Week 4 Revisit

HTML

CSS

Servlets

REST Api

HTML – Hypertext Markup Language (Client Side Code)

* HTML is the Language of Web (Used to create web pages/sites)
* HTML is a Markup Language which is not space or case sensitive.
* HTML is user friendly Language.
* No Compilation or Run time errors in HTML
* HTML is a tag based language (Markup)
* Each tag is having a closing tag.
* Every tags will have angular brackets (<>)
* Few tags in html will not have separate closing tag. (Self closing tags. Ex. <hr/> <br/> <input />
* In HTML, tags along with the content is called elements.
* HTML is rendered by the Browser. [Each browser will have a rendering engine]
* HTML files can be created in any text editor [NotePad, WordPad, Notepad++, VS Code, Brackets, ATOM, Sublime, vi editor, terminal, command prompt etc.,]
* Popular IDEs [Integrated Development Environment] for HTML are VS Code, Atom, Brackets & Sublime
* HTML file will have a root tag called <html> and all other tags will go inside <html> tag
* <html> tag is called as root tag of html file
* Html file will have an extension .html or .htm
* Html files, contents, tags are not case sensitive.
* Types of Tags – Formatting Tags, Form Tags, Table tags, List Tag, Heading Tags, Media Tags, Input tags
* Different input types in HTML – text, numbers, password, email, url, mobile, file, color, select, radio,check box, textarea, hidden,reset, submit etc.,
* Html 5 contains in-built client side validation attributes [Required, PlaceHolder, pattern etc.,]
* W3cschools.com is the good reference <https://www.w3schools.com/>
* Attributes provide more details about the tag

CSS – Cascading Style Sheet (Client Side Code)

* Styling Language of the Web /Internet
* Ways of applying CSS [ Inline, Internal & External]
* Inline CSS [ adding style attribute to the HTML element]
* Internal CSS [ Adding style tag in the HTML document]

Ex:

**<style>**  [opening tag]

body {  // Selector Name

    background-color: black;

}

h1 {

    color: red;

    padding: 50px;

}

**</style>**  [closing tag]

* External CSS (This is the recommended approach) [Creating a separate .css file and adding it to the html file)
* Types of Selector in CSS [element or tag , id, class]
* Element selector (will have the tag name or element name)
* Id selector will have a attribute called id. [each html element needs to have a unique ID]
* Class selector will use a attribute called class
* Each browser will have a Styling engine which is responsible for generating & applying the given styles in css files/ style tag/ style attribute

Servlets (Server Side Code)

* Servlet is a Java Class which gets executed in the server side.
* Types of Servlet [i. GenericServlet (Can be used for any protocol ii. HttpServlet (used only for http/https request)
* Servlet Life cycle [Initialization Phase, Service Phase & Termination Phase]
* Init() for Servlet Initialization
* doService() for Servlet Service [ doGet(), doPost(), doTrace() …..]
* Termination Phase [Destroy Phase]
* Web.xml (Deployment Descriptor) – It is a xml file which contains all deployments related details.
* Web.xml (deployment descriptor) is the entry point of Web application.
* Client & Server Architecture.
* Client will send a request to the server, for each request the server will send the response by executing few or more lines of server side code.

Servlet is an advance Java concepts. (Server Side code) – All the core Java concepts are applicable for Servlets.

QC will be tomorrow[07-June-2022] 2p.m to 3p.m [Post Lunch] – Coding Challenge for One hour in iMocha platform [No code/content assist, you need to remember the class names, package names everything]

09-Jun-2022 (Thursday) 10.30 A.M to 11A.M – Portfolio Orientation meeting.

Dharshanaa Kamaraj is inviting you to a scheduled Zoom meeting.

Topic: Dharshanaa Kamaraj's Zoom Meeting

Time: Jun 8, 2022 08:00 PM India

Join Zoom Meeting

<https://revature.zoom.us/j/86096960143?pwd=dnNCVVMwN3VGUFVKZTJ2TGt4U1RlZz09>

Meeting ID: 860 9696 0143

Passcode: 719839

One tap mobile

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+13017158592,,86096960143#,,,,\*719839# US (Washington DC)

Portfolio is nothing but your resume/cv

Design Pattern (It’s proven way to resolve common challenges) – Efficient way to resolve a problem.

