100 Problem-Solving Questions for Web Development

1. What is the difference between HTML and XHTML?

2. Explain the concept of the Document Object Model (DOM).

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

4. How does CSS specificity work?

5. What is the difference between relative, absolute, and fixed positioning in CSS?

6. How do media queries work in CSS?

7. What are pseudo-classes and pseudo-elements in CSS?

8. Explain the box model in CSS.

9. What is Flexbox, and how does it help in layout design?

10. What are CSS Grid Layouts?

11. What is the difference between inline, inline-block, and block elements?

12. What is the purpose of JavaScript closures?

13. What are JavaScript promises, and how do they work?

14. How does async/await improve JavaScript code readability?

15. What is event delegation in JavaScript?

16. Explain the differences between var, let, and const.

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

18. How does the 'this' keyword work in JavaScript?

19. What is the difference between null and undefined?

20. What are arrow functions, and how do they differ from regular functions?

21. How does prototypal inheritance work in JavaScript?

22. What is the difference between local storage, session storage, and cookies?

23. What is AJAX, and how does it work?

24. Explain the Fetch API in JavaScript.

25. What is CORS, and why is it important in web development?

26. What are WebSockets, and how do they differ from HTTP?

27. What is the difference between GET and POST requests?

28. What are RESTful APIs?

29. What is GraphQL, and how does it compare to REST?

30. What is Node.js, and how does it work?

31. What is the purpose of Express.js?

32. How does middleware work in Express.js?

33. What are template engines, and how do they work in Express.js?

34. What is the difference between client-side and server-side rendering?

35. How does authentication work in web applications?

36. What is JSON Web Token (JWT), and how does it work?

37. What is OAuth, and how does it work?

38. What is CSRF, and how can it be prevented?

39. What is XSS, and how can it be prevented?

40. What are SQL injections, and how can they be prevented?

41. How does HTTPS improve security?

42. What is the difference between HTTP/2 and HTTP/1.1?

43. How does a Content Delivery Network (CDN) work?

44. What is the role of Webpack in web development?

45. How does tree shaking work in JavaScript bundlers?

46. What is the difference between SSR and CSR?

47. What is the virtual DOM, and how does it work in React?

48. What are React hooks?

49. How does state management work in React?

50. What is Redux, and how does it help in web development?

51. What is Next.js, and why is it useful?

52. How does Vue.js differ from React?

53. What is Angular, and how does it compare to React and Vue?

54. What is the purpose of service workers in PWA?

55. How do you make a web application responsive?

56. What is the difference between rem and em in CSS?

57. What is lazy loading, and why is it important?

58. How do you optimize images for web development?

59. What are web accessibility standards?

60. What is ARIA in web development?

61. What are the advantages of single-page applications (SPAs)?

62. How do progressive web apps (PWAs) work?

63. What is the difference between Monolithic and Microservices architecture?

64. How does OAuth2 work?

65. What is WebAssembly, and how does it benefit web development?

66. What is the purpose of Service Workers?

67. How do you handle browser caching effectively?

68. What is lazy loading, and how does it improve performance?

69. How does Lighthouse help with web performance optimization?

70. How does server-side rendering (SSR) improve performance?

71. What is a headless CMS, and how does it work?

72. How do GraphQL and REST compare in terms of flexibility?

73. How does Firebase work in web development?

74. What is Netlify, and how does it help in deployment?

75. What is Vercel, and how does it compare to Netlify?

76. What is the role of Docker in web development?

77. What is Kubernetes, and how does it help in web development?

78. What is JAMstack, and why is it popular?

79. How do you implement SEO best practices in a web app?

80. What is schema markup, and how does it help SEO?

81. How do you prevent memory leaks in JavaScript?

82. What is the difference between soft delete and hard delete in databases?

83. What is the difference between relational and non-relational databases?

84. What is an API gateway, and how does it work?

85. How does Google Lighthouse analyze web performance?

86. What is the importance of Core Web Vitals?

87. What is the difference between relational and NoSQL databases?

88. What is event-driven architecture in web development?

89. What is the difference between cookies, local storage, and session storage?

90. How do you manage environment variables in web development?

91. What is WebRTC, and how is it used?

92. What is a Content Security Policy (CSP)?

93. How does DNS work in web requests?

94. What is an API rate limit?

95. How does load balancing work in web development?

96. What is serverless computing, and how does it work?

97. How does cloud computing benefit web development?

98. How do you implement dark mode in a web app?

99. What is an edge function, and how does it improve performance?

100. What is microfrontend architecture?