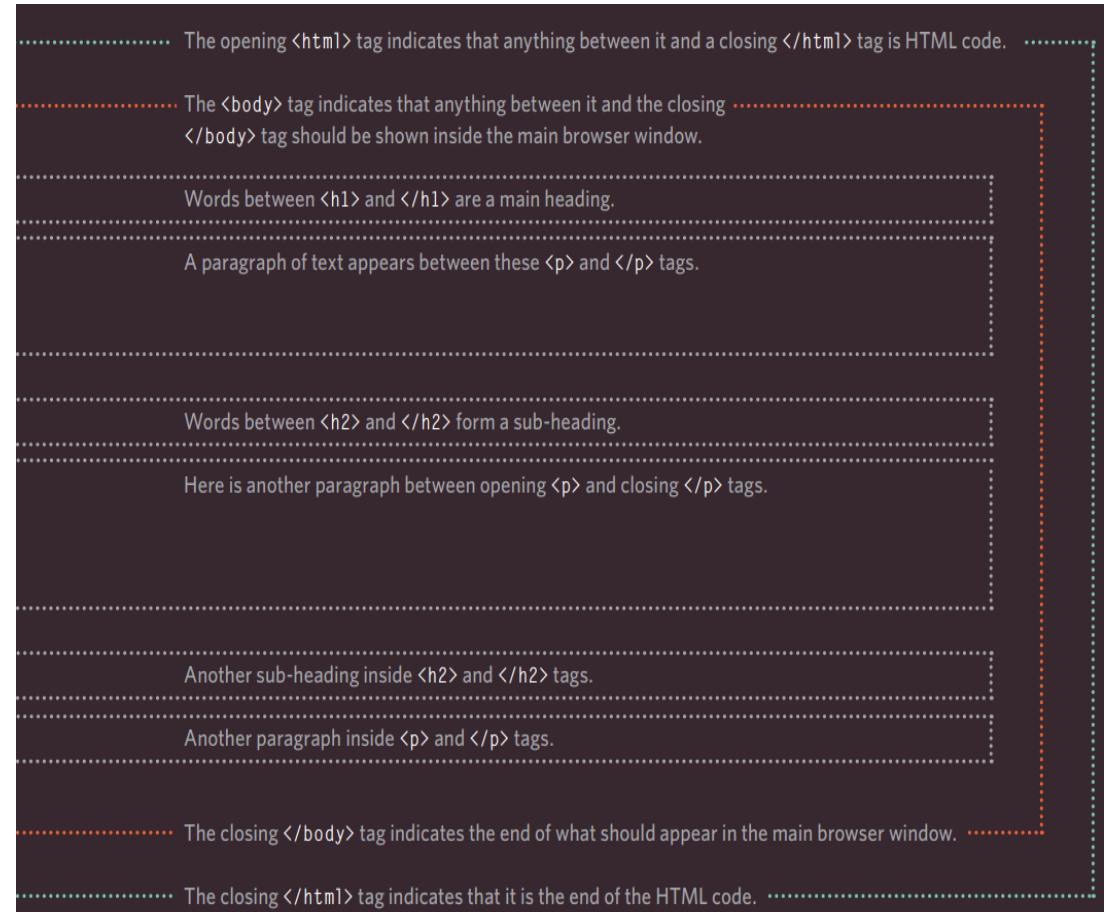# Web and Mobile application Development
