

HTML Basics

Hypertext Markup Language



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<http://softuni.bg>

Table of Contents

1. What is HTML?
2. Element anatomy
3. Document anatomy
4. Formatting text
5. Attributes
6. Images, Links and Forms
7. Nested and empty elements



Questions?

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HTML

Standard for Markup Language

What is HTML?

- HTML (**H**ypertext **M**arkup **L**anguage) is the code used to build and display a web page and its content.
- HTML is the standard markup language for creating web pages and web applications.
- It represents a **series of elements** that you use to surround (or wrap) different portions of content to make them look and act in a certain way.



<html>

-





A diagram illustrating the structure of an HTML element. It features a dark blue circle containing a black rectangle. Inside the rectangle, the text `<html>` is displayed in a light blue monospace font. Four pairs of vertical lines with horizontal caps at the top and bottom are positioned around the text: one pair above the opening tag, one pair below the opening tag, one pair below the closing tag, and one pair above the closing tag. Each of these four pairs is labeled with three question marks '???' in a small, light blue font. The entire diagram is set against a background of a light gray network of lines and circles.

```
<html>
```

Anatomy of an element

Element anatomy

- The **main parts** of an element are:
 - Opening tag, Content and Closing
- **Opening tag** - It consists of the name of the element surrounded by opening and closing angles. This indicates where the element starts.



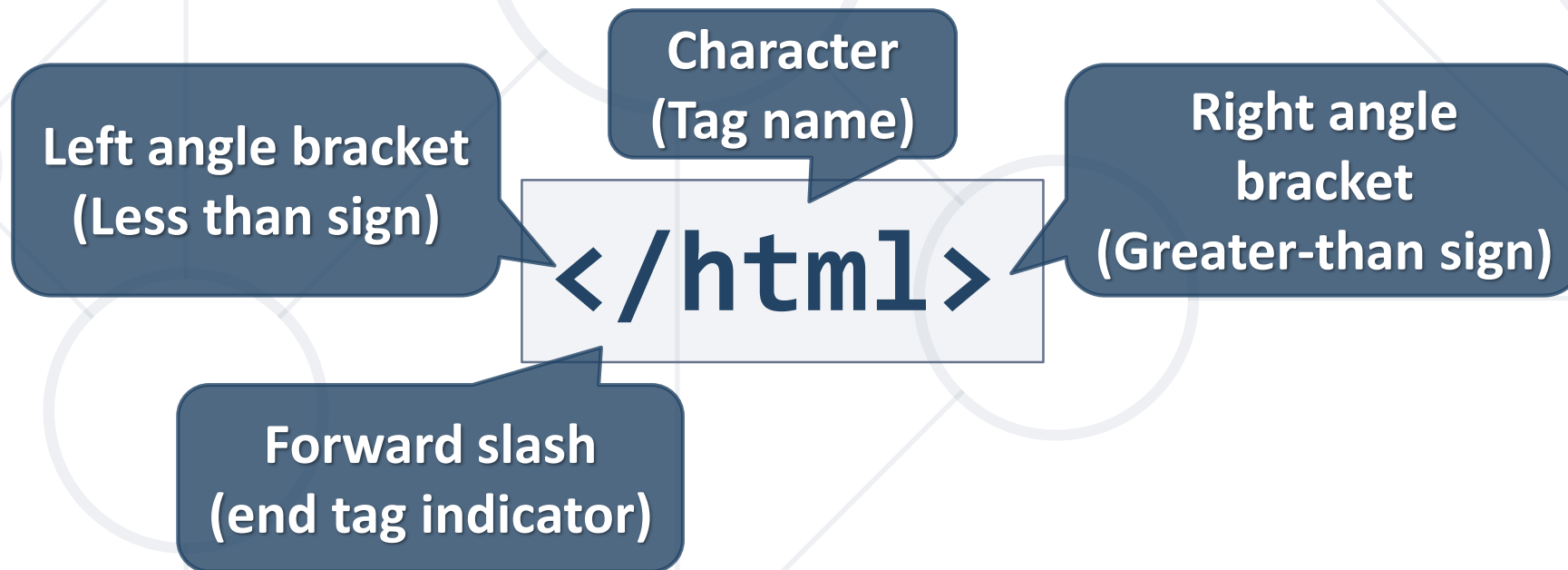
Left angle bracket
(Less than sign)

Character
(Tag name)

`<html>`

Right angle
bracket
(Greater-than sign)

- **Closing tag** - Same as the opening tag, but with an additional slash before the item's name. This shows where the element ends.



