Note: Important concepts and yet to be discussed are : Web API, Web Storage

CSS: it is a compliment to html and it is a language. As Html styling tags are deprecated in favour of CSS styling

**Java Script**

Def: Java script is a scripting language. (i.e. is not a general language, unlike python, c) and it is a light weight programming(less features, since it is not general language, its purpose is only to add dynamism to web pages) tool to add dynamism to static web pages created using HTML.

* It is based on a standard called Ecma Script(ES).
* It is an interpreted language
* It is also a platform independent (you donot need to install js separately, browser is enough, browser parses the script with parsers builtin with the browsers)
* Netscape created the JavaScript(Not Important)

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Dynamism: making the web page to respond to user action is called dynamism. Since html is lacking dynamism we use js to provide dynamism to html.

Client Side Validation: Client side validations are also part of dynamism of javascript, instead of sending small issues to server which costs the time, we can use the validation in browser using js

Scripting languages other than js: vb script, jscript

Where javascript is written:

1. Within the html page
2. Writing javascript in separate .js file and link it with html file/page

1. Within the html page:

We start with writing the java script inside the body using the script tag instead of head

<!DOCTYPE html>

<html>

    <head>

        <script>

            // here goes the js code

        </script>

    </head>

    <body>

        <script>

            // here goes the js code

        </script>

    </body>

</html>

Elements of the Language:

* Operators
* Data Types
* Variables

**Operators:**

**(Categorizing on arity i.e. how many operands an operator works with)**

1. Unary Operators: which work with only one operand(value or variable) Ex: -10, -a, i++,

-, ++, --, !, ~(tild)

1. Binary Operators: which work with two operands
   * Arithmetic Operators: +, -, \*, /, %
   * Relational Operators: <, <=, >, >=, ==, !=
   * Logical Operators: &&(short circuit operator) , ||(short circuit operator), !
     + Since && and || are short circuit operators if the left section becomes false(in &&) or true(in ||) it doesnot checks the right section
   * Assignment operators: =
   * Compound Operators: +=, -=, \*=, /=, %=
2. Ternary Operators: which work with three operands

?: Condition (Boolean expression ) ? true\_part : false\_part

Data Types: js doesnot have fixed keywords for datatypes. It usually supports variant data types(which changes). It supports numeric, strings, Boolean. In js every element is considered as a object

Variables:

Var keyword: to define the variable we need to use the “var” keyword and variable can store any type value after declaration ex:

    <script type="text/javascript">

        var x = "10";

        document.write(x);

        x="Hello world";

        document.write("<br>"+x);

        x=false;

        document.write("<br>"+x);

    </script>

Note: when the value is not defined with value, then it is said to be undefined and prints “undefined”

 var y;

  document.write(y);

Note: in JS prior to the usage of the variable the variable must be declared/defined.

Variable Scope Hoisting: pulling the variable scope up is called hoisting, which means using the downside declared variable in upperscope, i.e. we can use the variable without declaration by declaring the variable anywhere in the program.

The variables declared/defined with var are not block scoped, i.e. a variable declared using var can be used outside the block also, but let scopes the variables inside their blocks, i.e the variables declared/defined with let are block scoped

Const Variables: const variables holds only one value throughout its life time. Any attempt made to modify its value leads to error. Const variables must be defined (with initial value)

**Scanning values dynamically:**

Java scripts supports 3 dialog boxes:

1. Alert: alert(x)
2. Confirm:
3. Prompt: it is used to scan/read a input value dynamically. It takes the input as a string value

Function to convert the value:

parseInt(): this function converts the string formatted int value to int

parseFloat(): this function converts the string formatted float value to float