Introduction to semantic elements

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Semantic HTML is HTML that concentrates on the meaning of information in Web pages instead of its presentation or look.

What are semantic elements?

If you want to add a paragraph, you would use the paragraph tag. If you want to add a heading, you would use the header tags `<h1>`-`<h6>`, and to add an image, you would use the image tag (we will learn about this later in this module). All these tags along with their id and class attributes are semantic because they suggest the purpose of the content within the tags. `<i>` and `<b>` suggest nothing about the content and this is why they were not considered semantic enough and initially deprecated.

Using the right tags

From a semantic HTML perspective, using the right tags is important. You should use `<blockquote>` to wrap a quote and not use a paragraph tag and then style it to look like a quote. You should use `<em>` to emphasize a part of your content, not just to italicize text. For presentation purposes, you can achieve the same using CSS. How something looks has very little to do with what it means. This is why in HTML, we separate content and style.

Why is it important?

Semantic elements are beneficial to both the developer and browser. They convey much more information about your HTML document's content and structure. There is a tag called `header` in semantic HTML. When you see a heading like `<h1>` or `<h2>`, you

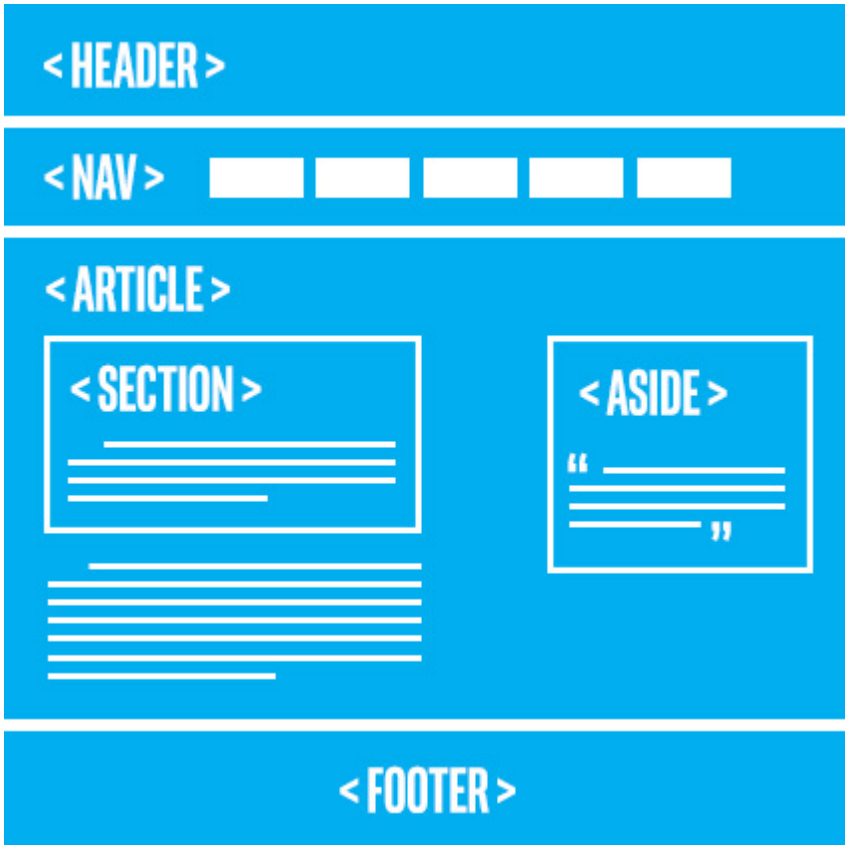
know this is likely the start of a new sub-section or topic. Communication is always welcome in any programming language.

This additional communication is useful for a **developer** who can understand the markup structure better (when you come back to your code after a year or pass it on to a colleague, this is going to help you and them a lot!). For the **browser**, it can better differentiate different types of data which results in better display of content in different devices. **Assistive technology**, such as a screen reader, will read content and convey information about the content depending on the semantic meaning, for example, identifying headers and reading them in a different tone.

