JavaScript Topics List

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1. Basics

What is JavaScript?

Where to write JS? (Inline, `<script>`, external file)

`console.log()` and debugging

Comments (`//`, `/* */`)

Variables: `var`, `let`, `const`

Data Types

typeof Operator

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2. Operators

Arithmetic: `+`, `-`, `*`, `/`, `%`, `**`

Assignment: `=`, `+=`, `-=`

Comparison: `==`, `===`, `!=`, `!==`, `>`, `<`, `>=`, `<=`

Logical: `&&`, `||`, `!`

Ternary Operator: `condition ? true : false`

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3. Control Flow

`if`, `else`, `else if`

`switch` statement

Loops:

> `for`, `while`, `do...while`
>
> `break`, `continue`

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4. Functions

Function declaration

Function expression

Arrow functions `() => {}`

Parameters vs Arguments

Return values

IIFE (Immediately Invoked Function Expression)

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5. Objects

Creating objects: literals & constructors

Accessing properties: `obj.prop` or `obj['prop']`

`this` keyword

Nested objects

Object methods

`Object.keys(), Object.values(), Object.entries()`

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6. Arrays

Creating arrays

Accessing values

Looping: `for, forEach(), map()`

Useful methods:

    `push(), pop(), shift(), unshift()`

    `splice(), slice()`

    `includes(), indexOf()`

    `sort(), reverse(), filter(), reduce()`

7. String Methods

`length`, `charAt()`

`toUpperCase()`, `toLowerCase()`

`indexOf()`, `includes()`

`slice()`, `substring()`, `substr()`

`replace()`, `split()`, `trim()`

8. Date and Time

`new Date()`

`getFullYear()`, `getMonth()`, `getDate()`, `getDay()`

`setHours()`, `setMinutes()`, etc.

9. Math Object

`Math.round()`, `Math.floor()`, `Math.ceil()`

`Math.random()`

`Math.min()`, `Math.max()`, `Math.pow()`

10. ES6+ Features

`let`, `const`

Arrow Functions

Template Literals `Hello ${name}`

Destructuring (Objects & Arrays)

Spread and Rest Operators

Default Parameters

`for...of` and `for...in`

Modules: `export`, `import`

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11. DOM Manipulation

`document.getElementById()`

`querySelector()`, `querySelectorAll()`

`innerHTML`, `innerText`, `value`

Modifying attributes, classes, styles

Creating and appending elements

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12. Events

`onclick`, `onchange`, `onsubmit`, etc.

`addEventListener()`

Event Object (`e.target`, `e.preventDefault()`)

Event bubbling and delegation

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13. Error Handling

`try...catch`

`throw` keyword

`finally` block

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14. Asynchronous JavaScript

Callback functions

`setTimeout()`, `setInterval()`

Promises:

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     new Promise()

     .then(), .catch(), .finally()

async / await
```

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15. Fetch API (AJAX)

`fetch(url)`

Handling JSON

HTTP methods: GET, POST, PUT, DELETE

Headers and body in request

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16. Local Storage / Session Storage

`localStorage.setItem(), .getItem(), .removeItem()`

`sessionStorage`

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17. Advanced Topics

Closures

Hoisting

Scope (Global, Local, Block)

Lexical Environment

Execution Context & Call Stack

`this` in different contexts

Prototypes and Inheritance

`call(), apply(), bind()`

Currying

Debouncing & Throttling

18. OOP in JavaScript

Constructor Functions

ES6 Classes

`constructor, super, extends`

Encapsulation, Inheritance, Polymorphism

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19. Event Loop & Concurrency

Call Stack

Event Queue

Microtasks & Macrotasks

`setTimeout` vs `Promise`

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20. Useful Tools & APIs

`console.table(), console.warn(), console.error()`

Geolocation API

Web Storage API

Form Validation