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Crack the Front-End Developer Interview

Top 30 Questions You Must Know

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HTML Basics

1. **Difference between and <section> tags in HTML?**

- : Generic container with no semantic meaning.
- <section>: Denotes a thematic grouping of content, often with a heading.

2. **How to create a table in HTML, and when should you use it?**

- Use <table> with <tr>, <th>, and <td> tags. Use for tabular data only.

```
<table>
  <tr>
    <th>Name</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>John</td>
    <td>30</td>
  </tr>
</table>
```

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3. **What are semantic HTML tags, and why are they important?**

- Tags like <header>, <footer>, <article> provide meaning to content and improve SEO and accessibility.

4. **Purpose of the alt attribute in images?**

- Describes the image for accessibility and is displayed if the image fails to load.

5. **What are meta tags, and how do they affect a web page?**

- Provide metadata about the page. E.g., <meta charset="UTF-8"> sets the character encoding.

CSS Fundamentals

6. **Difference between id and class selectors in CSS?**

- id: Unique, applied to one element (#id).
- class: Reusable, applied to multiple elements (.class).

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7. **How does the CSS Box Model work?**

   - Includes content, padding, border, and margin. Controls spacing and layout.

8. **How does the CSS Box Model work?**

   - relative: Position relative to itself.
   - absolute: Positioned relative to nearest positioned ancestor.
   - fixed: Position relative to the viewport.

9. **Difference between inline, block, and inline-block elements?**

   - inline: No new line; width/height not respected (e.g.,).
   - block: Occupies full width (e.g.,).
   - inline-block: Combines properties of both.

10. **How do media queries work?**

    Used to apply styles based on device properties like width.

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```
@media (max-width: 600px) {
  body { font-size: 14px; }
}
```

JavaScript Essentials

11. Difference between var, let, and const?

- var: Function-scoped.
- let: Block-scoped, reassignable.
- const: Block-scoped, not reassignable

12. Explain closures in JavaScript.

- A closure allows a function to access variables from its outer scope even after the outer function has returned.

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```
function outer() {
  let count = 0;
  return function inner() {
    count++;
    return count;
  };
}
const counter = outer();
console.log(counter()); // 1
console.log(counter()); // 2
```

13. What is the DOM?

- DOM (Document Object Model) represents a web page as a tree structure. It allows JavaScript to manipulate HTML and CSS.

14. What are arrow functions?

- Concise syntax for functions, no binding of this.

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```
const add = (a, b) ⇒ a + b;
```

15. Explain event delegation

- Event delegation attaches a single event listener to a parent element to handle events for its children.

Advanced JavaScript Topics

16. Difference between synchronous and asynchronous programming?

- Synchronous: Tasks are executed sequentially.
- Asynchronous: Tasks can run in the background (e.g., setTimeout).

17. What is the Promise API?

- Used to handle asynchronous operations.

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```
fetch('url').then(response ⇒ console.log(response));
```

18. Purpose of async and await?

- async declares an asynchronous function. await pauses execution until a Promise resolves

19. What are higher-order functions?

- Functions that take other functions as arguments or return them. E.g., map, filter.

20. What is hoisting in JavaScript?

- Variables and function declarations are moved to the top of their scope before code execution.

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Front-End Frameworks and Libraries

21. What is the Virtual DOM?

- A lightweight copy of the DOM used in libraries like React for efficient updates.

22. Difference between two-way and one-way data binding?

- Two-way: Changes in UI and data affect each other (e.g., Angular).
- One-way: Data flows only from parent to child (e.g., React).

23. What are React hooks?

- Functions like useState and useEffect that let you manage state and side effects in functional components.

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24. Purpose of useState and useEffect?

- useState: Manage state.
- useEffect: Handle side effects like API calls.

25. What is a component lifecycle?

- The phases (mounting, updating, unmounting) a component goes through in React or Vue.js.

Performance Optimization

26. Strategies for improving web app performance?

- Minify assets, lazy load images, use a CDN, optimize JavaScript.

27. What is lazy loading?

- Loading resources (e.g., images, scripts) only when needed.

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28. What is critical CSS?

- CSS required for above-the-fold content, improving load speed.

29. How to handle large datasets efficiently?

- Use pagination, virtualization (e.g., react-window).

30. Purpose of a CDN?

- A network of servers that delivers content quickly to users based on their location.