

HTML

Image

- Use the **img** tag with **src** attribute to include an image in you HTML page
 - ``
 - `img` tag has no closing tag
- `URL_of_image_file` is the relative, absolute or remote URL link of the image file
- The **alt** attribute is used to define an "alternate text" for an image: the value of the `alt` attribute is an author-defined text
 - The `alt` attribute specifies an alternate text for an image, if the image cannot be displayed
 - Provides alternative information for an image if a user for some reason cannot view it
 - E.g., because of slow connection, or image is corrupted, or an error in the `src` attribute, or if the user uses a screen reader
- Images can be aligned like paragraphs
- Images can be resized in pixel size or percentage with `width` and/or `height` attributes

Image

There are two ways to specify the URL in the **src** attribute:

1. Absolute URL - Links to an external image that is hosted on another website
 - `src="https://www.w3schools.com/images/img_girl.jpg"`
 - External images might be under copyright
 - You cannot control external images
2. Relative URL - Links to an image that is hosted within the website.
 - The URL does not include the domain name
 - ✓ If the URL begins without a slash, it will be relative to the current page
 - `src="img_girl.jpg"`
 - ✓ If the URL begins with a slash, it will be relative to the domain
 - `src="/images/img_girl.jpg"`
 - It is almost always best to use relative URLs

Image: Example

```
<p align = center>
```

```
An image mixed in with text <br><br>
```

```

```

```
</p>
```

It looks like this when viewed through a browser:

Remember: The **width** and **height** attributes always defines the width and height of the image in pixels.

An image mixed in with text



Links and Anchors

- Linking to other documents — The Bread and Butter of the Web
- Regions of text can be linked to other documents via the **anchor, <a>**, tag which has the following format:
 - ` link text `
- The opening **<a>** tag has a **href** attribute that is used to specify the link to URL or local file
- Text between the `<a>` and `` (closing tag) is highlighted by the browser to indicate the hyperlink
 - E.g., The link to **<a href="https://www.bradford.ac.uk/ei/computer-science/"**
University of Bradford's Computer Science **** is highlighted
 - The link to University of Bradford's Computer Science is highlighted
- Depending on browser and web page configuration highlight style can differ.

Links and Anchors - Example

```
<!DOCTYPE html>
<html>
<body>

<h1>HTML Links</h1>

<p><a href="https://www.w3schools.com/">Visit W3Schools.com!</a></p>

</body>
</html>
```

HTML Links

[Visit W3Schools.com!](https://www.w3schools.com/)

<https://www.w3schools.com/html/>

Absolute and Relative Links

- Absolute links—reference files based on the absolute location on the local file system or WWW
 - **Absolute** HREFs specify fully qualified URLs
 - `BBC UK`
- Relative links—refer to a page in relation to the current document
 - **Relative** HREFs are relative to the directory containing the current HTML file
 - Sub-directories and included files can be specified in the relative link
 - Makes for very portable web pages
 - `In this directory!`
 - `In sub-directory a!`
- With the **target** attribute, you can define where the linked document will be opened
 - E.g., `Visit W3Schools!` will open the link in a new window

Absolute and Relative Links - Example

```
<!DOCTYPE html>
<html>
<body>

<h2>Absolute URLs</h2>
<p><a href="https://www.w3.org/" target="_blank">W3C</a></p>
<p><a href="https://www.google.com/" target="_blank">Google</a></p>

<h2>Relative URLs</h2>
<p><a href="html_images.asp">HTML Images</a></p>
<p><a href="/css/default.asp">CSS Tutorial</a></p>

</body>
</html>
```

Absolute URLs

[W3C](https://www.w3.org/)

[Google](https://www.google.com/)

Relative URLs

[HTML Images](html_images.asp)

[CSS Tutorial](/css/default.asp)

<https://www.w3schools.com/html/>

Anchors—Jumping to specific places in a document

- **Anchors** are special places within documents that can be linked to
- Anchors may be placed anywhere in a document with
 - `Anchor Position`
 - The **id** attribute gives a name to the section of the page
- Alternatively you can also have following types of anchors:
 - anchor in a header: `<h2 id="anchor-name">Section name</h2>`
 - anchor in a paragraph: `<p id="anchor-name">Paragraph name</p>`
 - anchor in an image: ``
- **Remember that each id can appear only once in one page**
- Anchors within the same document are referred to by
 - `Jump to the part of the page with the anchor`
- Anchors in the external document are referred to by
 - `` where link may be a relative, absolute or remote URL link.

