

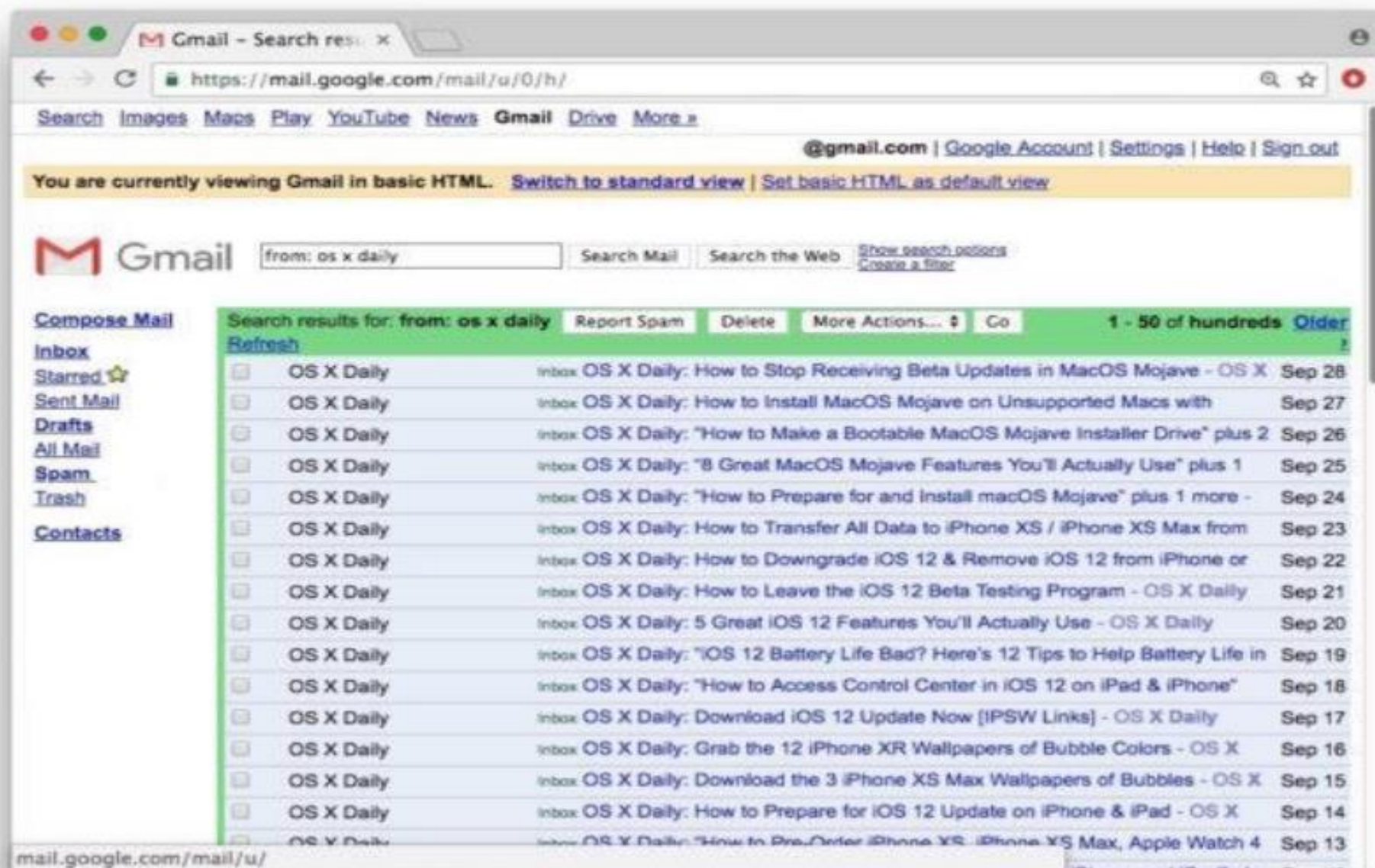
Cascading Style Sheets

CSS, which stands for Cascading Style Sheets, is a stylesheet language used for describing how elements on a web page should be displayed.

It is an essential part of web development, as it allows you to control the layout, design, and presentation of your web pages.

CSS separates the content (HTML) from its visual representation, making it easier to maintain and update the design of a website.

