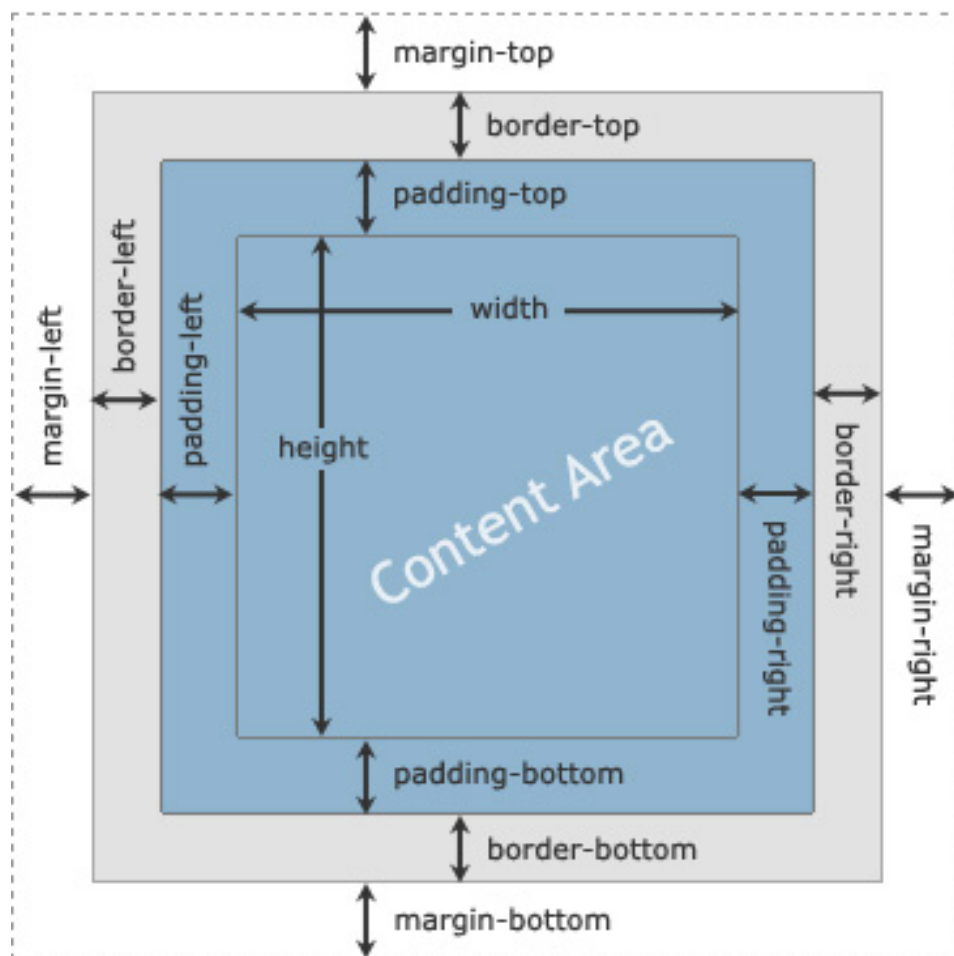


Box Model

The CSS box model describes how elements are visually laid out on the web pages.

What is Box Model: Every element that can be displayed is comprised of one or more rectangular boxes. CSS box model typically describes how these rectangular boxes are laid out on a web page. These boxes can have different properties and can interact with each other in different ways, but every box has a content area and optional surrounding margin, padding, and border.

The following diagram demonstrates how the margin, padding, and border CSS properties determines how much space an element can take on a web page.



Width and Height of Elements:

Usually when you set the width and height of an element using the CSS width and height properties, in reality you are only setting the width and height of the content area of an element. The actual width and height of the element's box depend on several factors.

The actual space that an element's box might take is calculated like this:

Box Size	CSS Properties
Total Width	width + padding-left + padding-right + border-left + border-right +margin-left + margin-right
Total Height	height + padding-top + padding-bottom + border-top + border-bottom +margin-top + margin-bottom

Note:In CSS box model; content area of the element's box is the area, where text, images, lists, tables, forms, videos, etc. appears.

CSS Margin

Margin clears an area around the border that separates it from other boxes.

CSS Margin Properties

The CSS margin properties allow you to set the margins around the sides of an element's box. The margins does not have a background-color, it is completely transparent.