Anchors—example

```
<ul>  
<li><a href="#apples">apples</a></li>  
<li><a href="#oranges">oranges</a></li>  
<li><a href="#bananas">bananas</a></li>  
</ul>
```

Referring to anchors

```
<h2>Information</h2>
```

```
<p id="apples">  
Apples are green  
</p>
```

```
<p id="oranges">  
Oranges are orange  
</p>
```

```
<p id="bananas">  
Bananas are yellow  
</p>
```

Creating anchors

Anchors—example

```
<!DOCTYPE html>
<html>
<body>

<p><a href="#C4">Jump to Chapter 4</a></p>
<p><a href="#C10">Jump to Chapter 10</a></p>

<h2>Chapter 1</h2>
<p>This chapter explains ba bla bla</p>

<h2>Chapter 2</h2>
<p>This chapter explains ba bla bla</p>

<h2>Chapter 3</h2>
<p>This chapter explains ba bla bla</p>

<h2 id="C4">Chapter 4</h2>
<p>This chapter explains ba bla bla</p>

<h2>Chapter 5</h2>
<p>This chapter explains ba bla bla</p>

<h2>Chapter 6</h2>
<p>This chapter explains ba bla bla</p>

<h2>Chapter 7</h2>
<p>This chapter explains ba bla bla</p>

<h2>Chapter 8</h2>
<p>This chapter explains ba bla bla</p>
```

[Jump to Chapter 4](#)

[Jump to Chapter 10](#)

Chapter 1

This chapter explains ba bla bla

Chapter 2

This chapter explains ba bla bla

Chapter 3

This chapter explains ba bla bla

Chapter 4

This chapter explains ba bla bla

Chapter 5

This chapter explains ba bla bla

Chapter 6

<https://www.w3schools.com/html/>

Colours in HTML

- Colour is widely used in many HTML contexts
- There are two ways to specify colour:
 - Use **Hexadecimal numbers** to specify each red, green and blue (RGB) component
 - Use one of a set of **predefined colour names**
- **Hexadecimal Colour Representation in HTML**
- Colour for each red, green and blue colour component is represented by a range 0 (0 Hex) to 255 decimal (FF hex) where
 - 0 indicates zero colour component
 - 255 indicates full colour component
 - Other values: a proportion of the colour value

Color	Color HEX	Color RGB
	#000000	rgb(0,0,0)
	#FF0000	rgb(255,0,0)
	#00FF00	rgb(0,255,0)
	#0000FF	rgb(0,0,255)
	#FFFF00	rgb(255,255,0)
	#00FFFF	rgb(0,255,255)
	#FF00FF	rgb(255,0,255)
	#C0C0C0	rgb(192,192,192)
	#FFFFFF	rgb(255,255,255)

More colours: https://www.w3schools.com/colors/colors_picker.asp

Or <https://htmlcolorcodes.com/>

Colours in HTML

- **Predefined Colours in HTML**
- W3C has listed **16 colour names** that will validate with an HTML validator
 - Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, and Yellow
- Colour names are easier to remember
 - The only limitation is a restricted choice compared with several million possible colours possible with hexadecimal representation
- The fidelity and ultimate rendering of colour will depend on the hardware you run the browser on

<u>Aqua</u>	<u>Black</u>	<u>Blue</u>	<u>Fuchsia</u>
<u>Gray</u>	<u>Green</u>	<u>Lime</u>	<u>Maroon</u>
<u>Navy</u>	<u>Olive</u>	<u>Purple</u>	<u>Red</u>
<u>Silver</u>	<u>Teal</u>	<u>White</u>	<u>Yellow</u>

Colours in Use

- In a HTML document, colours can be used in different ways
 - E.g. to change text colour, background colour of the webpage
- You can change the colour of text on your web page by setting the TEXT attribute of the BODY tag
 - `<body text = "#FF0000">` or
 - `<body text = "red">` gives us red text on our page
- Setting the Text colour in the BODY only gives one colour for all text on a page
 - We can also colour individual portions of text with the `` tag by setting the COLOR attribute.

```
Multicoloured text:<br><br>
<font color = "#FF0000">
This is RED text
</font><br><br>
<font color = "#00FF00">
This is GREEN text
</font><br><br>
<font color = "#0000FF">
This is Blue text
</font><br>
```

Multicoloured text:

This is RED text

This is GREEN text

This is Blue text

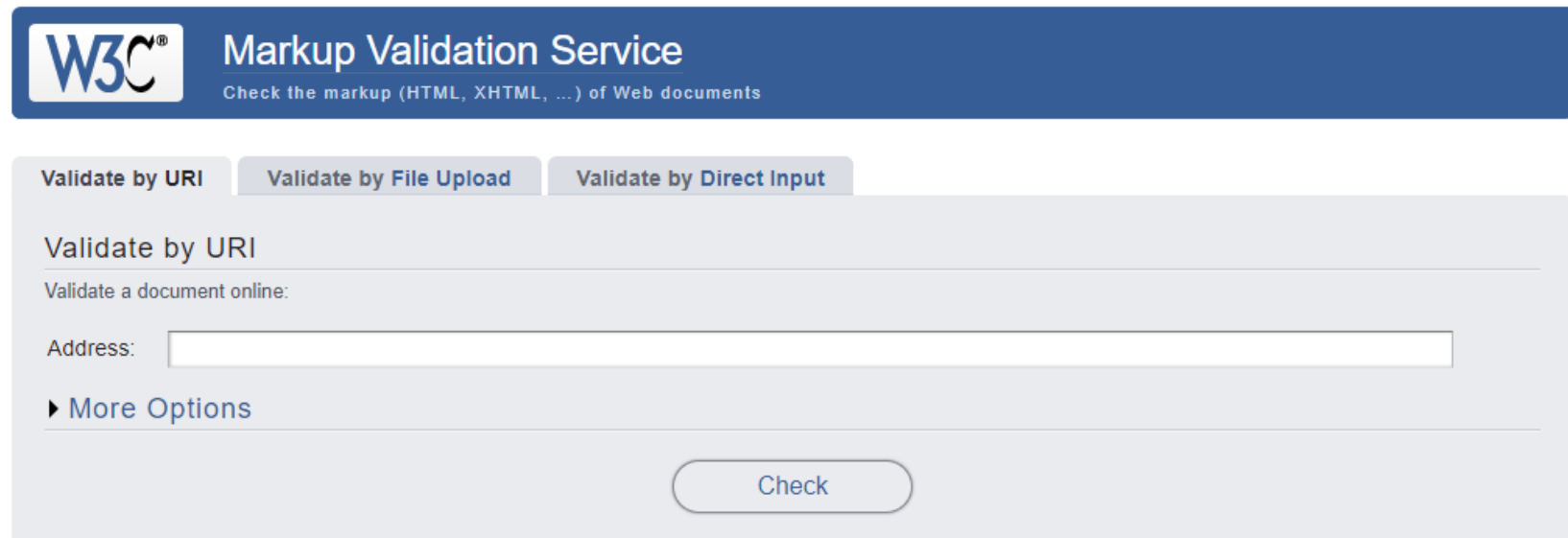
Colours in Use

- You can change the background colour of your page in much the same way as you set the text colour
- To change the background colour you must set the BGCOLOR attribute in the BODY tag
 - `<body bgcolor = "#FFFFFF">` gives us a white background
 - `<body bgcolor = "blue">` gives us a blue background
- Instead of using colours, we can also use an image as a background for your web pages
 - To do this use the BACKGROUND attribute of the BODY tag
 - `<body background="my_back.jpg">`
 - Relative or absolute URLs can also be used
 - `<body background="images/my_back.jpg">`
 - `<body background="http://www.myimageserver/my_back.jpg">`

HTML Validation

- You could validate your page - check that they respect the DOCUMENT type that you selected

<https://validator.w3.org/>



The screenshot shows the W3C Markup Validation Service interface. At the top, there is a blue header with the W3C logo and the text "Markup Validation Service" and "Check the markup (HTML, XHTML, ...) of Web documents". Below the header, there are three tabs: "Validate by URI", "Validate by File Upload", and "Validate by Direct Input". The "Validate by URI" tab is selected. Under this tab, there is a section titled "Validate by URI" with the text "Validate a document online:". Below this, there is a label "Address:" followed by a text input field. Below the input field, there is a link "► More Options". At the bottom of the form, there is a "Check" button.

This validator checks the [markup validity](#) of Web documents in HTML, XHTML, SMIL, MathML, etc. If you wish to validate specific content such as [RSS/Atom feeds](#) or [CSS stylesheets](#), [MobileOK content](#), or to [find broken links](#), there are [other validators and tools](#) available. As an alternative you can also try our [non-DTD-based validator](#).