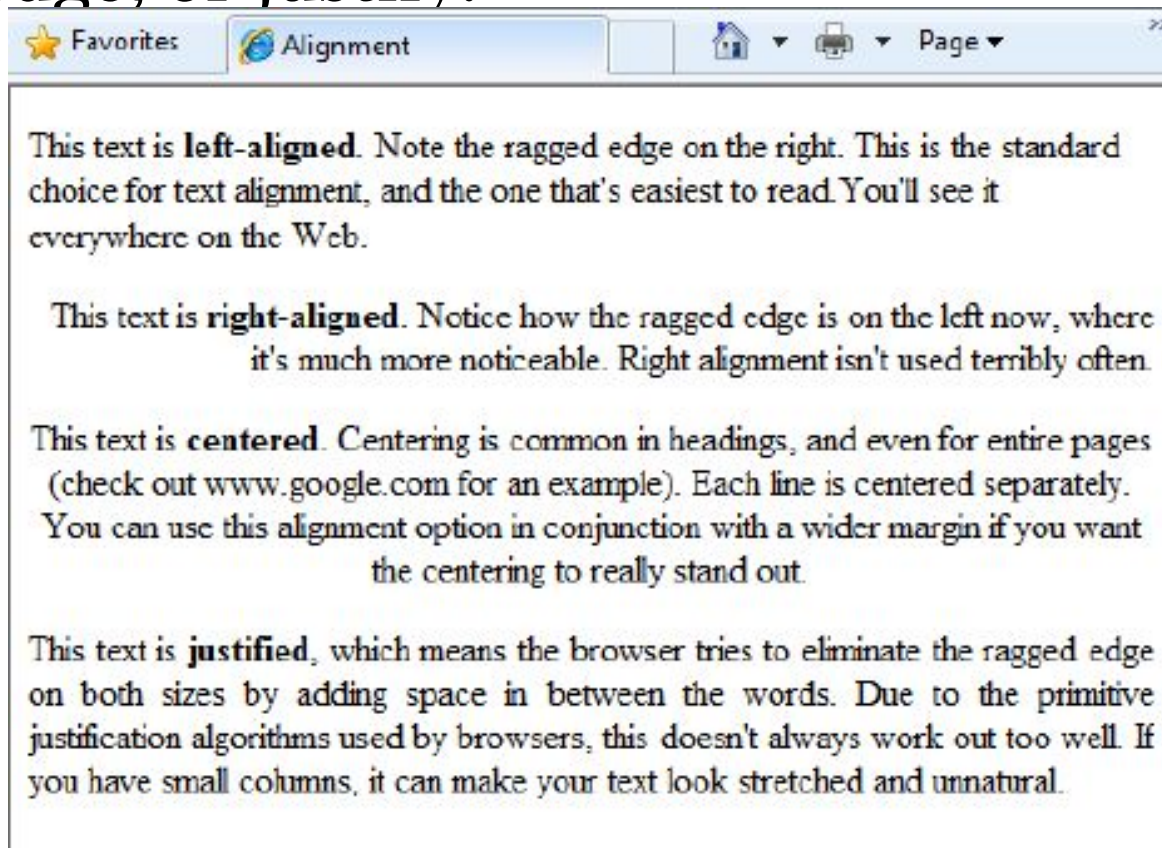
# Text Alignment and Spacing

Property	Description	Common Values	Can Be Inherited?
text-align	Lines up text on one or both edges of a page.	left, right, center, justify.	Yes
text-indent	Indents the first line of text (typically in a paragraph).	A pixel value (indicating the amount to indent) or percentage of the width of the containing element.	Yes
margin	Sets the spacing around the outside of a block element (page 107). To change the margin on just one side, use the similar properties margin-bottom, margin-left, margin-right, and margin-top.	A pixel value or percentage indicating the amount of space to add around the element.	No
padding	Sets the spacing around the inside of a block element. Has the same effect as "margin," unless you have an element with a border or background color.	A pixel value or percentage indicating the amount of space to add around the element.	No
word-spacing	Sets the space between words.	A pixel value or percentage.	Yes
letter-spacing	Sets the space between letters.	A pixel value or percentage.	Yes

line-height	Sets the space between lines.	A pixel value or percentage. You can also use a multiple (for example, use 2 for double-spacing).	Yes
white-space	Tells the browser how to deal with spaces in your text.	normal, pre, nowrap.	Yes

# Alignment

- By default, all text on a web page lines up on the left side of the browser window.
- **Text-align** : you can **center** that text, line it up on the right edge, or justify.



