# MSc DS – Web Technologies

Module No: 3

## Revision from Last Lecture

1. Module 2 explores fundamental aspects of web design, starting with HTML and CSS.
2. HTML is introduced as the structural core of webpages, with an emphasis on understanding tags and their role in online content.
3. CSS is recognised as the influential stylistic component of the internet, and students learn about selectors and properties for customising web components.
4. Bootstrap, a widely used front-end framework, is covered to create adaptable designs that look visually appealing on different devices.

## Expected Learning Outcomes

1. Understand and use the main variables and data types in JavaScript.
2. Utilise looping and conditional expressions to control logic.
3. Create and alter data in objects and arrays.
4. Effectively use functions by being aware of their declarations, invocations, and scope.

## Understanding Variables and Data Types

• Variables: Serve as containers for diverse data values in programming.

• let and const: Used for block-level scoping of variables.

• JavaScript Data Types: Include numbers, strings, booleans, undefined, and null.

## Logic Control with Conditionals and Loops

* Programming involves making logical choices and automating repetitive processes.
* JavaScript provides conditionals and loops for executing specific actions.
* Conditionals are used to make decisions based on certain criteria.
* JavaScript has if, else if, and else statements for conditional logic.

## Working with Arrays and Objects

* JavaScript's flexibility is demonstrated through its ability to manipulate structured data.
* Arrays and objects are fundamental to JavaScript's data organization.
* Arrays are used for ordered collections; objects for entities with properties.

## Functions: Declaration, Invocation, and Scope

• Functions in JavaScript are contained entities of logic that fulfill specific objectives.

• Declaration establishes a function’s structure and readiness for use.

• Functions are invoked or called to activate their tasks.

## ES-6 Features: Let, Const, Arrow Functions

* ES6 introduced `let` and `const` for better variable control and predictability than `var`.
* `let`: Allows for block-scoped variables.
* `const`: Creates immutable variables.
* Arrow Functions: Concise syntax, auto-bind `this`, and reduce errors.

## Important Terminologies (Part 1)

• Variables: Fundamental components in programming that serve as containers for storing data values.

• Data Types: Categorisation of data by characteristics like numerical or textual representation.

• Conditionals: Programming constructs that run code based on criteria.

## Important Terminologies (Part 2)

• Loops: Constructs that repeatedly execute code until a condition is satisfied.

• Functions: Reusable code blocks for specific tasks.

• Arrow Functions: Succinct ES6 feature enabling lexical binding of `this`.

## Summary

* Module 3 covers JavaScript basics: variables, data types, arrays, objects, functions, conditionals, and loops.
* It explores logic control and ES-6 features like `let`, `const`, and arrow functions, highlighting improvements in JavaScript.

# THANK YOU