



Cascading Style Sheets (CSS)

Separating Presentation Details

- Separating content and its presentation details is important
- Content is consumed using various media
 - Computer monitor
 - Braille terminal
 - Text to speech system
 - Automated systems
- Focus on content during development
- Easily improve/change the presentation later
- Saves a lot of effort

CSS Properties

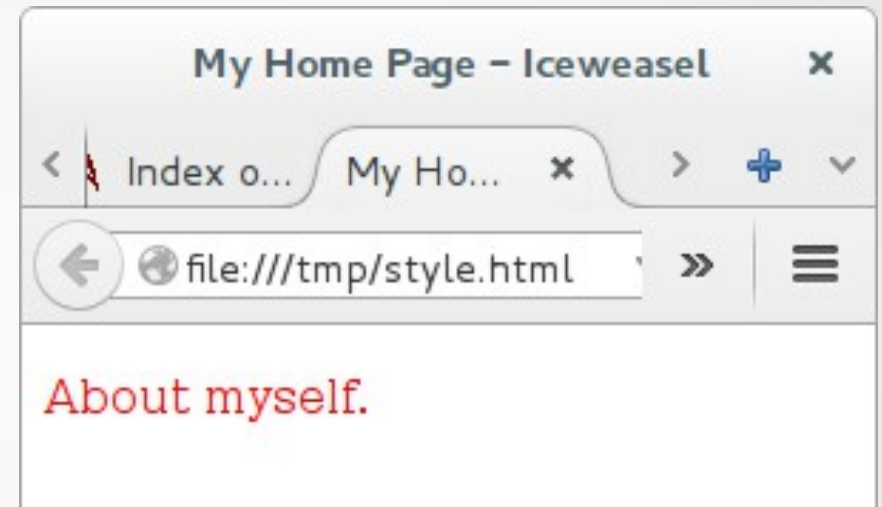
- Color
- Background and Borders
- Basic Box
- Flexible Box
- Text
- Text Decoration
- Fonts
- Writing Modes
- Table
- Lists and Counters
- Animation
- Transform
- Transition
- Basic User Interface
- Multi-column
- Paged Media
- Generated Content
- Filter Effects
- Image/Replaced Content
- Masking
- Speech

In-line CSS (Bad)

You Write:

```
<!DOCTYPE html>
<html>
  <head>
    <title> My Home Page
  </title>
</head>
<body style="color: red;">
  <p>About myself.</p>
</body>
</html>
```

You See:

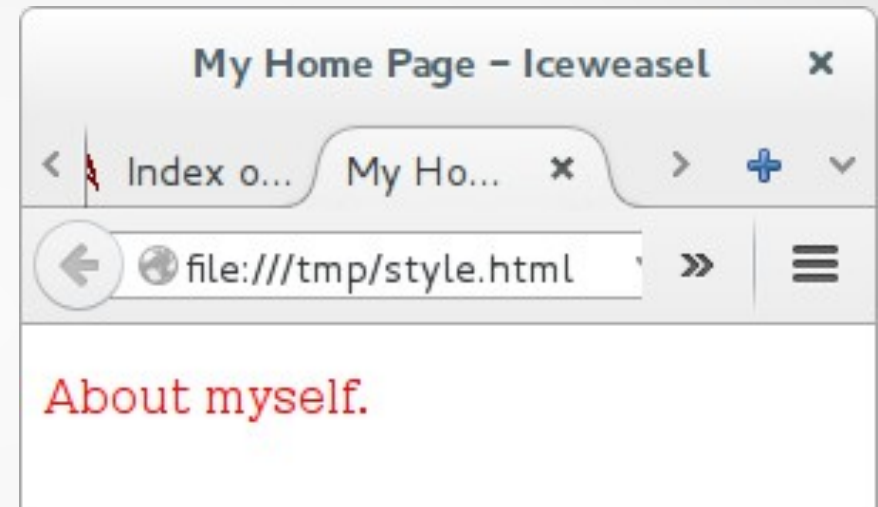


Internal CSS (Better)

You Write:

```
<head>
  <title> My Home </title>
  <style>
    body {
      color: red;
    }
  </style>
</head>
```

You See:



External CSS (Good)