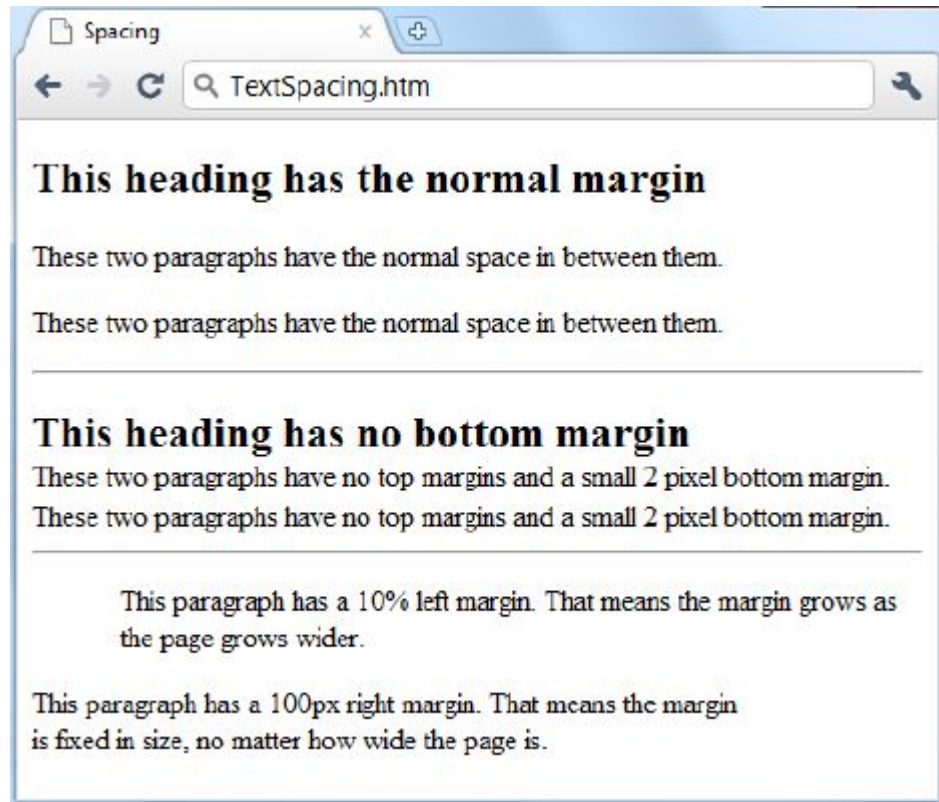
# Spacing

- To adjust the spacing around any element, use the **margin** property.
- Set the size of the white space outside the border.

```
p{  
margin: 8px;  
}
```

For each side of an element:

- **margin-top**
- **margin-right**
- **margin-bottom**
- **margin-left**



# Spacing

All the margin properties can have the following values:

- **auto** - the browser calculates the margin
- **length** - specifies a margin in px, pt, cm, etc.
- **%** - specifies a margin in % of the width of the containing element
- **inherit** - specifies that the margin should be inherited from the parent element

# Margin-Shortland Property

- To shorten the code, it is possible to specify all margin properties in one property

- **margin-top**
- **margin-right**
- **margin-bottom**
- **margin-left**

```
p {  
    margin: 100px 150px 100px 80px;  
}
```

- **auto** value

- The element will then take up the specified width, and the remaining space will be split equally between the left and right margins:

## Use of the auto Value

You can set the margin property to auto to horizontally center the element within its container. The element will then take up the specified width, and the remaining space will be split equally between the left and right margins:

This div will be centered because margin: auto;

# CSS Padding

- Padding properties are used to generate space around content.
- The padding clears an area around the content (inside the border) of an element.
- **padding-top**
- **padding-right**
- **padding-bottom**
- **padding-left**



# CSS Border properties

- The CSS border properties allow you to specify the style, width, and color of an element's border.
- **Border Style** – specifies what kind of border to display. The following values are allowed:

- `dotted` - Defines a dotted border
- `dashed` - Defines a dashed border
- `solid` - Defines a solid border
- `double` - Defines a double border
- `groove` - Defines a 3D grooved border. The effect depends on the border-color value
- `ridge` - Defines a 3D ridged border. The effect depends on the border-color value
- `inset` - Defines a 3D inset border. The effect depends on the border-color value
- `outset` - Defines a 3D outset border. The effect depends on the border-color value
- `none` - Defines no border
- `hidden` - Defines a hidden border