Olden days



Olden days



Advantages of using CSS

- CSS Save Lots of Time
- Easy Maintenance
- Pages Load Faster
- Superior Styles to HTML
- Multiple Device Compatibility

CSS Syntax

The diagram illustrates the CSS syntax `h1 { color: blue; text-align: center; }` with the following labels and arrows:

- Selector:** Points to `h1`.
- Declaration:** Points to the entire block `{ color: blue; text-align: center; }`.
- Property:** Points to `color` and `text-align`.
- value:** Points to `blue` and `center`.

- 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.

Including CSS in HTML Documents



1.Inline CSS:

- It is used to style a specific HTML element.
- **Style** attribute is used to each HTML tag, without using selectors.

Advantages of Inline CSS:

1. Easily and quickly insert CSS rules to an HTML page.
2. No need to create and upload a separate document as in the external style.

Disadvantages of Inline CSS:

1. Adding CSS rules to every HTML element is time-consuming and makes your HTML structure messy.
2. Styling multiple elements can affect your page's size.


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

This is a heading

This is a paragraph.

2. Internal (Embedded) CSS:

Internal CSS is placed within the <style> tag in the HTML document's <head> section. It applies styles to elements on the current web page.

*Internal CSS is suitable for styling a single web page. It keeps the style information separate from the HTML content.

```
<head>
<style>
body {
    background-color: linen;
}

h1 {
    color: maroon;
    margin-left: 40px;
}
</style>
```

3.External Style Sheet:

- With an external style sheet, you can change the look of an entire website by changing just one file.
- Each page must include a reference to the external style sheet file inside the **<link>** element.
- The **<link> element** goes inside the **<head>** section
- An external style sheet can be written in any text editor. The file should not contain any html tags. The style sheet file must be saved with a .css extension.

Linking of CSS file

```
<head>
```

```
<link rel="stylesheet" href="mystyle.css">
```

```
</head>
```

```
<body>
```

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title> external css </title>
  <link rel="stylesheet" type="text/css"
  href="mystyle.css">
</head>
<body>
<h1> This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

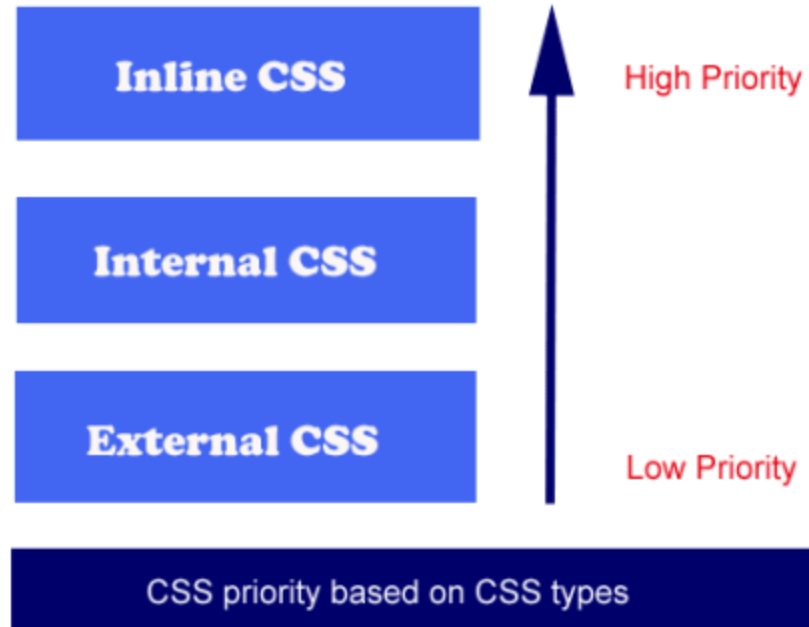
Here is how the "myStyle.css" looks:

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

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

CSS Priority rules

- If the same CSS property is defined multiple times with different values then the browser will apply one value based on priority.



CSS Selector:

- **CSS selectors** are used *to select the content you want to style*.
- Selectors are the part of CSS rule set.
- CSS selectors select HTML elements according to its id, class, type, attribute etc..
- There are several different types of selectors in CSS.
 - Element Selector
 - Class Selector
 - Id Selector
 - Universal Selector
 - Descendant Selector
 - Pseudo-classes
 - Pseudo-elements

id Attribute: The id attribute is a unique identifier that is used to specify the document. It is used by CSS and JavaScript to perform a certain task for a unique element.

class Attribute: The class attribute is used to specify one or more class names for an HTML element. The class attribute can be used on any HTML element and multiple classes can have same name. The class name can be used by CSS and JavaScript to perform certain tasks for elements with the specified class name.

1. Element Selector:

Definition: The element selector selects HTML elements based on their tag name.

