Module 7- Boxes

<Div> - Sort of like a basic container or box

GROUPING TEXT & ELEMENTS IN A BLOCK

<div>

The <div> element allows you to group a set of elements together in one block-level box.

For example, you might create a <div> element to contain all of the elements for the header of your site (the logo and the navigation), or you might create a <div> element to contain comments from visitors.

In a browser, the contents of the <div> element will start on a new line, but other than this it will make no difference to the presentation of the page.

Using an id or class attribute on the <div> element, however, means that you can create CSS style rules to indicate how much space the <div> element should occupy on the screen and change the appearance of all the elements contained within it.

It can also make it easier to follow your code if you have used <div> elements to hold each section of the page.

chapter-08/grouping-block-elements.html `HTML`

```
<div id="header">
    <img src="images/logo.gif" alt="Anish Kapoor" />
    <ul>
        <li><a href="index.html">Home</a></li>
        <li><a href="biography.html">Biography</a></li>
        <li><a href="works.html">Works</a></li>
        <li><a href="contact.html">Contact</a></li>
    </ul>
</div><!-- end of header -->
```

`RESULT`

ANISH KAPOOR

- Home
- Biography
- Works
- Contact

Since there may be several other elements inside a <div> element, it can be helpful to add a comment after the closing </div> tag.

This allows you to clearly see which opening tag it is supposed to correspond to, as shown at the end of the example here.

Box Dimensions

By default a box is sized just big enough to hold its contents. To set your own dimensions for a box you can use the `height` and `width` properties.

The most popular ways to specify the size of a box are to use pixels, percentages, or ems. Traditionally, pixels have been the most popular method because they allow designers to accurately control their size.

When you use percentages, the size of the box is relative to the size of the browser window or, if the box is encased within another box, it is a percentage of the size of the containing box.
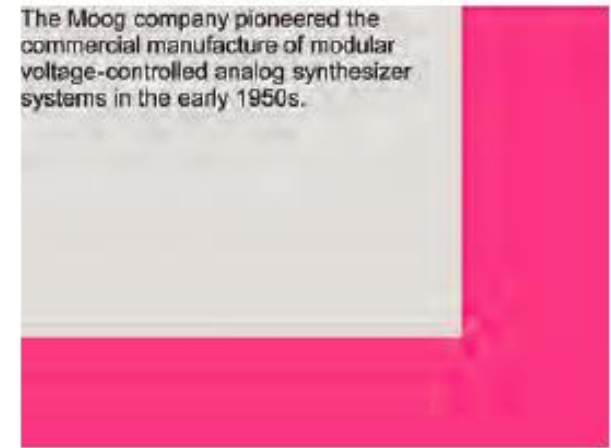
chapter-13/width-height.html **HTML**

```html
<div>
  <p>The Moog company pioneered the commercial
     manufacture of modular voltage-controlled
     analog synthesizer systems in the early
     1950s.</p>
</div>
```

CSS

```css
div.box {
  height: 300px;
  width: 300px;
  background-color: #bbbbaa;}
p {
  height: 75%;
  width: 75%;
  background-color: #0088dd;}
```

RESULT

The Moog company pioneered the commercial manufacture of modular voltage-controlled analog synthesizer systems in the early 1950s.

Limiting height (min-height, max-height)

In the same way that you might want to limit the width of a box on a page, you may also want to limit the height of it. This is achieved using the `min-height` and `max-height` properties.

The example on this page demonstrates these properties in action. It also shows you what happens when the content of the box takes up more space than the size specified for the box.

chapter-13/min-height-max-height.html `HTML`

```html
<h2>Fender Mustang</h2>
<p>The Fender Mustang was introduced in 1964 as the
   basis of a major redesign of Fender's ...</p>
<h2>Fender Stratocaster</h2>
<p>The Fender Stratocaster or "Strat" is one of the
   most popular electric guitars of all time ...</p>
<h2>Gibson Les Paul</h2>
<p>The Gibson Les Paul is a solid body electric
   guitar that was first sold in 1952 ...</p>
```

`CSS`

```css
h2, p {
  width: 400px;
  font-size: 90%;
  line-height: 1.2em;}
h2 {
  color: #0088dd;
  border-bottom: 1px solid #0088dd;}
p {
  min-height: 10px;
  max-height: 30px;}
```

`RESULT`

Fender Mustang

The Fender Mustang was introduced in 1964 as the basis of a major redesign of Fender's student models then consisting of the Musicmaster and Duo-Sonic. It was originally popular in ~~Fender Stratocaster~~ sixties surf music and attained cult status in the 1990s largely as a result of its use by a number of alternative rock bands. The Fender Stratocaster or "Strat" is one of the most popular electric guitars of all time, and its design has been copied by many guitar makers. It was designed by Leo Fender, George Fullerton and Fredie Tavares in 1954.

