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**JavaScript Basics**

1. **Variables**

var name = 'John'; // ES5

let age = 30; // ES6

const isAdult = true; // ES6

1. **Data Types**

const str = 'Hello';

const num = 100;

const bool = false;

const obj = {name: 'John', age: 30};

const arr = [1, 2, 3];

const undef = undefined;

const nul = null;

1. **Functions**

function greet(name) {

return `Hello, ${name}`;

}

const add = (a, b) => a + b; // ES6

1. **Conditionals**

if (age > 18) {

console.log('Adult');

} else {

console.log('Not an adult');

}

1. **Loops**

for (let i = 0; i < 5; i++) {

console.log(i);

}

arr.forEach(item => console.log(item)); // ES6

1. **Objects**

const person = {

name: 'John',

age: 30,

greet() {

console.log('Hello');

}

};

1. **Array Methods**

const numbers = [1, 2, 3, 4, 5];

const doubled = numbers.map(num => num \* 2); // [2, 4, 6, 8, 10]

const evens = numbers.filter(num => num % 2 === 0); // [2, 4]

1. **Promises**

const fetchData = () => {

return new Promise((resolve, reject) => {

setTimeout(() => {

resolve('Data received');

}, 2000);

});

};

fetchData()

.then(data => console.log(data))

.catch(error => console.error(error));

1. **Async/Await**

async function getData() {

try {

const data = await fetchData();

console.log(data);

} catch (error) {

console.error(error);

}

}

getData();

**JavaScript DOM Manipulation**

1. **Selecting Elements**

const element = document.getElementById('myId');

const elements = document.getElementsByClassName('myClass');

const allElements = document.getElementsByTagName('div');

const queryElement = document.querySelector('.myClass');

const queryAllElements = document.querySelectorAll('div');

1. **Manipulating Elements**

element.textContent = 'Hello, World!';

element.innerHTML = '<strong>Hello, World!</strong>';

element.style.color = 'red';

1. **Adding/Removing Classes**

element.classList.add('new-class');

element.classList.remove('old-class');

const hasClass = element.classList.contains('myClass');

1. **Creating Elements**

const newElement = document.createElement('div');

newElement.textContent = 'New Element';

document.body.appendChild(newElement);

1. **Removing Elements**

element.remove();

1. **Event Listeners**

element.addEventListener('click', () => {

console.log('Element clicked!');

});

1. **Form Handling**

const form = document.querySelector('form');

form.addEventListener('submit', event => {

event.preventDefault();

const formData = new FormData(form);

const name = formData.get('name');

console.log(name);

});

**JavaScript ES6 Features**

1. **Arrow Functions**

const add = (a, b) => a + b;

1. **Template Literals**

const name = 'John';

const greeting = `Hello, ${name}!`;

1. **Destructuring**

const person = { name: 'John', age: 30 };

const { name, age } = person;

const numbers = [1, 2, 3, 4];

const [first, second] = numbers;

1. **Spread Operator**

const arr1 = [1, 2, 3];

const arr2 = [...arr1, 4, 5, 6];

const obj1 = { a: 1, b: 2 };

const obj2 = { ...obj1, c: 3 };

1. **Rest Parameters**

const sum = (...args) => args.reduce((acc, curr) => acc + curr, 0);

1. **Default Parameters**

const multiply = (a, b = 1) => a \* b;

1. **Classes**

class Person {

constructor(name, age) {

this.name = name;

this.age = age;

}

greet() {

console.log(`Hello, my name is ${this.name}`);

}

}

const john = new Person('John', 30);

john.greet();

1. **Modules**

// Exporting (in person.js)

export const name = 'John';

export const age = 30;

export default Person;

1. **Importing (in another file)**

import Person, { name, age } from './person';