Introduction to HTML & CSS

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HTML

User Interface

The user interface **(UI)** is the point at which **human** users **interact** with a **computer**, **website** or **application**. This can include display screens, keyboards, a mouse and the appearance of a desktop.

It is also the way through which a user **interacts** with an **application** or a **website**.

The **UI** is often talked about in conjunction with user experience **(UX)**, which is the process design teams use to create products that provide meaningful and relevant experiences to users.

HTML and **CSS** have been geared toward making it easier **to create a strong user interface and experience.**

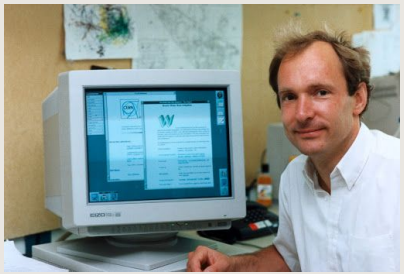
HTML History

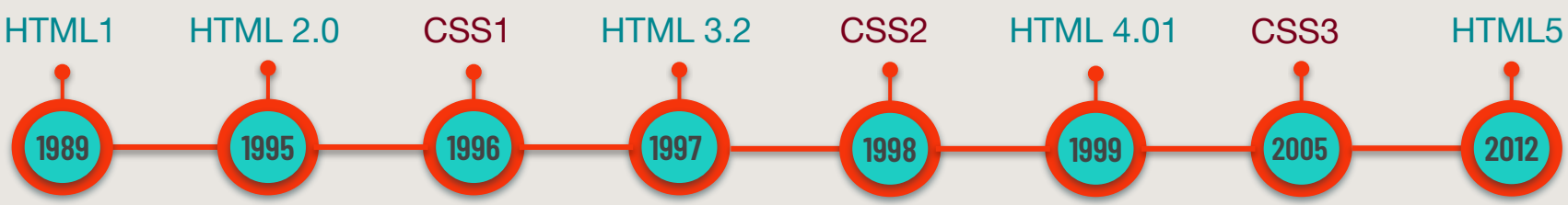
HTML

HTML was created in late 1989 by Sir Timothy John Berners-Lee in late 1989.

Its basic purpose was to use and share documents in the research center CERN

After rejection of a funding request from CERN in 1991 Berners Lee introduced a hypertext system in public and he named that project or document **“HTML Tags”**





Read more

HTML History

HTML

HTML stands for **H**yper **T**ext **M**arkup **L**anguage and **Markup** means the way you can structure or format content.

When the document is processed to be displayed, the **markup** language **won't be shown** in the browser.
Its called **markup** language because it marks the information by **tagging** them.

HTML is the standard **markup** language for creating Web pages
HTML describes the **structure** of a Web page
HTML consists of a series of **elements**
HTML elements tell the browser how to **display** the **content**

Anatomy of HTML Elements

HTML Element

An HTML element is consist of three main parts:

1. Start/ opening tag
2. Content
3. End/ closing tag

```
<tagname>Content</tagname>
```

Some HTML elements have no content. Its referred to as **empty elements** and they **don't have ending tags**

```
<br>
<link>
<hr>
<meta>
<img>
<input>
```

All HTML elements can have **attributes**

Attributes are always specified in the start tag. They provide additional information about elements and usually comes in name-value pairs like: name="value"

```
<a href=""></a>
<div id=""></img>
<img src="" alt=""></img>
```

Anatomy of HTML Elements

Web Browsers

- A web browser is a software application that can read HTML instructions and display the resulting Web page.

- A browser **does not display the HTML tags,** but uses them to determine how to display the document


```
<!DOCTYPE html>
<html lang="en">
    <head>
        <title>Page Title</title>
    </head>
    <body>
        <h1>My First Heading</h1>
        <p>My first paragraph.</p>
    </body>
</html>
```

What is inside <HEAD> Element

Language attribute: is used to identify the language of text content on the web. This information helps search engines return language specific results

Metadata: additional important information about a document in a variety of ways

What is inside <HEAD> Element

HTML <meta> Element

The **<meta>** element is typically used to specify the character, set page description, keywords, author of the document and viewport settings.