Setting Margins for Individual Sides

You can easily specify the different margins for the different sides of an element such as top,

right, bottom or left side using the CSS individual margin property.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Example of CSS margin Property</title>
  <style type="text/css">
    h1 {
      margin-bottom: 20px;
    }
    p {
      margin-left: 10px;
      margin-right: 30px;
    }
  </style>
</head>
<body>
  <h1>This is a heading</h1>
  <p>This is a paragraph.</p>
  <p><strong>Note:</strong> Change the margin property value to see how it works.</p>
</body>
</html>
```

The margin Shorthand Property

The margin property is a shorthand property to avoid setting margin of each side separately: margin-top, margin-right, margin-bottom and margin-left.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Example of CSS margin Shorthand Property</title>
  <style type="text/css">
    h1 {
```

```

        margin: 0 10px;
    }
    p {
        margin: 25px 50px 75px 100px;
    }
</style>
</head>
<body>
    <h1>This is a heading</h1>
    <p>This is a paragraph.</p>
    <p><strong>Note:</strong> Change the margin property value to see how it works.</p>
</body>
</html>

```

This shorthand notation can take one, two, three, or four whitespace separated values.

If one value is set, this is applied to all the four sides.

If two values are specified, the first value is applied to the top and bottom, and the second value is applied to the right and left side.

If three values are specified, the first value is applied to the top, second value is applied to left and right side and the last value is applied to the bottom.

If four values are specified, they are applied to the top, right, bottom and the left side respectively in the specified order.

CSS Padding

The padding area is the space between the content of the element and its border.

CSS Padding Properties

The CSS padding properties allow you to set the padding area for an element that separates its

border from its content. The padding is affected by the background-color of the box.

Define Paddings for Individual Sides

You can easily specify the different paddings for the different sides of an element such as top, right, bottom or left side using the CSS individual padding property.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Example of CSS padding Property</title>
  <style type="text/css">
    h1 {
      padding-bottom: 10px;
      background: #c5c5e2;
    }
    p {
      padding-top: 20px;
      padding-left: 50px;
      background: #ffb6c1;
    }
  </style>
</head>
<body>
  <h1>This is a heading</h1>
  <p>This is a paragraph.</p>
  <p><strong>Note:</strong> Change the padding property value to see how it works.</p>
</body>
</html>
```

The padding Shorthand Property

The padding property is a shorthand property to avoid setting padding for each side of an

element separately i.e.

padding-top,padding-left,padding-right,padding-bottom

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Example of CSS padding Shorthand Property</title>
  <style type="text/css">
    h1 {
      padding: 10px 20px;
      background: #c5c5e2;
    }
    p {
      padding: 10px 15px 20px 25px;
      background: #ffb6c1;
    }
  </style>
</head>
<body>
  <h1>This is a heading</h1>
  <p>This is a paragraph.</p>
  <p><strong>Note:</strong> Change the padding property value to see how it works.</p>
</body>
</html>
```

Note:Unlike CSS margin properties, values for padding properties cannot be negative. Like margin properties, percentage values for padding properties refer to the width of the generated box's containing block.

The padding property can take one, two, three, or four whitespace separated values.

If one value is set, this is applied to all the four sides.

If two values are specified, the first value is applied to the top and bottom, and the second value is applied to the right and left side.

If three values are specified, the first value is applied to the top, second value is applied to left and right side and the last value is applied to the bottom.

If four values are specified, they are applied to the top, right, bottom and the left side respectively in the specified order.

CSS Border

Border of an element goes around the padding and content.

CSS Border Properties

The CSS border properties allow you to define the border area of a box. The border can either be a predefined style like, solid line, double line, dotted line, etc.

The following section will describe you how to set the various properties defining the style (border-style), color (border-color), and thickness (border-width) of the border.

The border-width Property

The border-width property specifies the width of the border area. It is a shorthand property for setting the thickness of all the four sides of an element's border at the same time.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Example of CSS border-width property</title>
  <style type="text/css">
    p.one {
      border-style: solid;
      border-width: 5px;
    }
    p.two {
```