# CSS border properties

```
p.dotted {border-style: dotted;}
p.dashed {border-style: dashed;}
p.solid {border-style: solid;}
p.double {border-style: double;}
p.groove {border-style: groove;}
p.ridge {border-style: ridge;}
p.inset {border-style: inset;}
p.outset {border-style: outset;}
p.none {border-style: none;}
p.hidden {border-style: hidden;}
p.mix {border-style: dotted dashed solid
double;}
```

A dotted border.

A dashed border.

A solid border.

A double border.

A groove border. The effect depends on the border-color value.

A ridge border. The effect depends on the border-color value.

An inset border. The effect depends on the border-color value.

An outset border. The effect depends on the border-color value.

No border.

A hidden border.

A mixed border.

# Basic Fonts

- Using the CSS font properties, you can choose a font family, font weight (its boldness setting), and font size

Property	Description	Common Values	Can Be Inherited?
font-family	A list of font names. The browser scans through the list until it finds a font that's on your visitor's computer. If it doesn't find a supported font, it uses the standard font the browser always uses.	A font name (like Verdana, Times, or Arial) or a generic font-family name: serif, sans-serif, monospace.	Yes
font-size	Sets the size of the font.	A specific size, or one of these values: xx-small, x-small, small, medium, large, x-large, xx-large, smaller, larger.	Yes
font-weight	Sets the weight of the font (how bold it appears).	normal, bold, bolder, lighter.	Yes
font-style	Lets you apply italic formatting.	normal, italic.	Yes

# Basic Fonts

font-variant	Lets you apply small caps, which turns lowercase letters into smaller capitals (LIKE THIS).	normal, small-caps.	Yes
text-decoration	Applies a few miscellaneous text changes, like underlining and strikeout. Technically speaking, these aren't part of the font (the browser adds these).	none, underline, overline, line-through.	Yes
text-transform	Transforms text so that it's all capitals or all lowercase.	none, uppercase, lowercase.	Yes

# Examples

```
<!DOCTYPE html>
<html>
<head>
<style>
p.serif {
  font-family: "Times New Roman", Times, serif;
}

p.sansserif {
  font-family: Arial, Helvetica, sans-serif;
}
</style>
</head>
<body>

<h1>CSS font-family</h1>
<p class="serif">This is a paragraph, shown in the Times New Roman font.</p>
<p class="sansserif">This is a paragraph, shown in the Arial font.</p>

</body>
</html>
```

## CSS font-family

This is a paragraph, shown in the Times New Roman font.

This is a paragraph, shown in the Arial font.

### Difference Between Serif and Sans-serif Fonts



# Generic Family

- **generic family** - a group of font families with a similar look (like "Serif" or "Monospace")
- **font family** - a specific font family (like "Times New Roman" or "Arial")

Generic family	Font family	Description
Serif	Times New Roman Georgia	Serif fonts have small lines at the ends on some characters
Sans-serif	Arial Verdana	"Sans" means without - these fonts do not have the lines at the ends of characters
Monospace	Courier New Lucida Console	All monospace characters have the same width

# Font Size

- The font-size property sets the size of the text.
- Being able to manage the text size is important in web design. However, you should not use font size adjustments to make paragraphs look like headings, or headings look like paragraphs.
- Always use the proper HTML tags, like `<h1>` - `<h6>` for headings and `<p>` for paragraphs.
- The font-size value can be an absolute, or relative size.

Use a Combination  
of Percent and Em

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# Font Weight

- The font-weight property specifies the weight of a font:

```
<style>
p.normal {
  font-weight: normal;
}
p.light {
  font-weight: lighter;
}
p.thick {
  font-weight: bold;
}
p.thicker {
  font-weight: 900;
}
</style>
```

This is a paragraph.

This is a paragraph.

**This is a paragraph.**

**This is a paragraph.**

# Font Style

- The font-style property is mostly used to specify italic text.
- This property has three values:
- normal - The text is shown normally
- italic - The text is shown in italics
- oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

```
<style>
p.normal {
    font-style: normal;
}

p.italic {
    font-style: italic;
}

p.oblique {
    font-style: oblique;
}
</style>
```

This is a paragraph in normal style.

