

Introduction to HTML and CSS

HTML



CSS



SoftUni Team
Technical Trainers



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- What is HTML?
 - HTML Syntax - Tags & Attributes
 - Common HTML Tags
 - Common HTML Attributes
- What is CSS?
 - CSS Syntax - Selectors & Rules
 - Adding CSS to our HTML documents
 - Basic CSS Selectors

HTML



CSS



sli.do

#html-css



Introduction to HTML

What is HTML?

- HTML is a markup language
- HTML is the basis for creating web pages and other information that can be displayed in a web browser
- Language for expressing semantic structure in textual documents



What is HTML?

- HTML is a language for describing web pages
- HTML documents contain HTML tags and plain text
- A markup language is a set of markup tags
- The tags describe document content

HTML Page Structure

```
<!DOCTYPE html>  ← Tells version of HTML
<html>           ← HTML Root Element

<head>           ← Used to contain page HTML metadata
  <title>Page Title</title> ← Title of HTML page
</head>

<body>           ← Hold content of HTML
  <h2>Heading Content</h2> ← HTML heading tag
  <p>Paragraph Content</p> ← HTML paragraph tag
</body>

</html>
```

What is HTML?

- **HTML** is consumed by **web browsers**
- The purpose of a **web browser** is to read HTML documents and compose them into visible or audible web pages.
- **The browser** does not display the HTML tags, it uses the tags to interpret the content of the page.



- Tags are keywords surrounded by angle brackets

```
'<' + 'html' + '>' ► <html>  
'<' + 'head' + '>' ► <head>  
'<' + 'body' + '>' ► <body>  
'<' + 'p' + '>' ► <p>
```


- HTML tags normally come in pairs

```
'<' + 'p' + '>' and '</' + 'p' + '>'
```

- The first tag in a pair is the start tag, the second tag is the end tag
- The end tag is written like the start tag, with a forward slash before the tag name
- Start and end tags are also called opening tags and closing tags

- Examples

Opening tag

'<' + 'html' + '>'
'<' + 'head' + '>'
'<' + 'body' + '>'
'<' + 'p' + '>'

Closing tag

'</' + 'html' + '>'
'</' + 'head' + '>'
'</' + 'body' + '>'
'</' + 'p' + '>'

- Examples

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

Describes the start and end of the web page/document

```
<head></head>
```

Describes the start and end of the metadata section of the document

- Examples

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

Describes the start and end of the web page/document

```
<title></title>
```

Describes the start and end of the title section of the document

Your first **HTML** document

```
<html>  
  <head>  
    <title>Simple HTML document example</title>  
  </head>  
  <body>  
    <h1>Simple HTML document example</h1>  
  </body>  
</html>
```

HTML document structure

```
<html>  
  
  <head>  
  
    <title>Page title</title>  
  
  </head>  
  
  <body>  
  
    <h1>This is a heading</h1>  
  
    <p>This is a paragraph.</p>  
  
    <p>This is another paragraph.</p>  
  
  </body>  
  
</html>
```

- Time passes, people think of new ways to entertain themselves. So new versions of HTML have been created.
- How do we differentiate between the different versions?

HTML Version History

- 1992 The first version of HTML
- 1995 HTML 2.0
- 1996 HTML 3.0 & 3.2
- 1997 HTML 4.0
- 1999 HTML 4.01
- 2008 HTML 5

THE <!DOCTYPE> DECLARATION

- There are many different documents on the web, and a browser can only display an HTML page 100% correctly if it knows the HTML type and version used.

```
<!DOCTYPE html>
```


Your first **HTML** document

```
<!DOCTYPE html>
<html>
  <head>
    <title>Simple HTML document example</title>
  </head>
  <body>
    <h1>Simple HTML document example</h1>
  </body>
</html>
```

Headings

```
<h1>This is a level 1 heading</h1>  
<h2>This is a level 2 heading</h2>  
<h3>This is a level 3 heading</h3>  
<h4>This is a level 4 heading</h4>  
<h5>This is a level 5 heading</h5>  
<h6>This is a level 6 heading</h6>
```