- **<meta charset="UTF-8">**
  Specify the character encoding for the HTML document

- **<meta name="description" content="Free Web tutorials …">**
  The meta description is a snippet of up to about 155 characters, which summarises a page's content.

- **<meta name="keywords" content="HTML, CSS, JavaScript …">**
  Used to tell search engines what the topic of the page is.

- **<meta name="author" content="John Doe">**
  To give credit to the person of company that made the webpage.

- **<meta name="viewport" content="width=device-width, initial-scale=1.0">**
  The width=device-width part sets the width of the page to follow the screen-width of the device.
  The initial-scale=1.0 part sets the initial zoom level when the page is first loaded by the browser.

Read more

What is inside <HEAD> Element

HTML <Link> Element

- The **<link>** element defines a link between the **current document** and an **external resource**.
- The rel attribute specifies the relationship between these two documents.

Link to external style sheets

```
<link rel="stylesheet" href="style.css" />
```

Link to favicon icon

```
<link rel="icon" type="image/png" href="images/logo_icon.png" />
```

Link to external font-family source

```
<link rel="stylesheet" href="https://fonts.googleapis.com/css2?family=Kalam&display=swap"/>
```

Link to external bootstrap library source

```
<link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"/>
```

What is inside <HEAD> Element

HTML <title> Element

- The **<title>** element defines the **title of the document**
- The title must be **text-only**, and it is shown in the browser's title bar or in the page's tab.
- The contents of a page title is very important for **search engine optimization (SEO)**
- The page title is used by search engine algorithms to decide the order when listing pages in search results. So, try to make the title **as accurate and meaningful as possible!**

```
<title>A Meaningful Page Title</title>
```

What is inside <HEAD> Element

HTML <style> Element

The **<Style>** tag is used to define **style information** for a **single** HTML page

```
<!DOCTYPE html>
<html lang="en">
    <head>
        <title>Page Title</title>
        <style>
            body {background-color: #434343}
            h1 {color: #ffd497}
            p {color: #1dcdc3}
        </style>
    </head>
    <body>
        <h1>This is a Heading</h1>
        <p>This is a paragraph</p>
    </body>
</html>
```

CSS

Anatomy of CSS

- CSS stands for **Cascading Style Sheets**
- It determine how HTML elements are going to be displayed
- It can control the layout of multiple web pages all at once
- External stylesheets are stored in **files with a .css extension**

Multiple CSS declarations are separated with semicolons, and declaration blocks are surrounded by curly braces

```
p { color: red; text-align: center; font-size: 16px;}
```

There are three ways to use CSS with HTML

- External stylesheet
- Internal stylesheet
- Inline CSS

- A **CSS rule-set** consists of a **selector** and a **declaration** block

- 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**

Using CSS with HTML

External style sheet

- An **external style sheet** is a separate file with a **.css** extension with all CSS style definitions for the HTML page**(s)**
- You can **reference** this file in the **<link> tag** inside the <head> in the HTML

```
<!DOCTYPE html>
<html>
    <head>
        <link rel="stylesheet" href="mystyle.css">
    </head>
    <body>

        <h1>This is a heading</h1>
        <p>This is a paragraph.</p>

    </body>
</html>
```

Using CSS with HTML

Internal style sheet

- An **internal style sheet** is written with the HTML in the same file inside the <head> tag using the <style> tag
- An internal style sheet may be used if one single HTML page has a unique style

```
<!DOCTYPE html>
<html>
    <head>
        <style>
            body {background-color: powderblue;}
            h1 {color: red;}
            p {color: blue;}
        </style>
    </head>
    <body>

        <h1>This is a heading</h1>
        <p>This is a paragraph.</p>

    </body>
</html>
```

