

## Week 4:

### ❖ Day 1: Introduction to Javascript

-Understanding the basics of JavaScript and its role in web development.

.**What is JavaScript** - JavaScript is a high-level, interpreted programming language that is widely used for creating and controlling dynamic website content.

-Learned about the structure of a JavaScript program and how to include JavaScript in an HTML document.

. **What is the structure of JavaScript** - The structure of JavaScript encompasses its syntax, data types, control structures, functions, and objects.

-Wrote a simple JavaScript program to display a message on a webpage.

### ❖ Day 2: Variables and Data Types Introduction:

- Using variables to store data in JavaScript.

1) **Variables** - variables are used to store data values. Variables act as containers for data that can be referenced and manipulated throughout the code.

2) **Data Types** - Data Types specify the type of data that a variable can hold. JavaScript has several data types, which can be categorized into primitive and composite type.

-Studied different data types: strings, numbers, booleans, and null.

1) **Strings** - Strings are sequences of characters used to represent text. They are one of the primitive data types and are immutable, meaning once a string is created, it cannot be changed, although you can create new strings based on operations performed on existing strings.

2) **Numbers** - Numbers are a primitive data type used to represent both integer and floating-point values. JavaScript uses a single type 'number' to represent all numeric values.

3) **Booleans** - A boolean is a primitive data type that can hold one of two values: 'true' or 'false' Booleans are often used in conditional statements to control the flow of a program based on certain conditions.

4) **Null** – Null is a special primitive data type that represents the intentional absence of any object value. It is one of the six falsy values in JavaScript.

-Practiced declaring and initializing variables in JavaScript.

### ❖ Day 3: Operators and Expressions Introduction:

-Performing operations using JavaScript operators.

**.What is Operators in JavaScript** - Operators are special symbols or keywords used to perform operations on values and variables. JavaScript has various types of operators.

-Learned about arithmetic, comparison, and logical operators.

1) **Arithmetic** - Arithmetic operators in JavaScript are used to perform basic mathematical operations on numbers.

2) **Comparison** - Comparison operators in JavaScript are used to compare two values and determine the relationship between them. These operators return a boolean value true or false based on the result of the comparison.

3) **Logical Operator** - Logical operators in JavaScript are used to perform logical operations on values and expressions. They are commonly used in conditional statements to combine or invert boolean values.

-Practiced writing expressions and using operators in JavaScript code.

### ❖ Day 4: Control Structures Introduction:

-Making decisions in code with control structures. Studied conditional statements like if, else if, and else.

1) **if** - conditional statement in JavaScript allows you to execute a block of code based on whether a condition evaluates to true or false. It's fundamental for controlling the flow of a program based on conditions.

2) **else if** - else if conditional statement in JavaScript allows you to specify a new condition to test if the initial 'if' condition evaluates to 'false'. It is used to handle multiple conditions in a more structured way, providing additional branches of execution beyond the initial 'if' and the final 'else'.

3) **else** - The 'else' conditional statement in JavaScript provides a block of code that executes if none of the preceding 'if' or 'else if' conditions are true. It acts as a fallback when all previous conditions evaluate to 'false'.

-Practiced writing programs that use control structures to make decisions.

### ❖ Day 5: Loops Introduction:

-Repeating actions with loops in JavaScript

-Learned about for, while, and do-while loops.

1) **for** – ‘for’ loop is used to execute a block of code a specific number of times. It is commonly used when the number of iterations is known beforehand.

2) **While** – ‘while’ loop repeatedly executes a block of code as long as a specified condition evaluates to ‘true’.

3) **do-while** – ‘do-while’ loop is similar to a ‘while’ loop but with a key difference: it guarantees that the block of code inside the loop will execute at least once before checking the condition.

### ❖ Day 6: Functions Introduction:

-Studied how to declare and invoke functions in JavaScript.

. In JavaScript, functions are blocks of code designed to perform a specific task. They can be declared in several ways and invoked (or called) to execute the code they contain.

Function Declaration, Function Expression, etc.

-Practiced writing reusable functions and passing arguments to functions.

-Studied different types of function in javascript such as Named functions, Anonymous function, Arrow function.

1) **Named Function** - a named function is a function that has a specific name assigned to it. Named functions are defined using the ‘function’ keyword followed by a name, a list of parameters, and a block of code.

2) **Anonymous Function** - An anonymous function in JavaScript is a function that does not have a name. It is often used as a value for variables, arguments in function calls, or directly in places where a function is needed temporarily.

3) **Arrow Function** - Arrow functions in JavaScript provide a concise syntax for writing functions. Arrow functions are particularly useful for writing short functions and maintaining the context of ‘this’.