The Gibson Les Paul is a solid body electric guitar that was first sold in 1952. The Les Paul was designed by Ted McCarty in collaboration with popular guitarist Les Paul, whom Gibson enlisted to endorse the new model. It is one of the most well-known electric guitar types in the world.

Border, Margin, Padding

1

BORDER

Every box has a border (even if it is not visible or is specified to be 0 pixels wide). The border separates the edge of one box from another.

2

MARGIN

Margins sit outside the edge of the border. You can set the width of a margin to create a gap between the borders of two adjacent boxes.

3

PADDING

Padding is the space between the border of a box and any content contained within it. Adding padding can increase the readability of its contents.

If you specify a width for a box, then the borders, margin, and padding are added to its width and height.

hello

What are Margins & Padding

Border Width (border-width)

The border-width property is used to control the width of a border. The value of this property can either be given in pixels or using one of the following values:

thin
medium
thick

(You cannot use percentages with this property.)

You can control the individual size of borders using four separate properties:

border-top-width
border-right-width
border-bottom-width
border-left-width

You can also specify different widths for the four border values in one property, like so:

border-width: 2px 1px 1px 2px;

The values here appear in clockwise order: top, right, bottom, left.

chapter-13/border-width.html   **HTML**

```
<p class="one">Hohner's "Clavinet" is essentially an
    electric clavichord.</p>
<p class="two">Hohner's "Clavinet" is essentially an
    electric clavichord.</p>
<p class="three">Hohner's "Clavinet" is essentially
    an electric clavichord.</p>
```

CSS

```
p.one {
  border-width: 2px;}
p.two {
  border-width: thick;}
p.three {
  border-width: 1px 4px 12px 4px;}
```

RESULT

Hohner's "Clavinet" is essentially an electric clavichord.

Hohner's "Clavinet" is essentially an electric clavichord.

Hohner's "Clavinet" is essentially an electric clavichord.

Border Style (border-style)

You can control the style of a border using the `border-style` property. This property can take the following values:

`solid` a single solid line

`dotted` a series of square dots (if your border is 2px wide, then the dots are 2px squared with a 2px gap between each dot)

`dashed` a series of short lines

`double` two solid lines (the value of the `border-width` property creates the sum of the two lines)

`groove` appears to be carved into the page

`ridge` appears to stick out from the page

`inset` appears embedded into the page

`outset` looks like it is coming out of the screen

`hidden` / `none` no border is shown

You can individually change the styles of different borders using:
`border-top-style`
`border-left-style`
`border-right-style`
`border-bottom-style`

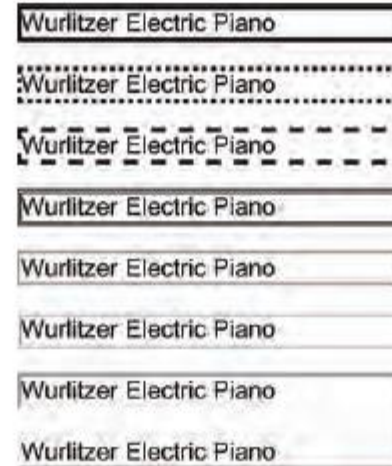**HTML**   chapter-13/border-style.html

```
<p class="one">Wurlitzer Electric Piano</p>
<p class="two">Wurlitzer Electric Piano</p>
<p class="three">Wurlitzer Electric Piano</p>
<p class="four">Wurlitzer Electric Piano</p>
<p class="five">Wurlitzer Electric Piano</p>
<p class="six">Wurlitzer Electric Piano</p>
<p class="seven">Wurlitzer Electric Piano</p>
<p class="eight">Wurlitzer Electric Piano</p>
```