Paragraphs

```
<p>This is a paragraph</p>
```

Text formatting

```
<strong>All of this text will appear bold</strong>
```

```
<em>All of this text will appear italic</em>
```

Links

```
<a href="https://softuni.bg">Click this to go to SoftUni.bg</a>
```

Images

```

```

Ordered List

```
<ol>  
  <li>List item</li>  
  <li>List item</li>  
</ol>
```

Unordered List

```
<ul>  
  <li>List item</li>  
  <li>List item</li>  
</ul>
```

Definition List

```
<dl>  
  <dt>Definition title</dt>  
  <dd>Definition description</dd>  
  <dt>Definition title</dt>  
  <dd>Definition description</dd>  
</dl>
```

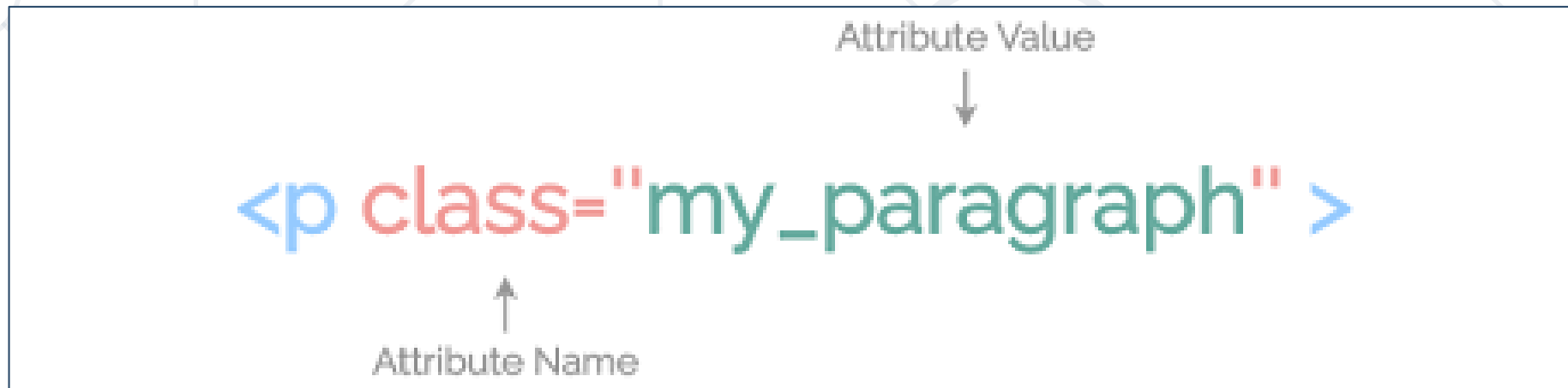
Table

```
<table>  
  <thead>  
    <tr>  
      <th>Table header 1</th>  
      <th>Table header 2</th>  
    </tr>  
  </thead>  
  <tbody>  
    <tr>  
      <td>Table cell 1</td>  
      <td>Table cell 1</td>  
    </tr>  
  </tbody>  
</table>
```