- Everything between the **opening** and **closing tags** is defined as the content of this element.
- The content of this element is visualized in one form or another.

```
<html>  
  <!-- HTML ELEMENT CONTENT -->  
</html>
```

- **The element** is the **set** of the opening tag, closing tag, and content.



Document anatomy

Document anatomy

- This covers the basics of individual **HTML elements**, but they do not have a particular benefit when used individually.



```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>HTML</title>
</head>
<body>...</body>
</html>
```

This is the basic requirement for content that a html file **should have!**

Document anatomy

- **<!DOCTYPE html>** - Describes the HTML that will be used in your page. It **is not** an HTML tag! It is an **instruction** to the web browser about what version of HTML the page is written in.
- The **doctype** is supported by all web browsers like:
 - Chrome, Firefox, IE, Safari and Opera



Document anatomy

- **<html> tag** - This element surrounds the entire content of the page and is usually called the basic element.
- The html element must contain a head element followed by a body element.

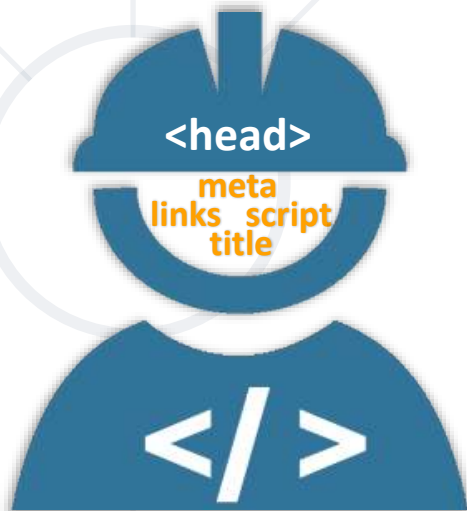
```
<!DOCTYPE html>  
<html>  
  <head>  
    ...  
  </head>  
  <body>  
    ...  
  </body>  
</html>
```

HTML
ELEMENT
CONTENT



Document anatomy

- **<head> tag** - It acts as a container for all the things that you include on the page but are not part of the content you show to visitors to your page.
- Information about the document - is placed. It should be the first element inside an **html element**.



```
<!DOCTYPE html>
<html>
  <head>
    <!-- HEAD ELEMENT CONTENT -->
  </head>
  <body>
    ...
  </body>
</html>
```

Document anatomy

- **Head** is required and it should be used just once. It should start immediately after the **opening html tag** and end before the opening **body tag**.
- **<body> tag** defines the main content of the HTML document or the section of the HTML document that will be directly visible on your web page.

```
<!DOCTYPE html>
<html>
<head>
  ...
</head>
<body>
  <!-- BODY ELEMENT CONTENT -->
</body>
</html>
```



Document anatomy

- This tag is also commonly referred to as the **<body> element**.
- It contains everything you want to show visitors to your page like text, images, video clips, games, audio.



Document anatomy

- **<meta> tag** (meta information) is information about the information. The **<meta>** tag provides information about the HTML document.
- The information inside the item is not displayed on the page but is relied on by the machine.



Document anatomy

- The **metadata** is used by the browser to know how to load the page or reload it, from the search engines (keywords) or other web services.
- **<meta> tags** are always in the **<head>** element.
- **Meta elements** are usually used to add a description to the page, keywords or character sets.

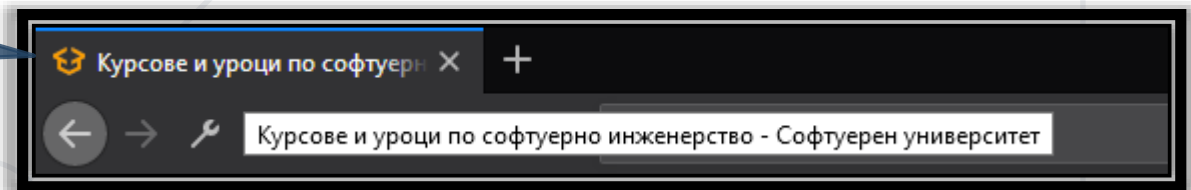


Document anatomy

- **Tag <title>** defines the title of the document. It is required in any HTML document, but if it is not present in HTML5, the document remains completely valid. The following apply to the **<title>** element:
 - Defines the title in the browser's toolbar
 - Gives a page title when added to favorites
 - Shows the title of the page in the search engines