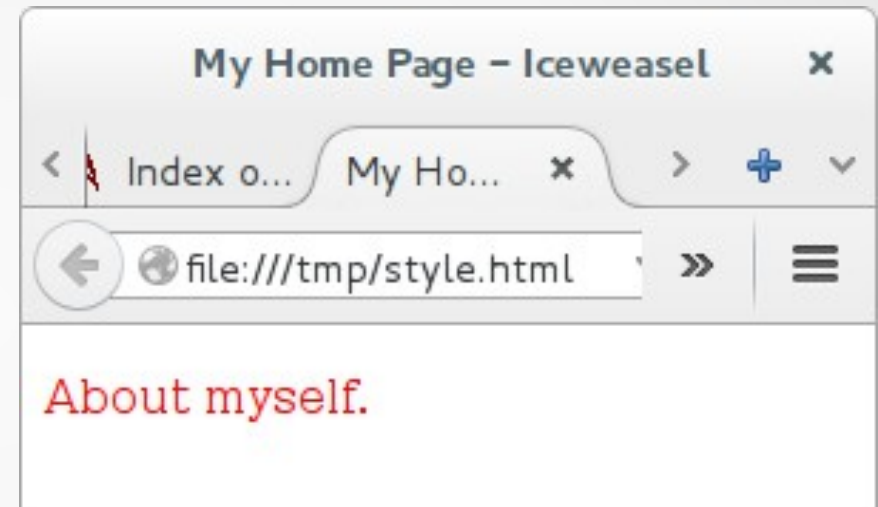
In HTML You Write:

```
<head>
  <title> My Home </title>
  <link
    rel="stylesheet"
    href="style.css">
</head>
```

In *style.css* You Write:

```
body {
  color: red;
}
```

You See:



CSS Syntax

Selector Property Value

```
body {  
    color: red;  
    font-weight: bold;  
}  
  
h1 {  
    font-size: 20px;  
}
```

Rule

CSS Comments

```
/* This is a comment */
```

```
body {  
    color: red;  
    font-weight: bold;  
}  
  
h1 {  
    font-size: 20px;  
}
```


CSS Selectors – Tag Name

- Select all elements in a page matching a HTML tag name

```
<body>  
  <h1>Section 1</h1>  
  
  <p>About myself.</p>  
  <h2>Sub section 1.1</h2>  
  <p>My interests are...</p>  
</body>
```

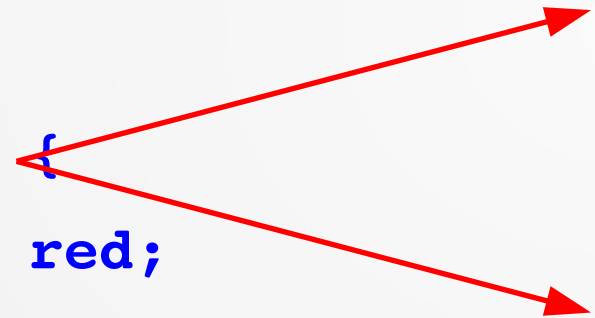
p {
 color: red;
}

The diagram illustrates how a CSS selector targets multiple HTML elements. On the left, a CSS rule is shown: `p { color: red; }`. Two red arrows originate from the `p` selector. One arrow points to the first paragraph in the HTML snippet: `<p>About myself.</p>`. The other arrow points to the second paragraph: `<p>My interests are...</p>`. This demonstrates that the `p` selector successfully selects all paragraph elements in the document.

CSS Selectors – Class Name

- Select all elements in a page have a “class” attribute
- An element can have multiple classes

```
.heading {  
    color: red;  
}
```




The diagram consists of two red arrows originating from the opening curly brace of the `.heading {` CSS rule. One arrow points to the `<h1 class="heading">` tag in the HTML code block, and the other points to the `<h2 class="heading">` tag. This illustrates that the `.heading` selector applies to all elements with the `heading` class, regardless of their tag type.

```
<body>  
  
    <h1 class="heading">  
        Section 1</h1>  
    <p>About myself.</p>  
  
    <h2 class="heading">  
        Sub section 1.1</h2>  
    <p>My interests are...</p>  
  
</body>
```

