Learn JavaScript With me Day-1

console.log():

- "console.log() " is used to print output or messages to the browser's console, useful for debugging.
- **Syntax:** "console.log(value) "
- Can output different types: strings, numbers, objects, etc.
- **Example:** "console.log("Hello World!"); "

Linking JS File:

- JavaScript files can be linked to HTML documents using the "<script> " tag.
- External JS file is referenced by the "src " attribute inside "<script> ".
- Place "<script src="filename.js"></script> " at the end of the "<body> " for better performance.
- **Example:**

```
<html>
<script src="app.js"></script>
</html>
```

Template Literals:

- Template literals allow embedded expressions and multi-line strings using backticks (" " " " ").
- Supports string interpolation: "${expression} ".
- **Example:**

```
js:
let name = "John";
console.log( "Hello, ${name}! ");
```

Operators in JS:

- Arithmetic Operators : "+ ", "- ", " ", "/ ", "% ", " " (exponentiation)
- Assignment Operators : "= ", "+= ", "-= ", etc.
- Comparison Operators : "== ", "!= ", "=== ", "!== ", "> ", "< ", ">= ", "<= "
- Logical Operators : "&& " (AND), "|| " (OR), "! " (NOT)
- Increment/Decrement Operators : "++ ", "-- "

Comparison Operators:

- "== " : Equality comparison (type conversion allowed)
- "=== " : Strict equality (no type conversion)
- "!= " : Not equal (type conversion allowed)
- "!== " : Strict not equal
- **Example:**
  js:
  console.log(2 == "2"); // true
  console.log(2 === "2"); // false

Comparison for Non-numbers:

- Non-numeric comparisons are based on Unicode point values (for strings).
- **Example:**
  js:
  console.log("apple" > "banana"); // false (alphabetical order)
  console.log("2" > 1); // true (string gets converted to number)

Conditional Statements:

- Used to perform different actions based on different conditions.
- **if statement :**
  js:
  if (condition) {
  // code block
  }

- **if-else :**
  js:
  if (condition) {
  // code block
  } else {
  // alternative block
  }

- else if for multiple conditions.

if Statement:

- Executes a block of code only if the condition evaluates to true.
- **Example:**
  js:
  ```
  if (x > 10) {
    console.log("x is greater than 10");
  }
  ```

else if Statement:

- Used for multiple conditions in a decision-making chain.
- **Example:**
  js:
  ```
  if (x > 10) {
    console.log("x is greater than 10");
  } else if (x > 5) {
    console.log("x is greater than 5 but less than or equal to 10");
  } else {
    console.log("x is less than or equal to 5");
  }
  ```

Nested if-else:

- if-else statements inside another if-else block.
- **Example:**
  js:
  ```
  if (x > 10) {
    if (y > 10) {
      console.log("Both x and y are greater than 10");
    } else {
      console.log("Only x is greater than 10");
    }
  }
  ```

Logical Operators:

- AND ("&& ") : True if both conditions are true.
- OR ("|| ") : True if at least one condition is true.
- NOT ("! ") : Inverts the condition.
- Example:

```
 js:
let x = true, y = false;
console.log(x && y); // false
console.log(x || y); // true
console.log(!x); // false
```

truthy & falsy:

- **Truthy:** Values that evaluate to "true " in Boolean context (e.g., non-zero numbers, non-empty strings).
- **Falsy:** Values that evaluate to "false " (e.g., "0 ", """ ", "null ", "undefined ", "NaN ", "false ").
- **Example:**

```
js:
let x = 0;
if (x) {
  console.log("x is truthy");
} else {
  console.log("x is falsy");
}
```

Switch Statement:

- Allows testing a variable against multiple cases.
- **Syntax:**

```
js:
switch(expression) {
  case value1:
    // code block
    break;
  case value2:
    // code block
    break;
  default:
    // default code
}
```

- "break " exits the switch; "default " executes if no match is found.

Alerts & Prompts:

- **"alert() " :** Displays a pop-up message.
  js:
  alert("Hello World!");

- **"prompt() " :** Displays a dialog box for user input.
  js:
  let name = prompt("What is your name?");
  console.log(name);

- **"confirm() " :** Displays a dialog box with "OK" and "Cancel".
  js:
  let result = confirm("Do you agree?");
  console.log(result);