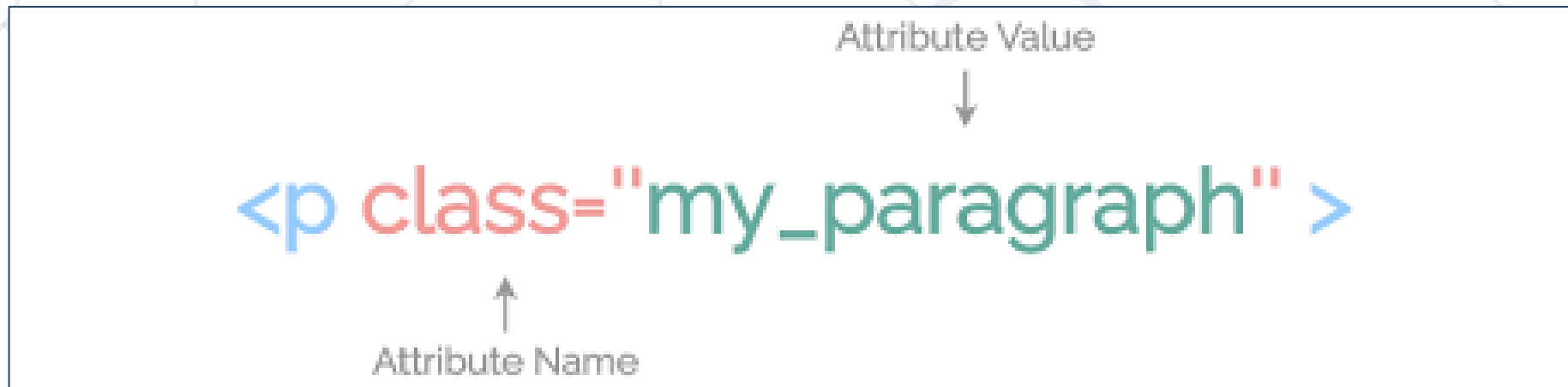
- Reference Documentation

<https://developer.mozilla.org/en-US/docs/Web/HTML/Element>

- Attributes provide additional information about HTML elements.
- Tags elements can have attributes



- Attributes provide additional information about an element
- Attributes are always specified in the start tag
- Attributes come in name/value pairs like - name="value"



- Examples

```
<a href="http://initlab.org">init Lab</a>
```

href – gives the tag the location information for the link

```

```

src – tells the tag where to look for the image file

- Some tips
 - Always Quote Attribute Values. Attribute values should always be enclosed in quotes
 - Double style quotes are the most common, but single style quotes are also allowed
 - Be careful when combining single and double quotes, make sure you use only one type
 - Reference Documentation
 - <https://developer.mozilla.org/en-US/docs/Web/HTML/Attributes>

- HEAD Tag
 - The `<head>` element is a container for all the head elements. Elements inside `<head>` can include scripts, instruct the browser where to find style sheets, provide meta information, and more.

```
<html>  
  <head>  
    ...  
  </head>  
  <body>  
  </body>  
</html>
```

- The following tags can be added to the head section:
 - <title>, <style>, <meta>, <link>, <script>, <noscript>
- <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/head>

```
<html>  
  <head>  
    ...  
  </head>  
  <body>  
    </body>  
</html>
```

Title

```
<head>  
  <title>HTML Document title</title>  
</head>
```

Link

```
<head>  
  <link rel="stylesheet" type="text/css" href="mystyle.css">  
</head>
```

The <link> tag defines the relationship between a document and an external resource.

Meta

```
<head>  
  <!-- Define keywords for search engines: -->  
  <meta name="keywords" content="HTML, CSS, XML, XHTML,  
JavaScript">  
  
  <!--Define a description of your web page:-->  
  <meta name="description" content="Courses on HTML and CSS">  
  
  <!--Define the author of a page:-->  
  <meta name="author" content="Koko">  
</head>
```

Indentation & Code formatting

- We will be using tabs that are 4 spaces long
- **Indentation is extremely important**
 - It helps with navigating the code
 - It helps to find mistakes faster
 - It makes debugging issues faster
- Bad indentation is shameful – when sharing



HTML Basics - Let's try it ...

Demo



Introduction to CSS

What is CSS?