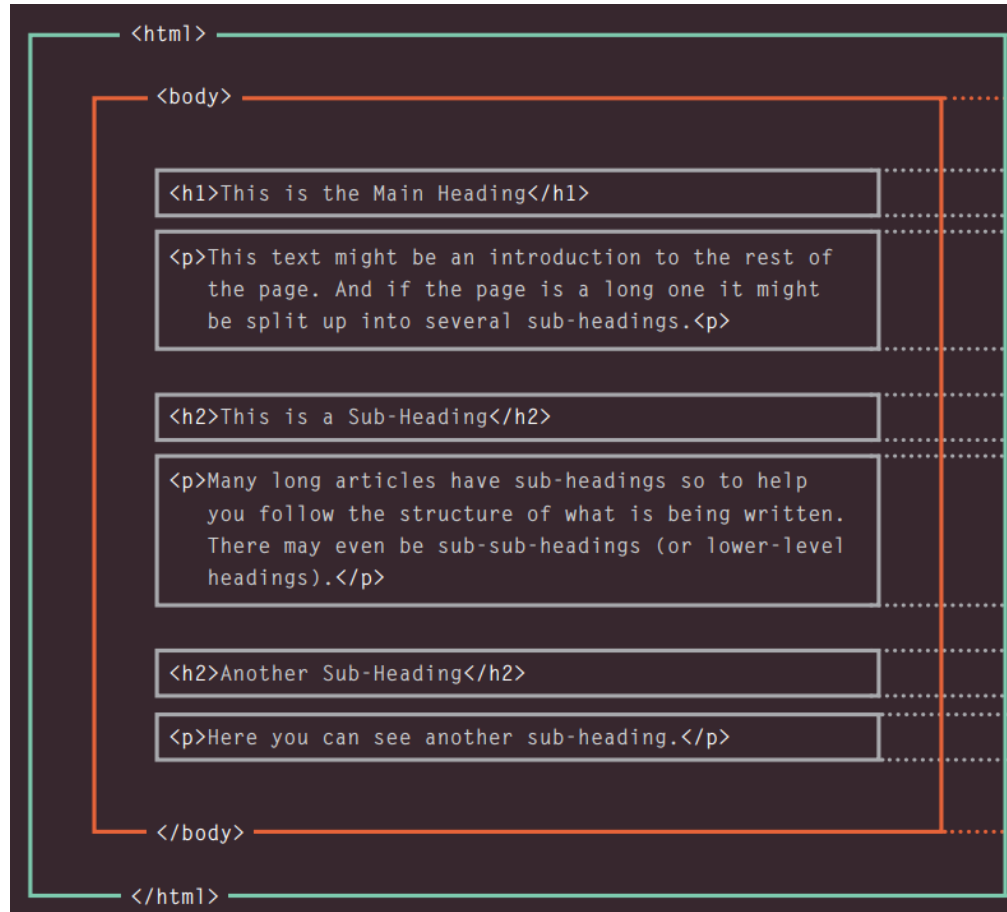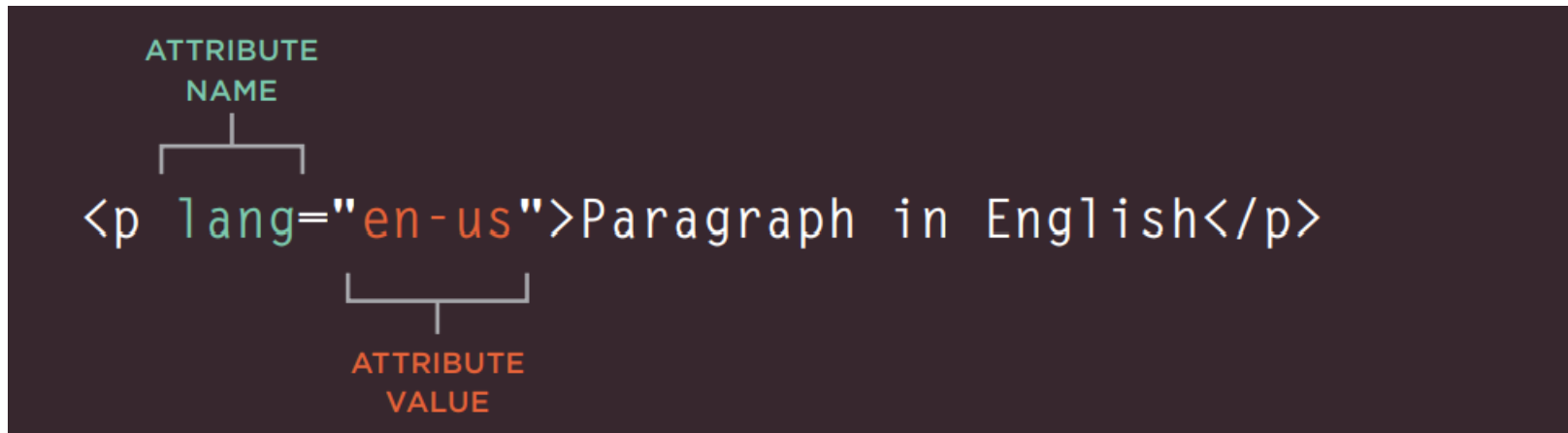
Structure of HTML

