

# HTML, CSS and JavaScript Basics

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# HTML Reference

# HTML Text and Headings

HTML provides elements for displaying text, headings and page structure.

Headings Headings are used to organise content on a webpage.

HTML provides six heading levels.

## Heading 1

## Heading 2

## Heading 3

## Heading 4

## Heading 5

Heading 6

Result:

Heading 1 Heading 2 Heading 3 Heading 4 Heading 5 Heading 6 Paragraphs Paragraphs are used for normal text content.

This is a paragraph.

This is another paragraph.

Result:

This is a paragraph.

This is another paragraph.

Bold Text Use the strong element to make text bold.

**Important information** Result:

Important information

Italic Text Use the em element to emphasise text.

*Important information* Result:

Important information

Line Breaks Use the br element to move text onto a new line.

Line One

Line Two Result:

Line One Line Two

Horizontal Lines Use the hr element to create a horizontal divider.

---

Result:

Subscript Subscript is commonly used in science and mathematics.

H<sub>2</sub>O Result:

H2O

Superscript Superscript is commonly used for powers and exponents.

x<sup>2</sup> Result:

x2

Combining Elements Multiple text elements can be combined.

# Science Report

Water is written as H<sub>2</sub>O.

The formula for area is x<sup>2</sup>.

Result:

Complete Example

```
<h1>Heading 1</h1>
```

```
<h2>Heading 2</h2>
```

```
<p>This is a paragraph.</p>
```

```
<strong>Bold text</strong>
```

```
<br><br>
```

```
<em>Italic text</em>
```

```
<hr>
```

```
H<sub>2</sub></sub>0
```

```
<br>
```

```
x<sup>2</sup>
```

Quick Reference Headings

# Heading 1

Heading 6

Paragraph

Paragraph text

Bold **Bold text** Italic *Italic text* Line Break

Horizontal Rule

---

Subscript

Superscript

You now know how to create headings and display text content in HTML.

Next tutorial: [HTML Links and Images](#)

# HTML Links and Images

Links allow users to navigate between pages and websites.

Images can be used to display photos, logos and graphics on a webpage.

---

## Creating a Link

Use the `a` element to create a hyperlink.

```
<a href="page.html">Go to Page</a>
```

Result:

[Go to Page](#)

When clicked, the browser will open the specified page.

---

## Linking to Another Website

Use a full web address when linking to an external website.

```
<a href="https://www.google.com">  
  Visit Google  
</a>
```

Result:

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

---

## Opening a Link in a New Tab

Add the `target="_blank"` attribute.

```
<a href="https://www.google.com"
  target="_blank"
  rel="noopener noreferrer">

  Visit Google

</a>
```

Result:

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

The `rel` attribute improves security when opening new tabs.

---

## Linking to an Email Address

Use the `mailto:` protocol.

```
<a href="mailto:teacher@school.com">
  Email Teacher
</a>
```

Result:

[Email Teacher](mailto:teacher@school.com)

When clicked, the user's email program will open.

---

## Creating an Image

Use the `img` element.

```

```

The `src` attribute specifies the image location.

The `alt` attribute provides alternative text if the image cannot be displayed.



## Setting Image Width

Use the `width` attribute.

```

```

The image will be displayed at 100 pixels wide.



## Responsive Images

A responsive image automatically scales to fit different screen sizes.

```

```

This is useful for:

- Phones
- Tablets
- Laptops
- Desktop computers

---

# Using an Image as a Link

Images can also be used as buttons.

```
<a href="dogs.html">  
  
    
  
</a>
```



I open the specified page.

---

# Displaying a Logo

A common use of images is displaying a website logo.

```

```

---

# Creating an Image Gallery

Multiple images can be displayed together.

```

```

```

```

```

```

---

# Complete Example

```
<!DOCTYPE html>

<html>

<head>
  <title>Links and Images</title>
</head>

<body>

  <h1>Links and Images</h1>

  <a href="page.html">
    Internal Page
  </a>

  <br><br>

  <a href="https://www.google.com"
    target="_blank"
    rel="noopener noreferrer">

    Google
```

```
</a>
```

```
<br><br>
```

```
<a href="mailto:teacher@school.com">
```

```
Email Teacher
```

```
</a>
```

```
<br><br>
```

```

```

```
</body>
```

```
</html>
```

---

# Quick Reference

## Internal Link

```
<a href="page.html">
```

## External Link

```
<a href="https://website.com">
```

## New Tab

```
target="_blank"
```

## Email Link

```
<a href="mailto:someone@email.com">
```

# Image

```

```

# Image Width

```
width="300"
```

# Responsive Image

```
style="max-width:100%;"
```

# Image Link

```
<a href="page.html">  
  
      
  
</a>
```

You now know how to create hyperlinks and display images in HTML.