Example:

```
p {  
color: green;  
}
```

Use Case: This selector is used to apply styles to all <p> elements on the page.

2. Class Selector:

Definition: The class selector selects elements with a specific class attribute. To select elements with a specific class, write a period(.) character, followed by the name of the class.

Example:

```
.classname  
{  
    color:azure;  
}
```

Use Case: Use class selectors to style elements that share a common class, such as highlighting certain sections of the page.

3. ID Selector:

Definition: The ID selector selects a single element based on its unique id attribute. To select an element with a specific id, write a hash (#) character, followed by the id of the element.

Example:

```
#header {  
font-size: 24px;  
}
```

Use Case: ID selectors are useful for styling individual elements with unique characteristics, like the header or footer.

4.Universal Selector

- The universal selector provided by CSS helps in choosing any elements within the HTML page.
- It goes with a single element and uses the asterisk (i.e., "*") symbol used for denoting the selector as a universal selector.
- It is usually written as an asterisk followed by a selector.
- The * is used for selecting all elements.
- This asterisk also has the capability to select all elements that are inside another element.

Ex:

```
* {  
    color: green;  
    font-size: 20px;  
    line-height: 25px;  
}
```

5. Descendant Selector:

Definition: The descendant selector selects elements that are descendants of another element.

Example:

```
parenttag childtag {  
font-style: italic;  
}
```

Use Case: Use this selector to style elements that are nested within other elements, like paragraphs within an article.

6. Pseudo-classes: Pseudo-classes select elements based on their state or position.

Example:

```
/* unvisited link */
```

```
a:link {  
  color: red;  
}
```

```
/* visited link */
```

```
a:visited {  
  color: green;  
}
```

```
/* mouse over link */
```

```
a:hover {  
  color: hotpink;  
}
```


7. Pseudo-elements:

Definition: Pseudo-elements select and style a specific part of an element.

Example:

```
tagname::first-line {  
font-weight: bold;  
}
```

Use Case: Pseudo-elements are handy for styling specific parts of text, like the first line of a paragraph.

Important CSS Properties

Every color on a computer screen is created by mixing amounts of red, green, and blue. To find the color you want, you can use a color picker.

Computer monitors are made up of thousands of tiny squares called pixels (if you look very closely at your monitor you should be able to see them).

When the screen is not turned on, it's black because it's not emitting any light. When it's on, each pixel can be a different color, creating a picture.

The color of every pixel on the screen is expressed in terms of a mix of red, green, and blue — just like on a television screen.



1. color:

Definition: The color property sets the text color.

Example:

/ color name */*

```
h1 {  
color: DarkCyan;  
}
```

/ hex code */*

```
h2 {  
color: #ee3e80;  
}
```

/ rgb value */*

```
p {  
color: rgb(100,100,90);  
}
```

Marine Biology

The Composition of Seawater

Almost anything can be found in seawater. This includes dissolved materials from Earth's crust as well as materials released from organisms. The most important components of seawater that influence life forms are salinity, temperature, dissolved gases (mostly oxygen and carbon dioxide), nutrients, and pH. These elements vary in their composition as well as in their influence on marine life.

background-color :-

Example:-

```
Body
{ background-color: rgb(200,200,200);
}
h1
{
background-color: DarkCyan;
}
h2 {
background-color: #ee3e80;
}
p
{
background-color: white;
}
```

