1. **What is the significance of the doctype declaration?**
2. It helps the browser determine how to render the page by ensuring they use standard Mode.
3. It also helps indirectly in cross browser compatibility
4. Without <!DOCTYPE>, browsers may enter quirks mode, which means they will try to render the page using outdated, non-standard rules.
5. <!DOCTYPE> declaration is not case sensitive.
6. **What are semantic HTML elements, and why are they important?**
7. Semantic HTML elements are HTML tags that convey meaning about their content to both browsers and developers.
8. Header, nav, article, section, aside, footer, main, figure, figcaption, time
9. These elements describe their content, making it easier for developers and search engines to understand the page structure.
10. Better Readability & Maintainability
11. Improved SEO (Search Engine Optimization)
12. Accessibility (Better for Screen Readers)
13. **What is the role of the <​meta> tag in an HTML document?**
14. The <meta> tag provides metadata about the HTML document.
15. Metadata is information about the webpage that is not displayed directly on the page but helps browsers, search engines, and social media platforms understand the content better.
16. charset="UTF-8" -Special characters may not display correctly in some browsers.
17. **What is the difference between HTML4 and HTML5 ?**

|  |  |
| --- | --- |
| HTML5 uses a simpler doctype declaration. <!DOCTYPE html> | HTML4 require specifying a DTD (Document Type Definition)  <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd"> |
| HTML5 introduces a range of semantic elements that provide better structure and readability, such as: <header>, <footer>, <article>, <section>, <nav>, <aside>, and <figure>. These tags improve accessibility, SEO, and clarity of code. | HTML4 lacks semantic tags for structure and relies more on <div> and <span> elements. |
| HTML5 introduces native support for embedding audio and video using the <audio> and <video> elements, eliminating the need for third-party plugins. HTML5 also supports media formats like MP4, WebM, and Ogg. | Multimedia elements (like video or audio) are not natively supported in HTML4. You needed to rely on plugins (like Flash) for embedding media. |
| HTML5 introduces new input types like email, tel, number, date, range, color, etc., as well as form validation attributes like required, pattern, and min/max. | HTML4 forms have limited input types and no built-in validation. |
| HTML5 introduces many JavaScript APIs, including: **Local Storage and Session Storage, Geolocation API, Canvas API, Web Workers** | HTML4 lacks many JavaScript APIs and modern DOM (Document Object Model) features. |

5. What is the role of <meta charset="UTF-8"> in an HTML document?

1. <meta charset="UTF-8"> ensures that the browser correctly interprets and displays your document's characters, including special symbols and characters from non-English languages.
2. Omitting it can lead to incorrect character rendering, particularly when your content includes special characters, non-English text, or symbols.
3. Always include the <meta charset="UTF-8"> tag in your HTML documents to avoid potential issues with text display, data integrity, and overall user experience.
4. **UTF** stands for **Unicode Transformation Format**.

6. Explain the difference between inline, block, and inline-block elements in HTML.

1. **Block elements** are ideal for structuring large parts of your webpage, as they create a flow from top to bottom.
2. **Inline elements** are used for smaller, inline content like links and text formatting.
3. **Inline-block elements** allow for more flexible, horizontally-aligned layouts where you need to control both size and alignment of elements on the same line.

|  |  |  |
| --- | --- | --- |
| Block | Inline | Inline-block |
| Takes up full width, forces a new line | Takes up only the width of its content | Behaves like inline but can have width/height |
| |  | | --- | | Can set width and height |  |  | | --- | |  | | |  | | --- | | Cannot set width/height |  |  | | --- | |  | | |  | | --- | | Can set width and height |  |  | | --- | |  | |
| |  | | --- | | Starts on a new line |  |  | | --- | |  | | |  | | --- | | Does not start a new line |  |  | | --- | |  | | Does not start a new line, but respects block sizing |
| <div>, <p>, <h1>, <section>, <article>, <header> | <span>, <a>, <strong>, <em>, <img> | <img>, <button>, <input>, <span> (when styled with display: inline-block) |

7. How do you optimize the performance of an HTML page?

1. Minimize HTTP Requests:
2. Optimize Images
3. Minify and Compress HTML, CSS, and JavaScript Files
4. Use Caching:
5. Asynchronous Loading of JavaScript
6. Prioritize Critical Content
7. Use a Content Delivery Network (CDN)
8. Optimize External Resources

**General HTML Knowledge**

1. **What are the key differences between HTML4 and HTML5?**
   * Follow-up: What are some new elements introduced in HTML5 and their use cases?
2. **Explain the concept of the DOCTYPE in HTML and its importance.**
   * Follow-up: How do you choose which DOCTYPE declaration to use?
3. **What is the role of <meta charset="UTF-8"> in an HTML document?**
   * Follow-up: What would happen if it was omitted?
4. **Explain the difference between inline, block, and inline-block elements in HTML.**
   * Follow-up: How do they affect layout?
5. **How do you optimize the performance of an HTML page?**
   * Follow-up: Can you give examples where HTML affects page load time?
6. **How does the <head> section differ from the <body> section?**
   * Follow-up: What are the contents of each section?