HTML Uses Elements to Describe the Structure of Pages

```
<html>
    <body>

        <h1>This is the Main Heading</h1>

        <p>This text might be an introduction to the rest of
           the page. And if the page is a long one it might
           be split up into several sub-headings.<p>


        <h2>This is a Sub-Heading</h2>

        <p>Many long articles have sub-headings so to help
           you follow the structure of what is being written.
           There may even be sub-sub-headings (or lower-level
           headings).</p>


        <h2>Another Sub-Heading</h2>

        <p>Here you can see another sub-heading.</p>

    </body>
</html>
```

The opening `<html>` tag indicates that anything between it and a closing `</html>` tag is HTML code.

The `<body>` tag indicates that anything between it and the closing `</body>` tag should be shown inside the main browser window.

Words between `<h1>` and `</h1>` are a main heading.

A paragraph of text appears between these `<p>` and `</p>` tags.

Words between `<h2>` and `</h2>` form a sub-heading.

Here is another paragraph between opening `<p>` and closing `</p>` tags.

Another sub-heading inside `<h2>` and `</h2>` tags.

Another paragraph inside `<p>` and `</p>` tags.

The closing `</body>` tag indicates the end of what should appear in the main browser window.

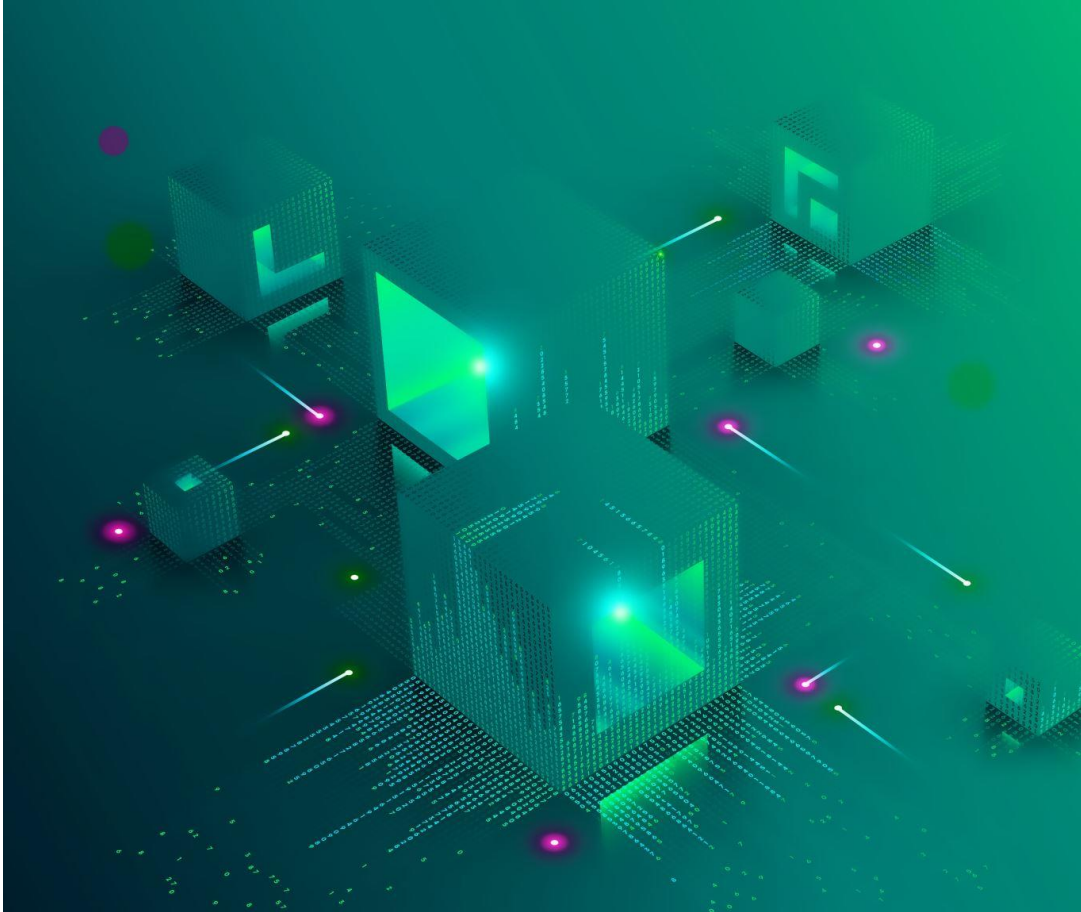The closing `</html>` tag indicates that it is the end of the HTML code.

