

Chapter 2: HTML Tables, Lists and Divisions

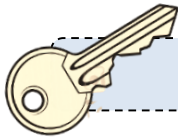
Learning Outcomes:

- ✓ Implement rudimentary CSS to change the appearance of some HTML elements
- ✓ Create a HTML table
- ✓ Create an ordered and unordered HTML list
- ✓ Identify the importance of divs and metadata



Prerequisite Knowledge:

- ✓ Complete Chapter 1
- ✓ Be able to use basic HTML elements, for example, `<p>`, `<h1>`, `` and `<i>` tags
- ✓ Be able to create hyperlinks to external websites and documents using the `<a>` tag



Inline

Block

Metadata

Divs

Bookmarks

SEO

Keywords

2.1 Theory: Introduction to CSS

Chapter 1 provided a simple introduction to the basic structural elements in HTML. Chapter 2 will continue this theme by examining additional structural elements that are available in the HTML specification, as well as identifying their usefulness in displaying different types of information. In particular, HTML tables, lists and divisions. However, before these elements are examined further, some understanding of CSS is essential. As explained in the introduction, CSS is a modern technology used to format the appearance of web pages, as opposed to using deprecated HTML tags (that were once used). The next section provides a simple introduction to CSS, although CSS will be examined in detail in proceeding chapters.

Simple CSS

CSS can be applied to any HTML element by using the `style` attribute inside an opening tag; for example, an opening paragraph tag `<p style="..."> </p>`. CSS syntax (that is placed between the quotations) must have both a property and a value; the property is proceeded by a colon (:) and the value is proceeded by a semi-colon (;); for example, `property:value`. Here is an example of some real CSS syntax that is used to change the colour of font; `color:red`. Below are further examples of how CSS can be implemented into a HTML document:

`<p style="color:blue;">This paragraph is blue.</p>` → This paragraph is blue.

`<h1 style="color:#FF0000;">This heading is red.</h1>` → **This heading is red.**

`<em style="font-family:arial;">This font is Arial.` → *This font is Arial.*

`<strong style="font-size:20px;">Font size 20px.` → **Font size 20px.**

`<p style="color:blue;font-family:arial;">Arial and blue.</p>` → Arial and blue.



HTML Tips!

Not all fonts are available on a user's computer. Therefore, if the font specified does not exist, the browser will use a default font instead. Some common web fonts include: Times New Roman, Georgia, Arial, Verdana, Courier New and Lucida Console.



HTML Tips!

Colours can be specified using key words; for example, red, green, blue, yellow, cyan, purple and so on. Alternatively, a more specific colour can be specified using a hexadecimal colour; for example, #FF0000 (which is a shade of red).

2.2 Practical: HTML Tables

Building a HTML Table

HTML tables can be used to display tabular data in a web page. In the early days of web design, they were also used to structure a web page; however, this method has since been replaced by the use of CSS and divisions (divisions will be looked at later in this chapter). However, in the new specification, HTML tables are now only used to display data.

Activity 2.1

Review the previous section and try some CSS with the following elements: `<p>`, `<h1>` and ``.

Tables are defined by using the opening and closing `<table></table>` tags. A table is divided into rows, and in HTML, this is achieved by using the opening and closing `<tr></tr>` tags (short for 'table row'). Rows are divided further into individual cells by using the opening and closing `<td></td>` tags (short for 'table data'); these tags are used to store the actual table data, including text, lists, images or even other tables. Heading rows can also be applied to a table by using the opening and closing `<th></th>` tags (short for 'Table Header').

Car	Model
Ford	Fiesta
Toyota	Prius
Honda	Civic

To the left is an illustration of how a table is structured in a HTML document. Be aware that each row is defined with the `<tr></tr>` tags and each cell is defined with the `<td></td>` tags. Below is a syntax example of a table structured in a HTML document and a screen-print of how the same document would be rendered in a web page;

Activity 2.2

1. Create the following table in a HTML document and then view it in a web page:

Film	Rating
Tremors	15
Ice Age	U
Bad Boys	18
Bugs Life	U

2. Add an outside border to the table.

```
<!DOCTYPE html>
<html>
<head>
  <title>My First Table</title>
  <meta charset="UTF-8">
</head>
<body>
  <table>
    <tr><th>Car</th><th>Model</th></tr>
    <tr><td>Ford</td><td>Fiesta</td></tr>
    <tr><td>Toyota</td><td>Prius</td></tr>
    <tr><td>Honda</td><td>Civic</td></tr>
  </table>
</body>
</html>
```

Car Model
Ford Fiesta
Toyota Prius
Honda Civic



HTML Tips!