Title

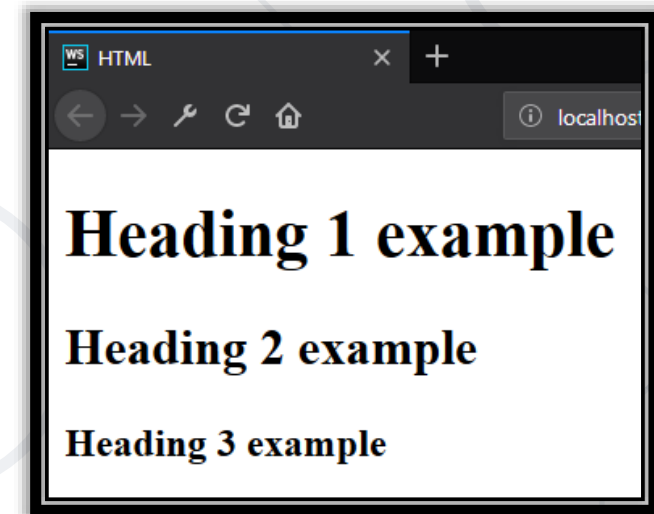




Formatting text

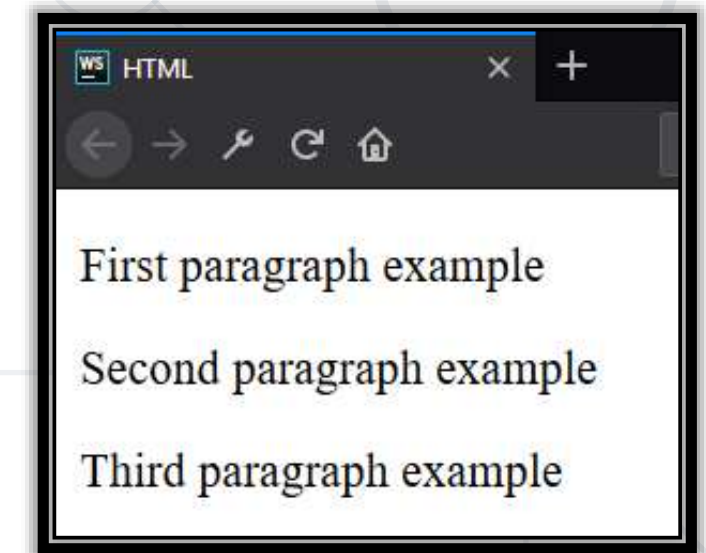
- **Heading** - Allow you to specify that certain portions of the content are titles or subheadings.

```
<body>  
  <h1>Heading 1 example</h1>  
  <h2>Heading 2 example</h2>  
  <h3>Heading 3 example</h3>  
</body>
```



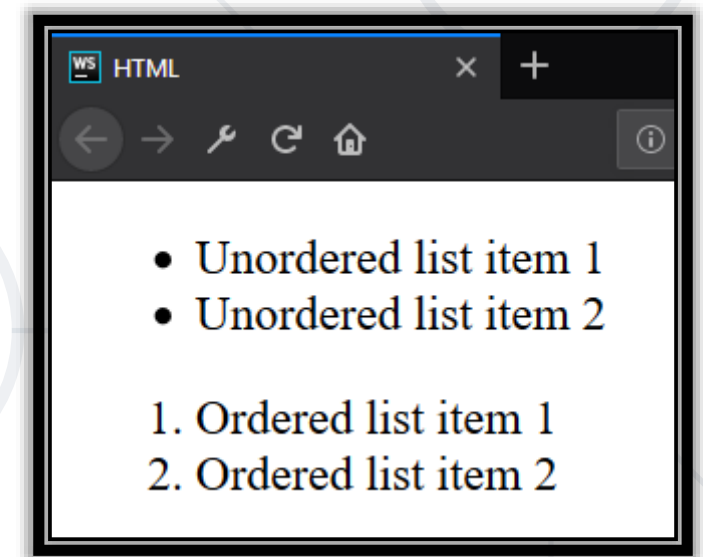
- **Paragraphs** - Are meant to contain the individual paragraphs in the text.

```
<body>  
  <p>First paragraph example</p>  
  <p>Second paragraph example</p>  
  <p>Third paragraph example</p>  
</body>
```



