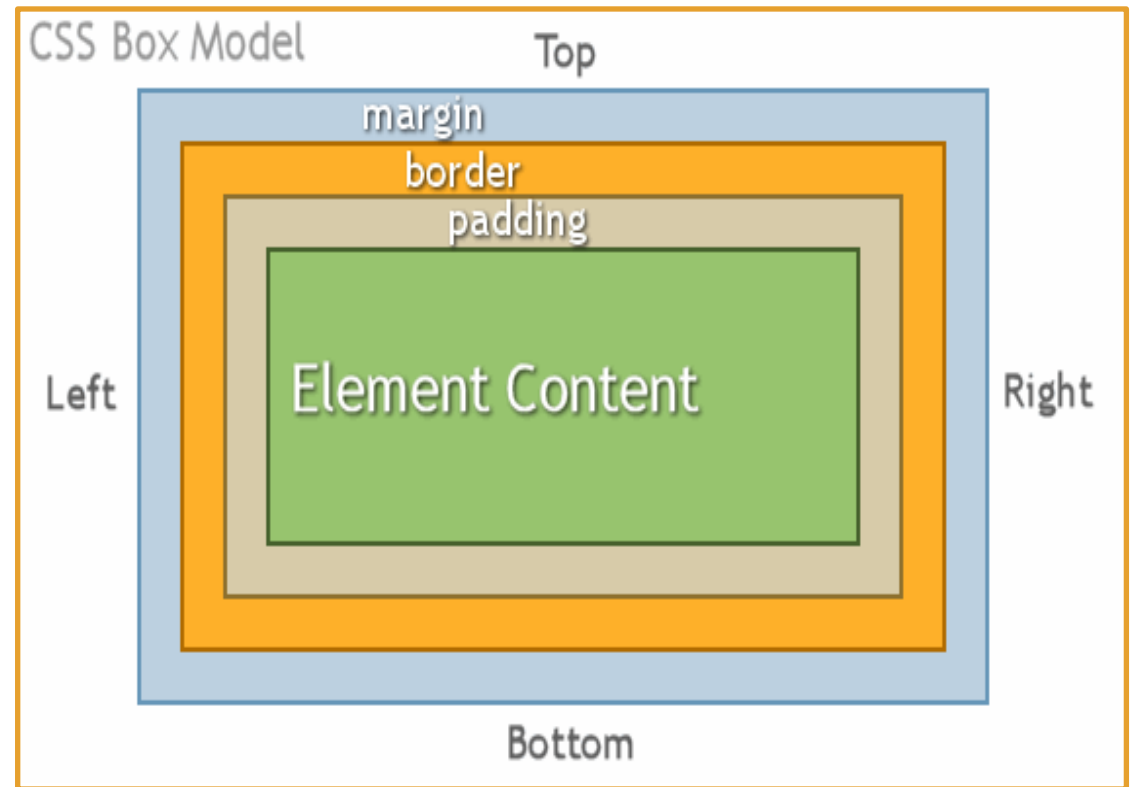# Box Model

.NET

*A browser's rendering engine represents each element as a rectangular box according to the standard **CSS basic box model**. CSS determines the size, position, and properties of these boxes.*

CSS - Box Model

The CSS *'Box Model'* is the way that all HTML *elements* are defined. The *Box Model* is made up of 4 different concentric <u>boxes</u>.

- *Content* - this is the actual text or image
- *Padding* - space between content and border
- *Border* - space between the padding and the margin. The border width, style, and color properties may be set
- *Margin* – the invisible space between the end of one element and the start of another
- Remember:
    - C.P.B.M. => Create Pretty Box Models!

Box Model elements.

Box Element	Additional Information
Content	This is the content that the user sees. The actual content of an element can be changed based on factors like hover, etc
Border	The border doesn't exist if there's no style and size for it.
Margin	Creates space around elements, outside of any defined borders. Cannot be colored and is the only element that can have a negative value.
Padding	Padding is used to create space around an element's content, inside of any defined borders.