Below is an example of how an outside border can be added to a table by using the `style` attribute (as part of the opening table tag) and CSS;

```
<table style="border:1px solid black;">
```

Car Model
Ford Fiesta
Toyota Prius
Honda Civic

HTML5 Tables and CSS

In the new standard of HTML there are additional tags that can be used to define the characteristics of a table further; they are `<tbody></tbody>` (groups the table body row(s)), `<thead></thead>` (groups the table head row(s)), and `<tfoot></tfoot>` (groups the table foot row(s)). These additional tags can be used to improve the manipulation of table data; one example may be enabling independent scrolling of the body content. Below is an example of a table structure that implements these additional tags. Also, note that the `<thead>` and `<tfoot>` elements are defined above the `<tbody>` element:

```
<!DOCTYPE html>
<html>
<head>
  <title>HTML5 Table</title>
  <meta charset="UTF-8">
</head>
<body>
  <table>
    <thead>
      <tr>
        <th>Head 1</th><th>Head 2</th><th>Head 3</th>
      </tr>
    </thead>
    <tfoot>
      <tr>
        <td>The Footer</td>
      </tr>
    </tfoot>
    <tbody>
      <tr>
        <td>Content 1</td><td>Content 2</td><td>Content 3</td>
      </tr>
      <tr>
        <td>Content 1</td><td>Content 2</td><td>Content 3</td>
      </tr>
      <tr>
        <td>Content 1</td><td>Content 2</td><td>Content 3</td>
      </tr>
      <tr>
        <td>Content 1</td><td>Content 2</td><td>Content 3</td>
      </tr>
      <tr>
        <td>Content 1</td><td>Content 2</td><td>Content 3</td>
      </tr>
    </tbody>
  </table>
</body>
</html>
```

Head 1	Head 2	Head 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
The Footer		

Activity 2.3

Create a new web page that demonstrates the HTML example shown on this page. Try the web page both with and without the **border** attribute to compare the differences.

