**📘 Modern JavaScript & Web Development Notes**

**⚡ Modern JavaScript Features**

**1. Arrow Functions**

\* Concise function syntax introduced in ES6.

\* Implicit `return` if no braces.

\* \*\*`this`\*\* is lexically scoped (inherits from surrounding code).

```js

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

```

**Spread and Rest Operators (`...`)**

\* \*\*Spread\*\* expands an array or object into individual elements.

\* \*\*Rest\*\* collects multiple elements into an array parameter.

```js

// Spread example (copy array)

const arr1 = [1, 2];

const arr2 = [...arr1, 3, 4]; // [1, 2, 3, 4]

// Rest example (function arguments)

function sum(...nums) {

return nums.reduce((a, b) => a + b, 0);

}

```

🔷 1. **Basic Syntax**

// Regular function

function add(a, b) {

return a + b;

}

// Arrow function

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

**🔹 2. Syntax Variations**

**✅ One Parameter (No parentheses needed)**

const square = x => x \* x;

✅ **Multi-line Function (Use {} and return)**

const multiply = (a, b) => {

const result = a \* b;

return result;

};

**🔷 3. Arrow Functions vs Regular Functions**

**✅ A. this Behavior**

Arrow functions **do not have their own this** — they inherit this from the outer scope.

**Example:**

function Person() {

this.age = 0;

setInterval(() => {

this.age++;

console.log(this.age); // ✅ Works as expected

}, 1000);

}

new Person();