```

    border-style: solid;
    border-width: 5px 10px;
}
p.three {
    border-style: solid;
    border-width: 5px 10px 15px;
}
p.four {
    border-style: solid;
    border-width: medium 10px thick 15px;
}
</style>
</head>
<body>
    <p class="one"><strong>one-value syntax:</strong> the single value sets the width of all four
border sides.</p>
    <p class="two"><strong>two-value syntax:</strong> the first value sets the width of the top
and bottom border, while the second value sets the width of the right and left sides border.</p>
    <p class="three"><strong>three-value syntax:</strong> the first value sets the width of the top
border, the second value sets the width of the right and left border, and the third value sets the
width of the the bottom border.</p>
    <p class="four"><strong>four-value syntax:</strong> each value sets the width of the border
individually in the order top, right, bottom, and left.</p>
    <p><strong>Note:</strong> You must declare the <code>border-style</code> property before
the <code>border-width</code> property. An element must have borders before you can set the
width of the border.</p>
</body>
</html>

```

Note: If the value for the border-width property is missing or not specified, the default value (medium) of the border-width will be used instead.

The border-style Property

The border-style property sets the style of a box's border such as: solid, dotted, etc. It is a shorthand property for setting the line style for all four sides of the elements border.

The border-style property may take one of the following values: none, hidden, dashed,dotted, double, groove, inset, outset, ridge and solid.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Example of CSS border-style property</title>
  <style type="text/css">
    p
    {
      border-width: 3px;

}
  p.none
  {
```

```
border-style: none;
```

```
}
```

```
  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;
```

```

}
</style>
</head>
<body>

  <h1>Various border style.</h1>

  <p class="none">No border.</p>

  <p class="dotted">A dotted border.</p>

  <p class="dashed">A dashed border.</p>

  <p class="solid">A solid border.</p>

  <p class="double">A double border.</p>

  <p class="groove">A groove border.</p>

  <p class="ridge">A ridge border.</p>

  <p class="inset">An inset border.</p>

  <p class="outset">An outset border.</p>

</body>
</html>

```

The border-color Property

The border-color property specify the color of a box's border. This is also a shorthand property for setting the color of all the four sides of an element's border.

```

<!DOCTYPE html>
<html lang="en">
<head>
  <title>Example of CSS border-color property</title>
  <style type="text/css">
    p.one {
      border-style: solid;
      border-color: #ff0000;
    }
    p.two {
      border-style: solid;
      border-color: #ff0000 #00ff00;
    }
  </style>

```

```

    }
    p.three {
        border-style: solid;
        border-color: #ff0000 #00ff00 #0000ff;
    }
    p.four {
        border-style: solid;
        border-color: #ff0000 #00ff00 #0000ff #ff00ff;
    }
</style>
</head>
<body>
    <p class="one"><strong>one-value syntax:</strong> the single value sets the color of all four
border sides.</p>
    <p class="two"><strong>two-value syntax:</strong> the first value sets the color of the top and
bottom border, while the second value sets the color of the right and left sides border.</p>
    <p class="three"><strong>three-value syntax:</strong> the first value sets the color of the top
border, the second value sets the color of the right and left border, and the third value sets the
color of the the bottom border.</p>
    <p class="four"><strong>four-value syntax:</strong> each value sets the color of the border
individually in the order top, right, bottom, and left.</p>
    <p><strong>Note:</strong> You must declare the <code>border-style</code> property before
the <code>border-color</code> property. An element must have borders before you can set the
color of the border.</p>
</body>
</html>

```

Note: The border-color property does not work if it is used alone. Use the border-style property to set the border first.

The border Shorthand Property

The border CSS property is a shorthand property for setting one or more of the individual border

properties border-style, border-width and border-color in a single rule.

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Example of CSS border shorthand property</title>
<style type="text/css">
  p {
    border: 5px solid #ff4500;
  }
</style>
</head>
<body>
  <p>This is a paragraph.</p>
</body>
</html>
```

If the value for an individual border property is omitted or not specified while setting the border shorthand property, the default value for that property will be used instead, if any.

Note: If the value for the border-color property is missing or not specified when setting the borders for an element (e.g. border: 5px solid;) the element's color property will be used as the value for the border-color.

In this example, the border will be a solid black line of 5px width:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Example of CSS border shorthand property</title>
<style type="text/css">

  p {
    color: black;
    border: 5px solid;
  }
</style>
</head>
<body>
  <p>The border color of this paragraph is same as the text color.</p>
```

```
</body>
</html>
```

But, in the case of border-style, omitting the value will cause no border to show at all, because the default value for border-style property is none.

In the example below, there will be no border:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Example of CSS border shorthand property</title>
<style type="text/css">
p {
    border: 5px #00ff00;
}
</style>
</head>
<body>
    <p>This paragraph has no border.</p>
</body>
</html>
```