Attributes

Attributes provide additional information about the contents of an element. They appear on the opening tag of the element and are made up of two parts: a name and a value, separated by an equals sign.

Here an attribute called lang is used to indicate the language used in this element. The value of this attribute on this page specifies it is in US English.

Attributes (Cont.)

- The attribute name indicates what kind of extra information you are supplying about the element's content. It should be written in lowercase.

- The value is the information or setting for the attribute. It should be placed in double quotes.

- Different attributes can have different values.

- The majority of attributes can only be used on certain elements, although a few attributes (such as lang) can appear on any element.

- Most attribute values are either pre-defined or follow a stipulated format. We will look at the permitted values as we introduce each new attribute.

- The value of the lang attribute is an abbreviated way of specifying which language is used inside the element that all browsers understand.

Summary of Structure

HTML pages are text documents.

HTML uses tags (characters that sit inside angled brackets) to give the information they surround special meaning.

Tags are often referred to as elements.

Tags usually come in pairs.

The opening tag denotes the start of a piece of content; the closing tag denotes the end.

Opening tags can carry attributes, which tell us more about the content of that element.

Attributes require a name and a value.

To learn HTML you need to know what tags are available for you to use, what they do, and where they can go.
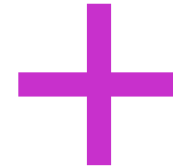
Semantic and Structural tags

Structural Tags: the elements that you can use to describe both headings and paragraphs.

EFFECT ON OUTPUT e.g <p> <h1>

Semantic Tags which provides extra information;

NO DIFFERENCE ON OUTPUT, E.G <HTML> only used for better understanding

Headings

Revised

```
<h1>
<h2>
<h3>
<h4>
<h5>
<h6>
```

chapter-02/headings.html   HTML

```
<h1>This is a Main 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>
```

HTML has six "levels" of headings:

<h1> is used for main headings

<h2> is used for subheadings

If there are further sections under the subheadings then the <h3> element is used, and so on...

RESULT

This is a Main Heading

This is a Level 2 Heading

This is a Level 3 Heading

This is a Level 4 Heading

This is a Level 5 Heading

This is a Level 6 Heading

Paragraphs

Revised


```
HTML                        chapter-02/paragraphs.html

<p>A paragraph consists of one or more sentences
   that form a self-contained unit of discourse. The
   start of a paragraph is indicated by a new
   line.</p>
<p>Text is easier to understand when it is split up
   into units of text. For example, a book may have
   chapters. Chapters can have subheadings. Under
   each heading there will be one or more
   paragraphs.</p>
```

⟨p⟩

To create a paragraph, surround the words that make up the paragraph with an opening <p> tag and closing </p> tag.