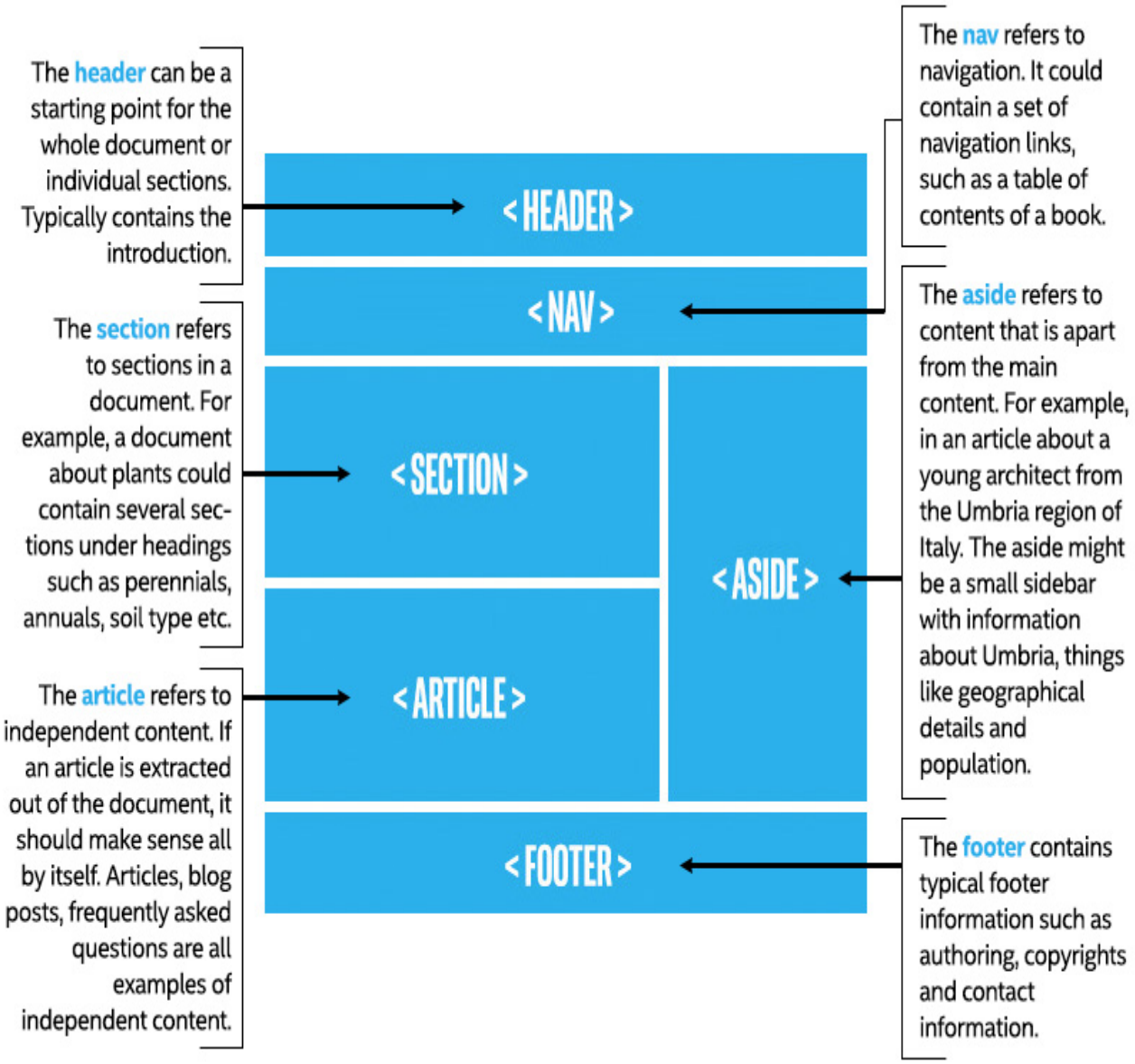
Since its establishment, it is an ongoing effort on part of W3C to make HTML as semantic as possible. HTML5 brought with it a slew of new semantic elements.

Web page structure

Let's look at a typical Web page structure.



Do you see how each section refers to a part of the document?



Tags such as **<article>**, **<section>**, **<header>**, **<nav> and <footer>** were specifically introduced in HTML5 to define the Web page structure. These new semantic elements give meaning to different parts of a webpage. When you do a Google search, the search engine automatically processes millions of HTML pages to scan and offer you the most appropriate content.