Using CSS with HTML

Inline styling

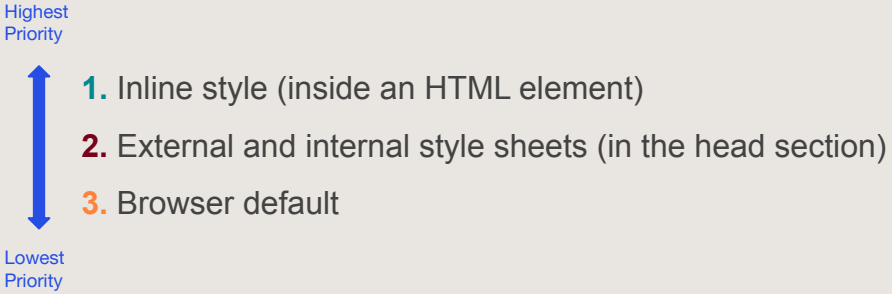
- The **inline style** is written inside the HTML element as an attribute
- Inline style may be used to apply a unique style for a single element.

```
<!DOCTYPE html>
<html>
    <head>

    </head>
    <body>

        <h1 style="color: red;">This is a heading</h1>
        <p style="color: blue; background: yellow;">This is a paragraph.</p>

    </body>
</html>
```

Using CSS with HTML

Cascading Order

Which style will be used when there are more than one style specified for an HTML element?

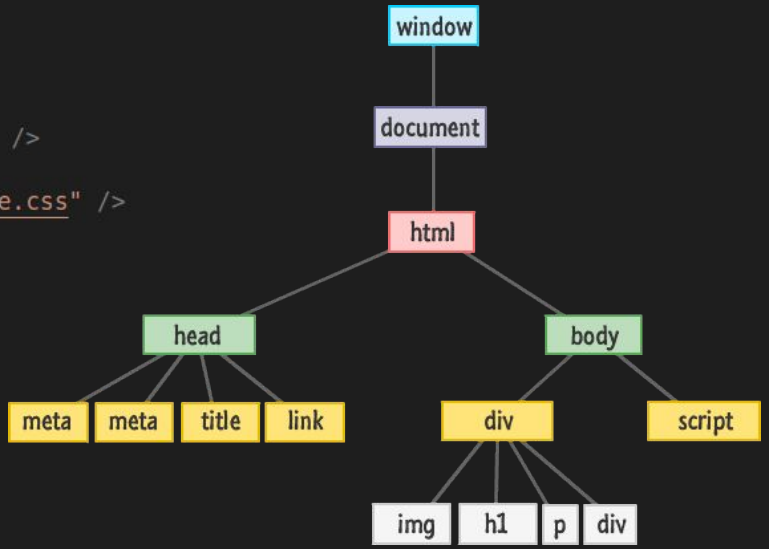


HTML

HTML Document Tree

We describe the elements in a **document tree** like we would describe a **family tree**. We have **ancestors**, **descendants**, **parents**, **children** and **siblings**.