CSS Selectors – ID

- Select all elements in a page a ID attribute
- ID must be unique in the entire document

```
#first-p {  
    color: red;  
}  
  
<body>  
    <h1>Section 1</h1>  
    <p id="first-p">  
        About myself.</p>  
    <h2>Sub section 1.1</h2>  
    <p>My interests are...</p>  
</body>
```



Grouping Selectors

```
h1 { color: red; }
```

```
h2 { color: red; }
```

is same as:

```
h1, h2 { color: red; }
```

Grouping Selectors

```
p { color: red; }
```

```
p { background: black; }
```

is same as:

```
p { color: red; background: black; }
```

Combining Selectors

```
p.even { color: red; }
```

means all elements with “p” tag **and** “even” class, and similarly

```
p#first { color: red; }
```

means all elements with “p” tag **and** “first” as ID attribute

Other Selectors

- [P]
 - Select elements containing attribute P
- [P=Q]
 - Select elements containing attribute P and value Q
- :hover :link :visited
 - Select elements with a particular state
- :before :after
 - Select pseudo elements before/after an element
- And more...

Pseudo Selectors

defines a special state of an element or a phantom state that can be targeted with CSS.

Can be psuedo-class or a pseudo-element

Pseudoclass : style the selected elements ***only*** when they are in certain state

Ex: only when element is hovered over by the mouse pointer, or a checkbox when it is disabled or checked, or an input is required,

Pseudoelement: A CSS pseudo-element is used to style specified parts of an element.

- Style the first letter, or line, of an element, Insert content before, or after, the content of an element

Some pseudoclasses:

- `:default`
- `:fullscreen`
- `:focus`
- `:hover`
- `:invalid`
- `:lang()`
- `:link`
- `:not()`
- `:optional`
- `:out-of-range`
- `:read-only`
- `:required`
- `:target`
- `:valid`
- `:visited`
- `.....`

Some pseudoelements

- `::after`
- `::before`
- `::first-letter`
- `::first-line`
- `::selection`
- `....`

Cascading..

Cascading preferences

sources of style definition for a given document element are in this order of precedence:

1. The STYLE attribute on an individual element tag
2. The STYLE element that defines a specific style sheet containing style declarations or a LINK element that links to a separate document containing the STYLE element. In a Web page, the STYLE element is placed between the TITLE statement and the BODY statement.
3. An imported style sheet, using the CSS @import notation to automatically import and merge an external style sheet with the current style sheet
4. Style attributes specified by the viewer to the browser
5. The default style sheet assumed by the browser

Cascading

- Priority among various selectors
 - Tag (low)
 - Class
 - ID
 - Style attribute (high)
- See specificity algorithm for full details

Font Family

You Write:

You See:

```
#first {  
    font-family: monospace;  
}
```



```
#second {  
    font-family: sans-serif;  
}
```

First line

Second line

Font Size

You Write:

You See:

```
#first {  
    font-size: 32px;  
}
```

```
#second {  
    font-size: 16px;  
}
```



First line

Second line

Font Style

You Write:

You See:

```
#first {  
    font-style: italic;  
}
```

```
#second {  
    font-style: normal;  
}
```



First line

Second line

Font Weight

You Write:

You See:

```
#first {  
    font-weight: bold;  
}
```

```
#second {  
    font-weight: normal;  
}
```



First line

Second line

Text Color

You Write:

You See:

```
#first {  
    color: red;  
}
```

```
#second {  
    color: green;  
}
```



First line

Second line

Text Color

You Write:

You See:

```
#first {  
    text-align: right;  
}
```

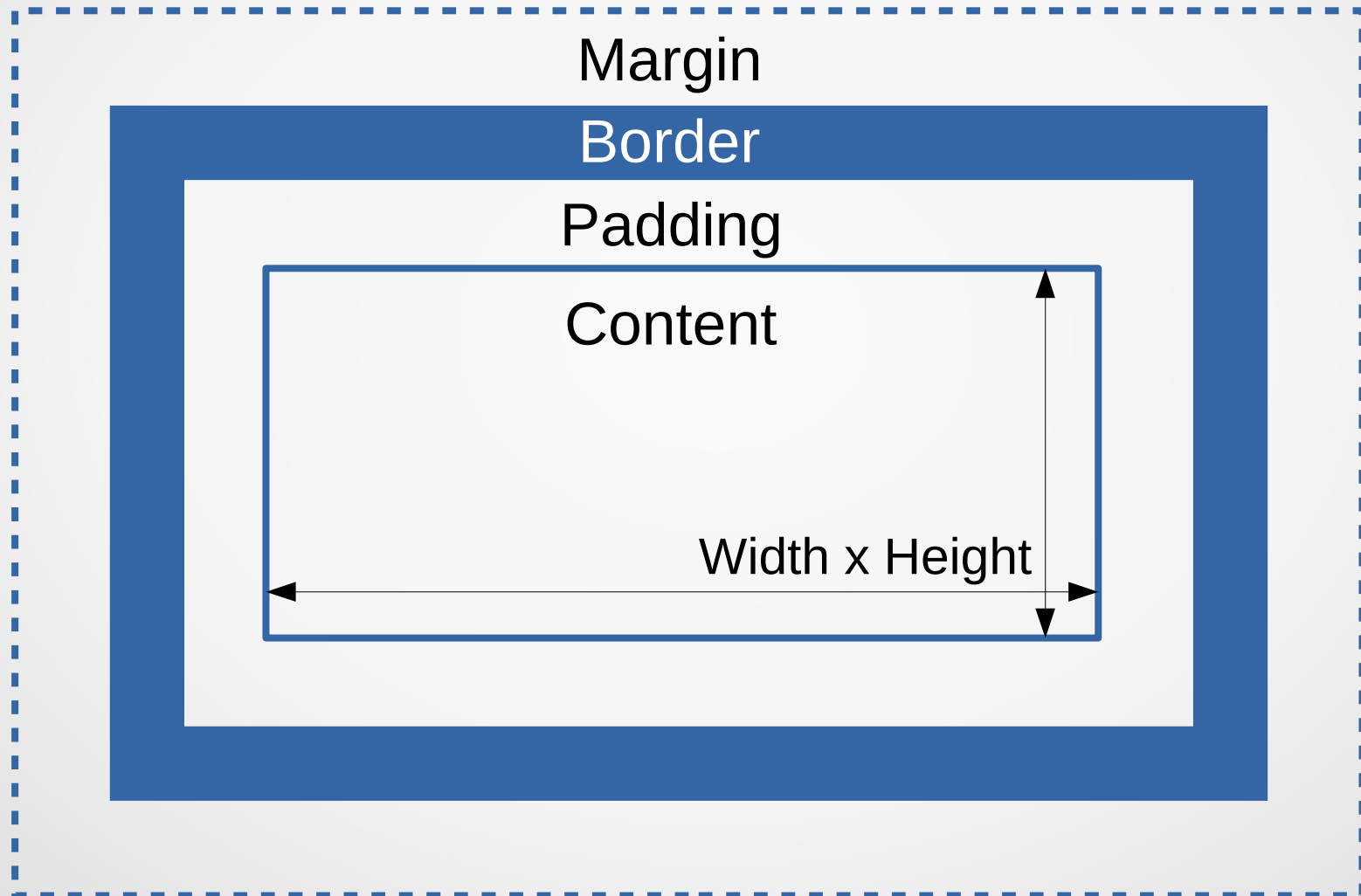
```
#second {  
    text-align: left;  
}
```



First line

Second line

Box Model



Margin

You Write:

```
#second {  
    border: black solid 1px;  
    margin-left: 15px;  
}
```



You See:

First line

Second line

Third line

Padding

You Write:

You See:

```
#second {  
    border: black solid 1px;  
    padding-left: 15px;  
}
```



First line

Second line

Third line

Border Color

You Write:

```
#second {  
    border-color: red;  
    border-style: solid;  
    border-width: 1px;  
}
```



You See:

First line

Second line

Third line

Border Style

You Write:

```
#second {  
  border-color: black;  
  border-style: dashed;  
  border-width: 1px;  
}
```



You See:

First line

Second line

Third line

Border Width

You Write:

```
#second {  
    border-color: black;  
    border-style: solid;  
    border-width: 5px;  
}
```