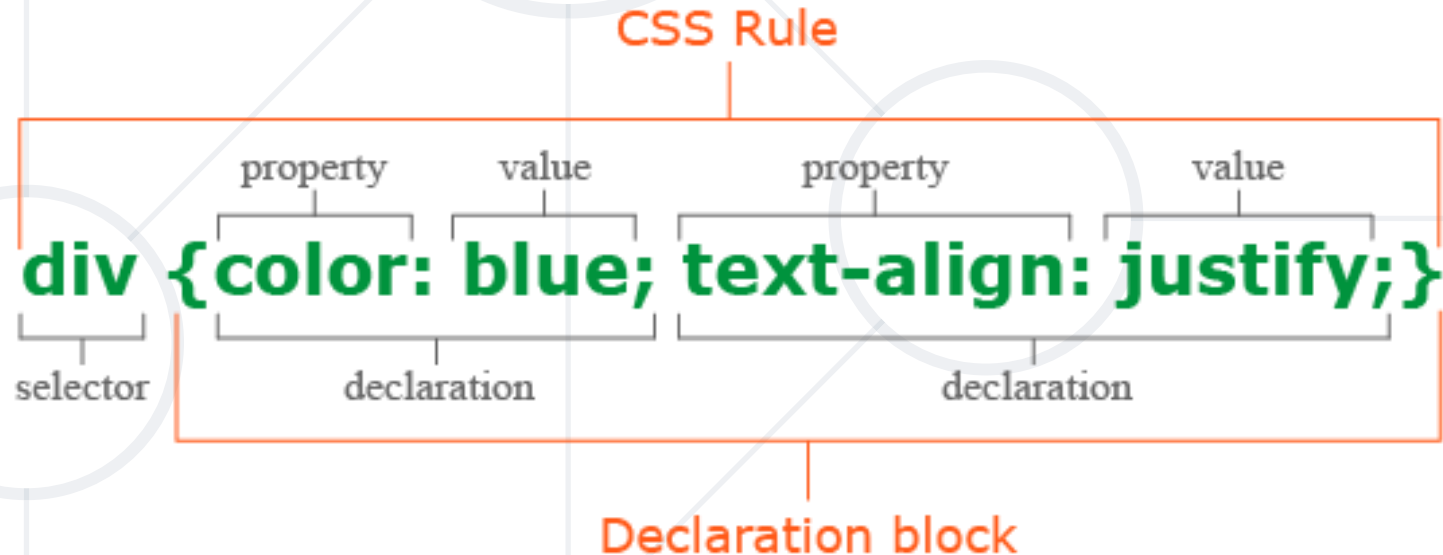
- CSS stands for **Cascading Style Sheets**
- Styles define the visual presentation of HTML elements
- CSS solved a problem
- HTML was never intended to contain tags for formatting a document.
- With CSS the separation between semantic content and visual presentation can be achieved again.



What is CSS?

- CSS can save you a lot of work!
- External visual style guide shared across all pages of your site.
- Change the style guide - change all page's visual presentation.

1. Every CSS document is a collection of CSS rules.
2. CSS rule has two main parts, Select and one or more declarations
3. Each declaration consists of a property and a value.



- **CSS Rule** has two main parts:
 1. Selector
 2. One or more declarations

```
[selector] {  
    [declaration]  
    [declaration]  
}
```

- The **CSS Selector** is an identifier of the HTML element or the group of HTML elements you want to style.

```
body {  
    ...  
}
```

- **CSS Declarations** end with a semicolon, and declaration groups are surrounded by curly brackets.

```
{  
    font:16px/1.5 Verdana, sans-serif;  
    color: #333;  
}
```



The diagram illustrates the components of a CSS rule. A blue box highlights the selector `.my-css-rule`, with a blue arrow labeled "Selector" pointing to it. A grey box highlights the entire declaration block, with a blue arrow labeled "Declaration" pointing to it. Inside this block, a cyan box highlights the property `color` and a purple box highlights the value `beige` in the `color: beige;` declaration. A blue arrow labeled "Property" points to the `color` box, and a blue arrow labeled "Value" points to the `beige` box. The full CSS rule is shown as follows:

```
.my-css-rule {  
  background: red;  
  color: beige;  
  font-size: 1.2rem;  
}
```


- In CSS, selectors are used to target the HTML elements on our web pages that we want to style.
- There are a wide variety of CSS selectors available, allowing for fine-grained precision when selecting elements to style. A CSS selector is the first part of a CSS Rule.
- https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Selectors

- **Type selectors**

- The CSS type selector matches elements by node name. In other words, it selects all elements of the given type within a document.
- https://developer.mozilla.org/en-US/docs/Web/CSS/Type_selectors

```
[tag-name] {  
    [declaration]  
    [declaration]  
}
```

```
h1 {  
    color: red;  
    font-weight: bold;  
}
```