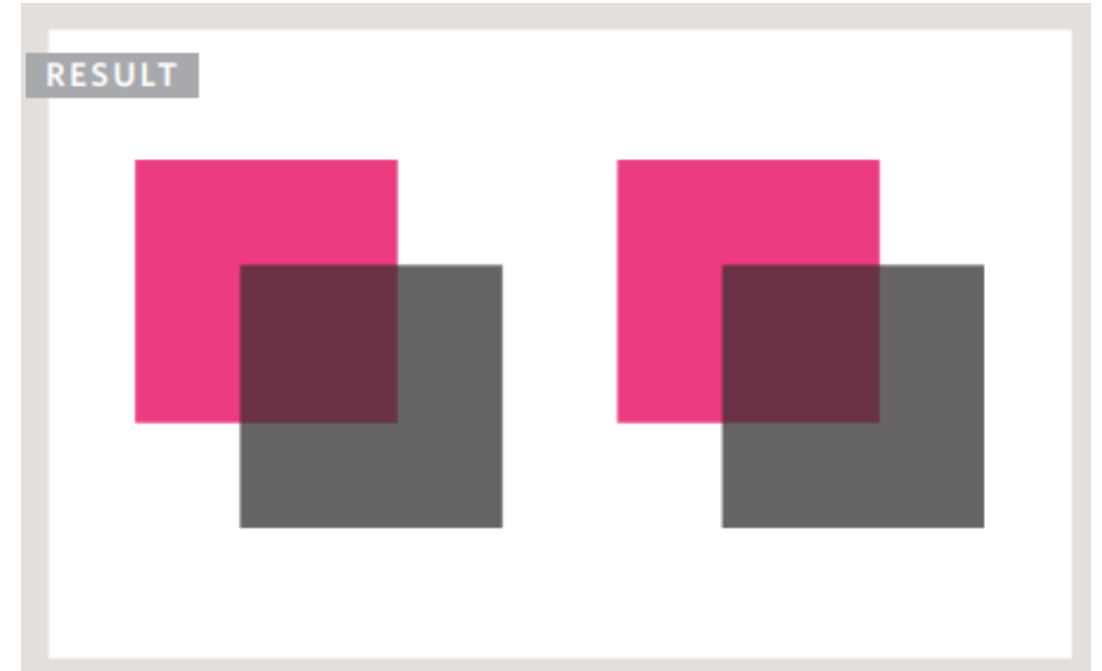
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Opacity :-

```
p.one {  
background-color: rgb(0,0,0);  
opacity: 0.5;}  
p.two {  
background-color: rgb(0,0,0);  
background-color: rgba(0,0,0,0.5);}
```



2. font-size:

Definition: The font-size property sets the size of the font.

Example:

```
h1 {  
font-size: 24px;  
}
```

Use Case: Adjust text size for headings and content to improve readability.

3. margin:

Definition: The margin property sets the space outside an element.

Example:

```
div {  
margin: 10px;  
} If the margin property has four values:
```

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

margin: 25px 50px 75px 100px;

top margin is 25px

right margin is 50px

bottom margin is 75px

left margin is 100px

4. padding:

Definition: The padding property sets the space inside an element.

Example:

```
ul {  
padding: 20px;  
}
```

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

If the padding property has four values:

```
padding: 25px 50px 75px 100px;  
top padding is 25px  
right padding is 50px  
bottom padding is 75px  
left padding is 100px
```

6.Border:

Definition: The border property sets the border of an element.

Example:

```
Img{  
  border-style: solid/dotted/dashed;  
  border-width: 5px;  
  border-color: green;  
}
```

```
p {  
  border-top-style: dotted;  
  border-right-style: solid;  
  border-bottom-style: dotted;  
  border-left-style: solid;}
```

•**border-style: dotted solid double dashed;**

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

CSS Border - Shorthand Property

```
img {  
border: 2px solid black;  
border-radius: 5px; (for rounded corners)  
}
```

Display Property

display: inline / block / inline-block / none

- **inline** - Takes only the space required by the element. (no margin/ padding)
- **block** - Takes full space available in width.
- **inline-block** - Similar to inline but we can set margin & padding.
- **none** - To remove element from document flow.

Example:

```
li{  
display: inline-block;  
}
```

The Two Major Types of Units in CSS:

- Absolute
- Relative

Absolute Units:

These units are the ones whose values are fixed irrespective of any other factors like parent element or viewing window i.e the screen size won't affect the size of the element.

CSS px:

px stands for Pixel. Pixels can be defined as 1/96th part of an inch.

Syntax:

font-size: Kpx;

* Pixels are widely used in websites to make elements of fixed sizes (ex: in a logo)

CSS pt:

pt stands for point. 1 CSS pt is defined as 1/72th of an inch.

Syntax:

font-size: Kpt;

Use case: This unit is mainly used in printers for printing the output on paper and not so widely used for on-screen outputs.

Relative Units:

In relative units, we talk in terms of the same property, like, if we are talking about width of an element in relative units then it is relative to the **WIDTH** of the parent element/viewport. We shall be seeing this in the example section in a while.

CSS %:

This is the percentage unit. The measurement of the element is relative to the dimensions of the parent.

HTML:

```
<body>
  <div class="relativeUnit">
    <h1>My dimensions are relative :)</h1>
  </div>
</body>
```

My dimensions are relative :)

CSS:

```
.relativeUnit {
  background-color: beige;
  color: red;
  border-color: black;

  height: 200px;
  width: 50%;
  padding: 20px;
  box-sizing: border-box;
}
```


HTML file

```
<body>  
  <p>Mine is the default font size (16px).</p>  
  <div class="relativeUnits"><p>Mine is 200%  
of the default font size</p></div>  
</body>
```

CSS file

```
.relativeUnits {  
  font-size:200%;  
}
```

Mine is the default font size (16px).