By default, a browser will show each paragraph on a new line with some space between it and any subsequent paragraphs.

RESULT

A paragraph consists of one or more sentences that form a self-contained unit of discourse. The start of a paragraph is indicated by a new line.

Text is easier to understand when it is split up into units of text. For example, a book may have chapters. Chapters can have subheadings. Under each heading there will be one or more paragraphs.

Bold

By enclosing words in the tags **and** we can make characters appear bold.

chapter-02/bold.html HTML

```
<p>This is how we make a word appear <b>bold.</b>
    </p>
<p>Inside a product description you might see some
    <b>key features</b> in bold.</p>
```

RESULT

This is how we make a word appear **bold.**

Inside a product description you might see some **key features** in bold.

Italic

By enclosing words in the tags *and* we can make characters appear italic.


```
chapter-02/italic.html                          HTML
<p>This is how we make a word appear <i>italic</i>.
    </p>
<p>It's a potato <i>Solanum teberosum</i>.</p>
<p>Captain Cook sailed to Australia on the
    <i>Endeavour</i>.</p>
```

                                                RESULT

This is how we make a word appear *italic*.

It's a potato *Solanum teberosum*.

Captain Cook sailed to Australia on the *Endeavour*.

Superscript & Subscript

\<sup\>

The \<sup\> element is used to contain characters that should be superscript such as the suffixes of dates or mathematical concepts like raising a number to a power such as 2^2.

\<sub\>

The \<sub\> element is used to contain characters that should be subscript. It is commonly used with foot notes or chemical formulas such as H_2O.

HTML   chapter-02/superscript-and-subscript.html

```
<p>On the 4<sup>th</sup> of September you will learn
    about E=MC<sup>2</sup>.</p>
<p>The amount of CO<sub>2</sub> in the atmosphere
    grew by 2ppm in 2009<sub>1</sub>.</p>
```

RESULT

On the 4th of September you will learn about $E=MC^2$.

The amount of CO_2 in the atmosphere grew by 2ppm in 2009_1.

