Technical Interview Prep Guide

JavaScript | TypeScript | React | Hooks | State Management | Data Structures & Algorithms | CSS

This document is a comprehensive compilation of key interview questions and concise notes on essential topics in modern web development. It is structured to provide quick-reference knowledge on:

- Core JavaScript concepts
- TypeScript types and OOP patterns
- React fundamentals, new features in React 19, and advanced performance patterns
- Modern state management techniques including Context API and Redux
- Deep dive into React Hooks and component lifecycles
- Data Structures & Algorithms essentials
- CSS layout and positioning strategies

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"A strong foundation in fundamentals is the key to becoming a great engineer."

JS

01. What are the types of copies in JS?
02. What are Object methods?
03. What is async and why we need to use it?
04. What is a Promise? And What is the different between async and promise?
05. What is event-loop in JS?
06. What is Hoisting in JS?
07. What is the different between var and let?
08. What is the different between setTimeout and setInterval?
09. What is rest operator?
10. What is a closure in JS?
11. What does reduce function do?
12. What is the deifferant between map and reduce?
13. What is the differnat between callback and a promise
14. What is differnat between ‘==’ and ‘===’?
15. What is a pure function?
16. What is function composition?
17. What is TS?
18. What are the basic types in TS?
19. What is a interface?
20. How does classes and inheritance works in TS?
21. What is template literal?
22. Different between null and undefined?
23. What is different between event capturing vs event bubbling?
24. What is event propagation?
25. What is Web-API in Js?

React

01. What is virtual DOM in React?
02. How to render react in a browser?
03. What is npm?
04. What is peer dependency?
05. What is a public folder?
06. What is the src folder?
07. What is mean by REST full API?
08. What does app.js contain?
09. What is the difference between js and jsx?
10. Can we implement components without returns?
11. What does export default mean?
12. What is the responsibility of index.js?
13. Can we have multiple DOM elements?
14. How read loads and display components in browser?
15. What is JSX?
16. What are the advantages of JSX?
17. Can we use jsx without react?
18. What is fragments in react?
19. How iterate over an array in jsx?
20. What is a arrow function?
21. What is a callback function?
22. What are props in jsx?
23. How to spread operator?
24. What is conditional rendering?
25. What is the higher order function?
26. What are the ,routes. And ,route. Component in react routing?
27. What are route parameters?
28. What is a dependency array in a usereffect hooks?
29. What is the difference between useState() and useReducer()?
30. What are the rules or best practices for hooks implementation?
31. What are custom hooks?
32. What are component lifecycle methods?
33. What are constructors in class components and when to use them?
34. What is the difference between class components and functional components?

35. What is props drilling?
36. What are the rules or best practices for hooks implementation?
37. What is lazy loading?
38. What is reconsilation and driffing algorithm?
39. What is pure component in react?
40. What is context API and why it used?
41. Why react?
42. What is DOM?
43. How virtual DOM looks like?
44. Why virtual DOM is fast than actual DOM?
45. Why vite faster than CRA?
46. What is source map?
47. What is SPA?
48. What is the difference between satefull and stateless components?
49. What are controlled and uncontrolled components?
50. What is react portal?how it works?
51. What is react strict mode?
52. Why use <Doctype> in HTML?
53. What is <head> tag do?
54. What what is the best palce to add scripts?
55. What is webpack?
56. What is a flux?
57. What is a void element in html?
58. What is the difference between flexbox and grid?
59. What is a callback function?
60. What are limitations of react?

Hooks

1. What are react hooks?
2. What are rules of hooks?
3. What is usestate() and how it works?
4. What is userEffect and why it used?
5. What is Dependency array in userEffect?
6. What is useRef and why it used?
7. What is useMemo?
8. What is useCallback?
9. What is React.memo does?
10. What is a higher-order-components?
11. How can optimize performance in React with hooks?

State Management

1. What is a state management?
2. What is the difference between props and state?
3. What are different ways to manage state in react?
4. What is contex API and how it support with state management?
5. What is redux and when to use it?
6. What is useReducer and useState?
7. What is the difference between redux and context API?
8. What are the best practices in state management?
9. What is redux-toolkit?
10. What are props when using redux toolkit?
11. What is a middleware in redux?

React 19

1. How to view react version?
2. What are new in react 19?
3. What are new hooks in react 19?
4. What is sever components?
5. What is suspense?

DS and Algo (General)

1. What is the difference between merge sort and quick sort?
2. How binary search works? What is time complexity?
3. What is linear search?
4. What is hashmap?
5. What is binary trees?
6. What are the methods we have for traversal through a tree?
7. What is stack vs queue?
8. What are design patterns in software engineering?
9. What are OOP concepts?
10. What are SOLID principles?

CSS

1. What is position in css?
2. What is flexbox?
3. What is the difference between display none and visibility?