Akash Kale

MCA

SLK Software Java/JEE 2 year

12 + Year of exp

Core Java, Jee (Servlet/JSP/EJB), Hibernate, JSF, Spring, Struts,

HTML5, CSS3, JavaScript, jQuery, Node JS, Angular JS, React JS etc.

4

2 RestFull Web Service

2 Node JS

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Web Service :

J2EE or JavaEE or JEE :

Java Enterprise Edition

3 Modules

Servlet :

JSP : Java Server Pages

EJB : Enterprise Java Bean

Spring Framework

20% EJB 80% Spring Framework.

MVC : Model View Controller

View : HTML/CSS/JavaScript + JSP

Presentation Logic

Controller : Servlet / Filter

doGet/doPost

Model : JavaBean + Service Layer (

Business logic) +

Dao Layer(database Logic/JDBC)

Data Access Object.

JavaBean

Property : private (all variables)

And setter /getter methods

public class Login {

private String user;

public void setUser(String user) {

this.user = user;

}

public String getUser() {

return user;

}

}

Login.jsp check.jsp (database logic)

Javabean

Login.jsp/Login.html --🡪 LoginController (Servlet) doGet/doPost --🡪

JavaBean

-🡪 LoginService -----🡪LoginDao --🡪 Database (Oracle/MySQL)

Req(http/https)-🡪 java(req)-🡪

Client HDFC (jee) xml/json HSBC(asp.net/php/)

🡨---Res(http/https) 🡨.net(res)

<https://www.hdfclogin.com> -🡪URL

Java is a pure object oriented, platform independent but language dependent.

Web Service

Customer cc = new Customer();

cc.setCustId(100);

cc.setCustName(“Ravi”);

cc.setAmount(5000);

cc

xml format or json format

Web Service : Giving the Service for web application when both application running using different technologies or same, different platform or same.

Web Service is a platform independent, language independent as well as browser independent.

Web Service is a concept.

MVC is a design pattern.

2 types

1. SOAP Base Web Service or Big Web Service
2. RestFull Web Service

SOAP : Simple Object Access Protocol.

SOAP base web service is base upon SOA

Service Oriented Architecture.

Eclipse, Java 8, Tomcat , JAX\_RS jar files

SOA

SB : Service Broker

Register lookup Service

Search Details

WSDL

SR or SC SP

Service Requester Send req(SOAP Service

Service Consumer Res (SOAP Provider

JEE Asp.net

Method/functions

WSDL : Web Service Description Language : It is a type of XML file which contains services details. Like service url, service name, number of parameter as well as type of parameter and return type of service methods.

This wsdl file they will register in UDDI registry .

Universal Description discovery integration. It is a type of database which hold wsdl file.

Then service consumer or requester search or lookup the wsdl file from uddi registry. Then using wsdl file they call service

SB uddi registry

Wsdl file

SC SOAP Req SP

SOAP Res

JAX\_WS : Java API (Application Programming Interface) XML Web Service

JAX\_WS is a implementation of SOAP Web Service in Java Technologies.

Third party tools or vendor tools which provides set of jar files which help to achieve JAX\_WS

1. Axis 2 tool
2. Metro tool
3. Java 8
4. WAS (WebShere Application Server)
5. Spring framework

JDBC : Java Database Connectivity : mysql connector jar file

Class.forName(“com.mysql.jdbc.Driver”);

SQL server 2018 :

Limitation of SOAP base web service

1. Using SOAP base web service we can consume as

all as data only in the form of XML.

1. XML data is heavy data. In XML we can dtd(document type definition) and xsd (xml schema definition).

Employee emp = new Employee();

emp.setId(100);

emp.setName(“Ravi”);

emp.setSalary(12000);

JAX\_B : Java API for XML Binding : Converting

Java to XML and Vice-versa.

XML Format

<Employee>

<Id>100</Id>

<Id>10ab</Id>

<Name>Raj</Name>

<Salary>12000</Salary<

</Employee>

Html vs xml

RestFull Web Service :

Resource : Servlet / JSP :

Employee

CRUD Operation : Create / Read / Update / Delete

EmployeeController.java (Servlet Programs )

doPost() : Create the Resource

doGet() : Read the resource

doDelete() : Delete the resource

doPut() : Update the resource

RestFull Web Service : it is a concept

JAX\_RS : Java API for XML Restfull WebService.

JAX\_Rs is a implementation of RestFul Web Service in Java Technologies.

