

# Introduction to JavaScript

## ◆ What is JavaScript?

- **JavaScript (JS)** is a **client-side scripting language** mainly used to make web pages **interactive and dynamic**.
  - It was created in **1995** by *Brendan Eich* at Netscape.
  - Runs directly in the **browser** (like Chrome, Firefox, Edge, Safari).
  - It is one of the **core technologies of the web** along with **HTML** and **CSS**.
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## ◆ Why JavaScript?

- HTML → Provides **structure** of a web page.
  - CSS → Provides **style and design**.
  - JavaScript → Provides **interactivity and behavior**.
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## ◆ Features of JavaScript

1. **Lightweight & simple** – Easy to learn and use.
  2. **Interpreted** – Runs directly in the browser without compilation.
  3. **Event-driven** – Can respond to user actions (clicks, inputs, etc.).
  4. **Cross-platform** – Runs on any browser and device.
  5. **Versatile** – Can be used for:
    - Frontend (Browser scripting – e.g., form validation, animations).
    - Backend (via Node.js – server-side apps, APIs).
    - Mobile & Desktop apps (with frameworks like React Native, Electron).
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## ◆ What JavaScript Can Do?

- Validate form input (e.g., check if email is entered).
- Create interactive UI (sliders, dropdowns, popups).
- Manipulate HTML & CSS dynamically (DOM manipulation).
- Fetch data from servers (AJAX / Fetch API).
- Create web apps, games, mobile apps, and even server-side apps.

## How to run JavaScript?

There are 3 common ways:

### 1. Inside `<script>` tag in HTML.

```
<!DOCTYPE html>
<html>
<body>
  <script>
    console.log("Hello, JavaScript!");
  </script>
</body>
</html>
```

### 2. As an external file (`script.js`):

#### index.html

```
<!DOCTYPE html>
<html>
<body>
  <script src="script.js"></script>
</body>
</html>
```

#### script.js

```
console.log("Hello, JavaScript!");
```

### 3. Directly in the browser console (**Right-click** → **Inspect** → **Console**).