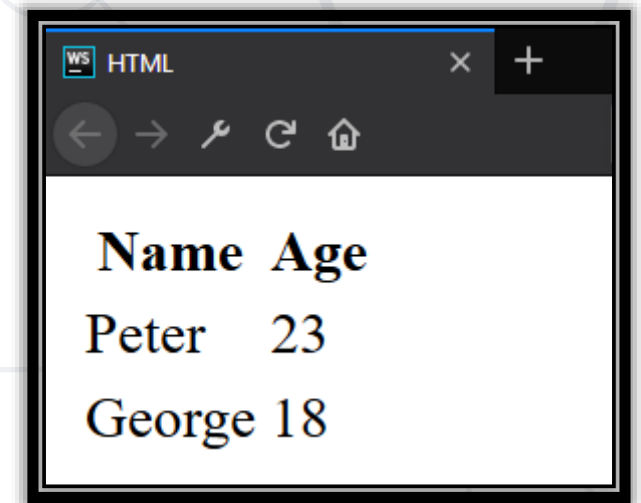
- **Lists** - The lists contain at least two elements. The most common types are ordered and unordered lists.

```
<ul>
  <li>Unordered list item 1</li>
  <li>Unordered list item 2</li>
</ul>
<ol>
  <li>Ordered list item 1</li>
  <li>Ordered list item 2</li>
</ol>
```



- **Table** - Is a structured set of data made up of rows and columns.

```
<table>
  <thead>
    <tr><th>Name</th><th>Age</th></tr>
  </thead>
  <tbody>
    <tr><td>Peter</td><td>23</td></tr>
    <tr><td>George</td><td>18</td></tr>
  </tbody>
</table>
```

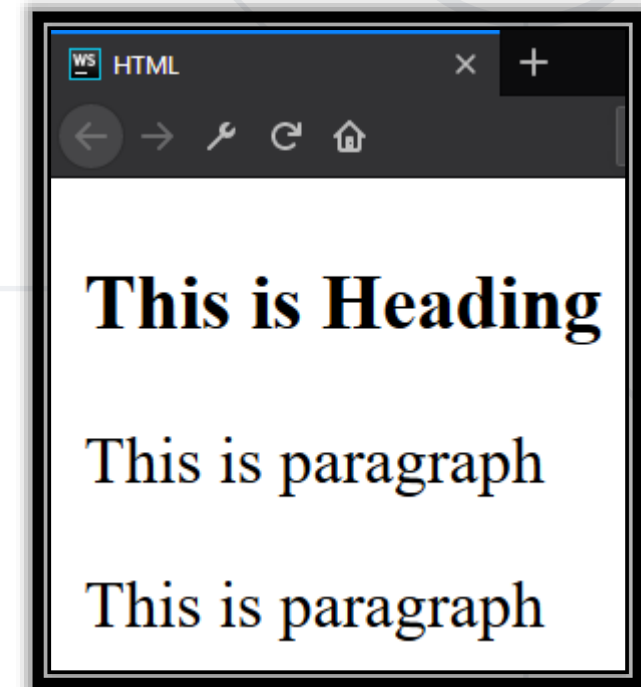


Name	Age
Peter	23
George	18

Formatting text – Division element

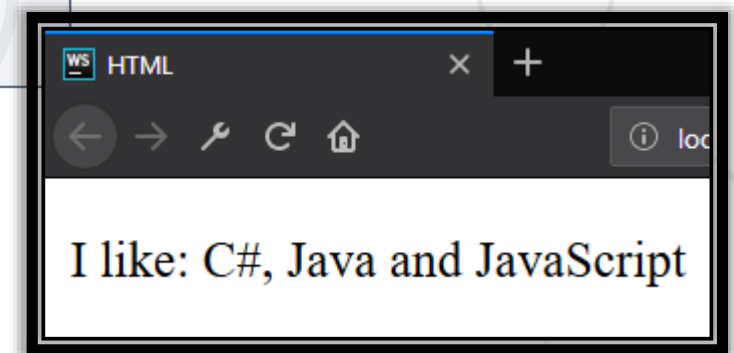
- Division element (**div**) is the generic container for flow content. It has no effect on the content or layout.
- As a "pure" container, the **<div>** element does not inherently represent anything.

```
<div>  
  <h3>This is Heading</h3>  
  <p>This is paragraph</p>  
  <p>This is paragraph</p>  
</div>
```