**HTML5 Features & Advanced Topics**

1. **What are HTML5 semantic elements and why are they important?**
   * Follow-up: Can you name some common semantic tags and their use cases?
2. **What are Web Storage and Local Storage in HTML5?**
   * Follow-up: How do they differ from cookies, and when would you use them?
3. **Explain the <canvas> element in HTML5. What are its use cases?**
   * Follow-up: How do you draw on a canvas?
4. **What is the <video> tag in HTML5, and how does it work?**
   * Follow-up: How do you provide fallback content for unsupported browsers?
5. **What are the different types of input controls introduced in HTML5 (e.g., input[type="email"], input[type="range"])?**
   * Follow-up: How do these improve user experience and validation?
6. **How would you implement an offline web application using HTML5 features?**

**Accessibility and Best Practices**

1. **How do you ensure that an HTML page is accessible to users with disabilities?**
   * Follow-up: What are ARIA roles, and when should you use them?
2. **What are some common accessibility issues in HTML, and how would you fix them?**
   * Follow-up: How do you handle alt text for images?
3. **Explain the role of the lang attribute in HTML. Why is it important for SEO and accessibility?**
4. **What are some of the SEO best practices you should follow when structuring an HTML document?**
   * Follow-up: How do you use <h1>, <h2>, etc., for SEO?
5. **What is the role of <link rel="stylesheet"> and <script src="..."> in HTML?**
6. **What are the best practices for using forms in HTML?**
   * Follow-up: How do you handle form validation and submission in modern HTML?

**HTML Structure & Performance**

1. **How do you organize the HTML structure for a large-scale application?**
   * Follow-up: How do you separate concerns like styling, structure, and logic?
2. **Explain the importance of the alt attribute for images and how it contributes to SEO and accessibility.**
   * Follow-up: What are the considerations when using <picture> for responsive images?
3. **How do you manage the inclusion of third-party libraries like fonts, CSS, and JavaScript?**
   * Follow-up: What is the difference between linking external resources with <link> vs <script>?

**HTML with CSS and JavaScript Integration**

1. **What is the difference between inline, embedded, and external CSS?**
   * Follow-up: When would you use one over the other?
2. **How does JavaScript interact with the DOM in an HTML document?**
   * Follow-up: What are event listeners in the context of HTML and JavaScript?
3. **What are the best practices for structuring HTML in relation to CSS?**
   * Follow-up: How do you ensure that your HTML code is easy to style and maintain?
4. **How do you handle cross-browser compatibility issues when working with HTML?**
   * Follow-up: How do you implement feature detection (e.g., Modernizr)?

**HTML5 APIs and Advanced Features**

1. **Explain the difference between the <iframe> and <object> elements in HTML.**
   * Follow-up: How do you ensure security when embedding content using these elements?
2. **What is the <details> and <summary> tag in HTML5?**
   * Follow-up: Can you give an example where this feature can enhance user experience?
3. **What are the new attributes available for <input> in HTML5, and how do they improve form handling?**
   * Follow-up: Can you explain the use of input[type="date"] and input[type="datetime-local"]?
4. **Explain the picture element in HTML5 and its use in responsive web design.**
   * Follow-up: How does it differ from using <img> alone?
5. **How does HTML5 support Geolocation, and what considerations should be kept in mind when using it?**

**Miscellaneous Topics**

1. **What is the purpose of the charset attribute in the <meta> tag?**
   * Follow-up: Why is it important to use UTF-8 encoding?
2. **What is the difference between div and section?**
   * Follow-up: When would you use one over the other?
3. **Can you explain the data-\* attributes in HTML? How do you use them?**
   * Follow-up: What are the advantages of using data-\* attributes for JavaScript integration?
4. **Explain the defer and async attributes for the <script> tag.**
   * Follow-up: When should you use them for better performance?
5. **What is the role of the form element in HTML, and how do you manage form submission and validation in modern HTML?**

**Debugging and Testing**

1. **How do you troubleshoot layout issues in HTML?**
   * Follow-up: What tools do you use for debugging HTML and CSS in a browser?
2. **How would you test the accessibility of an HTML page?**
   * Follow-up: What tools do you use to check for WCAG compliance?