■ Class selectors

- The CSS class selector matches elements based on the contents of their class attribute.
- https://developer.mozilla.org/en-US/docs/Web/CSS/Class_selectors

```
[tag-name] {  
  [declaration]  
  [declaration]  
}
```

```
[class-name] {  
  color: red;  
  font-weight: bold;  
}
```

■ ID selectors

- The CSS ID selector matches an element based on the value of the element's id attribute. For the element to be selected, its id attribute must match exactly the value given in the selector.
- https://developer.mozilla.org/en-US/docs/Web/CSS/ID_selectors

```
#[tag-name] {  
    [declaration]  
    [declaration]  
}
```

```
#[id-name] {  
    color: red;  
    font-weight: bold;  
}
```

- **Attribute selectors**

- The CSS attribute selector matches elements based on the element having a given attribute explicitly set, with options for defining an attribute value or substring value match.
- https://developer.mozilla.org/en-US/docs/Web/CSS/Attribute_selectors

```
[attribute="value"] {  
    [declaration]  
    [declaration]  
}
```

```
[href="https://softuni.bg"] {  
    color: red;  
    font-weight: bold;  
}
```

■ Universal selector

- The CSS universal selector (*) matches elements of any type.
- https://developer.mozilla.org/en-US/docs/Web/CSS/Universal_selectors

```
* {  
    [declaration]  
    [declaration]  
}
```

```
* {  
    color: red;  
    font-weight: bold;  
}
```

■ Descendant combinator

- The descendant combinator — typically represented by a single space (" ") character — combines two selectors such that elements matched by the second selector are selected if they have an ancestor (parent, parent's parent, parent's parent's parent, etc.) element matching the first selector.
- https://developer.mozilla.org/en-US/docs/Web/CSS/Descendant_combinator

```
header p {  
    color: red;  
    font-weight: bold;  
}
```

- **Selector list**

- The CSS selector list (,) selects all the matching nodes. A selector list is a comma-separated list of selectors.
- https://developer.mozilla.org/en-US/docs/Web/CSS/Selector_list

```
header, p, div {  
    color: red;  
    font-weight: bold;  
}
```


■ Child combinator

- The child combinator (>) is placed between two CSS selectors. It matches only those elements matched by the second selector that are the direct children of elements matched by the first.
- [https://developer.mozilla.org/en-US/docs/Web/CSS/Child combinator](https://developer.mozilla.org/en-US/docs/Web/CSS/Child_combinator)

```
header > p {  
    color: red;  
    font-weight: bold;  
}
```

Adding **CSS** to our **HTML** documents

- There are three ways of inserting a style sheet:
 - External style sheet
 - Internal style sheet
 - Inline style



- **External Style Sheet**

- An external style sheet is ideal when the style is applied to many pages. With an external style sheet, you can change the look of an entire Web site by changing one file. Each page must link to the style sheet using the tag.
- The tag goes inside the head section:

```
<head>  
    <link rel="stylesheet" type="text/css" href="mystyle.css">  
</head>
```

- **Internal Style Sheet**

- An internal style sheet should be used when a single document has a unique style. You define internal styles in the head section of an HTML page, by using the style tag.

```
<head>  
  <style>  
    body {  
      ...  
    }  
  </style>  
</head>
```

