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**Task** #3

**Topic**

JavaScript ES6+ basic

(let/ const, arrow function

and template literal)

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# 📘 JavaScript ES6+ Learning Report

**ECMAScript 6 (ES6)**, also known as **ES2015**, is a major update to JavaScript that introduced modern features to improve code readability, reusability, and performance. Since ES6, JavaScript continues to evolve with **ES7, ES8, ES9...**, hence the term **ES6+** (ES6 and later versions).

## 🔹 1. let, const, and var

### 🔸 var (Old Way)

* Introduced in early versions of JS
* **Function-scoped**
* Can be **redeclared** and **reassigned**
* Hoisted (moved to top of function scope)

var x = 10;

var x = 20; // no error

### 🔸 let (Modern Way)

* Introduced in ES6
* **Block-scoped** (works inside {})
* Cannot be redeclared in the same block
* Can be reassigned

let count = 5;

count = 10; // allowed

### 🔸 const (Constant Variable)

* Introduced in ES6
* **Block-scoped**
* Cannot be **redeclared** or **reassigned**
* Use when value **should not change**

const PI = 3.14;

// PI = 3.15 ❌ Error

#### Use Case:

const userName = "Zain"; // Fixed name

let score = 0; // Score changes over time

## 🔹 2. Arrow Functions (➤ ()=>{})

Arrow functions are **shorthand** versions of regular functions.

### 🔸 Syntax:

const greet = (name) => {

return `Hello, ${name}`;

};

If one line:

const greet = name => `Hello, ${name}`;

### Use Case:

let numbers = [1, 2, 3];

let squared = numbers.map(n => n \* n);

// [1, 4, 9]

## 🔹 3. Template Literals

**Template literals** allow:

* Easier string interpolation
* Multi-line strings
* Embedding expressions

### 🔸 Syntax:

Use **backticks** ` and ${} for variables.

### 🔸 Example:

const name = "Zain";

const age = 22;

const intro = `My name is ${name} and I am ${age} years old.`;

console.log(intro);

### 🔸 Multi-line:

const message = `

Hello,

This is a multi-line

string in JavaScript.

`;

## 🔹 4. Real-Life Use Cases

### Using All Together:

const user = "Zain";

let taskCount = 3;

const taskSummary = (name, tasks) => {

return `Hello ${name}, you have ${tasks} tasks to do today.`;

};

console.log(taskSummary(user, taskCount));

## What I’ve Learned

* ES6+ provides cleaner and modern ways to write JavaScript
* let and const should replace var for better scoping
* Arrow functions simplify function syntax
* Template literals make strings easier to handle