Mine is 200% of the default font size

CSS em:

1em refers to the default size of the property. So precisely, 1em is equivalent to 100%. (i.e 1em in case of plain text would be 16px if the root value is unaltered)

CSS rem:

This unit counters the adding-up effect of units like % and em. rem rather stands for Root em.

This means the browser will ignore all the adjustments made to the parent elements and will scale the HTML element, to which the property is applied, based on the root/default value for that particular element

```
<body>
  <p>hello</p>
  <div class="relativeUnits"><p>I have a font
size of 2rem</p></div>
</body>
```

```
body{
  font-size: 40px;
}
.relativeUnits {
  font-size:2rem;
}
```

In this CSS code, the font-size of the div is set to 2rem (i.e twice the base font size ignoring all changes) and thus is (2 x 16px=) 32px. It ignores the change in font size of 40px made to its parent (here, the body).

My font size is set to 40px.

I have a font size of 2rem

```
body {  
font-family: Arial, Verdana, sans-serif;  
font-size: 12px;}  
h1 {  
font-size: 200%;}  
h2 {  
font-size: 1.3em;}
```

Briards

by Ivy Duckett

The [briard](#), or berger de brie, is a large breed of dog traditionally used as a herder and guardian of sheep.

Breed History

The briard, which is believed to have originated in France, has been bred for centuries to herd and to protect sheep. The breed was used by the French Army as sentries, messengers and to search for wounded soldiers because of its fine sense of hearing. Briards were used in the First World War almost to the point of extinction. Currently the population of briards is slowly recovering. Charlemagne, Napoleon, Thomas Jefferson and Lafayette all owned briards.

UNITS OF TYPE SIZE

PIXELS

TWELVE PIXEL SCALE

h1	24px
h2	18px
h3	14px
body	12px

PERCENTAGES

h1	200%
h2	150%
h3	117%
body	75%

EMS

h1	1.5em
h2	1.3em
h3	1.17em
body	100%
p	0.75em

SIXTEEN PIXEL SCALE

h1	32px
h2	24px
h3	18px
body	16px

h1	200%
h2	150%
h3	133%
body	100%

h1	2em
h2	1.5em
h3	1.125em
body	100%
p	1em

1. Create a simple div with an id “box”, add some text inside the div and set the background color to blue.
2. Create 4 headings with h1,h2,h3 and h4. give 2 of them the class name heading and remaining two as head . Set the color for heading as red and for head as blue.
3. Create a button and set its background color to green using css style sheet, blue using style tag and pink using inline style
4. Create a heading to the center of the page with all its text capitalized by default.
5. Create one div inside another div, set the id and text “outer” for the first one and “inner” for the second one, set the outer div text size to 25px and inner div text size to 10px.
6. Create a web page layout with header ,footer and a content area containing 3 divs. Set the height and width of div to 100px, add borders to all of them, add background color to each div with opacity of 0.5, give the content area an appropriate height.

CSS Box Model

- CSS treats an HTML document as a hierarchical tree of elements, where each element can have zero or more child elements arranged in an ordered way.
- The topmost element of this tree is called as the root element or the parent element.
- These elements display their content at a specific position, which is defined by using CSS properties.
- CSS converts the data of HTML elements in the form rectangular boxes, by using a layout model called the box model, to set the design and layout of HTML documents.

- This means that the box model determines how HTML elements are displayed as boxes.
- The box model allows placing a border around the elements and also provides space between elements.