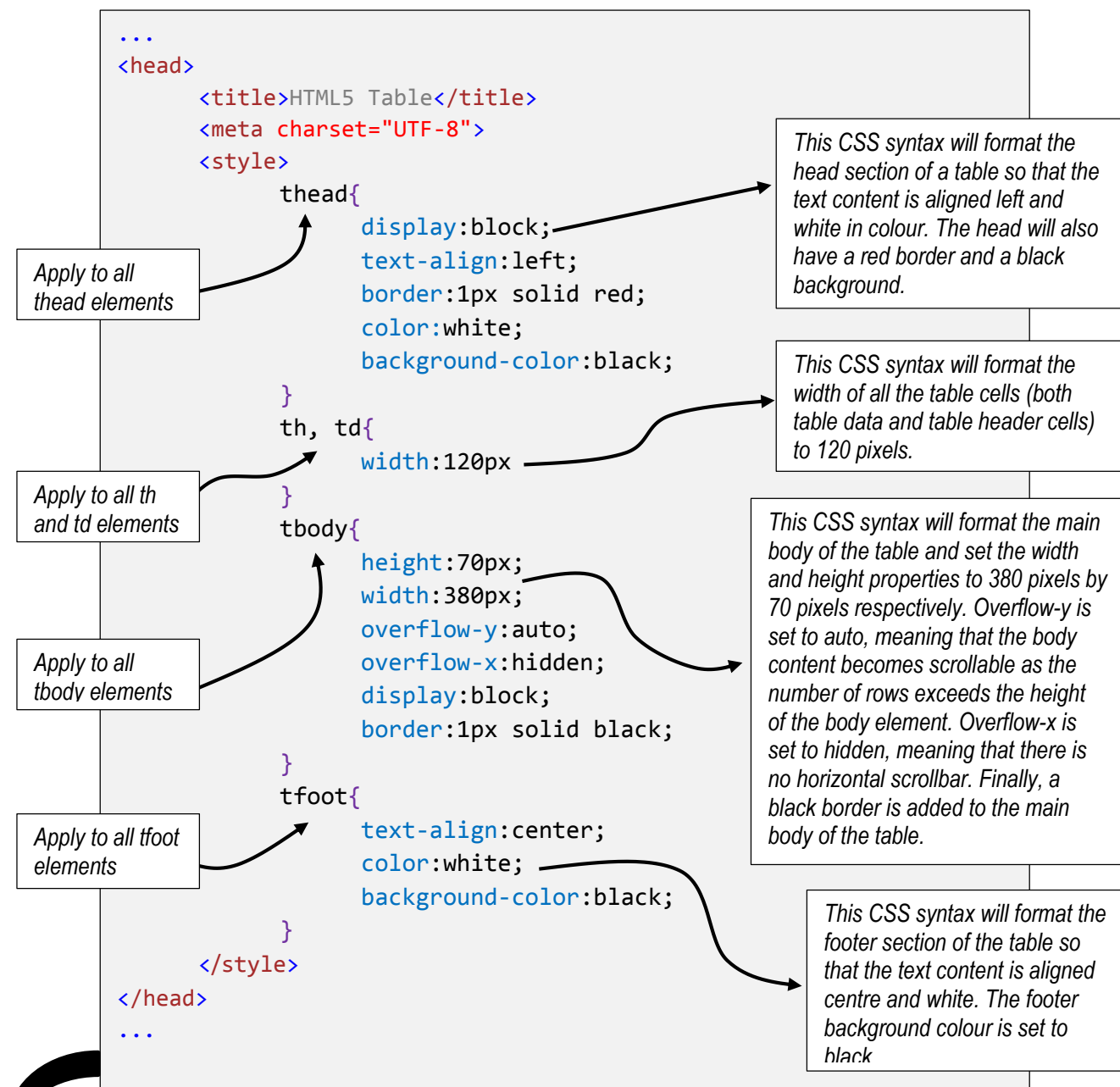
HTML Tips!

Add the following attribute to the opening `<table>` tag. The **border** attribute has been deprecated in HTML5 (replaced by CSS), but is still rendered by the browser. The border makes the structure clearer;

```
<table border="1">
```

Head 1	Head 2	Head 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
The Footer		

In the previous example, the structure and content of a table was defined using HTML tags, but the presentation of the table was non-existent. CSS can be used to manipulate the presentation of HTML tables. At the start of the chapter CSS was implemented by using the **style** attribute; however, CSS can also be applied by adding the syntax between opening and closing `<style></style>` tags, in the head section of a HTML document. Below is an example of CSS (added to the head of a document) that is used to improve the presentation of a HTML table. Do not be concerned if all of the CSS properties are not clear at this point, CSS is examined in great detail in subsequent chapters.



Head 1	Head 2	Head 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
Content 1	Content 2	Content 3
The Footer		

Activity 2.4

Add the CSS syntax above to the head section of the HTML document that was created for activity 2.3. Test the web page to ensure that the table is presented correctly and that the body content is scrollable.

Activity 2.5

Create a web page containing a table that presents meaningful content; for example, a football league table or a price list for a shop. Experiment with the CSS properties and values to change the format of the table; for example, the size and colour of the table.



HTML Tips!

The `display:block;` property is used to display both the head and body content as a 'single block' (which acts similar to a `<p>` tag), as opposed to multiple cells. Without this property, the body content would not be scrollable.



HTML Tips!

In HTML, how would one change only 'this part of the sentence to the colour red', but not the rest of the sentence? To achieve this, the opening and closing `` tags are required. The span tag has no special meaning, but is useful when applying a style (using CSS) to a section of text (a small container), as opposed to applying the style to all of it. The tag is referred to as an 'inline' element as the tag follows the normal flow of the document. The following syntax could be used to achieve the opening sentence (of this box) in a web page:

`<p>`

In HTML, how would one change only '``this part of the sentence to the colour red,``' but not the rest of the sentence?