*This is a paragraph in italic style.*

*This is a paragraph in oblique style.*

# CSS line-height Property

- The line-height property specifies the line height.

```
<style>
p.small {
  line-height: 70%;
}

p.big {
  line-height: 200%;
}
</style>
</head>
<body>

<p>
This is a paragraph with a standard line-height.<br>
This is a paragraph with a standard line-height.<br>
The default line height in most browsers is about 110% to 120%
</p>

<p class="small">
This is a paragraph with a smaller line-height.<br>
This is a paragraph with a smaller line-height.<br>
This is a paragraph with a smaller line-height.<br>
This is a paragraph with a smaller line-height.<br>
</p>

<p class="big">
This is a paragraph with a bigger line-height.<br>
This is a paragraph with a bigger line-height.<br>
This is a paragraph with a bigger line-height.<br>
This is a paragraph with a bigger line-height.<br>
</p>
```

This is a paragraph with a standard line-height.  
This is a paragraph with a standard line-height.  
The default line height in most browsers is about 110% to 120%.

This is a paragraph with a smaller line-height.  
This is a paragraph with a smaller line-height.  
This is a paragraph with a smaller line-height.  
This is a paragraph with a smaller line-height.

This is a paragraph with a bigger line-height.  
This is a paragraph with a bigger line-height.  
This is a paragraph with a bigger line-height.  
This is a paragraph with a bigger line-height.

# Text-transform Property

- The text-transform property controls the capitalization of text.

```
p.uppercase {  
  text-transform: uppercase;  
}
```

THIS IS SOME TEXT.

```
p.lowercase {  
  text-transform: lowercase;  
}
```

this is some text.

```
p.capitalize {  
  text-transform: capitalize;  
}
```

This Is Some Text.

# List-style Property

- The list-style shorthand property sets all the list properties in one declaration.
- The properties that can be set, are (in order): list-style-type, list-style-position, list-style-image.
- If one of the values above are missing, e.g. "list-style:circle inside;", the default value for the missing property will be inserted, if any.

```
ul {  
    list-style: square url("sqpurple.gif");  
}
```

- Coffee
- Tea
- Coca Cola

Value	Description
<i>list-style-type</i>	Specifies the type of list-item marker. See <a href="#">list-style-type</a> for possible values
<i>list-style-position</i>	Specifies where to place the list-item marker. See <a href="#">list-style-position</a> for possible values
<i>list-style-image</i>	Specifies the type of list-item marker. See <a href="#">list-style-image</a> for possible values

# Text-decoration Property

- The text-decoration property specifies the decoration added to text

```
h1 {  
  text-decoration: overline;  
}
```

This is heading 1

```
h2 {  
  text-decoration: line-through;  
}
```

~~This is heading 2~~

```
h3 {  
  text-decoration: underline;  
}
```

This is heading 3

Value	Description
none	Defines a normal text. This is default
underline	Defines a line below the text
overline	Defines a line above the text
line-through	Defines a line through the text
initial	Sets this property to its default value. <a href="#">Read about <i>initial</i></a>
inherit	Inherits this property from its parent element. <a href="#">Read about <i>inherit</i></a>

# Width Property

- The width property sets the width of an element.

```
<style>
img.normal {
  height: auto;
}

img.big {
  height: 120px;
}

p.ex {
  height: 100px;
  width: 100px;
}
</style>
</head>
<body>
```



The height and  
width of this  
paragraph is  
100px.

This is some text in a paragraph. This is some text in a paragraph. This is some text in a paragraph. This is some text in a paragraph.  
This is some text in a paragraph. This is some text in a paragraph.

```
<br>

```

```
<p class="ex">The height and width of this paragraph is 100px.</p>
<p>This is some text in a paragraph. This is some text in a paragraph.
This is some text in a paragraph. This is some text in a paragraph.
This is some text in a paragraph. This is some text in a paragraph.</p>
```

# CSS height Property

- The height property sets the height of an element.
- **Note:** The height property does not include padding, borders, or margins; it sets the height of the area inside the padding, border, and margin of the element!

