**Lesson 6: Functions in JavaScript**

By the end of this lesson, students will be able to:

* Define what a function is and explain its purpose in programming.
* Write and call functions using different declaration styles (function declaration, function expression, arrow function).
* Demonstrate how to use parameters and return values.
* Differentiate between built-in and user-defined functions.
* Apply functions to structure and reuse code effectively.

**Functions in JavaScript**

A **function** is a block of reusable code designed to perform a specific task. Instead of writing the same code multiple times, you can define it once inside a function and call it whenever needed.

### Function Declaration

A function can be declared using the function keyword.

Syntax:

function functionName(parameters) {

// code to be executed

}

Example:

function greet() {

console.log("Hello, welcome to JavaScript!");

}

greet(); // Calling the function

### Function with Parameters

Parameters allow you to pass values into a function.

Example:

function greetUser(name) {

console.log("Hello, " + name + "!");

}

greetUser("Alice");

greetUser("Bob");

In this case, since the age is 16, the condition is false, and the else block executes, printing "You are not eligible to vote."

Here, "Alice" and "Bob" are arguments passed to the name parameter.

### Function with Return Value

Functions can return values using the return keyword.

Example:

function add(a, b) {

return a + b;

}

let sum = add(5, 7);

console.log("The sum is: " + sum);

### Function Expressions

Functions can also be stored in variables.

Example:

const multiply = function(x, y) {

return x \* y;

};

console.log(multiply(4, 5)); // 20

### Arrow Functions (ES6)

Arrow functions provide a shorter syntax.

Example

const divide = (a, b) => a / b;

console.log(divide(10, 2)); // 5

### Avoiding Common Mistakes

* Forgetting to call the function (functionName();).
* Mismatching the number of arguments and parameters.
* Forgetting the return statement when a value is needed.