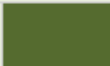
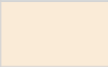

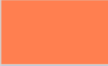

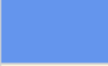





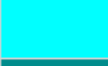



`</p>`

In HTML, how would one change only 'this part of the sentence to the colour red', but not the rest of the sentence?



HTML Tips!

In HTML and CSS there are 17 standard colours; they are aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, orange, purple, red, silver, teal, white, and yellow. Any of these names can be used when specifying a colour. Colours can also be specified using a hexadecimal code; for example, the hexadecimal code for white is #FFFFFF and for black is #000000. Below are some examples of extended colour options (along with their hexadecimal code) that are listed as part of the newer HTML and CSS standard;

AliceBlue		#F0F8FF	DarkOliveGreen		#556B2F
AntiqueWhite		#FAEBD7	DarkOrange		#FF8C00
Coral		#FF7F50	DarkOrchid		#9932CC
CornflowerBlue		#6495ED	DarkRed		#8B0000
Cornsilk		#FFF8DC	DarkSalmon		#E9967A
Crimson		#DC143C	DarkSeaGreen		#8FBC8F
Cyan		#00FFFF	DarkSlateBlue		#483D8B
DarkCyan		#008B8B	RoyalBlue		#4169E1

2.3 Practical: HTML Lists

Ordered and Unordered Lists

Lists are a useful way of presenting information in a web page. In HTML, there are three types of list; they are ordered, unordered and descriptive. The most common are ordered and unordered lists, frequently referred to as numbered or bulleted lists.

```
<!DOCTYPE html>
<html>
<head>
  <title>My List</title>
  <meta charset="UTF-8">
</head>
<body>
  <ul>
    <li>Item 1</li>
    <li>Item 2</li>
    <li>Item 3</li>
    <li>Item 4</li>
  </ul>
</body>
</html>
```



- Item 1
- Item 2
- Item 3
- Item 4

This example (to the left) will generate an unordered list. The opening and closing `` tags are used to mark the start and end of the unordered list. Each list item is enclosed using the opening and closing `` tags and can include as many items as necessary. The default bullet style for an unordered list is a circular black disk, although this can be changed using CSS.



HTML Tips!

CSS can be used to manipulate the appearance of unordered lists. Try the following syntax:

```
<ul style="list-style-type:circle;">
    Or
<ul style="list-style-type:square;">
```

```
<!DOCTYPE html>
<html>
<head>
  <title>My List</title>
  <meta charset="UTF-8">
</head>
<body>
  <ol>
    <li>Item 1</li>
    <li>Item 2</li>
    <li>Item 3</li>
    <li>Item 4</li>
  </ol>
</body>
</html>
```



1. Item 1
2. Item 2
3. Item 3
4. Item 4

This example (to the left) will generate an ordered list. The opening and closing `` tags are used to mark the start and end of the ordered list. Each list item is enclosed using the opening and closing `` tags and can include as many items as necessary. The default style for an ordered list is numbered, although this can be changed using CSS; for example, to letters or even roman numerals.



HTML Tips!

CSS can be used to manipulate the appearance of ordered lists too. Try the following syntax:

```
<ol style="list-style-type:upper-roman;">
    Or
<ol style="list-style-type:lower-alpha;">
```

TIP: the words 'lower' and 'upper' can be used interchangeably; for example, 'upper-alpha' can be used to change the format of the list to capital letters.

Activity 2.6

Create a web page that has two titles, 'Ordered List' and 'Unordered List'. Under each title create the respective list type and add five items to each list. The list content can be of any topic. Use CSS to change the style of each list.



Descriptive Lists

The last list type available in HTML is referred to as 'descriptive'. However, it is worth noting that this list type is not as popular, partially because tables are more commonly used as the preferable format type. Descriptive lists are similar to an unordered list, except each item in the list is described further.