Next tutorial: **HTML Lists and Tables**

# HTML Lists and Tables

Lists and tables are used to organise and display information on a webpage.

Lists are useful for displaying related items, while tables are useful for displaying data in rows and columns.

---

## Unordered Lists

An unordered list displays items using bullet points.

```
<ul>
  <li>HTML</li>
  <li>CSS</li>
  <li>JavaScript</li>
</ul>
```

Result:

- HTML
  - CSS
  - JavaScript
- 

## Ordered Lists

An ordered list displays items using numbers.

```
<ol>
  <li>Plan the website</li>
  <li>Create the HTML</li>
  <li>Add CSS styling</li>
</ol>
```

Result:

1. Plan the website
  2. Create the HTML
  3. Add CSS styling
- 

# Nested Lists

Lists can be placed inside other lists.

```
<ul>

  <li>Web Development

    <ul>
      <li>HTML</li>
      <li>CSS</li>
      <li>JavaScript</li>
    </ul>

  </li>

</ul>
```

Result:

- Web Development
    - HTML
    - CSS
    - JavaScript
- 

# Definition Lists

Definition lists are useful for displaying terms and descriptions.

```
<dl>

  <dt>HTML</dt>
  <dd>Creates webpage content.</dd>
```

```
<dt>CSS</dt>
<dd>Controls appearance and styling.</dd>

</dl>
```

Result:

## HTML

Creates webpage content.

## CSS

Controls appearance and styling.

HTML

Creates webpage content.

CSS

Controls appearance and styling.

# Creating a Table

Tables display information in rows and columns.

```
<table>

  <tr>
    <th>Name</th>
    <th>Score</th>
  </tr>

  <tr>
    <td>Sam</td>
    <td>90</td>
  </tr>

</table>
```

Result:

| Name | Score |
|------|-------|
| Sam  | 90    |

# Understanding Table Elements

Tables are made up of:

| Element | Purpose                |
|---------|------------------------|
| <table> | Creates the table      |
| <tr>    | Creates a row          |
| <th>    | Creates a heading cell |
| <td>    | Creates a data cell    |

## Adding Multiple Rows

```
<table>

  <tr>
    <th>Name</th>
    <th>Score</th>
  </tr>

  <tr>
    <td>Sam</td>
    <td>90</td>
  </tr>

  <tr>
    <td>Alex</td>
    <td>85</td>
  </tr>

  <tr>
    <td>Jess</td>
    <td>95</td>
  </tr>

</table>
```

Result:

| Name | Score |
|------|-------|
| Sam  | 90    |
| Alex | 85    |
| Jess | 95    |

// Screenshot Placeholder

Insert screenshot showing a table with multiple rows.

# Adding Borders

Tables often use CSS for styling.

```
<table border="1">

  <tr>
    <th>Name</th>
    <th>Score</th>
  </tr>

  <tr>
    <td>Sam</td>
    <td>90</td>
  </tr>

</table>
```

Result:

A table with visible borders.

| Name | Score |
|------|-------|
| Sam  | 90    |

# Merging Columns

Use `colspan` to combine columns.

```
<table border="1">

  <tr>
    <th colspan="2">
      Student Results
    </th>
  </tr>

  <tr>
    <td>Sam</td>
    <td>90</td>
  </tr>

</table>
```

Result:

| Student Results |    |
|-----------------|----|
| Sam             | 90 |

# Merging Rows

Use `rowspan` to combine rows.

```
<table border="1">

  <tr>
    <td rowspan="2">
      Year 10
    </td>

    <td>Sam</td>
  </tr>
```

```
<tr>
    <td>Alex</td>
</tr>

</table>
```

|         |      |
|---------|------|
| Year 10 | Sam  |
|         | Alex |

# Complete Example

```
<!DOCTYPE html>

<html>

<head>
    <title>Lists and Tables</title>
</head>

<body>

    <h1>Lists and Tables</h1>

    <h2>Favourite Subjects</h2>

    <ul>
        <li>Digital Technologies</li>
        <li>Engineering</li>
        <li>Science</li>
    </ul>

    <h2>Student Results</h2>

    <table border="1">

        <tr>
```

```
<th>Name</th>
<th>Score</th>
</tr>

<tr>
  <td>Sam</td>
  <td>90</td>
</tr>

<tr>
  <td>Alex</td>
  <td>85</td>
</tr>

</table>

</body>

</html>
```