CSS - Box Model Example
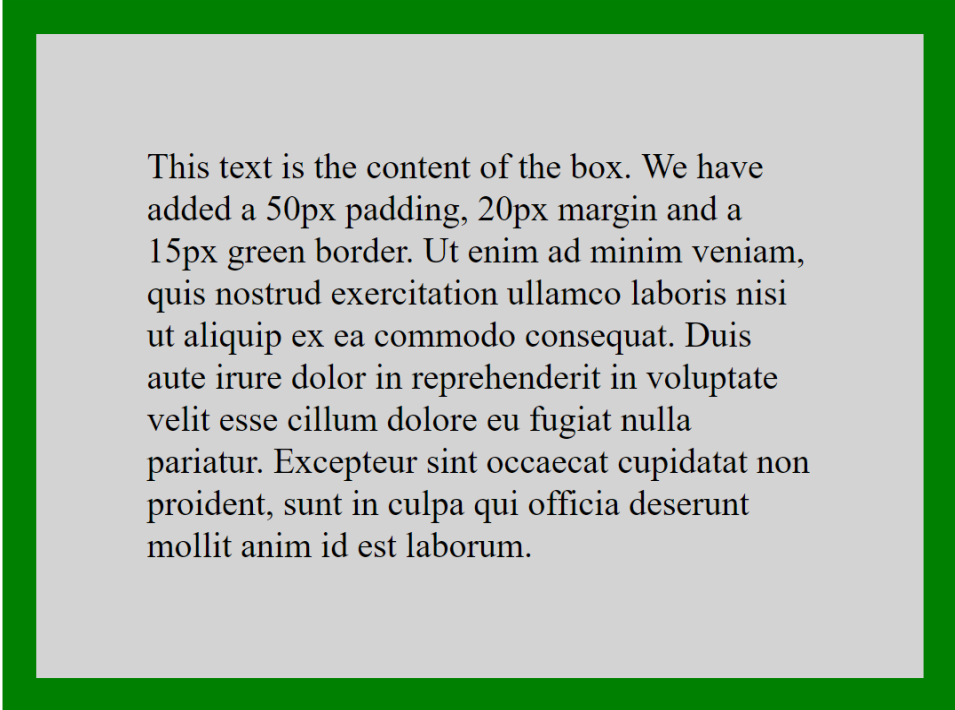
```
<!DOCTYPE html>
<html>
<head>
<style>
div {
    background-color: lightgrey;
    width: 300px;
    border: 15px solid green;
    padding: 50px;
    margin: 20px;
}
</style>
</head>
<body>

<h2>Demonstrating the Box Model</h2>

<p>The CSS box model is essentially a box that wraps around ev
consists of: borders, padding, margins, and the actual conten

<div>This text is the content of the box. We have added a 50p
15px green border. Ut enim ad minim veniam, quis nostrud exerc
nisi ut aliquip ex ea commodo consequat. Duis aute irure dolo
voluptate velit esse cillum dolore eu fugiat nulla pariatur. [
cupidatat non proident, sunt in culpa qui officia deserunt mo:
</div>


</body>
</html>
```
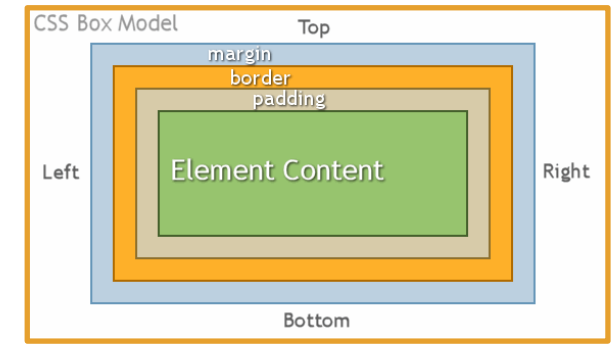
Demonstrating the Box Model

The CSS box model is essentially a box that wraps around every HTML elemen margins, and the actual content.

This text is the content of the box. We have added a 50px padding, 20px margin and a 15px green border. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

CSS Box Model – Example

In order to correctly set the width and height of an element, you must know how the box model works.

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

300px (width)
+ 30px (left + right border)
+ 100px (left + right padding)
+ 40px (left + right margin)
= 470px total element width

Margin is the only part if the Box Model that can display a negative value.

CSS Box Model

Top

Left   Element Content   Right

Bottom

margins, and the actual content.

margin

border

padding

This text is the content of the box. We have added a 50px padding, 20px margin and a 15px green border. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

width

CSS Box Model – Sizing Explained

In CSS, the sides of an element can be sized and styled individually.

- If there is only <u>one</u> value, that value applies to all sides.

- If there are <u>two</u> values, the Top and Bottom margins are set to the first value and the Right and Left margins are set to the second.

```
.cssdemo{
  width: 150; /*overall width of element*/
  background-color: ▢pink; /*content background*/
  border: 50px solid ▢red;/**/
  margin: 0px;
}
```

this is h1

```
.cssdemo{
  width: 150;
  border-style: solid;
  border-color: ▢red;
  border-width: 100px 25px;
}
```

this is h1

CSS Box Model – Sizing Explained

- If there are <u>three</u> values, the first value sets Top, the second value sets the Left and Right, and the third sets the Bottom.

```
.cssdemo{
  width: 150;
  border-style: solid;
  border-color: ■red;
  border-width: 100px 75px 25px;
}
```


this is h1

- If there are <u>four</u> values, they apply to the Top, Right, Bottom, and Left, respectively.

```
.cssdemo{
  width: 150;
  border-style: solid;
  border-color: ■red;
  border-width: 100px 75px 50px 25px;
}
```


this is h1