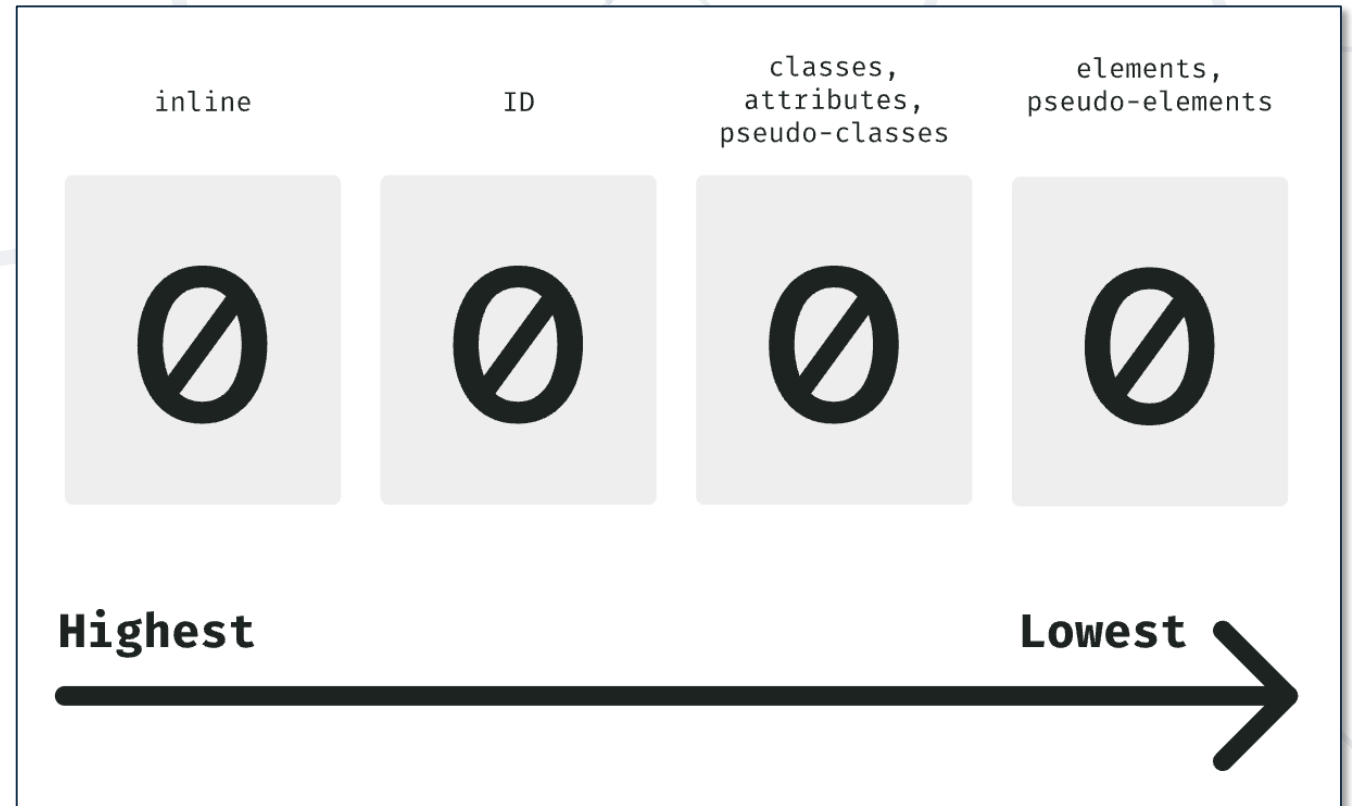
■ Inline Styles

- An inline style loses many of the advantages of style sheets by mixing content with presentation.
- Do not use this method unless you have no other choice!
- *To use inline styles, you use the style attribute in the relevant tag. The style attribute can contain any CSS property.*

```
<div style="color: red;">  
    ...  
</div>
```

CSS Selectors Inheritance & Specificity

- CSS relies heavily on specificity and style overwriting
- Its in the name!
- **Cascading** Style Sheets



- **Cascade Order**

- In increasing order of priority.

1. External **<link>**
2. In the **<head>**
3. Inline style attribute
4. Using **!important**

CSS Selector Specificity



- **background**

- **background-color:** #fff;
- **background-image:** url(../image.png);
- **background-repeat:** repeat | repeat-x | repeat-y | no-repeat;
- **background-position:** top left;

■ text

- **color:** #000;
- **text-align:** left | right | center | justify;
- **text-decoration:** underline | overline | line-through | none;
- **text-transform:** uppercase | lowercase | capitalize;
- **text-indent:** 50px;

■ font

- **font-family**: Verdana, Arial, sans-serif
- **font-style**: italic | normal;
- **font-size**: 16px;
- **font-weight**: bold | normal;

■ border

- **border-style:** solid | dotted | dashed | double;
- **border-color:** #C00;
- **border-width:** 2px;



CSS Basics - Let's try it ...