- **Span** element is a generic inline container for phrasing content, which does not inherently represent anything. It can be used to group elements for styling purposes.

```
<p>  
  I like: <span>C#, Java and JavaScript</span>  
</p>
```





Attributes

Attributes

- An **attribute** is a characteristic (special words) used inside the opening tag to control the tag's behavior.
- In HTML, an **attribute** is a characteristic of a page element, such as font size or color.



No space allowed

Must have space

No space allowed

```
<p id="myId"></p>
```

Attribute
name

Attribute
value

- **Attributes** are used to amplify a tag. When a Web browser interprets an **HTML tag**, it will also look for its **attributes** so that it can display the Web page's elements properly.
- Generally appear as name-value pairs, separated by '='.

```
<div class="divElement" id="mainContainer"  
  In this case, the attributes will not  
  affect the content of the div.  
</div>
```



Images, Link and Forms

Images

- **** - Embeds an image on our page on the site where it is located. It executes it by the **src** (source-source) attribute, which indicates the path to the image file.
- We also included the **alt** (alternate-substitute) attribute. Through it, we define descriptive text for users who can not see the image for some reason.




```
<body>  
  <h1>Welcome to SoftUni</h1>  
    
</body>
```



```
<body>  
  <h1>Welcome to SoftUni</h1>  
    
</body>
```



Links / References

- References / links are extremely important:
 - They are the essence of the Web (WEB).
 - To add a reference, we use this simple element **<a>**, as it comes from **anchor**
- It needs an attribute to hold the reference we want to make. This attribute is called **href** from **hypertext reference**.



SoftUni link

```
<body>  
  <a href="https://softuni.bg">SoftUni link</a>  
</body>
```

