

JavaScript – Lecture 1: Introduction

Where JS Code is Written

JavaScript code is usually written:

- Inside `<script>` tags in HTML.
- In external .js files linked to the HTML.

Comments

JavaScript supports:

- Single-line comments: `// This is a comment`
- Multi-line comments: `/* This is a multi-line comment */`
- Documentation style: `/** For describing functions or blocks */`

Output to Screen

You can output messages using:

- `console.log("message")` — logs to browser console
- `alert("message")` — shows alert popup
- `document.write("text")` — writes to the HTML document (not recommended)

Variables and Datatypes

You can declare variables using `var`, `let`, or `const`.

Example:

```
var x = 10;
```

```
let y = "text";
```

```
const pi = 3.14;
```

Common Datatypes:

- **string**: 'text' or "text"
- **number**: integer, float
- **boolean**: true / false
- **null**: empty value
- **undefined**: declared but no value assigned
- **array**: list of values [1, 'a', true]
- **object**: key-value pairs {name: 'Ali', age: 20}

Falsy Values

Values that evaluate to false in conditionals:

- false, 0, "", null, undefined, NaN

JS Coercion

Type coercion happens automatically in JS.

Example:

'10' + 10 → "1010" (string)

'10' - 1 → 9 (number)

Always use === and !== to avoid coercion errors.

Hoisting

JavaScript "hoists" variable declarations (but not assignments) to the top of their scope.

Example:

```
console.log(x); // undefined
```

```
var x = 5;
```

'let' and 'const' are also hoisted but not initialized.

JS Operators

Arithmetic: +, -, *, /, %, ** (power)

Assignment: =, +=, -=, *=, etc.

Comparison: ==, ===, !=, !==, >, <, >=, <=

Logical: &&, ||, !

Control Flow – Conditions

if / else if / else:

```
if (x > 10) {...}
```

Switch:

```
switch(grade) {
```

```
case 'A': ...; break;
```

```
default: ...;
```

```
}
```

Control Flow – Loops

JavaScript loops include:

- for

- while

- do...while

Example:

```
for (let i = 0; i < 5; i++) {
```

```
  console.log(i);
```

```
}
```

Interact with User

Three common ways:

- alert("message")
- prompt("Ask user")
- confirm("Are you sure?")

Example:

```
let name = prompt("Enter your name:");  
    if (confirm("Continue?")) {  
        console.log("User confirmed");  
    }
```