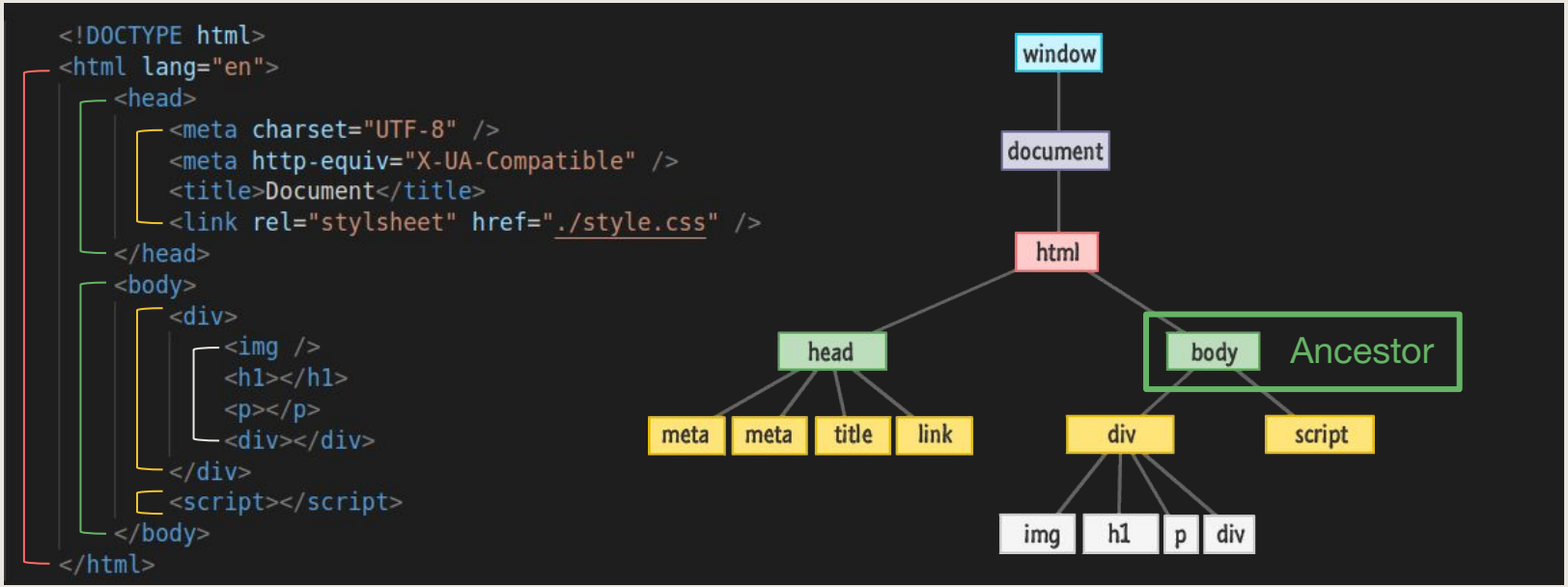
```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" />
    <title>Document</title>
    <link rel="stylsheet" href="./style.css" />
  </head>
  <body>
    <div>
      <img />
      <h1></h1>
      <p></p>
      <div></div>
    </div>
    <script></script>
  </body>
</html>
```



HTML Document Tree

Ancestors, Descendants, Parents, Children, Siblings

An **ancestor** refers to any element that is connected but **further up** the document tree - no matter how many levels higher.



