

# Training Day 8 Report

**Date:** 07 July 2025

**S.T.E.P** – Science & Technology Entrepreneurs' Park, GNDEC, Ludhiana

**Topic Covered:** Introduction to Programming, Scripting & Query Languages + Introduction to JavaScript

## Introduction

On Day 8 of our MERN Stack training, we were introduced to fundamental programming concepts and the differences between **programming**, **scripting**, and **query languages**. We also began our journey into **JavaScript**, the essential language for building interactive web applications.

## Key Learnings

### 1. Understanding Language Types

#### Programming Languages

- Compiled (e.g., C, C++, Java).
- Used to build standalone software applications.
- Requires a compiler to convert code into machine language.

#### Scripting Languages

- Interpreted at runtime (e.g., JavaScript, Python).
- Mainly used for automating tasks or enhancing web functionality.
- Does not require compilation before execution.

#### Query Languages

- Used to interact with databases (e.g., SQL).
- Retrieves, updates, and manipulates data.

## 2. Comparison Table

Feature	Programming	Scripting	Query
Execution	Compiled	Interpreted	Interpreted
Usage	Software dev	Automation/web	Data handling
Examples	C, Java	JS, Python	SQL, GraphQL

## Introduction to JavaScript

### What is JavaScript?

- A **scripting language** for web development.
- Runs in the browser to create interactive features.
- Works alongside HTML and CSS.

### Basic Concepts Covered

- `console.log()` for debugging output.
- Variables: `var`, `let`, `const`.
- Data types: string, number, boolean.
- Simple operators: `+`, `-`, `*`, `/`, `%`.
- Conditional statements: `if`, `else`.

### JavaScript in HTML

- Learned to embed JS using `<script>` tag.
- Inline, internal, and external JavaScript usage.

- Example:
- `<script>`
- `alert("Welcome to JavaScript!");`
- `</script>`