Monday, January 9, 2023 11:10 AM

HTML -----
HTML Tags = HTML Elements
html , head (title , link , script , style) , body (h1,h2,h3,h4 , div, p, span, table , form, input , button,anchor,label , pre, img, iFrame , select(option) , ul , ol(li) ,audio , textarea ,br, b , I , u

Tags have - opening tag, closing tag , tag attributes (name ,type , id , class , style ,value , width, heigth, align, href , src , target ,placeholder)
Validation tag attributes (maxlength , minlength , max, min , required , readonly ,pattern)
Event tag attributes = onclick , onchange, oninput, onsubmit

DOM = Tree like structure where nodes are HTML elements child nodes are nested tag, leaves are text created by browser , rendered by the browser

To beautify the HTML = CSS
Every HTML element is treated as CSS BOX
Properties of CSS box = margin , margin-left ,…. ,padding, padding-left …. , border, border-style, border-color, border-radius , border-width , content (width, height , background-color , align)
font , font-family , font-style, font-weight, font-size ,color)
display , visibility ,

Inline (style attribute), internal (style tag), external (link tag)

Javascript --------- adds client side programming capability
- DOM manipulation = changing elements of DOM tree(dynamic html)
  - Object that represents DOM tree = document
  - Using the document - find the elements in the document
    - element = document.getElementBy("ID")
    - arr = document.getElementsByClassName("clsname)
    - document.forms["formname"]["form element"]
    - document.forms.formname.formelement
- What are we changing in the DOM
  - v = element.value
  - element.innerText ="gggg"
  - element.innerHTML = " mmm"
  - v = element.checked
  - element.style.visibility = "hidden"

- Javascript is used for client side validation
  - We capture submit <form onsubmit="return validatefunc() " >
  - We can show messages , alerts for invalid content
  - WE stop submit if content is invalid

- Javascript is used for EVENT handling
  1. Identify source of the event <button onclick="handler() " >
     Source = button
     Event type = click
     Event handler = handler()

Javascript Language Details
1. var , let , const
2. typeof (number , string, boolean , object, function, undefined)
3. string ('r' , "ww" , `ww ${var1} `)

immutable
literal string is a primitive stored in constant pool
new String is object
valueOf
== , ===

4. String APIs = charAt, toUpperCase, concat , length, slice, split , endsWith, startsWith , match
5. Arrays = objects
Arr [0]
Apis = push, foreach, splice, map, filter, sort ,pop

7. Date = object
Date.now()
New Date() ---------- system date
getDay() , getMonth,getYear
Date in millis EPOCH
d1 - d2
d1 > d2
d1.valueOf() == d2.valueOf ()

8. Functions
passing paramenters
default parameter
returning values
Passing functions to functions
Defining functions within functions
Returning functions from functions
Lamda function , anonymous function

9. Reg Exp
Var x = /ab/
= new RegExp(/ab/)
Pattern symbols (. ,+ ,,? ,^,$, * , [A-Z a-Z 0-9] {2,3 })

10. Creating Objects
    1. JSON object
    2. Class
    3. Function constructor

11. Prototype = sharing properties between objects
properties include functions and attributes
For memory efficient storage - functions are written in prototype
Object.getPrototypeOf(d1)
setPrototype(d1, proto)
12. Prototype Chaining ---- for finding a property javascript searches in current object
If not found then search in prototype
Then in prototype of prototype tilll NULL is found

Object DESTRUCTURING Syntax ---------- Shorthand notation for quick access of elements in an object or an array .

HW -

1. Modify sortex.js such that the array elements are sorted as follows
    1. In ascending by name
    2. In descending by name

Hint : localCompare

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Callback Functions ---- The function is called later ! Whenever required !!!
`We register the function , but we never call it !!!

Mechanism ---- When a callback function is passed to a function

a. The CB function is added to a CB queue
b. The current function executes and returns
c. The next functions in the script execute and return till MAIN stack is empty
d. After the Main stack is empty - the CB queue functions are executed as per events

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AJAX Calls ----

SPA = Single Page Application =

Only one html page travels from server to client on the first REQQUEST
After the first request the subsequent requests are made to REST API through AJAX
The server returns ONLY data and not html
The data is RENDERED using html that has already landed on the client side

AJAX uses API = XMLHttpRequest = it will fire URLs

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REQUEST ----------
JSON data is passed from HTML (JAVASCRIPT -JSON object)-------(stringify)->------HTTP-----> to SERVER
OR
RESPONSE ----------
JSON data is passed from SERVER to---------(str)---------HTTP----(parse)--------> (JAVASCRIPT)HTML

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HW ----------

Write an AJAX program to GET the list of employees from reqres.in OR your tomcat APP
show id , first_name,last_name and the image of that employee in a table

Write an AJAX that will accept NAME and JOB from the user in textfields
Fire the POST query of reqres.in as done in class
show the createdDate received in the Response with DAY of week in words

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JQUERY ---------- Javascript Library used for quick and easy coding of UI
We need to include this library in our code in order to use it .