Activity 2.7

Create a web page that contains three descriptive lists, similar to the example shown here. The first list should have a minimum of three starters (and their descriptions), the second list should have a minimum of five mains (and their descriptions) and the final list should have a minimum of three desserts (and their descriptions). Ensure that the web page has suitable titles.

```
<!DOCTYPE html>
<html>
<head>
  <title>My List</title>
  <meta charset="UTF-8">
</head>
<body>
  <dl>
    <dt>GRILLED ASPARAGUS BRUSCHETTA</dt>
    <dd>With lemony mozzarella & smashed minty peas</dd>
    <dt>CRISPY SQUID</dt>
    <dd>With garlic mayo, lemon & chilli</dd>
    <dt>CRISPY KING PRAWNS</dt>
    <dd>Wrapped in angel hair pasta with tomato, basil & chilli sauce</dd>
    <dt>SEASONAL VEG CRUDITÉS ON ICE</dt>
    <dd>With a pesto yoghurt dip</dd>
  </dl>
</body>
</html>
```

GRILLED ASPARAGUS BRUSCHETTA
With lemony mozzarella & smashed minty peas

CRISPY SQUID
With garlic mayo, lemon & chilli

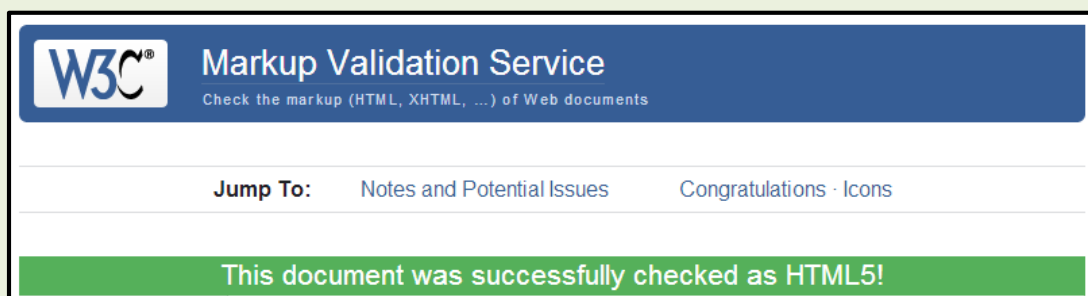
CRISPY KING PRAWNS
Wrapped in angel hair pasta with tomato, basil & chilli sauce

SEASONAL VEG CRUDITÉS ON ICE
With a pesto yoghurt dip



HTML Tips!

During the introduction of this resource, it was mentioned that W3C is the organisation that maintains HTML standards; their website also provides a useful validator that will compare an authored web page against those standards. If there are any errors identified with the written HTML/CSS, the validator will specify the line number of where those errors occur. To use the validator, navigate to the following address <http://validator.w3.org/> Once on the W3C website, either specify a web URL (address) or upload a HTML document to validate it. Try it yourself!



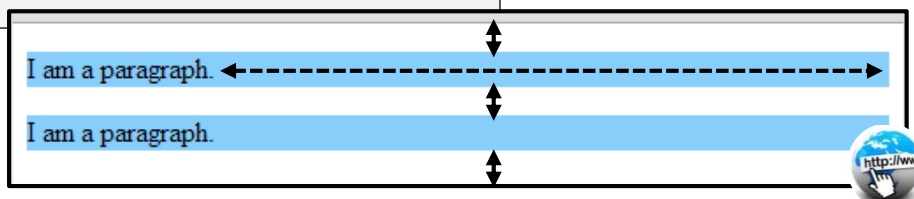
2.4 Theory: HTML Element Types

HTML Block and Inline Elements

HTML elements are normally defined as either 'block level' elements or as 'inline' elements. Block level elements, by default, consume the entire width of a web page (like a block) unless otherwise specified. They also, again by default, start and end with a new line in the browser. HTML elements that are considered as block level include `<p>`, `<h1>`, ``, ``, `<table>` and `<div>` (yet to be introduced). Below is an example of two block-level elements being displayed in the browser; note that there is a default new line added before and after each paragraph, and that each paragraph also fills the entire width of the web page.

```
<!DOCTYPE html>
<html>
<head>
  <title>HTML Block Elements</title>
  <meta charset="UTF-8">
</head>
<body>
  <p style="background:LightSkyBlue;">
    I am a paragraph.
  </p>
  <p style="background:LightSkyBlue;">
    I am a paragraph.
  </p>
</body>
</html>
```

HTML inline elements are the opposite of block-level elements; they do not start and end with a new line and, by default, do not span the width of an entire web page. They are referred to as inline because they are displayed in the normal flow of a web page. Examples of inline elements include ``, `<i>`, `` and `<a>`.



