

Advanced JavaScript Interview Questions and Answers

- 1. What is the difference between let and const in JavaScript?**
 - let allows you to reassign values, whereas const does not permit reassignment after the initial value is set.
- 2. What are the data types in JavaScript and explain the type system?**
 - JavaScript data types include Number, String, Boolean, Object, Null, Undefined, and Symbol. It has dynamic typing, meaning variables can hold any type of value.
- 3. What is a callback function and what is callback hell?**
 - A callback function is a function passed into another function as an argument. Callback hell refers to nested callbacks that make code harder to read and maintain.
- 4. What is a spread operator and its use cases in ES6?**
 - The spread operator (...) allows an iterable to expand in places where zero or more arguments or elements are expected, such as in function calls or array literals.
- 5. What is a promise and its states in JavaScript?**
 - A promise is an object representing the eventual completion or failure of an asynchronous operation. States include pending, fulfilled, and rejected.
- 6. What are template literals in JavaScript?**
 - Template literals allow embedded expressions, multi-line strings, and string interpolation using backticks (`) and \${} for expressions.
- 7. What are default parameters in JavaScript and how to declare them?**
 - Default parameters allow function parameters to have default values if no value is provided. Declared as function (param = defaultValue) {}.
- 8. What is the difference between named export and default export in ES6?**
 - Named exports allow multiple exports per module, while default exports export a single value per module.
- 9. Explain the difference between for...of loop and for...in loop.**
 - for...of iterates over values of an iterable, while for...in iterates over enumerable properties of an object.
- 10. What is Babel and why is it used?**
 - Babel is a JavaScript compiler that converts ES6+ code into backwards-compatible JavaScript for older environments.
- 11. What are the differences between ES5 and ES6?**
 - ES6 introduced new features like let, const, arrow functions, classes, template literals, and more, which are not present in ES5.

12. What is the difference between Set and WeakSet in ES6?

13. Set stores unique values of any type, while WeakSet stores objects weakly, meaning references do not prevent garbage collection.

14. What is Object.freeze method and how is it different from const?

- Object.freeze makes an object immutable, while const prevents reassignment of the variable. const does not make the object itself immutable.

15. Explain the use of Map in ES6.

- Map is a collection of keyed data items, similar to an object but allows keys of any type and maintains insertion order.

16. What is a proxy in ES6 and how is it used?

- A proxy is an object that allows you to customize basic operations on objects, like reading and writing properties. Used with `new Proxy(target, handler)`.

17. What is the largest palindrome in a paragraph?

- Finding the largest palindrome involves checking each substring of a paragraph and verifying if it reads the same forwards and backwards.

18. How to validate email ID and mobile number without using regular expressions?

- Basic validation can be done by checking for essential characters (like "@" in emails) and length constraints for mobile numbers.

19. How to check the casing of string characters in a paragraph?

- Iterate through the paragraph and use methods like `toUpperCase()` and `toLowerCase()` to check each character's case.

20. Count the total number of words and characters in a paragraph.

- Split the paragraph by spaces to count words and use the `length` property to count characters.

21. Find the repeated elements in an array.

- Use a hash map to track occurrences of each element and identify those that appear more than once.

22. Remove duplicate elements from an array.

- Use a Set to store unique elements and convert it back to an array with `Array.from()` or spread operator.

23. Find the common elements between three different arrays.

- Use `filter` and `includes` methods to identify elements present in all three arrays.

24. Explain 10 predefined functions of strings and arrays.

- String methods: `charAt()`, `concat()`, `includes()`, `indexOf()`, `slice()`, `split()`, `toLowerCase()`, `toUpperCase()`, `trim()`, `replace()`.
- Array methods: `push()`, `pop()`, `shift()`, `unshift()`, `splice()`, `slice()`, `indexOf()`, `find()`, `filter()`, `map()`.

