*# HTML Guide*

*## HTML Tables (Advanced)*

*Basic Table Structure*

*```html*

*<table border="1">*

*<thead>*

*<tr>*

*<th>Name</th>*

*<th>Age</th>*

*<th>City</th>*

*</tr>*

*</thead>*

*<tbody>*

*<tr>*

*<td>John Doe</td>*

*<td>25</td>*

*<td>New York</td>*

*</tr>*

*<tr>*

*<td>Jane Smith</td>*

*<td>30</td>*

*<td>Los Angeles</td>*

*</tr>*

*</tbody>*

*</table>*

*```*

*Table Attributes*

*- `border`: Adds a border to the table (deprecated in HTML5; use CSS instead).*

*- `colspan`: Merges columns.*

*- `rowspan`: Merges rows.*

*Example with `colspan` and `rowspan`*

*```html*

*<table border="1">*

*<tr>*

*<th colspan="2">Name</th>*

*<th>Age</th>*

*</tr>*

*<tr>*

*<td rowspan="2">John Doe</td>*

*<td>25</td>*

*<td>New York</td>*

*</tr>*

*<tr>*

*<td>30</td>*

*<td>Los Angeles</td>*

*</tr>*

*</table>*

*```*

*---*

*HTML Forms (Advanced)*

*Forms are crucial for user interaction. Let’s dive deeper into advanced form features.*

*Common Form Elements*

*```html*

*<input type="text" placeholder="Enter your name">*

*<input type="email" placeholder="Enter your email">*

*<input type="password" placeholder="Enter password">*

*<input type="number" min="1" max="10">*

*<input type="date">*

*<input type="range" min="0" max="100" step="10">*

*<input type="color">*

*<input type="datetime-local">*

*<input type="search">*

*```*

*Fieldset and Legend*

*- `<fieldset>`: Groups related form elements.*

*- `<legend>`: Provides a caption for the fieldset.*

*```html*

*<form>*

*<fieldset>*

*<legend>Personal Information</legend>*

*<label for="name">Name:</label>*

*<input type="text" id="name" name="name"><br>*

*<label for="email">Email:</label>*

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

*</fieldset>*

*<fieldset>*

*<legend>Preferences</legend>*

*<label for="color">Favorite Color:</label>*

*<input type="color" id="color" name="color"><br>*

*<label for="range">Rating:</label>*

*<input type="range" id="range" name="range" min="0" max="10">*

*</fieldset>*

*<button type="submit">Submit</button>*

*</form>*

*<form action="https://www.youtube.com/results" method="get">*

*<label for="search">Search for a song:</label>*

*<input type="text" id="search" name="search\_query" placeholder="Enter song name">*

*<button type="submit">Search</button>*

*</form>*

*```*

*Dropdown Lists*

*```html*

*<label for="cars">Choose a car:</label>*

*<select id="cars" name="cars">*

*<option value="volvo">Volvo</option>*

*<option value="saab">Saab</option>*

*<option value="mercedes">Mercedes</option>*

*<option value="audi">Audi</option>*

*</select>*

*```*

*Textarea*

*```html*

*<label for="message">Message:</label>*

*<textarea id="message" name="message" rows="4" cols="50"></textarea>*

*```*

*---*

*HTML5 Semantic Elements (Advanced)*

*Example with `<details>` and `<summary>`*

*```html*

*<details>*

*<summary>Click to expand</summary>*

*<p>This is hidden content that will be shown when you click the summary.</p>*

*</details>*

*```*

*Example with `<time>`*

*```html*

*<p>The event is on <time datetime="2023-10-15">October 15, 2023</time>.</p>*

*```*

*🔹 What Are Semantic Elements?*

*Semantic elements in HTML provide meaning to the structure of a webpage. Instead of using generic <div> and <span> elements, semantic tags clearly define the role of the content.*

*🔹 Why Use Semantic HTML?*

*✅ Improved Accessibility – Screen readers and assistive technologies understand the content better.*

*✅ Better SEO (Search Engine Optimization) – Search engines rank pages higher when they contain meaningful structure.*

*✅ Easier Maintenance & Readability – Makes the code easier for developers to understand and update.*

*✅ Standardized Web Structure – Helps ensure a consistent web experience across all browsers.*

*🔹 Common Semantic Tags & Their Uses*

*Tag Purpose Example Usage*

*<header>    Represents introductory content, often contains navigation. Used for site or section headings.*

*<nav>   Defines navigation links.   Used for menus, sidebars, etc.*

*<main>  Contains the main content of the webpage.   Used to avoid redundancy in structure.*

*<section>   Groups related content with a heading.  Used for separating content sections.*

*<article>   Represents an independent, self-contained article.  Used for blogs, news articles, posts.*

*<aside> Contains supplementary content (sidebars, ads). Used for secondary content on a page.*

*<footer>    Defines footer content (copyright, links).  Used at the bottom of a webpage.*

*<figure>    Contains media like images, charts, or code snippets.   Used with <figcaption> to describe content.*

*<time>  Represents a specific time/date for better machine readability. Used in event details, blogs.*

*<mark>  Highlights text for emphasis.   Used for search results, highlighting keywords.*

*<details>   Creates expandable/collapsible content sections.    Used for FAQs, additional information.*

*<summary>   Provides a visible label for <details>. Used as a clickable title for collapsible content.*