The Division (Div) Tag

So far HTML lists, tables, images, hyperlinks and several formatting tags have been examined; yet none of these tags can be used to group elements together and provide a layout (for example, header, footer and main content) for a web page. This is the role of a `<div></div>` tag; consider this tag as a box that is used to build web page layouts and to group HTML elements. This is why `<div></div>` tags are sometimes referred to as container tags. As the `<div></div>` tag is a block-level element, by default it has a line break before and after it (not a whole new line). Combined with CSS, numerous `<div></div>` tags can be used to create a powerful way of structuring a web page and its content. Most modern-day websites are constructed in this way. The next section provides a simplistic overview of how the `<div></div>` tag can be used. The `<div></div>` tag, combined with CSS, will be examined in greater detail in subsequent chapters.

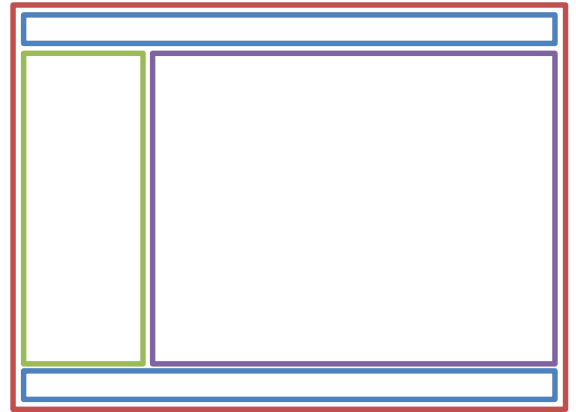


HTML Tips!

Technically speaking, tables can be used to group elements and provide a layout to a web page also. However, it is generally considered bad design and divisions have since replaced this style of web design.

2.5 Practical: Using Containers (Divs)

In the previous section, it was explained that division tags are used to provide a layout for a web page. With some imagination, it is not difficult to understand how divisions can be used to achieve this. Consider the example to the right. By using five boxes a web page layout is created; the layout has a container, a header, footer, a left navigation and a main content box. Division (`<div></div>`) tags are like boxes, and thus the same structure could be created by simply using five division tags combined with CSS. Layouts will be covered in much greater detail in coming chapters; for now, however, understanding the role of a division is what is important.



Using the Division (Div) Tag

```
<!DOCTYPE html>
<html>
<head>
  <title>Using Divs</title>
  <meta charset="UTF-8">
</head>
<body>
  <div style="background:Beige; border-style:solid; border-width:5px;">
    <h1>I am Div 1</h1>
    <p style="background:LightSkyBlue;">
      I am a paragraph.
    </p>
    <p style="background:LightSkyBlue;">
      I am a paragraph.
    </p>
  </div>
  <div style="background:Beige; border-style:solid; border-width:5px;">
    <h1>I am Div 2</h1>
    <p style="background:LightSkyBlue;">
      I am a paragraph.
    </p>
    <p style="background:LightSkyBlue;">
      I am a paragraph.
    </p>
  </div>
</body>
</html>
```

I am Div 1

I am a paragraph.

I am a paragraph.

I am Div 2

I am a paragraph.

I am a paragraph.

Activity 2.8

Create a web page that has three divisions, each with a suitable title. The first division should have an ordered list, the second division should have an unordered list and the final division should have a descriptive list. The content of the lists can be of any topic, but each division should have a border and a different background colour.



Creating HTML Bookmarks

In the previous chapter, the `<a>` tag was used to hyperlink HTML documents together. However, the same tag can also be used to hyperlink to a different section of the same document, as opposed to directing the user to an entirely new web page; these are known as bookmarks. Bookmarks are created by using two separate anchor tags; the first holds the 'id' (the position/bookmark in the document) and the other points to that id if the hyperlink is clicked. An example of this is demonstrated below:

[illegible]