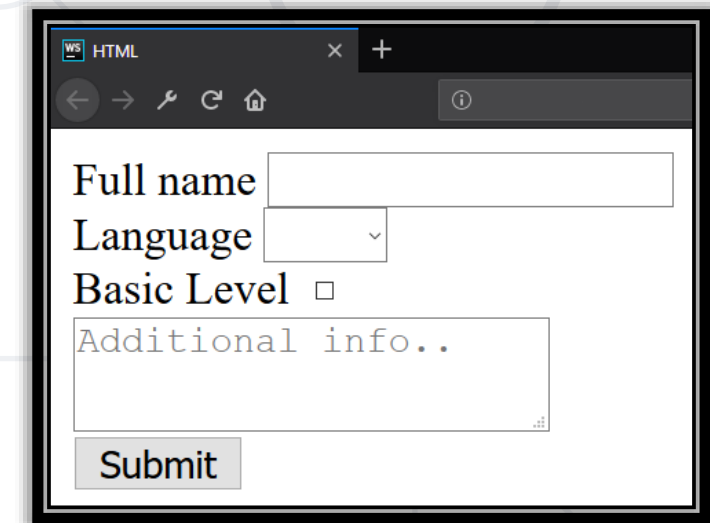
Forms

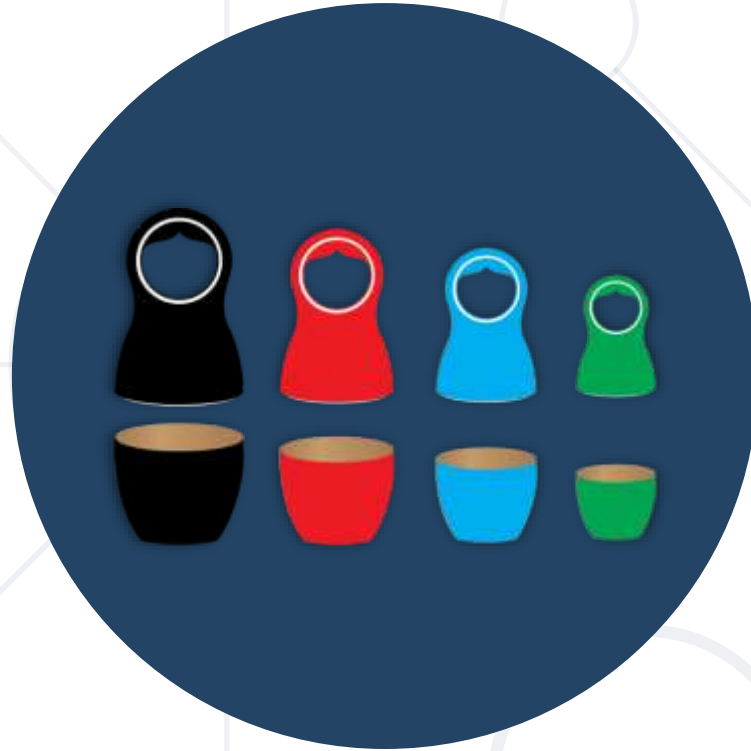
- Forms are one of the **main** points of interaction between a user and a web site or application.
- An HTML Form is made of **one or more** widgets. Those widgets can be text fields (single line or multiline), select boxes, buttons, checkboxes, or radio buttons.



- Example for a simple form:

```
<form>
  <label for="fullName">Full name</label>
  <input id="fullName" type="text" name="fullName"/><br>
  <label for="language">Language</label>
  <select id="language">
    // TODO: Add <option> tags
  </select><br>
  <label for="knowledge">Basic Level</label>
  <input id="knowledge" type="checkbox" name="language"
value="yes"><br>
  <button type="submit">Submit</button></form>
```

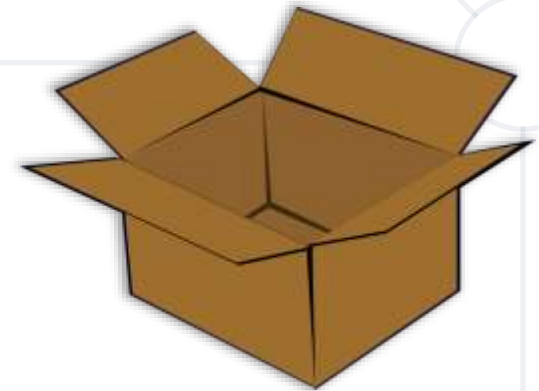




Nested and empty elements

Nested and empty elements

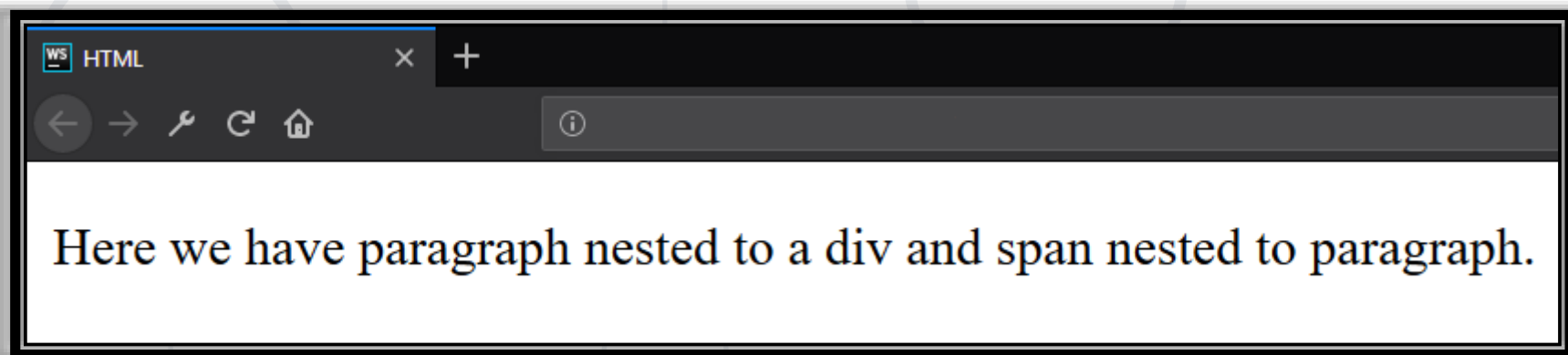
- It is possible to put an element inside another element - this is called **nesting**.
- Elements need to be opened and closed properly to be truly inside or outside of each other.
- Some items **have no** content and are called **empty elements**.