You See:

First line

Second
line

Third line

Border Width

You Write:

```
#second {  
    border-color: black;  
    border-style: solid;  
    border-width: 1px;  
    border-radius: 7px;  
}
```



You See:

First line

Second line

Third line

Border Image

You Write:

```
#second {  
  border-color: black;  
  border-style: solid;  
  border-width: 1px;  
  border-image:  
    url(border.png)  
    30 30 repeat repeat;  
}
```

You See:

First line



Second
line

Third line

Width

You Write:

```
#second {  
    overflow: hidden;  
    width: 30px;  
}
```

You See:

First line

Sec
line

Third line

Height

You Write:

```
#second {  
    overflow: hidden;  
    height: 12px;  
}
```



You See:

First line
Second line
Third line

Display: None

You Write:
.....

```
#second {  
    display: none;  
}
```

You See:
.....

First line



Third line

Visibility: Hidden

You Write:

```
#second {  
    visibility: hidden;  
}
```

You See:

First line

Third line

Float: None

You Write:

```
#pic {  
    float: none;  
}
```

You See:



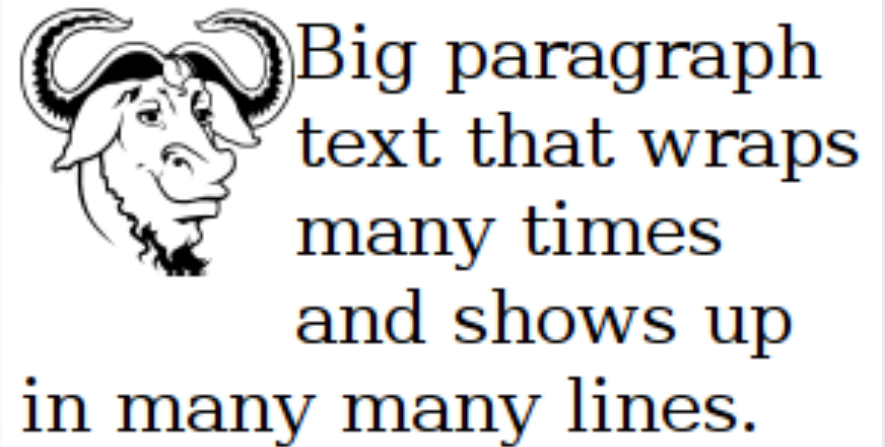
Big paragraph
text that wraps many
times and shows up in
many many lines.

Float: Left

You Write:

```
#pic {  
    float: left;  
}
```

You See:



Float: Right

You Write:

```
#pic {  
    float: right;  
}
```

You See:

Big paragraph
text that wraps
many times
and shows up
in many many lines.





More CSS

Background Repeat



repeat: "repeat-x"



repeat: "repeat-y"

Background Positioning

position: "right top"



Text decoration

text-decoration: underline

~~text-decoration: line-through~~

Text transformation

TEXT-TRANSFORM: UPPERCASE

text-transform: lowercase

Text-transform: Capitalize

Line height

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

Letter spacing

letter-spacing: -2px

letter-spacing: 2px

l e t t e r - s p a c i n g : 4 p x

Text shadow

Text-shadow effect

Some Interesting Topics

- Loading font files
- Link pseudo states
- List style (type, position, image)
- Table border collapse
- Margin collapse
- Border style
- Outlines
- Negative margins
- Min and Max dimensions

Some Interesting Topics

- Positioning (fixed, absolute, relative, static)
 - Z-index
- Clearing floats
- Center align using auto margin
- More CSS selectors
 - First child, even, odd, last child, nth child, first letter
- Pseudo elements
- Transparency
- Media types

Some Interesting Topics

- Box shadow
- Border image
- Background size, Multiple background images
- Gradients – Linear, radial
- Text shadow
- Transformations – 2D and 3D
- Transitions
- Animations
- Responsive design

References

- W3Schools CSS Tutorial: <http://www.w3schools.com/css/>
- W3C CSS Standard:
<http://www.w3.org/Style/CSS/Overview.en.html>
- W3C CSS Validator: <http://jigsaw.w3.org/css-validator/>