Start of Document

To End

I am a paragraph

I am a paragraph

I am a paragraph

I am a paragraph

I am a paragraph

I am a paragraph

I am a paragraph

Activity 2.9

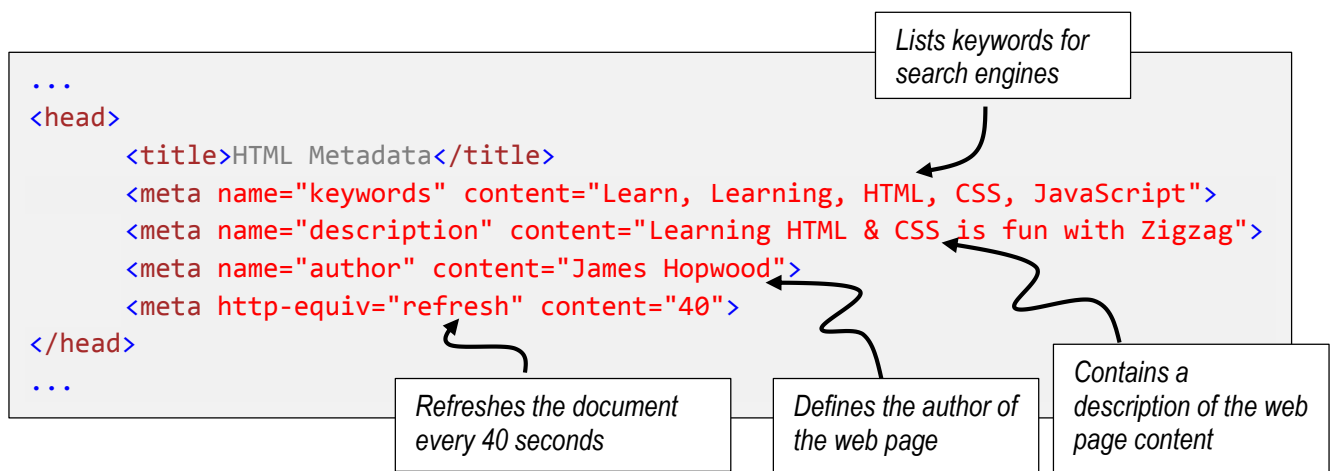
Create a web page that features at least two bookmarks; the content of the website can be of any topic, but should include enough content so that the bookmarks work correctly. The web page should also include a hyperlink to an external website, for example, the BBC or Sky News. Use the W3C validator to ensure the web page is free from errors.

2.7 Theory: Metadata

The Importance of Metadata

The HTML `<head>` element is a container that holds other HTML elements; elements that describe/interact with a HTML document, but do not appear on the web page itself. Typical elements that are found in the `<head>` element include: `<script>` (to contain JavaScript code), `<title>` (a mandatory tag that holds the document title), `<style>` (to contain CSS code) and `<meta>` (to contain metadata to describe the web page data).

Metadata is typically used to specify information about the HTML document itself without it appearing on the actual web page; for example, a web page description, keywords and author. It is also worth noting that metadata must be declared in the head section only. Search engines, such as Google, often use this information when ranking web pages; for example, a search engine might match the metadata description and listed keywords against a user's online search criteria. Therefore, it is considered good practice in Search Engine Optimisation (SEO) to include a metadata description and keywords on every web page. Metadata can also be used to tell the browser how often to reload a web page or even how to display it. Below are some examples of usable meta tags:



Chapter Summary



- ✓ CSS can be used to change the appearance of any HTML element; for example, the `style` attribute can be used to manipulate the appearance of a specific HTML element, such as a paragraph or heading. For example, `<p style="color:blue;">` would change the paragraph font colour to blue.
- ✓ HTML tables can be used to display tabular data; the `<table></table>` element is used to define the start and end of the table. Each row is defined using the `<tr></tr>` tags and each cell is defined using the `<td></td>` tags (with the exception of the heading cells: `<th></th>`).
- ✓ HTML lists can be used to define an ordered, unordered or descriptive list. Each list type has its own opening and closing tags; for example, `` is used to define the start and end of an ordered list. However, a list item is defined using the opening and closing `` tags.
- ✓ Containers (div tags) are used to group elements together and to create a web page layout.
- ✓ Metadata is data that describes a HTML document; for example, a description of the web page, keywords and the author of the web page. This information is sometimes used by search engines.
- ✓ Bookmarks can be used to create hyperlinks to different sections within the same HTML document.