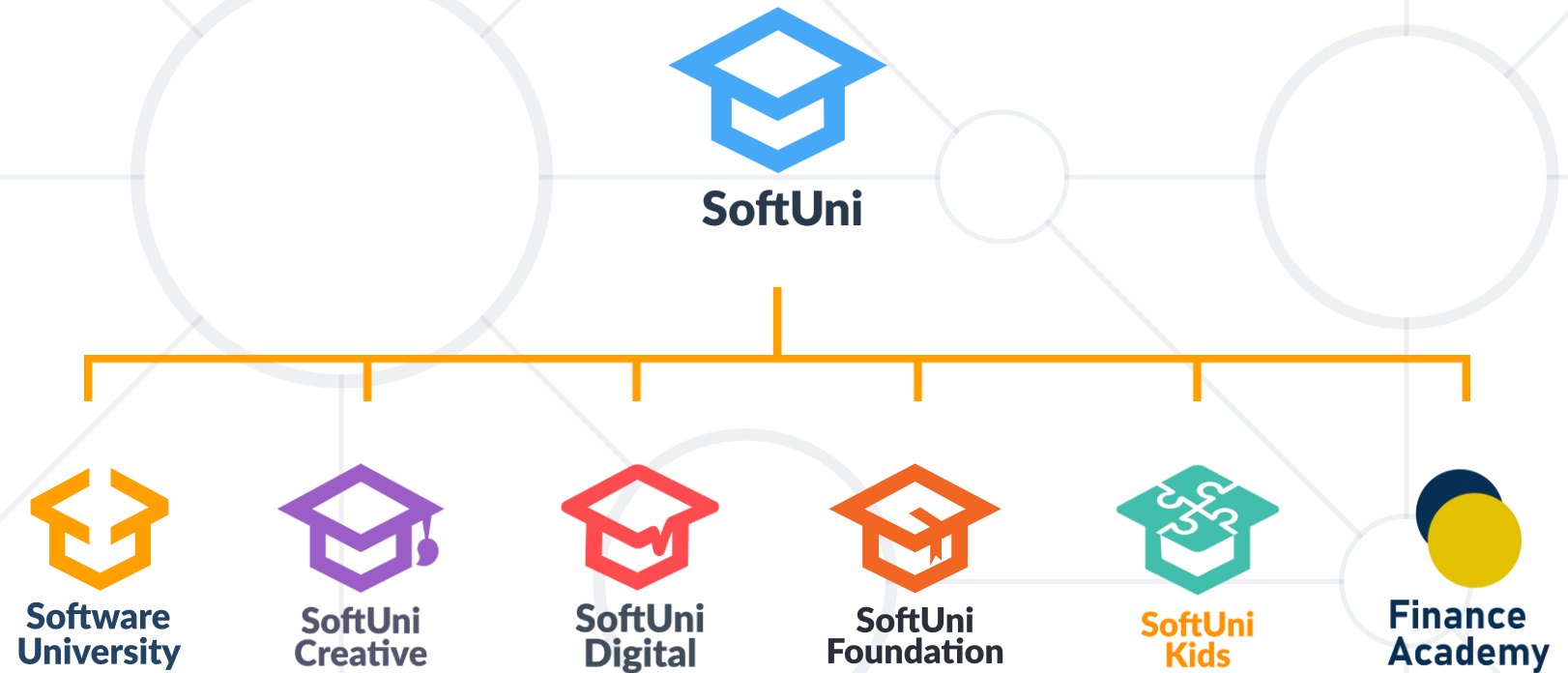
Demo

- https://en.wikipedia.org/wiki/Markup_language
- https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/How_the_Web_works
- <https://developer.mozilla.org/en-US/docs/Web/HTML>
- https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/HTML_basics
- <https://developer.mozilla.org/en-US/docs/Web/CSS>
- https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/CSS_basics

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