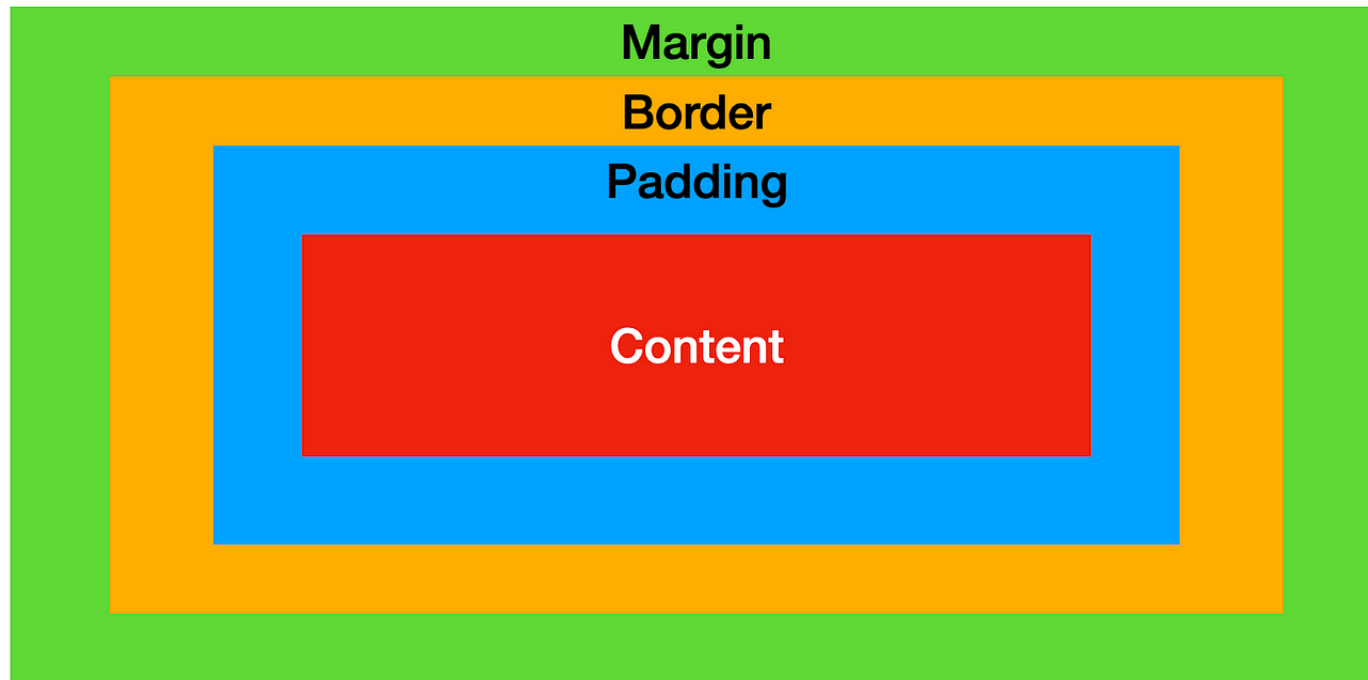


Fig: Displaying the Areas of Box Model

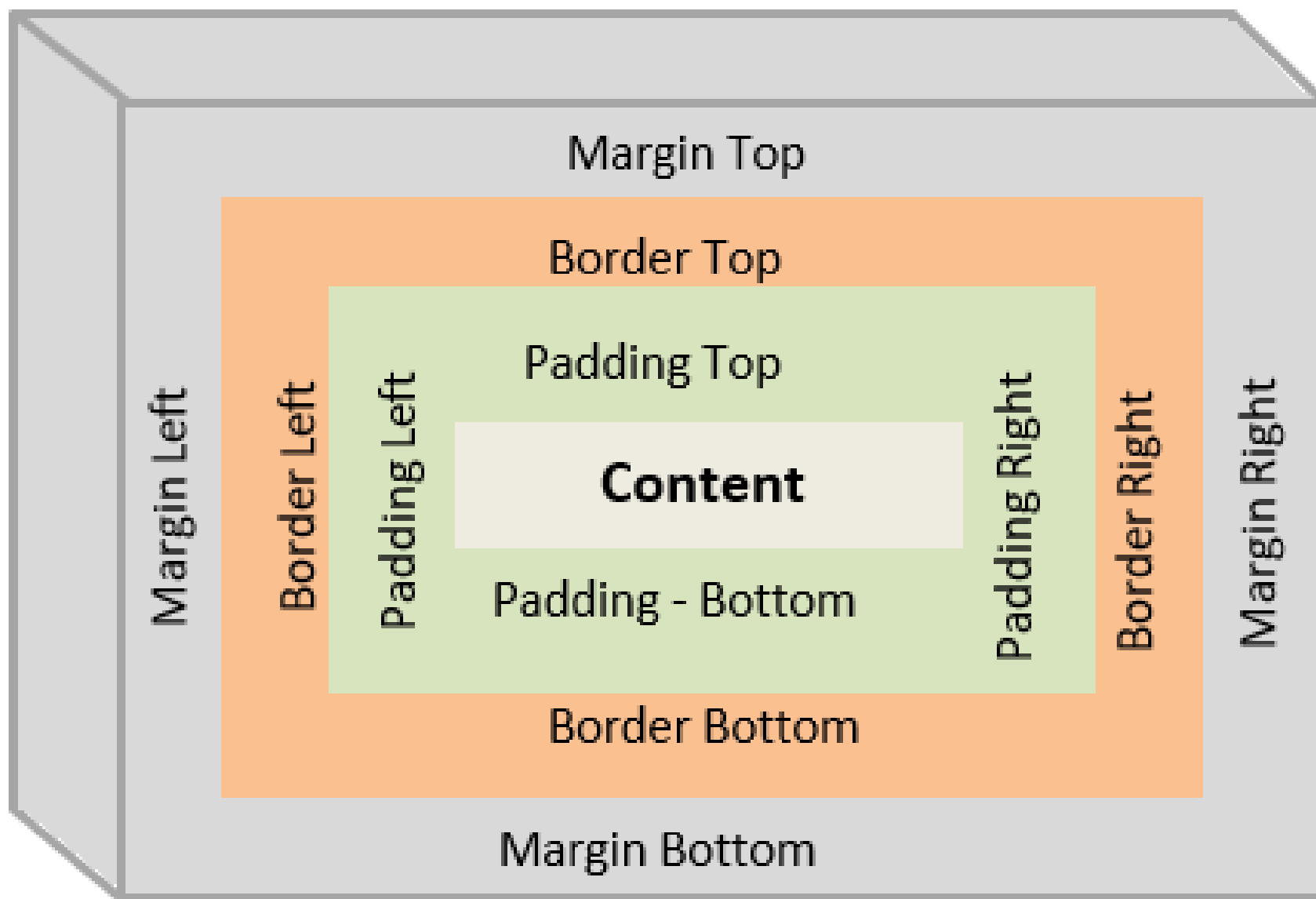
1. Content area: Displays the content of a document, such as text and images. This is bounded by a rectangle, which is called as the content edge