* MVC – Web Development Design Pattern
* Front Controller
* MVC [Model -View – Controller]
* Model represents the Data [Data Layer] (Database like RDBMS, Entity Bean class)
* View presents the data [User Interface/ Presentation Layer]
* Controller connects both Model & view and decides the data flow direction. [Business Logic Layer]

Web Services & REST Api

* Web Service – Communication between electronic device using web/internet protocols
* Web Service in simple is a Service offered via web or with the help of web.
* ATM transaction, Weather Data, Currency Exchange, Oil Prices, Stocks
* <http://Reqres.in> – For Understanding REST api
* Types of Web Service (i. SOAP Based ii. REST based)
* SOAP – Simple Object Access Protocol (WSDL – Wizdel, Web Service Description Lang)
* WSDL is a xml file which contains all details about request and response object.
* REST – Representational State Transfer (It works on top of Http – HyperText Transfer Protocol)
* Important Terms [Endpoints, APIs, http methods]
* API Naming Convention [No need to have any extension]
* API is represented in the form of URI
* URI – Uniform Resource Identifier

Week 5 (JavaScript Week)

* JS Intro,
* Syntax
* Data types
* Variables
* Functions
* OOPs in JavaScript
* JSON
* Arrow functions
* Async JS
* Promises
* Fetch API
* DOM & DOM Manipulation
* Why JS?
* AJAX
* Events Handling
* Types of Events
* Let & Const keyword

JavaScript – Is a Programming Language of Web

After the introduction of Node, Javascript is used everywhere.

Now a days JavaScript is becoming as a general purpose programming Language.

The Java & The JavaScript both are different languages.

Except the name and little similar syntax both are totally different.

|  |  |
| --- | --- |
| JAVA | JavaScript |
| It’s a General Purpose, Multi Threaded, Highly secured, Platform independent, Object Oriented Programming Language | It’s Single Threaded, Secured, Platform independent, Object based, Interpreted Scripting Language |
| It’s strongly typed | It’s loosely typed (Dynamically typed) |
| It runs in JVM (Java RunTime) | It runs in browser & Node (JS Runtime) |
| Multiple Threads | No Thread concepts |
| File Handling | Using node we can handle it |
| It’s a general purpose programming lang. | Initial days, it was mainly used for DOM manipulation |
| Java can be used as a back end coding. | JS will give life to web pages. It’s also used for user interaction. |
| Servlets, JSP | JS file which can be included in HTML file |
| It will run alone. | Initially it was running inside the browser only, later it can also run alone using node. |
| It’s a compiled & interpreted language | It’s an interpreted language |
| It’s class based object | It’s prototype based object |
| Overloading is supported | Overloading is not supported. No overloading concept |
| Encapsulation is simple using access modifiers | Encapsulation is possible but without access modifiers |

W3 = www = World wide Web

W3c is an organization which will provide specifications and details about HTML, CSS & JS.

Java Script is also called ECMA Script JS == ES

Ways of Adding JavaScript to HTML

* Inline Javascript
* Internal Javascript
* External Javascript

Java is a General purpose programming Lang.

* We can create Desktop based Applications using Java (GUI based/ CUI based)
* GUI – Graphical User Interface [ Java Swing, Java AWT, Java FX]
* CUI Based – Core Java Applications which can be accessed in command prompt.
* Network based applications –
* Java can be used in any devices [ Mobile phones, Smart TVs, Computer/Laptop Programming, Big Data, Automation, Testing, Engineering Applications, AI & ML, Data Handling]

JavaScript

DOM – Document Object Model – Tree like representation of HTML file.

document is an object which represents the current html page

DOM is a Tree like data structure. – Storing the data in a structured way.

alert(), prompt() – These are Javascript page load functions which will block other codes.

Using these codes in the web page is not recommended.

alert() and prompt() functions are blocking functions which blocks other operations.

JavaScript is one of the **3 languages** all web developers **must** learn:

   1. [**HTML**](https://www.w3schools.com/html/default.asp) to define the content of web pages

   2. [**CSS**](https://www.w3schools.com/css/default.asp) to specify the layout of web pages

   3. **JavaScript** to program the behavior of web pages

JS is a most-commonly used client-side scripting language.

* High Level, Multi paradigm & Interpreted
* Multi Paradigm – It can be used as scripting lang, used as object oriented programming lang, functional programming lang, async programming lang
* Official Name of JavaScript is ECMA Script (ES)
* ECMA – Electronics Computer Manufacturing Association
* W3C – World Wide Web Consortium
* Javascript is a case sensitive language
* Javascript ignores multiple spaces & tabs
* Each line in js is separated by semi-colon;
* To create a variable in js, “var” keyword is used
* Operators [ Arithmetic, Logical, Conditional, Relational (Comparative), assignment]
* For-in allows iteration on keys of any object
* For-of is used to iterate through arrays or array like object

Data types

* Number, string, boolean, symbol, object, null, undefined (7 datatypes in JS)
* NaN = Not a Number
* Scopes – Visibility or availability or lifetime of variabes
* Types of Scopes – Global, Local, Function & Lexical
* Global Scope – Variable declared outside all the functions, blocks, modules
* Functional Scope – Variable declared inside a function (Available/visible inside that function only and declared using var keyword)
* Block Scope – variable declared inside a function using let/const keyword
* == type converting equality (Check only the value – strings will be converted to numbers)
* === strict equality (Check both value & types)
* Type coercion or type conversion (Converting one data type to another data type)
* Functions in JS (Anonymous/functional expression, IIFE [Immediately invoked Functional Expressions],