CSS

```
p.one {border-style: solid;}
p.two {border-style: dotted;}
p.three {border-style: dashed;}
p.four {border-style: double;}
p.five {border-style: groove;}
p.six {border-style: ridge;}
p.seven {border-style: inset;}
p.eight {border-style: outset;}
```

RESULT

Wurlitzer Electric Piano
Wurlitzer Electric Piano
Wurlitzer Electric Piano
Wurlitzer Electric Piano
Wurlitzer Electric Piano
Wurlitzer Electric Piano
Wurlitzer Electric Piano
Wurlitzer Electric Piano

Border Color (border-color)

It is possible to individually control the colors of the borders on different sides of a box using:

```
border-top-color
border-right-color
border-bottom-color
border-left-color
```

It is also possible to use a shorthand to control all four border colors in the one property:

```
border-color: darkcyan
deeppink darkcyan
deeppink;
```

The values here appear in clockwise order: top, right, bottom, left.


```
chapter-13/border-color.html                                    HTML

<p class="one">The ARP Odyssey was introduced in
   1972.</p>
<p class="two">The ARP Odyssey was introduced in
   1972.</p>
```

```
                                                                CSS

p.one {
   border-color: #0088dd;}
p.two {
   border-color: #bbbbaa #111111 #ee3e80 #0088dd;}
```

```
                                                                RESULT
```

The ARP Odyssey was introduced in 1972.

The ARP Odyssey was introduced in 1972.

Shorthand (border)

The `border` property allows you to specify the width, style and color of a border in one property (and the values should be coded in that specific order).


```
HTML                          chapter-13/border-shorthand.html
<p>Here is a simple chord sequence played on a
    Hammond organ through a Leslie speaker.</p>
```

```
CSS
p {
    width: 250px;
    border: 3px dotted #0088dd;}
```

RESULT

Here is a simple chord sequence played on a Hammond organ through a Leslie speaker.

Padding (padding)

The padding property allows you to specify how much space should appear between the content of an element and its border.

The value of this property is most often specified in pixels (although it is also possible to use percentages or ems). If a percentage is used, the padding is a percentage of the browser window (or of the containing box if it is inside another box).

As you can see, the second paragraph here is much easier to read because there is a space between the text and the border of the box. The box is also wider because it has padding.

You can specify different values for each side of a box using:

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

Or you can use a shorthand (where the values are in clockwise order: top, right, bottom, left):

padding: 10px 5px 3px 1px;

chapter-13/padding.html **HTML**

```html
<p>Analog synths produce a wave sound, whereas the
   sounds stored on a digital synth have been
   sampled and then turned into numbers.</p>
<p class="example">Analog synths produce a wave
   sound, whereas the sounds stored on a digital
   synth have been sampled and then ... </p>
```

CSS

```css
p {
  width: 275px;
  border: 2px solid #0088dd;}
p.example {
  padding: 10px;}
```

RESULT

Analog synths produce a wave sound, whereas the sounds stored on a digital synth have been sampled and then turned into numbers.

Analog synths produce a wave sound, whereas the sounds stored on a digital synth have been sampled and then turned into numbers.

Margin (margin)

The margin property controls the gap between boxes. Its value is commonly given in pixels, although you may also use percentages or ems.

If one box sits on top of another, margins are collapsed, which means the larger of the two margins will be used and the smaller will be disregarded.

Please note: If the width of a box is specified then the margin is added to the width of the box.

You can specify values for each side of a box using:

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

You can also use the shorthand (where the values are in clockwise order: top, right, bottom, left):
margin: 1px 2px 3px 4px;

HTML   chapter-13/margin.html

```
<p>Analog synthesizers are often said to have a
    "warmer" sound than their digital counterparts.
    </p>
<p class="example">Analog synthesizers are often
    said to have a "warmer" sound than their digital
    counterparts.</p>
```

CSS

```
p {
  width: 200px;
  border: 2px solid #0088dd;
  padding: 10px;}
p.example {
  margin: 20px;}
```

RESULT

Analog synthesizers are often said to have a "warmer" sound than their digital counterparts.

Analog synthesizers are often said to have a "warmer" sound than their digital counterparts.