The use of these semantic elements improves the **automated processing of documents**. When it scans a `<nav>` tag, it automatically knows it includes content related to page navigation or a header indicates introductory content. It provides the structure and consistent behavior across many webpages providing simpler and more direct information to browsers making life easier for them. It also improves the **accessibility** of webpages. Assistive technologies depend on the structure of the

document to present information to the users. If a screen reader can correctly determine the structure of a document, it reads the document more seamlessly and avoids irrelevant information or repeating content.

We can apply the elements in the image above to a simple Web page like this:

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <title>Introduction to semantic elements</title>
</head>

<body>
<header>
  <h2>Using the Markup Validator.</h2>
</header>
<nav>
<!--You will learn about <a> tag later in this chapter-->
  <a href="">What is the Markup Validator and what does it do?</a><br />
  <a href="">Why validate?</a><br />
  <a href="">How do I use the Markup validator?</a><br />
  <a href="">Many error messages? Don't panic.</a><br />
</nav>
<section>
  <h3>What is the Markup Validator and what does it do?</h3>
  <p> The Markup Validator is a free tool and service that
    <a href="https://validator.w3.org/docs/help.html#validation_basics">validates markup</a>: in other words, it checks the syntax of Web documents, written in formats such as HTML.</p>
</section>
<section>
  <h3>Why validate?</h3>
  <p> One of the important maxims of computer programming is: "Be conservative in what you produce; be liberal in what you accept."

Browsers follow the second half of this maxim by accepting Web pages and trying to display them even if they're not
```

```
    legal HTML. The problem is that different browsers (or even
    different versions of the same browser) will make different
    guesses about the same illegal construct...
30.   </p>
31. </section>
32. <article>
33.   <h3>How do I use the Markup validator?</h3>
34.   <p>Most probably, you will want to use the online Markup
    Validation service. The simple way to use this service to
    validate a Web page is to paste its address into the
35.   <a href="https://validator.w3.org/#uri">text area</a>
36.   on the
37.   <a href="https://validator.w3.org/">validator's home
    page</a>
38.   ,and press the "Check" button.</p>
39. </article>
40. <aside>
41.   <h3>Many error messages? Don't panic.</h3>
42.   <p> Don't panic. Did The Validator complain about your
    DOCTYPE declaration (or lack thereof)? Make sure your
    document has a syntactically correct DOCTYPE declaration,
    as described in the section on DOCTYPE, and make sure it
    correctly identifies the type of HTML you're using. Then
    run it through The Validator again; if you're lucky, you
    should get a lot fewer errors.
43.
44. If this doesn't help, then you may be experiencing a
    cascade failure ... </p>
45. </aside>
46. <footer>
47.   <p>Written by: W3C</p>
48.   <p>For more information, please visit <a
    href="https://validator.w3.org/docs/help.html">this
    page</a>.</p>
49. </footer>
50. </body>
51.
52. </html>
```

HTML

LIVE

```
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5    <meta charset="UTF-8">
6    <title>Introduction to semantic
   elements</title>
7  </head>
8
9  <body>
10   <header>
11     <h2>Using the Markup Validator.
   </h2>
12   </header>
13   <nav>
14     <!--You will learn about <a> tag
   later in this chapter-->
15     <a href="">What is the Markup
   Validator and what does it do?</a><br
   />
16     <a href="">Why validate?</a><br
   />
17     <a href="">How do I use the
   Markup validator?</a><br />
18     <a href="">Many error messages?
   Don't panic.</a><br />
```

Result

EDIT ON

Using the Markup Validator.

What is the Markup Validator and what does it do?
Why validate?
How do I use the Markup validator?
Many error messages? Don't panic.

What is the Markup Validator and what does it do?

The Markup Validator is a free tool and service that validates markup: in other words, it checks the syntax of Web documents, written in formats such as HTML.

Why validate?

One of the important maxims of computer programming is: "Be conservative in what you produce; be liberal in what you accept." Browsers follow the second half of this maxim by accepting Web pages and trying to display them even if they're not legal HTML. The problem is that different browsers (or even

Knowledge check 2.3.2 (not graded)

0 points possible (ungraded)

Why should you use semantic elements in your Web page?

- It provides meaning and structure to the Web page and improves automated processing of documents
- A user will eventually run out of 'id' values and semantic elements solve that problem
- It makes styling the Web page easier
- It will drastically improve the structure of your document visually

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