White Space

When the browser comes across two or more spaces next to each other, it only displays one space. Similarly, if it comes across a line break, it treats that as a single space too. This is known as white space collapsing

```
chapter-02/white-space.html                              HTML

<p>The moon is drifting away from Earth.</p>
<p>The moon          is drifting away from Earth.</p>
<p>The moon is drifting away from

     Earth.</p>
```
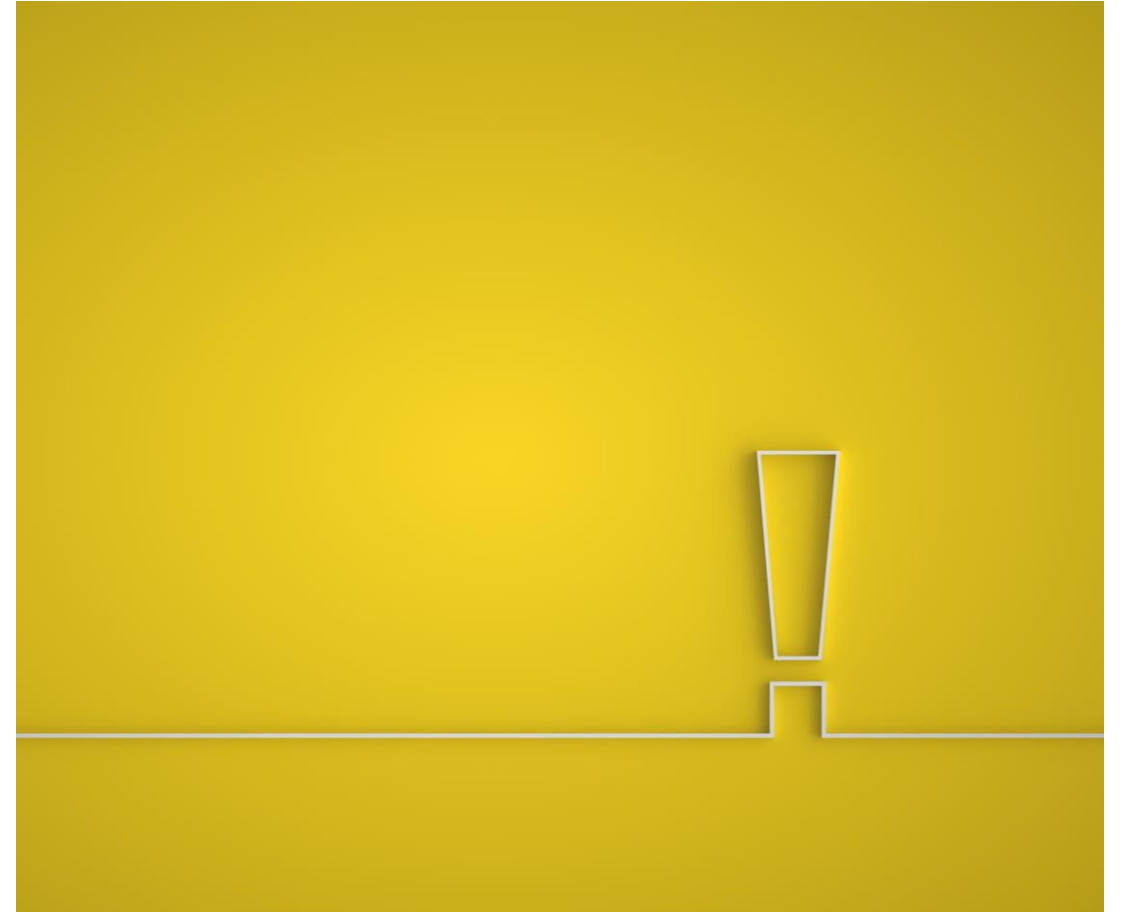
RESULT

The moon is drifting away from Earth.

The moon is drifting away from Earth.

The moon is drifting away from Earth.

Self closing tags

- A self-closing tag in HTML is **a kind of HTML tag that does not need to be closed manually by its closing tag**, which means it does not have a separate closing tag as </tag>.

- Some few self-closing tags are <hr/>,

Line Breaks

Although, the browser will automatically show each new paragraph or heading on a new line. But if you wanted to add a line break inside the middle of a paragraph you can use the line break tag.

.

The <br /> tag is an empty tag which means that it has no end tag.


```
HTML                              chapter-02/line-breaks.html

<p>The Earth<br />gets one hundred tons heavier
   every day<br />due to falling space dust.</p>
```

```
RESULT

The Earth
gets one hundred tons heavier every day
due to falling space dust.
```

Horizontal Rules

To create a break between themes —
such as a change of topic in a book or a
new scene in a play — you can add a
horizontal rule between sections using
the <hr /> tag.


```
HTML                                    chapter-02/horizontal-rules.html
<p>Venus is the only planet that rotates
   clockwise.</p>
<hr />
<p>Jupiter is bigger than all the other planets
   combined.</p>
```

RESULT

Venus is the only planet that rotates clockwise.

Jupiter is bigger than all the other planets combined.

Nested Tags

Tags within tag.

```
Voluptate quae vitae quas amet ipsam in impedit repudiandae! Inventore
<p> Lorem <br /> ipsum dolor sit amet, consectetur adipisicing elit.
    <br /> Cupiditate dolore quisquam maiores eum impedit perferendis,
    <br /> inventore quas quis eius vel nobis autem architecto, vitae tenet
    laboriosam optio <b> <i> accusamus </i>. Laborum, recusandae? </b>

</p>
```