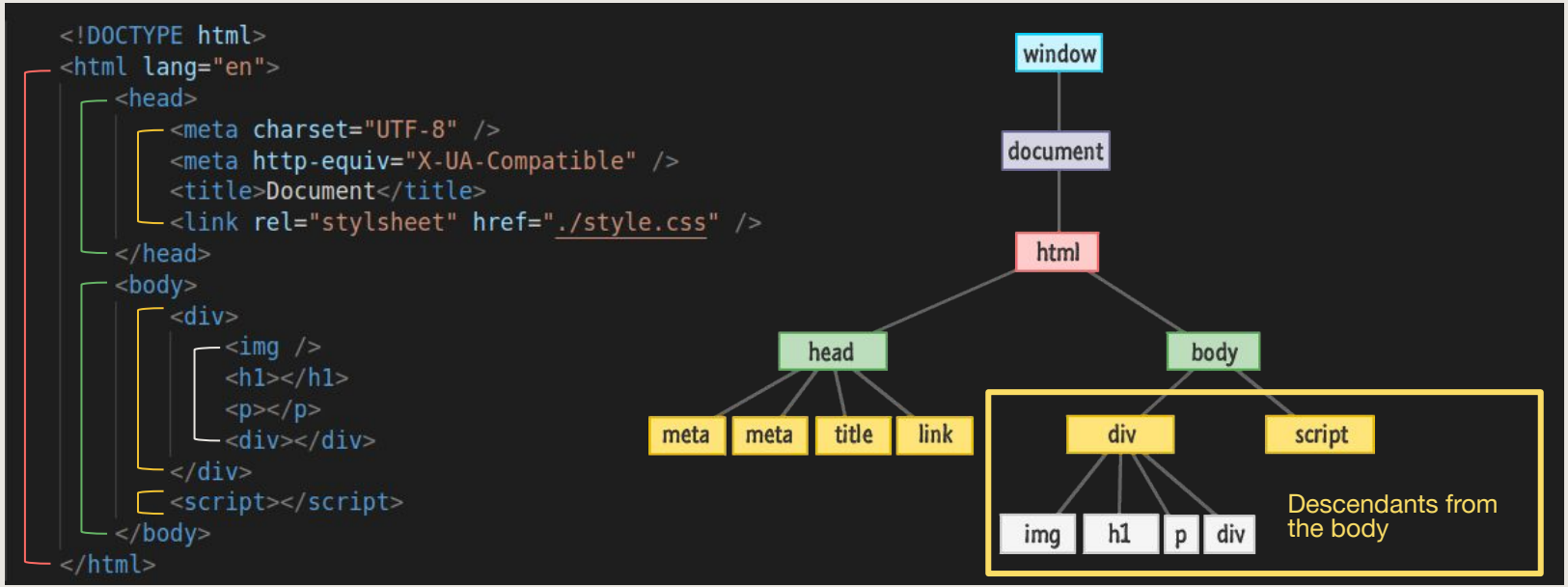

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" />
    <title>Document</title>
    <link rel="stylsheet" href="./style.css" />
  </head>
  <body>
    <div>
      <img />
      <h1></h1>
      <p></p>
      <div></div>
    </div>
    <script></script>
  </body>
</html>
```

HTML Document Tree

Ancestors, **Descendants**, Parents, Children, Siblings

A **descendant** refers to any element that is connected but **lower down** the document tree - no matter how many levels lower.

In the diagram below, **all elements** that are connected below the <body> are descendants of the <body>.

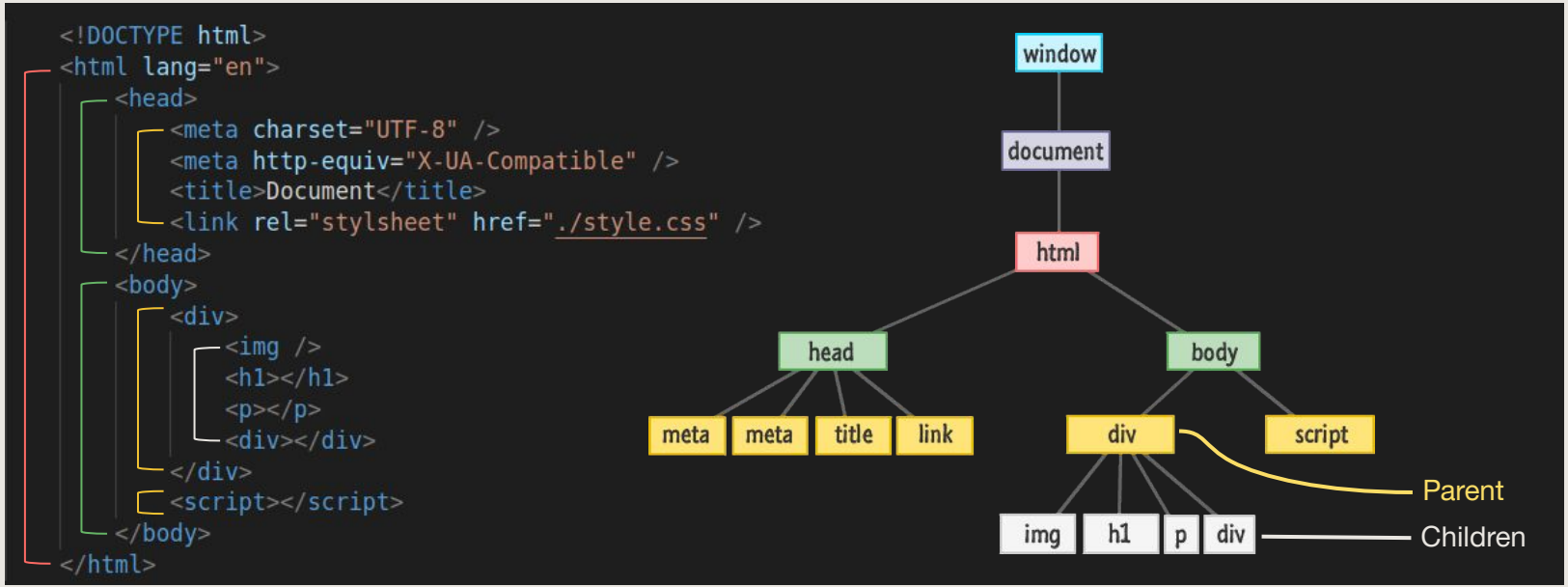


HTML Document Tree

Ancestors, Descendants, **Parents**, **Children**, Siblings

A **parent** is an element that is **directly above and connected to an element** in the document tree.

A **child** is an element that is **directly below and connected to an element** in the document tree.



