**JavaScript**

**Variables**

JavaScript variables are containers for storing data values. Variables can be declared using the 'var' keyword.

Example : var x = 5; In the above code declaration the value 5 has been assign to the variable x.

* + Variables are used to store data that can be used and manipulated later in the program.
  + You can declare variables using var, let and const.
    - **var**: Globally or function-scoped. Can be re-declared and updated.
    - **let**: Block-scoped. Can be updated but not re-declared within the same scope.
    - **const**: Block-scoped. Cannot be updated and re-declared.

**Data Types**

In programming, data types is an important concept.

To be able to operate on variables, it is important to know something about the type.

* + **Primitive Types**:
    - **Number**: Represents numeric values. Example: 42, 3.14
    - **String**: Represents text. Example: "Hello, World!"
    - **Boolean**: Represents true and false.
    - **Undefined**: Represents a variable that has been declared but not assigned a value.
    - **Null**: Represents an intentional absence of any value.
    - **Symbol**: Represents a unique identifier
    - **BigInt**: Represents integers with arbitrary precision
  + **Non-Primitive Types**:
    - **Object**: Used to store collections of data or more complex entities.
    - **Array**: A special type of object used to store multiple values in a single variable.

**Operators**

The symbols that are used to execute operations on operands.

* + **Arithmetic Operators**: +, -, \*, /, %, ++, --
  + **Assignment Operators**: =, +=, -=, \*=, /=
  + **Comparison Operators**: ==, ===, !=, !==, <, >, <=, >=
  + **Logical Operators**: &&, ||, !
  + **Bitwise Operators**: &, |, ^, ~, <<, >>
  + **Ternary Operator**: condition ? expr1 : expr2

**Functions**

A function in JavaScript is similar to a procedure a set of statements that performs a task and calculates a value but for a procedure to qualify as a function, it should take some input and return an output where there is some obvious relationship between the input and the output.

* + Functions are blocks of code designed to perform a particular task.
  + Declared using the function keyword or as an arrow function

**Control Structures**

A control structure lets us change the flow of the code. Loop-and-a-half. A loop, most often set with while(true), that has a break in the loop body. break statement. The break; statement breaks out of the current loop, without executing any more code in the loop.

* + **Conditional Statements**: if, else if, else, switch
  + **Loops**: for, while, do...while, for...of, for...in
  + **Break and Continue**: break exits a loop, continue skips the current iteration.

**Where to Declare JavaScript**

**Inline File**

A special type of anonymous function that is assigned to a variable, or in other words, an anonymous function with a name.

Inside <script> tags within an HTML document.

**External File**

 Javascript extension and then link the file inside the <head> or <body> tag of our HTML file.

In a separate.js file linked to your HTML

<script src="path/to/file.js"></script> tag.