

Js Engine

A **JavaScript engine** is a [software component](#) that executes [JavaScript code](#). The first JavaScript [engines](#) were mere [interpreters](#), but all relevant modern engines use [just-in-time compilation](#) for improved performance.^[1]

JavaScript engines are typically developed by [web browser](#) vendors, and every major browser has one. In a browser, the JavaScript engine runs in concert with the [rendering engine](#) via the [Document Object Model](#) and [Web IDL](#) bindings.^[2] However, the use of JavaScript engines is not limited to browsers; for example, the [V8 engine](#) is a core component of the [Node.js runtime system](#).^[3]

Since [ECMAScript](#) is the standardized specification of JavaScript, **ECMAScript engine** is another name for these [implementations](#). With the advent of [WebAssembly](#), some engines can also execute this code in the same [sandbox](#) as regular JavaScript code.^{[4][3]}

JavaScript HTML DOM

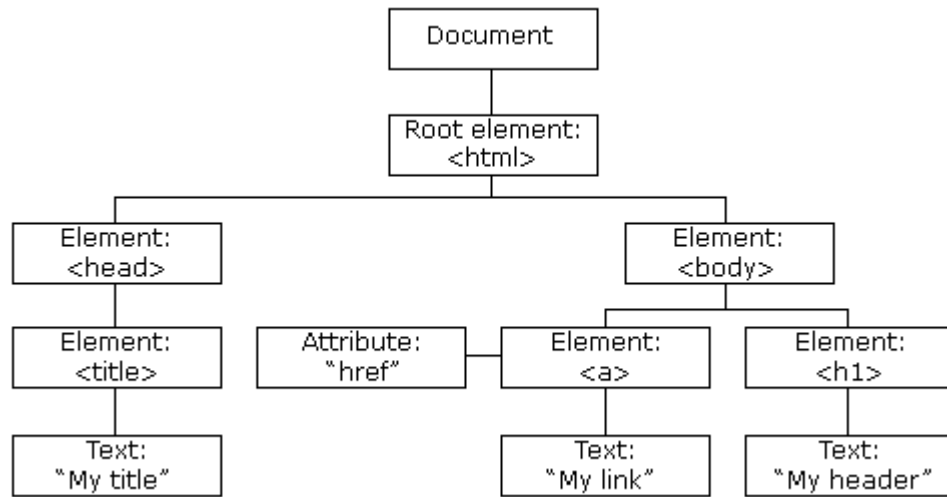
With the HTML DOM, JavaScript can access and change all the elements of an HTML document.

The HTML DOM (Document Object Model)

When a web page is loaded, the browser creates a **D**ocument **O**bject **M**odel of the page.

The **HTML DOM** model is constructed as a tree of **Objects**:

The HTML DOM Tree of Objects



With the object model, JavaScript gets all the power it needs to create dynamic HTML:

- JavaScript can change all the HTML elements in the page
- JavaScript can change all the HTML attributes in the page
- JavaScript can change all the CSS styles in the page
- JavaScript can remove existing HTML elements and attributes
- JavaScript can add new HTML elements and attributes
- JavaScript can react to all existing HTML events in the page
- JavaScript can create new HTML events in the page

What is the DOM?

The DOM is a W3C (World Wide Web Consortium) standard.

The DOM defines a standard for accessing documents:

"The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document."

The W3C DOM standard is separated into 3 different parts:

- Core DOM - standard model for all document types
- XML DOM - standard model for XML documents
- HTML DOM - standard model for HTML documents

What is the HTML DOM?

The HTML DOM is a standard **object** model and **programming interface** for HTML. It defines:

- The HTML elements as **objects**
- The **properties** of all HTML elements
- The **methods** to access all HTML elements
- The **events** for all HTML elements

JavaScript Message Boxes: alert(), confirm(), prompt()

- `alert(message)`: Display a popup box with the specified message with the OK button.
- `confirm(message)`: Display a popup box with the specified message with OK and Cancel buttons.
- `prompt(message, defaultValue)`: Display a popup box to take the user's input with the OK and Cancel buttons.