*🔹 Example of a Well-Structured Semantic HTML Page*

*html*

*Copy*

*Edit*

*<!DOCTYPE html>*

*<html lang="en">*

*<head>*

*<meta charset="UTF-8">*

*<meta name="viewport" content="width=device-width, initial-scale=1.0">*

*<title>Semantic HTML Example</title>*

*</head>*

*<body>*

*<!-- Website Header -->*

*<header>*

*<h1>My Awesome Website</h1>*

*<nav>*

*<ul>*

*<li><a href="#home">Home</a></li>*

*<li><a href="#about">About</a></li>*

*<li><a href="#contact">Contact</a></li>*

*</ul>*

*</nav>*

*</header>*

*<!-- Main Content -->*

*<main>*

*<section id="home">*

*<h2>Welcome to My Website</h2>*

*<p>This is an example of a well-structured HTML page using semantic elements.</p>*

*</section>*

*<section id="about">*

*<h2>About Me</h2>*

*<article>*

*<h3>My Story</h3>*

*<p>I am a web developer passionate about creating clean and accessible websites.</p>*

*</article>*

*</section>*

*<!-- Sidebar -->*

*<aside>*

*<h3>Related Links</h3>*

*<ul>*

*<li><a href="#">Web Development Resources</a></li>*

*<li><a href="#">HTML5 Best Practices</a></li>*

*</ul>*

*</aside>*

*</main>*

*<!-- Footer Section -->*

*<footer>*

*<p>&copy; 2025 My Website. All Rights Reserved.</p>*

*</footer>*

*</body>*

*</html>*

*🔹 Explanation of the Above Code*

*<header>: Contains the website title and navigation menu.*

*<nav>: Wraps the navigation links for better readability and SEO.*

*<main>: Contains the primary content of the webpage.*

*<section>: Groups related content under meaningful headings.*

*<article>: Represents a standalone, self-contained section (e.g., blog post).*

*<aside>: Contains additional, related content like sidebar links.*

*<footer>: Holds footer information such as copyright.*

*---*

*HTML5 Multimedia (Advanced)*

*Video with Controls and Autoplay*

*```html*

*<video controls autoplay muted width="400">*

*<source src="video.mp4" type="video/mp4">*

*Your browser does not support the video tag.*

*</video>*

*```*

*Audio with Loop*

*```html*

*<audio controls loop>*

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

*Your browser does not support the audio element.*

*</audio>*

*```*

*Picture Element for Responsive Images*

*```html*

*<picture>*

*<source media="(min-width: 800px)" srcset="large.jpg">*

*<source media="(min-width: 400px)" srcset="medium.jpg">*

*<img src="small.jpg" alt="A responsive image">*

*</picture>*

*```*

*---*

*HTML5 APIs*

*Geolocation API*

*```html*

*<button onclick="getLocation()">Get Location</button>*

*<p id="demo"></p>*

*<script>*

*function getLocation() {*

*if (navigator.geolocation) {*

*navigator.geolocation.getCurrentPosition(showPosition);*

*} else {*

*alert("Geolocation is not supported by this browser.");*

*}*

*}*

*function showPosition(position) {*

*document.getElementById("demo").innerHTML =*

*"Latitude: " + position.coords.latitude +*

*"<br>Longitude: " + position.coords.longitude;*

*}*

*</script>*

*```*

*Local Storage API*

*```html*

*<script>*

*// Store data*

*localStorage.setItem("name", "John Doe");*

*// Retrieve data*

*const name = localStorage.getItem("name");*

*console.log(name); // Output: John Doe*

*</script>*

*```*

*---*

*HTML5 Canvas*

*Example*

*```html*

*<canvas id="myCanvas" width="200" height="100" style="border:1px solid black;">*

*Your browser does not support the canvas element.*

*</canvas>*

*<script>*

*const canvas = document.getElementById("myCanvas");*

*const ctx = canvas.getContext("2d");*

*ctx.fillStyle = "green";*

*ctx.fillRect(10, 10, 150, 80);*

*</script>*

*```*

*---*

*## 7️⃣ HTML5 Drag and Drop*

*```html*

*<div id="drag" draggable="true" style="width: 100px; height: 100px; background-color: red;"></div>*

*<div id="drop" style="width: 200px; height: 200px; background-color: lightgray;"></div>*

*<script>*

*const dragElement = document.getElementById("drag");*

*const dropElement = document.getElementById("drop");*

*dragElement.addEventListener("dragstart", (e) => {*

*e.dataTransfer.setData("text", e.target.id);*

*});*

*dropElement.addEventListener("dragover", (e) => {*

*e.preventDefault();*

*});*

*dropElement.addEventListener("drop", (e) => {*

*e.preventDefault();*

*const data = e.dataTransfer.getData("text");*

*e.target.appendChild(document.getElementById(data));*

*});*

*</script>*

*```*

*<header>*

*<h1>My Awesome Website</h1>*

*<nav>*

*<ul>*

*<li><a href="#home">Home</a></li>*

*<li><a href="#about">About</a></li>*

*<li><a href="#contact">Contact</a></li>*

*</ul>*

*</nav>*

*</header>*

*<div class="spacer"></div> <!-- Spacer to offset fixed header -->*

*<section id="home">*

*<h2>Home Section</h2>*

*</section>*

*<section id="about">*

*<h2>About Section</h2>*

*</section>*

*<section id="contact">*

*<h2>Contact Section</h2>*

*</section>*

*HTML5 Best Practices*

*1. Use Semantic Elements: Improve accessibility and SEO.*

*2. Validate Your HTML: Use tools like the [W3C Validator](https://validator.w3.org/).*

*3. Optimize Multimedia: Use appropriate formats and sizes for images, audio, and video.*

*4. Leverage HTML5 APIs: Use Geolocation, Web Storage, and Canvas for advanced features.*

*5. Test Cross-Browser Compatibility: Ensure your HTML works on all major browsers.*