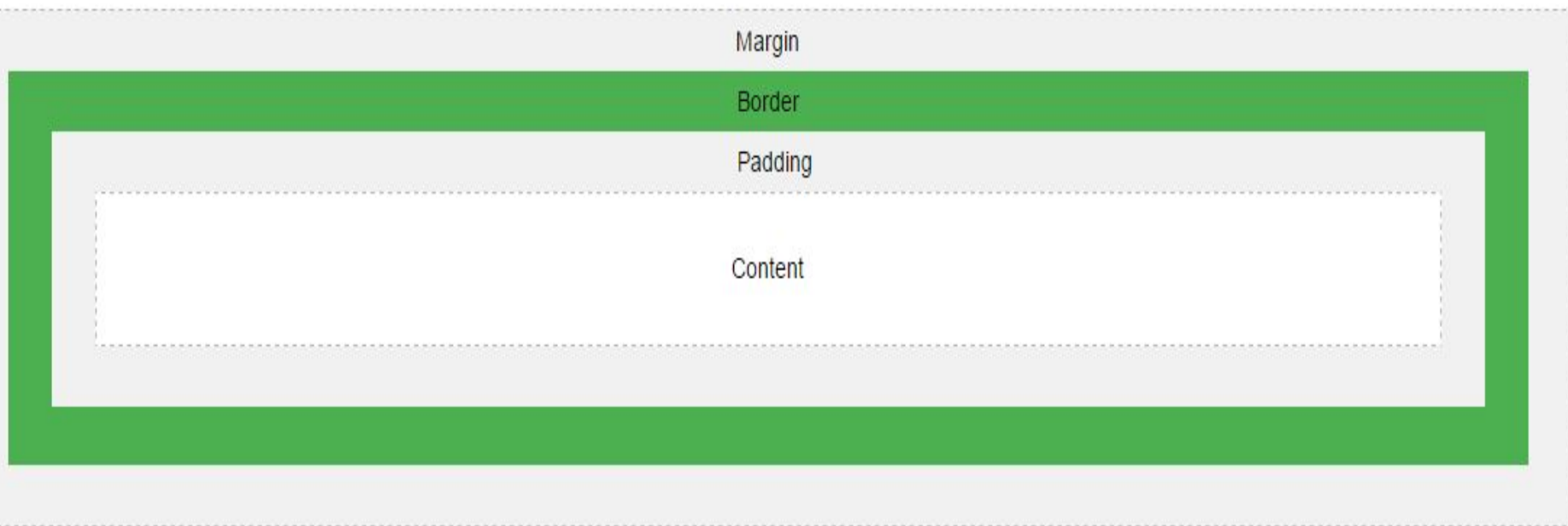
```
<br>  

```



# The CSS Box Model

- The CSS box model is essentially a box that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content. The image below illustrates the box model:



# The CSS Box Model

- **Content** - The content of the box, where text and images appear
- **Padding** - Clears an area around the content. The padding is transparent
- **Border** - A border that goes around the padding and content
- **Margin** - Clears an area outside the border. The margin is transparent

# Example

```
<style>
div {
  background-color: lightgrey;
  width: 300px;
  border: 25px solid green;
  padding: 25px;
  margin: 25px;
}
```

```
</style>
</head>
<body>
```

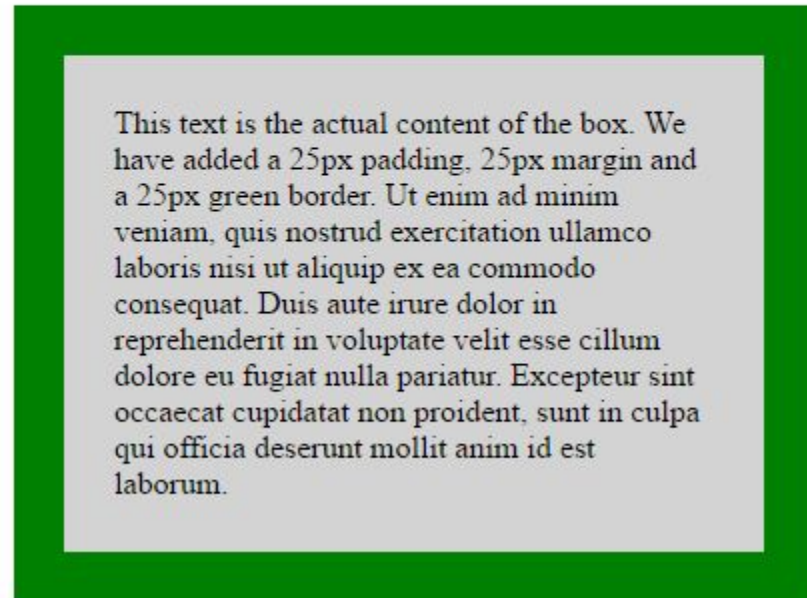
```
<h2>Demonstrating the Box Model</h2>
```

```
<p>The CSS box model is essentially a  
of: borders, padding, margins, and the
```

```
<div>This text is the actual content o  
and a 25px green border. Ut enim ad mi  
nisi ut aliquip ex ea commodo consequa  
velit esse cillum dolore eu fugiat nul  
proident, sunt in culpa qui officia de
```

