START
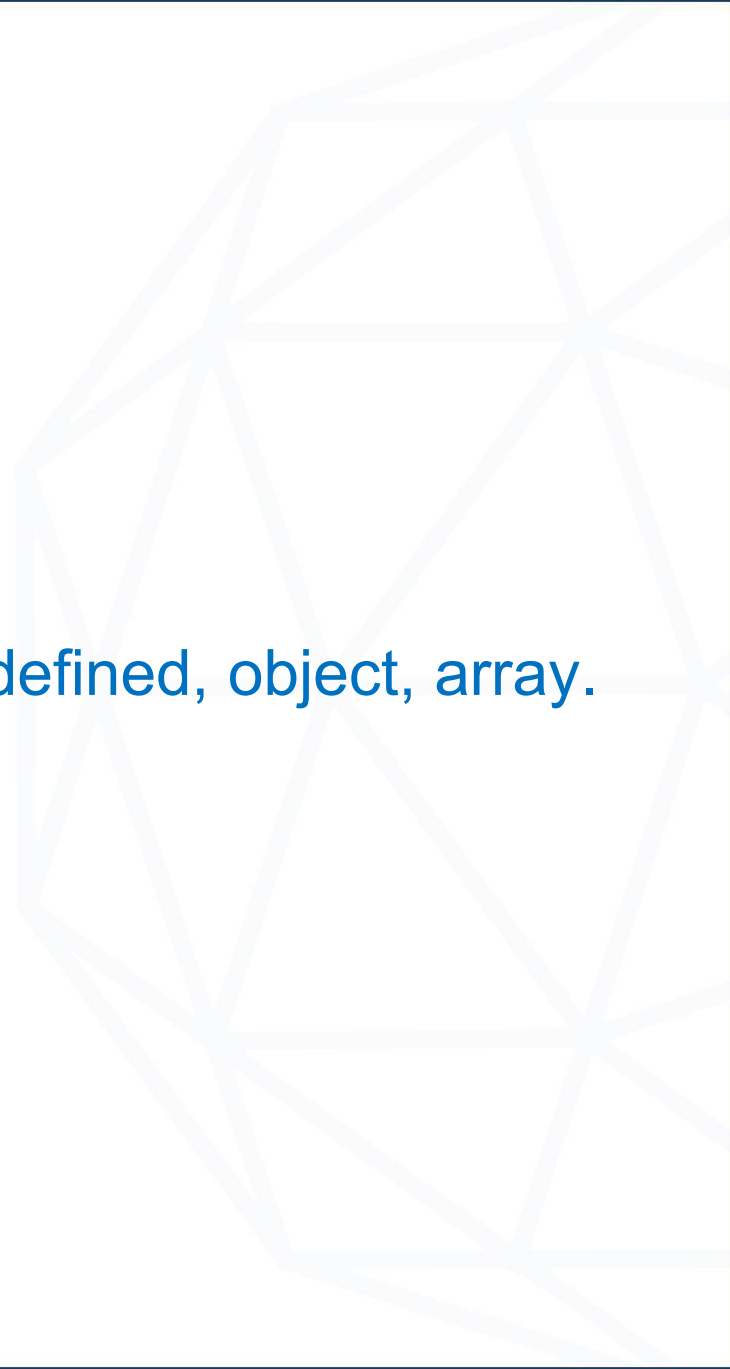## YOUR TECH JOURNEY
WITH ADA

Agenda

➢JavaScript basic syntax (console.log, comments)

➢Variable declarations: var, let, const.

➢JavaScript data types: string, number, boolean, null, undefined, object, array.

➢Type conversion & typeof operator.

➢Hands-on exercise: Age Calculator Program.

JavaScript Basic Syntax

Console Output:

```javascript
console.log("Hello, World!");
console.log("Welcome to Node.js!");
console.log(42);
console.log(true);
```

Comments:

```javascript
// This is a single-line comment

/*
  This is a
  multi-line comment
*/
```

Variables Overview

Three Ways to Declare Variables:

Keyword	Scope	Reassignable	Redeclarable	Modern Usage
`var`	Function	✅ Yes	✅ Yes	❌ Avoid
`let`	Block	✅ Yes	❌ No	✅ Preferred
`const`	Block	❌ No	❌ No	✅ Preferred

Key Point: Use let for variables and const for constant. Avoid using var.

Variable Declaration Examples

```javascript
// var - function-scoped (avoid in modern JavaScript)
var name = "John";
var age = 25;


// let - block-scoped, can be reassigned
let city = "New York";
let population = 8000000;
city = "Los Angeles"; // This is OK


// const - block-scoped, cannot be reassigned
const PI = 3.14159;
const country = "USA";
// country = "Canada"; // This will cause an ERROR!
```

JavaScript Data Types

Primitive Types:
- String - Text data.
- Number - Numeric data.
- Boolean - True/false values.
- Null - Intentionally empty value.
- Undefined - Variable not assigned.

Complex Types:
- Object - Key-Value pairs.
- Array – Ordered List.

Data Types Examples

```javascript
// Strings
let firstName = "Alice";
let lastName = 'Smith';
let fullName = `${firstName} ${lastName}`; // Template literal

// Numbers
let age = 28;
let price = 19.99;
let temperature = -5;

// Booleans
let isStudent = true;
let hasJob = false;

// Null and Undefined
let data = null;            // Intentionally empty
let result;                 // undefined (not assigned)

// Object
let person = {
    name: "Bob",
    age: 30,
    isEmployed: true
};

// Array
let colors = ["red", "green", "blue"];
let numbers = [1, 2, 3, 4, 5];
```

The typeof Operator

```javascript
console.log(typeof "Hello");        // "string"
console.log(typeof 42);             // "number"
console.log(typeof true);           // "boolean"
console.log(typeof undefined);      // "undefined"
console.log(typeof null);           // "object"  ⚠ (JavaScript quirk!)
console.log(typeof {});             // "object"
console.log(typeof []);             // "object"
```

Type Conversion

String to Number

```
let str = "123";
let num1 = Number(str);      // 123
let num2 = parseInt(str);    // 123
let num3 = +str;             // 123 (shorthand)
```

Number to String

```
let age = 25;
let ageStr1 = String(age);   // "25"
let ageStr2 = age + "";      // "25" (concatenation)
```

Boolean Conversion

```
Boolean(1);          // true
Boolean(0);          // false
Boolean("");         // false (empty string)
Boolean("hello");    // true (non-empty string)
```

Practice: Age Calculator

Your Task:
Create a program that calculates age from birth year.

Requirements:
- Declare a constant for the current year (2025)
- Declare a variable for birth year
- Calculate the person's age
- Display a nice message with the result
- Use proper variable declarations (const/let)
- Add comments explaining your code
- Test with different birth years

THANK YOU

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