Note: The content area always appears inside the padding area.

2. Padding area: Specifies the area around the content area. This is bounded by the padding edge. Outside the padding is the border area and the outside boundary of that area is the border edge. Finally, outside the border is the margin area whose outer edge is called the margin edge.

3. Border area: Specifies the area around the padding area. This is bounded by the border edge.

4. Margin area: Specifies the area around the border area. This is bounded by the margin edge.



```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Page Title</title>
<style>


This is the div.
</div>
</body>
</html>


```

border-width

```
<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>
```

```
p.one {  
  border-width: 2px;}
```

```
p.two {  
  border-width: thick;}
```

```
p.three {  
  border-width: 1px 4px 12px 4px;}
```

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 :-

```
<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>
```

```
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;}
```

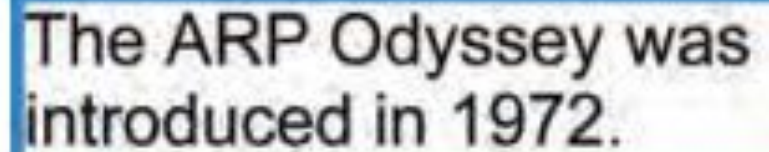


border-color

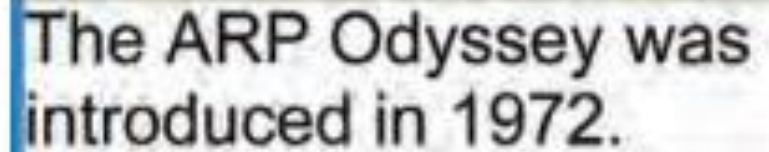
```
<p class="one">The ARP Odyssey was introduced in  
1972.</p>
```

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

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



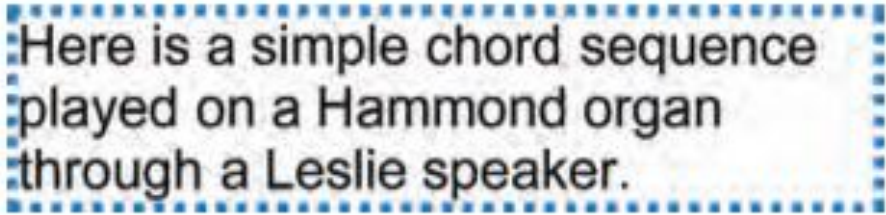
The ARP Odyssey was
introduced in 1972.



The ARP Odyssey was
introduced in 1972.

Shorthand border

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



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

padding

```
<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>
```

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.

