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Task #3

Topic

JavaScript ES6+ basic
(let/ const, arrow function
and template literal)

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APPVERSE TECHNOLOGIES

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