## Demonstrating the Box Model

The CSS box model is essentially a box that wraps around every HTML element. It consists of four parts: margins, borders, padding, and the actual content.



# The position Property

- The position property specifies the type of positioning method used for an element.
- There are 4 different position values:

Static

relative

fixed

absolute

# Position: Static

- HTML elements are positioned static by default.
- Static positioned elements are not affected by the top, bottom, left, and right properties.

```
div.static {  
    position: static;  
    border: 3px solid #73AD21;  
}
```

## **position: static;**

An element with `position: static;` is not positioned in any special way; it is always positioned according to the normal flow of the page:

This div element has `position: static;`

# position: relative;

- An element with `position: relative;` is positioned relative to its normal position.
- Setting the `top`, `right`, `bottom`, and `left` properties of a relatively-positioned element will cause it to be adjusted away from its normal position. Other content will not be adjusted to fit into any gap left by the element.

```
div.relative {  
  position: relative;  
  left: 30px;  
  border: 3px solid #73AD21;  
}
```

## **position: relative;**

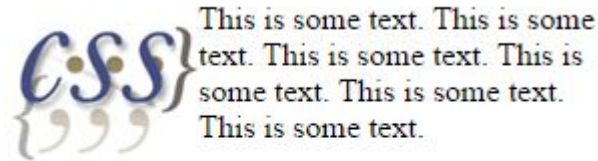
An element with `position: relative;` is positioned relative to its normal position:

This div element has `position: relative;`

# CSS clear Property

- The clear property specifies on which sides of an element floating elements are not allowed to float.

```
img {  
  float: left;  
}
```



```
p.clear {  
  clear: both;  
}
```

This is also some text. This is also some text.  
This is also some text. This is also some text.  
This is also some text. This is also some text.

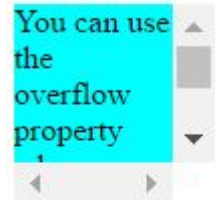
Value	Description
none	Default. Allows floating elements on both sides
left	No floating elements allowed on the left side
right	No floating elements allowed on the right side
both	No floating elements allowed on either the left or the right side
initial	Sets this property to its default value. <a href="#">Read about <i>initial</i></a>
inherit	Inherits this property from its parent element. <a href="#">Read about <i>inherit</i></a>

# Overflow Property

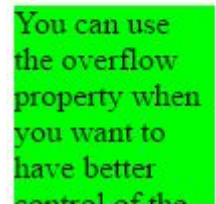
- The overflow property specifies what happens if content overflows an element's box.
- This property specifies whether to clip content or to add scrollbars when an element's content is too big to fit in a specified area.
- **Note:** The overflow property only works for block elements with a specified height.

```
div {  
  width: 150px;  
  height: 150px;  
  overflow: scroll;  
}
```

overflow:scroll



overflow:hidden





# Overflow property

Value	Description
visible	The overflow is not clipped. It renders outside the element's box. This is default
hidden	The overflow is clipped, and the rest of the content will be invisible
scroll	The overflow is clipped, but a scroll-bar is added to see the rest of the content
auto	If overflow is clipped, a scroll-bar should be added to see the rest of the content
initial	Sets this property to its default value. <a href="#">Read about <i>initial</i></a>
inherit	Inherits this property from its parent element. <a href="#">Read about <i>inherit</i></a>

# z-index Property

- The z-index property specifies the stack order of an element.
- An element with greater stack order is always in front of an element with a lower stack order.

```
<!DOCTYPE html>
<html>
<head>
<style>
img {
  position: absolute;
  left: 0px;
  top: 0px;
  z-index: -1;
}
</style>
</head>
<body>

<h1>This is a heading</h1>



<p>Because the image has a z-index
of -1, it will be placed behind the
text.</p>

</body>
</html>
```



