

HTML5 Guide

1. Introduction to HTML5

HTML5 is the latest version of HTML, introducing new elements, attributes, and APIs to enhance web development.

2. New Semantic Elements

- `<header>`: Represents a page or section header.
- `<nav>`: Defines a block of navigation links.
- `<section>`: Represents a thematic grouping of content.
- `<article>`: Defines self-contained content.
- `<aside>`: Represents content aside from the main content.
- `<footer>`: Defines the footer for a document or section.

3. HTML5 Forms Enhancements

- New input types: email, url, number, range, date, color.
- New attributes: required, placeholder, autofocus, pattern.

4. Multimedia Support

- `<audio>`: Embeds audio files with controls.
- `<video>`: Embeds videos with playback support.
- `<track>`: Provides text tracks for video.

5. Canvas and SVG

- `<canvas>`: A drawing API for graphics and animations.
- SVG: Scalable Vector Graphics for creating vector-based images.

6. HTML5 APIs

- Geolocation API: Retrieves the user's location.
- Web Storage API: Stores data locally (sessionStorage, localStorage).
- Web Workers: Runs scripts in the background.
- WebSockets: Enables real-time communication.

7. Responsive Web Design

- Viewport meta tag: Improves mobile responsiveness.
- Media Queries: Enables different styles based on screen size.

8. Accessibility and Best Practices

- Use semantic elements for better SEO and accessibility.
- Ensure backward compatibility with older browsers.
- Optimize performance using lazy loading and caching.

By leveraging HTML5 features, developers can create powerful, interactive, and accessible web applications.