---

# Quick Reference

## Unordered List

```
<ul>
  <li>Item</li>
</ul>
```

## Ordered List

```
<ol>
  <li>Item</li>
</ol>
```

## Definition List

```
<dl>
  <dt>Term</dt>
  <dd>Description</dd>
</dl>
```

## Table

```
<table>
```

## Table Row

```
<tr>
```

## Table Header

```
<th>
```

## Table Data

```
<td>
```

## Merge Columns

```
colspan="2"
```

## Merge Rows

```
rowspan="2"
```

You now know how to create lists and tables in HTML.

Next tutorial: **HTML Forms**

# HTML Forms

Forms allow users to enter and submit information on a webpage.

Forms are commonly used for:

- Login systems
  - Registration pages
  - Contact forms
  - Surveys
  - Search boxes
- 

## Creating a Form

A form is created using the `form` element.

```
<form>

</form>
```

All form controls are placed inside the form element.

---

## Text Input

Use the `input` element to create a text box.

```
<form>

  <input type="text">

</form>
```

Result:

---

# Adding a Label

Labels describe the purpose of an input.

```
<form>

  <label>
    Username:
  </label>

  <input type="text">

</form>
```

Result:

Username:

---

# Placeholder Text

Placeholders provide hints to the user.

```
<input
  type="text"
  placeholder="Enter username">
```

Result:

---

# Password Input

Password fields hide the text being entered.

```
<input
  type="password"
```

```
placeholder="Enter password">
```

Result:

---

# Email Input

Email inputs help validate email addresses.

```
<input  
  type="email"  
  placeholder="Enter email">
```

Result:

---

# Number Input

Number inputs only accept numeric values.

```
<input  
  type="number">
```

Result:

---

# Text Areas

Text areas allow users to enter multiple lines of text.

```
<textarea>  
  
</textarea>
```

Result:

---

# Checkboxes

Checkboxes allow multiple selections.

```
<input  
  type="checkbox">
```

HTML

Result:

☐ HTML

---

# Radio Buttons

Radio buttons allow a single selection from a group.

```
<input  
  type="radio"  
  name="year">
```

Year 10

<br>

```
<input  
  type="radio"  
  name="year">
```

Year 11

Result:

Year 10

Year 11

---

# Dropdown Lists

Use the `select` element to create a dropdown menu.

```
<select>

  <option>
    HTML
  </option>

  <option>
    CSS
  </option>

  <option>
    JavaScript
  </option>

</select>
```

Result:

---

# Submit Button

Buttons are used to submit forms.

```
<button>

  Submit

</button>
```

Result:

Submit

---

# Complete Login Form

```
<form>

  <label>
    Username
  </label>

  <br>

  <input
    type="text"
    placeholder="Username">

  <br><br>

  <label>
    Password
  </label>

  <br>

  <input
    type="password"
    placeholder="Password">

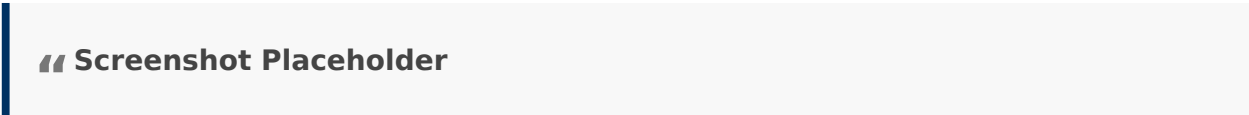
  <br><br>

  <button>

    Login

  </button>

</form>
```



Insert screenshot showing the login form.