Centering Content Using Margins

If you want to center a box on the page (or center it inside the element that it sits in), you can set the `left-margin` and `right-margin` to auto.

In order to center a box on the page, you need to set a `width` for the box (otherwise it will take up the full width of the page).

Once you have specified the width of the box, setting the left and right margins to `auto` will make the browser put an equal gap on each side of the box. This centers the box on the page (or within the element that the box sits inside).
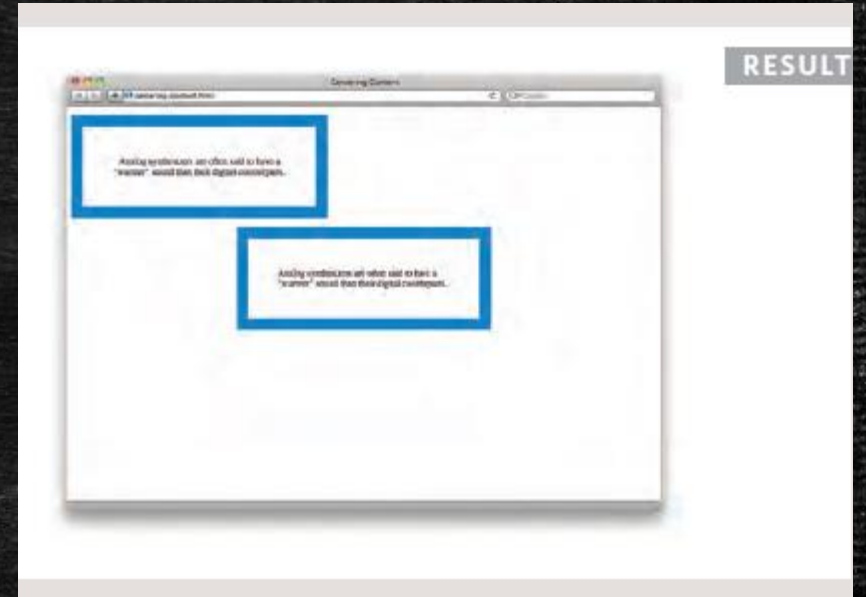
chapter-13/centering-content.html `HTML`

```
<body>
  <p>Analog synthesizers are often said to have a
    "warmer" sound than their digital
    counterparts.</p>
  <p class="example">Analog synthesizers are often
    said to have a "warmer" sound than their
    digital counterparts.</p>
</body>
```

`CSS`

```
body {
  text-align: center;}
p {
  width: 300px;
  padding: 50px;
  border: 20px solid #0088dd;}
p.example {
  margin: 10px auto 10px auto;
  text-align: left;}
```

RESULT

BLOCK ELEMENTS

Some elements will always appear to start on a new line in the browser window. These are known as **block level** elements.

Examples of block elements are <h1>, <p>, <ul>, and <li>.

chapter-08/block-elements.html **HTML**

```html
<h1>Hiroshi Sugimoto</h1>
<p>The dates for the ORIGIN OF ART exhibition are as
    follows:</p>
<ul>
    <li>Science: 21 Nov - 20 Feb 2010/11</li>
    <li>Architecture: 6 Mar - 15 May 2011</li>
    <li>History: 29 May - 21 Aug 2011</li>
    <li>Religion: 28 Aug - 6 Nov 2011</li>
</ul>
```

RESULT

Hiroshi Sugimoto

The dates for the ORIGIN OF ART exhibition are as follows:

- Science: 21 Nov - 20 Feb 2010/11
- Architecture: 6 Mar - 15 May 2011
- History: 29 May - 21 Aug 2011
- Religion: 28 Aug - 6 Nov 2011

INLINE ELEMENTS

```html
Timed to a single revolution of the planet around
the sun at a 23.4 degrees tilt that plays out the
rhythm of the seasons, this <em>Origins of Art</em>
cycle is organized around four themes: <b>science,
architecture, history</b> and <b>religion</b>.
```

RESULT

Timed to a single revolution of the planet around the sun at a 23.4 degrees tilt that plays out the rhythm of the seasons, this *Origins of Art* cycle is organized around four themes: **science, architecture, history** and **religion**.

Some elements will always appear to continue on the same line as their neighbouring elements. These are known as **inline** elements.

Examples of inline elements are <a>, <b>, <em>, and <img>.