

Beginner Questions

1. What is the difference between HTML and HTML5?

Answer:

HTML5 is the latest version of HTML. It includes new elements, attributes, and behaviors, such as `<article>`, `<section>`, `<nav>`, and `<header>`, and better support for multimedia elements like `<audio>` and `<video>`.

2. What does the alt attribute in the `` tag do?

Answer:

The alt attribute provides alternative text for an image if it cannot be displayed. It's also used for accessibility, helping screen readers describe the image to visually impaired users.

3. What are semantic elements in HTML?

Answer:

Semantic elements clearly describe their meaning in a human- and machine-readable way. Examples include `<article>`, `<section>`, `<header>`, `<footer>`, and `<nav>`. These improve accessibility and SEO.

4. What is the purpose of the `<head>` tag in HTML?

Answer:

The `<head>` tag contains metadata about the document, such as the title of the page (`<title>`), links to stylesheets (`<link>`), scripts (`<script>`), and other meta-information like character encoding.

5. What is a CSS selector?

Answer:

A CSS selector is a pattern used to select elements you want to style. Examples include element selectors (`p`), class selectors (`.class-name`), and ID selectors (`#id-name`).

Intermediate Questions

6. How do you center a div element horizontally and vertically using CSS?

Answer:

CSS

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```
div {  
  display: flex;  
  justify-content: center;  
  align-items: center;  
  height: 100vh;  
}
```

This will center the div both horizontally and vertically.

7. What are the differences between class and id in CSS?

Answer:

- class can be used on multiple elements, and you can apply the same style to many elements.
- id is unique and should be used for one element only.

8. Explain the difference between position: relative and position: absolute.

Answer:

- position: relative positions an element relative to its normal position in the document flow.
- position: absolute removes the element from the document flow and positions it relative to the nearest positioned ancestor.

9. How can you add an external CSS file to an HTML document?

Answer:

You can add an external CSS file using the <link> tag in the <head> section:

html

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```
<link rel="stylesheet" href="styles.css">
```

10. What is the difference between inline and block elements in HTML?

Answer:

- block elements take up the full width available and start on a new line (e.g., <div>, <p>).
- inline elements take up only as much width as their content and do not start on a new line (e.g., , <a>).

Advanced Questions

11. What is the z-index in CSS and how does it work?

Answer:

The z-index property specifies the stack order of elements. Elements with a higher z-index will appear in front of elements with a lower z-index. It only works on elements with a position value other than static.

12. What is the CSS grid layout, and how does it differ from flexbox?

Answer:

- grid is a two-dimensional layout system that allows you to place items into rows and columns.
- flexbox is a one-dimensional layout system that arranges items either in a row or a column.

13. Explain the concept of "event delegation" in JavaScript.

Answer:

Event delegation refers to the practice of using a single event listener on a parent element to handle events for child elements. This is efficient, especially for dynamic content, as it avoids the need to attach event listeners to each individual element.

14. What are the advantages of using localStorage and sessionStorage in JavaScript?**Answer:**

- localStorage: Stores data persistently, even after the browser is closed.
- sessionStorage: Stores data only for the duration of the page session, i.e., until the browser or tab is closed.

15. How do you create a responsive layout in CSS?**Answer:**

You can create a responsive layout by using media queries to apply different styles based on the screen size:

css

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```
@media (max-width: 600px) {  
  
  .container {  
  
    display: block;  
  
  }  
  
}
```

Advanced JavaScript Questions**16. What is a closure in JavaScript?****Answer:**

A closure is a function that retains access to variables from its outer scope even after the outer function has finished executing. This allows for private data and function factories.

17. What is the difference between == and === in JavaScript?**Answer:**

- == checks for equality of values, but it performs type coercion.
- === checks for both value and type equality, without type coercion.

18. Explain the concept of promises in JavaScript.**Answer:**

A promise is an object representing the eventual completion (or failure) of an asynchronous operation. It allows you to handle asynchronous operations more effectively using .then(), .catch(), and async/await.

19. What is the this keyword in JavaScript?

Answer:

The this keyword refers to the object it belongs to, depending on the context in which it is used. In a global context, this refers to the global object (e.g., window in browsers).

20. What is event bubbling in JavaScript?

Answer:

Event bubbling is a process where an event starts at the most specific node (the target) and bubbles up to the root of the document. This allows parent elements to listen for events triggered on child elements.

Bonus Questions for Advanced Developers

21. What are Web Workers in JavaScript?

Answer:

Web Workers allow for background threads to run independently of the main browser thread. This allows for parallel processing without blocking the user interface.

22. What is the purpose of the async and await keywords in JavaScript?

Answer:

The async keyword is used to define a function that returns a promise. The await keyword is used inside an async function to wait for the completion of a promise before proceeding.

23. Explain the concept of prototypal inheritance in JavaScript.

Answer:

Prototypal inheritance allows objects to inherit properties and methods from other objects. Every object has a prototype, and when a property or method is accessed, JavaScript checks the prototype chain.

24. What is the difference between null and undefined in JavaScript?

Answer:

- null is an assignment value that represents no value or object.
- undefined indicates that a variable has been declared but has not been assigned a value.

25. What is the difference between var, let, and const in JavaScript?

Answer:

- var has function scope and can be re-assigned.
- let has block scope and can be re-assigned.
- const has block scope and cannot be re-assigned.

26. What is the purpose of event.preventDefault() in JavaScript?

Answer:

event.preventDefault() is used to prevent the default behavior of an event. For example, it prevents the default action of a form submission or a link navigation.

27. What is the purpose of the <meta> tag in HTML?

Answer:

The <meta> tag provides metadata about the HTML document, such as character encoding, author information, viewport settings, and description. It's typically used inside the <head> section.

28. What is the difference between and tags in HTML?

Answer:

- is used to give importance or emphasis to text, indicating that it is of strong significance.
- simply makes text bold without conveying any special meaning.

29. What is an anchor tag in HTML?

Answer:

The anchor tag (<a>) is used to create hyperlinks. It can link to other pages, email addresses, or files using the href attribute.

30. What is the difference between <div> and in HTML?

Answer:

- <div> is a block-level element used to group large sections of content and create divisions in a page.
- is an inline element used to style small portions of text or elements without breaking the flow.