# Form Submission

Forms can send data to another page.

```
<form
  action="process.php"
  method="post">

</form>
```

## action

Specifies where the data will be sent.

```
action="process.php"
```

## method

Specifies how the data will be sent.

```
method="post"
```

or

```
method="get"
```

Most login and registration systems use:

```
method="post"
```

# Complete Example

```
<!DOCTYPE html>

<html>

<head>
    <title>Forms Example</title>
</head>

<body>

    <h1>Student Registration</h1>

    <form
        action="process.php"
        method="post">

        <label>
            Name
        </label>

        <br>

        <input
            type="text"
            name="name">

        <br><br>

        <label>
            Email
        </label>

        <br>

        <input
            type="email"
            name="email">

        <br><br>
```

```
<label>
  Year Level
</label>

<br>

<select name="year">

  <option>
    Year 10
  </option>

  <option>
    Year 11
  </option>

  <option>
    Year 12
  </option>

</select>

<br><br>

<button>

  Submit

</button>

</form>

</body>

</html>
```

---

## Quick Reference

# Form

```
<form>
```

## Text Input

```
<input type="text">
```

## Password Input

```
<input type="password">
```

## Email Input

```
<input type="email">
```

## Number Input

```
<input type="number">
```

## Text Area

```
<textarea>
```

## Checkbox

```
<input type="checkbox">
```

## Radio Button

```
<input type="radio">
```

# Dropdown

```
<select>
```

# Button

```
<button>
```

# Form Action

```
action="process.php"
```

# Form Method

```
method="post"
```

You now know how to collect user input using HTML forms.

Next tutorial: **HTML Embeds and Comments**

# HTML Embeds and Comments

HTML can be used to embed videos, maps and other content into a webpage.

Comments can also be added to help explain code without displaying anything on the page.

---

## HTML Comments

Comments are ignored by the browser.

They are useful for explaining code and leaving notes for yourself or other developers.

```
<!-- This is a comment -->
```

Example:

```
<!-- Navigation Menu -->

<nav>

</nav>
```

Comments are not visible on the webpage.

---

## Embedding a YouTube Video

YouTube provides embed code for videos.

Example:

```
<iframe
  width="560"
  height="315"
  src="https://www.youtube.com/embed/W-Q7RMpINVo"
  allowfullscreen>

</iframe>
```

Result:

A YouTube video displayed on the page.

<https://www.youtube.com/embed/dQw4w9WgXcQ>

---

# Responsive YouTube Videos

To help videos work on phones and tablets:

```
<iframe
  width="100%"
  height="315"
  src="https://www.youtube.com/embed/W-Q7RMpINVo"
  allowfullscreen>

</iframe>
```

The video will automatically adjust to the available width.

---

# Embedding a Google Map

Google Maps can also be embedded.

Example:

```
<iframe
  src="https://www.google.com/maps/embed..."
  width="600"
```

```
height="450">
```

```
</iframe>
```

Result:

An interactive map displayed on the page.

<https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3520.366280272018!2d153.37404667577476!3d-28.07436817597404!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x6b911cb972c15b2f%3A0xc34ef94511e30812!2sRobina%20State%20High%20School!5e0!3m2!1sen!2sau!4v1781436815960!5m2!1sen!2sau>

## Displaying a Video File

Videos stored in your project can be displayed using the `video` element.

```
<video
  width="600"
  controls>

  <source
    src="videos/demo.mp4"
    type="video/mp4">

</video>
```

Result:

A video player with play and pause controls.

## Displaying Audio Files

Audio can be embedded using the `audio` element.

```
<audio controls>

  <source
    src="audio/music.mp3"
    type="audio/mpeg">

</audio>
```

Result:

An audio player with playback controls.

---

## Displaying PDF Files

PDF documents can be embedded directly into a webpage.

```
<iframe
  src="files/document.pdf"
  width="100%"
  height="600">

</iframe>
```

Result:

The PDF document is displayed inside the webpage.

---

## Common Uses for Embeds

Embeds are commonly used for:

- YouTube videos
- Google Maps
- PDF documents
- Audio players
- Demonstration videos
- Interactive content

---

# Complete Example

```
<!DOCTYPE html>

<html>

<head>
  <title>Embeds Example</title>
</head>

<body>

  <h1>Media Examples</h1>

  <!-- YouTube Video -->

  <iframe
    width="560"
    height="315"
    src="https://www.youtube.com/embed/W-Q7RMpINVo"
    allowfullscreen>

  </iframe>

  <br><br>

  <!-- Audio Player -->

  <audio controls>

    <source
      src="audio/music.mp3"
      type="audio/mpeg">

  </audio>

</body>
```

```
</html>
```

# Quick Reference

## Comment

```
<!-- Comment -->
```

## YouTube Video

```
<iframe>
```

## Google Map

```
<iframe>
```

## Video File

```
<video>
```

## Audio File

```
<audio>
```

## PDF

```
<iframe src="document.pdf">
```

You now know how to embed media and add comments in HTML.

Next chapter: **CSS Reference**

# CSS Reference

# JavaScript Reference