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

Margin:-

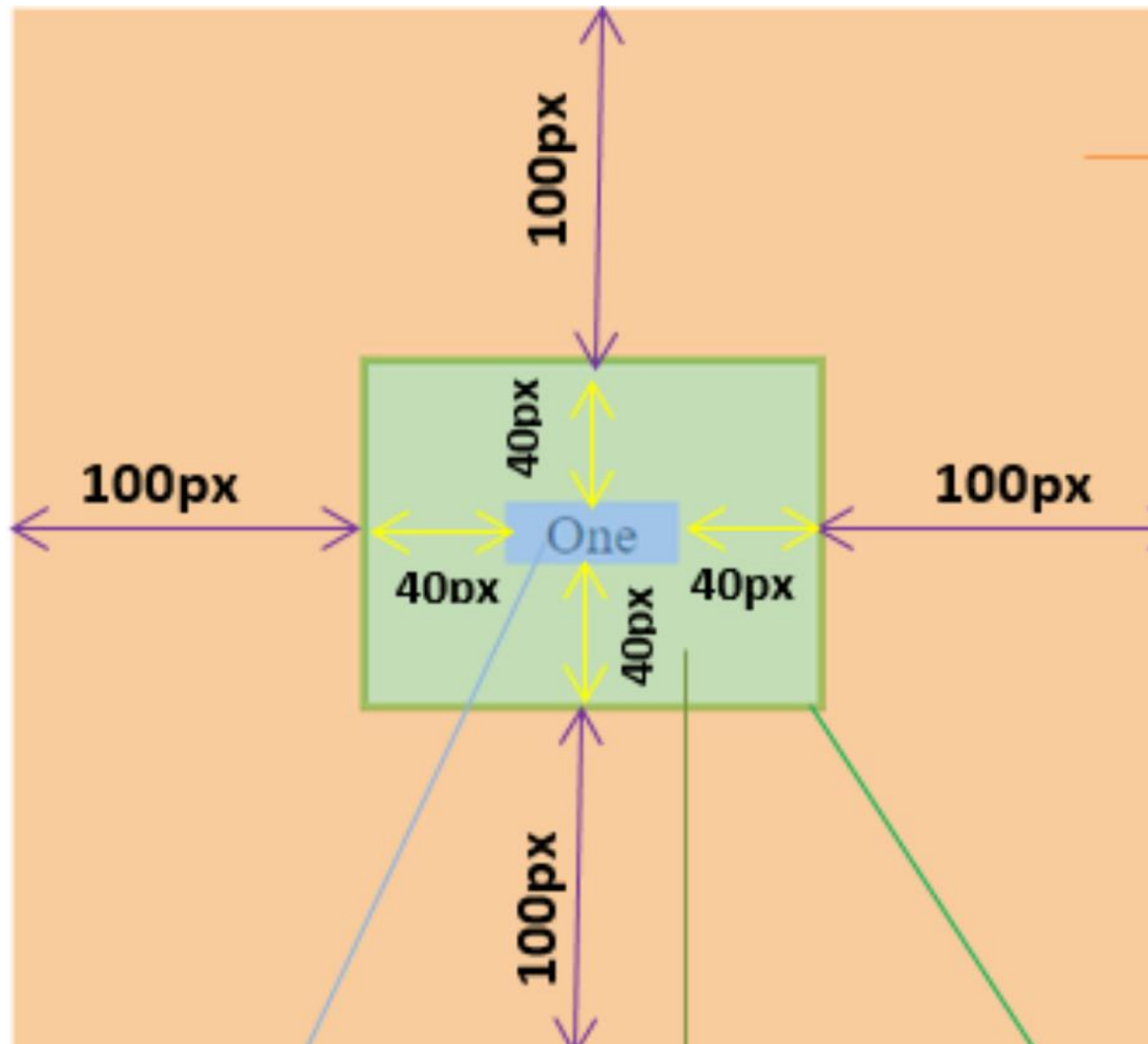
```
<p>Analog synthesizers are often said to have a  
  "warmer" sound than their digital counterparts.  
</p>
```

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

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

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.



Border:2px solid green

CSS Text Effect Properties

Property	Description
<u>text-justify</u>	Specifies how justified text should be aligned and spaced
<u>text-overflow</u>	Specifies how overflowed content that is not displayed should be signaled to the user
<u>word-break</u>	Specifies line breaking rules for non-CJK scripts
<u>word-wrap</u>	Allows long words to be able to be broken and wrap onto the next line
<u>writing-mode</u>	Specifies whether lines of text are laid out horizontally or vertically