

## Frontend Interview Questions

1. Explain the concept of the Virtual DOM and how it differs from the Real DOM.
2. What is rehydration in SSR (Server-Side Rendering), and how does it work in frameworks like Next.js?
3. How would you handle large form validation and dynamic inputs using React and Formik/Yup?
4. Compare different state management solutions in React (Redux, Context API, Zustand, Recoil).
5. How does the event loop work in the browser?
6. Describe how Webpack and Babel work together in the modern JS build process.
7. What are the pros and cons of micro-frontends? How would you implement them?
8. How does tree shaking work in modern JavaScript bundlers?
9. Explain content security policy (CSP) and how you would implement it in a frontend app.
10. What is Critical Rendering Path? How would you optimize it for performance?
11. How do you handle long lists efficiently in React (e.g., 10,000+ items)?
12. Describe lazy loading and code-splitting. How does it improve performance?
13. How do service workers enable offline-first web applications?
14. What is the difference between hydration and client-side rendering?
15. Explain the impact of CORS in frontend development. How do you resolve related issues?
16. What are controlled vs uncontrolled components in React?
17. What is the role of `useMemo` and `useCallback` in React optimization?
18. How does debouncing work in JavaScript, and where is it useful in frontend?
19. What are the advantages of using CSS-in-JS libraries like styled-components?
20. How do media queries work in responsive design?
21. Describe the box model and its significance in layout design.

22. How does the `z-index` property work and what are stacking contexts?
23. What is the purpose of the `rel="noopener noreferrer"` attribute on anchor tags?
24. How do Single Page Applications (SPAs) differ from Multi Page Applications (MPAs)?
25. Describe how routing works in React using React Router.
26. What is the shadow DOM, and how does it relate to web components?
27. How would you manage environment variables in a frontend project?
28. What is the role of `aria-\*` attributes in accessible web design?
29. Describe Cross-Site Scripting (XSS) and how to prevent it in frontend applications.
30. What are web accessibility (a11y) best practices for modern websites?
31. How do `flexbox` and `grid` differ in layout design?
32. What is the difference between `localStorage`, `sessionStorage`, and `cookies`?
33. What is the use of `contentEditable`, and what should developers be cautious of?
34. Explain CSS specificity and how conflicts are resolved.
35. How do you optimize images for the web?
36. What is the difference between `id` and `class` in HTML/CSS?
37. What are semantic HTML elements? Give examples.
38. How is an external stylesheet linked in an HTML file?
39. What is the use of the `` tag?
40. What are the different types of CSS: inline, internal, external?
41. What does the `position` property in CSS do? Explain different values.
42. What are pseudo-classes in CSS? Give examples.
43. What is the difference between `==` and `===` in JavaScript?
44. What are JavaScript data types?
45. How do you create a function in JavaScript? Give an example.

46. What are events in JavaScript? How do you attach an event listener?

47. What does `this` refer to in JavaScript?

48. How do you loop through an array in JavaScript?

49. What is the use of `console.log()`?

50. How do you make an API request in JavaScript?