Nested elements - Example

- Nested elements

```
<div>  
  <p>Here we have paragraph nested to a div and <span>span nested  
  to paragraph</span>.</p>  
</div>
```



Empty elements - Example

- Let's take for example `` element.
 - It contains two attributes, but **no** closing tag `` and content within itself. This is because the image element does not embrace content on which to act. Its purpose is to attach a photo to the HTML page of the place it occupies.



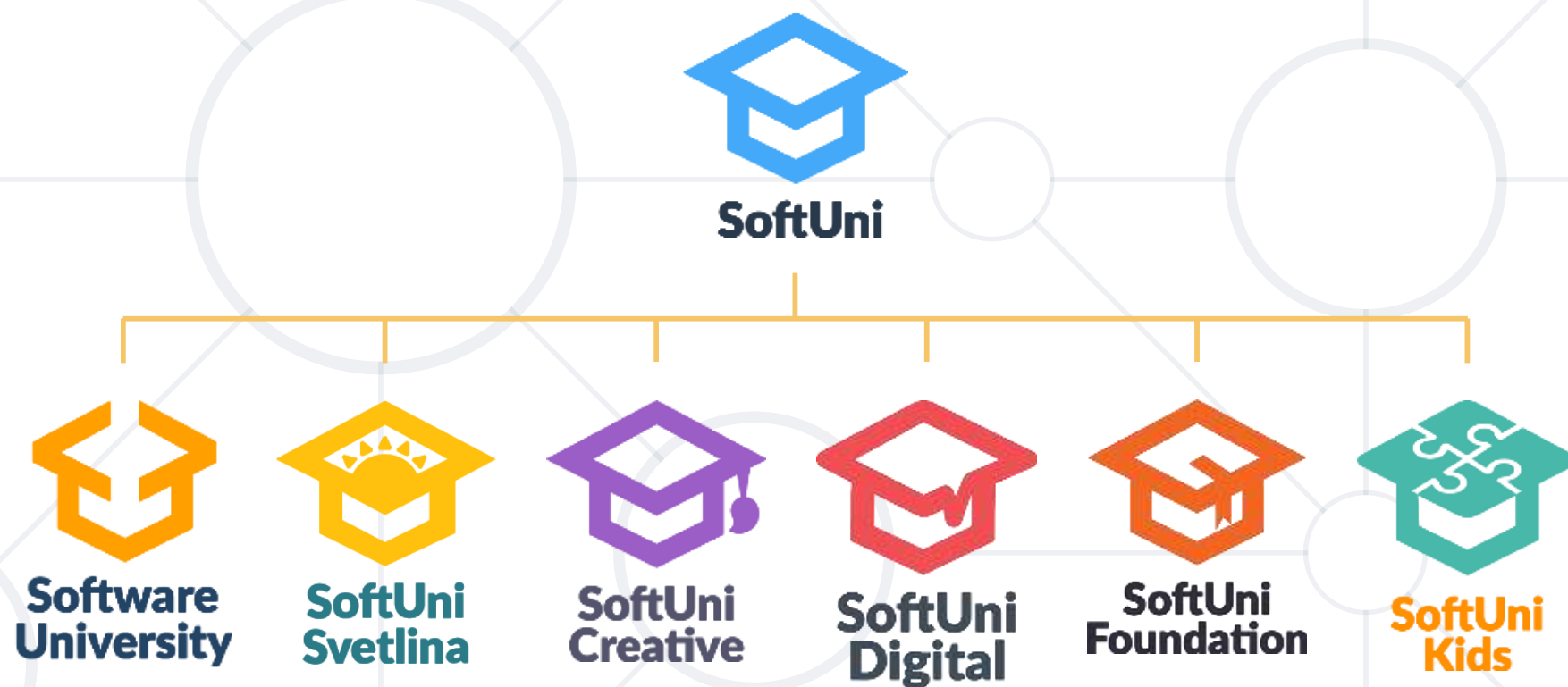
```

```


- What is HTML?
- Element anatomy
- Document anatomy
- Formatting text
- Attributes
- Images, Links and Forms
- Nested and empty elements



Questions?



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