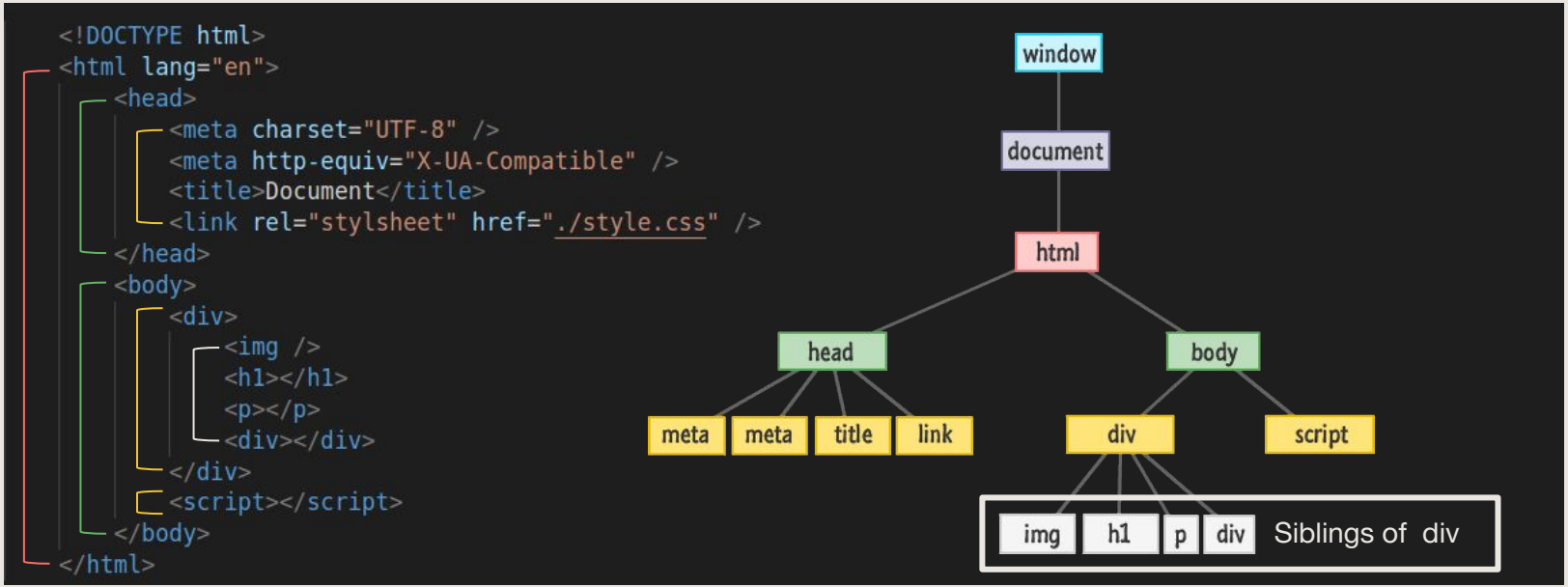

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" />
    <title>Document</title>
    <link rel="stylsheet" href="./style.css" />
  </head>
  <body>
    <div>
      <img />
      <h1></h1>
      <p></p>
      <div></div>
    </div>
    <script></script>
  </body>
</html>
```

HTML Document Tree

Ancestors, Descendants, Parents, Children, **Siblings**

A **sibling** is an element that **shares the same parent with another element**.

In the diagram below, the <img>, <h1>, <p> and are siblings as they all share the same parent - the .




```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" />
    <title>Document</title>
    <link rel="stylsheet" href="./style.css" />
  </head>
  <body>
    <div>
      <img />
      <h1></h1>
      <p></p>
      <div></div>
    </div>
    <script></script>
  </body>
</html>
```

End of the presentation