**What is JavaScript?**

* JavaScript appeared in 1995- to handle input validations.

**History-**

There was need to a complete round-trip to server for simple form validation.

Brendan Eich –who worked for netscape, began developing a scripting language called **Mocha.** (later LiveScript for NetScape Navigator)

Netscape + Sun Microsystems completed implementation of LiveScript = JavaScript.

Microsoft introduced IE(Internet Explorer) with Jscript.

In 1997 JavaScript 1.1 submitted to ECMA(European Comp Manufacturers Association) to standardize syntax and semantics.

JavaScript= ECMAScript + DOM + BOM

1. **ECMAScript** – It is not tied with web browsers. Web browsers are one of the host environment. Host env provides basic implementation of ECMA.

What ECMA262 specify-

1. Syntax
2. Types
3. Statements
4. Keywords
5. Reserved words
6. Operators
7. Objects

ECMA Editions-

1. 1st same as Netscape’s JS1.1 by removing browser specific code.
2. 2nd largely editorial. Standards was updated . did not feature any addtions.
3. 3rd updates on string handling , definition errors, numeric outputs, RegExp ,Exception handling
4. 4th JS becomes more popular so it includes strongly typed variables , new statements and data structures, classes inheritance, and ways to interact with data.
5. 5th clarify ambiguity of 3rd and introduces additional functions like Native JSON object for parsing and serializing JSON data , methods for inheritance.

ECMAScript conformance mean?

To consider an implementation of ECMAScript it must do

1. Support all types,values,objects,properties, functions and prg syntax and semantics.
2. Support Unicode character standard.
3. Additionally , add additional types, values, objects as new objects and properties.
4. Support prg and regexp syntax.

2**.DOM**(Document Object Model)-

* It is API for XML which is extended for use in HTML.
* It maps entire page as hierarchy of nodes.
* It is tree of all nodes.

Why DOM is necessary?

* IE4 and Netscape 4 has supporting different types of Dynamic HTML.
* there has to be something to preserve dynamic nature of web.
* So W3C body charged with creating standards for web.

DOM Levels-

1. DOM Level 1

a. DOM Core- way to map structure of XML based document to allow for easy access and manipulation of any part of document.

b. DOM HTML – extended the DOM core by adding HTML specific objects and methods.

1. DOM level 2-
   1. Extention of DOM, support for mouse and UI events , support for CSS.
   2. It introduces- DOM views, DOM events, DOM style and DOM traversal & Range.
2. DOM level3-
   1. Extend with methods to load and save document in uniform way and Dom validation. Support for XML like XPath, XMLBase.

3.**BOM**(Browser Object Model)-

- IE3 and Netscape 3 featured BOM

- allows access and manipulation to browser window.

- developers can interact with browser outside of context of displayed page.

- BOM has No standard until HTML5.

- Eg. Capability of pop up and close browser.