JAX\_RS

Vendor tools

1. Jersey
2. Apache wink
3. Spring MVC
4. WAS

<http://localhost:8080/JAX_RS_Demo/rest/Abc>

<http://localhost:8080/JAX_RS_Demo/rest/Xyz>

<http://localhost:8080/JAX_RS_Demo/rest/obj>

HTML Vs XML

1. HTML is use to display the data.

XML is use to describe the data or hold the data or transfer the data.

1. HTML contains lot of pre-defined tags like html, head, body, p, h1, font etc

In XML we can write user-defined tags base upon the application requirements.

1. IN html without tag we can display the output.

But in XML it require at least one tag ie tag is known as root tag or parent tag or document tags.

1. In html it is not mandatory every tag has to close properly. But in xml every tags must be close properly.
2. HTML is not case sensitive but xml is a case sensitive means

If you open the tag with upper case we have to close with upper case only.

<Message>Welcome to XML Data </Message>

<Message>Welcome to XML Data <Message>

<Message>Welcome to XML Data </message>

Welcome to XML Data

<Message><Msg>Welcome to XML Data </Message></Msg>

Passing the value to REST API

1. Query param

URI

<http://localhost:8080/JAX_RS_Demo/rest/obj/queryparam?name=Ravi>

<http://localhost:8080/JAX_RS_Demo/rest/obj/empInfo1?id=100&name=Ajay&salary=12000>

<http://localhost:8080/JAX_RS_Demo/rest/obj/loginInfo?user=Raj&pass=deep>

1. Path param

<http://localhost:8080/JAX_RS_Demo/rest/obj/pathparam/Ravi>

<http://localhost:8080/JAX_RS_Demo/rest/obj/empPath/100/Ajay/14000>

QueryParam Vs PathParam

If the client is sending data through HTML page using method as GET that time you can use queryParam option.

By default every html form method is get consider.

But if the client is command base application like unix that time we can use the path param

@POST

@GET

Client application may be

Brower, form

@POST

Client application may be

Form with method as post, rest client browser plugin,

AJAX, Java,.net,php, python rest client programs.

@DELETE and @PUT

Rest client browser plugin,

AJAX, Java,.net,php, python rest client programs.

If Servlet is a Controller then view must be html or jsp.

But if Restfull Web Service is a Controller then view may be html or jsp or command base application like unix, github or Java Client or .net or php or python or browser plugin or ajax or Angular 7/8 or React js.

Because of RestController the view and controller become loosely coupling.

Employee emp = new Employee();

emp.setId(100);

emp.setName(“Ravi”);

emp.setSalary(12000);

XML format

<employee>

<id>100</id>

<name>Ravi</name>

<salary>12000</salary>

</employee>

JSON : JavaScript Object Notation : Like map in java

{“key1”:value,”key2”:”value”}

{“id”:100,”name”:”Ravi”,”salary”:12000}

empDb using get to retrieve all employee details.

Get method to retrieve one employee details passing query param

Or path params.

Get Method :

1. Get all employee details or all resources.
2. Get employee details using employee id or any specific resource base upon primary key.

Post method :

1. Store employee details or store resource details.

Delete method

1. Delete employee details using employee id or delete resource base upon the primary key using query param or path param

Update Method :

1. Update employee salary using employee id or update any resource any property using primary property.

SOAP Web Service WSDL

RESTFull Web Service WADL Web application Description Language.

Node JS

Web Application

<http://www.google.com>

req(http/https)---------🡪

Client Server

🡨-------res(http/https)-------

HTML/HTML5

HTML is use to create the web pages. It may be static

Or dynamic web page.

CSS/CSS3

Cascading Style sheet

Form Validation : required, min length, max length, etc

JavaScript

JavaScript was object based interpreter scripting language which help to do validation on client side.

JEE

Sevlet/JSP/EJB Asp.net

Php

Python Node JS

JavaScript tags

Syntax

<script type=”text/JavaScript”> opening tag

</script> closing tag

This tag we can write in between head tag or body tag of html we page.

Declaring the variable in JavaScript

var keyword is use to declare the variable

syntax

var variableName;

data types : In JavaScript data types are divided into four types.

number,

string

boolean

object reference

demo1.html

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

    document.write("Welcome to JavaScript code<br>")

    document.write("Welcome to JavaScript code<br>")

    document.write("Welcome to JavaScript code<br>")

**var** abc;            *//default value of abc is undefined*

**var** n=10;           *//number data types*

**var** m = 10.10;      *//number data types*

**var** name ="Ravi Kumar";     *//string data types*

**var** res  = true;            *//boolean data types*

**var** obj = new Date();       *//object reference*

    document.write("<br>Value of abc is "+abc);

    document.write("<br>Value of n is "+n);

    document.write("<br>Value of m is "+m);

    document.write("<br>Value of name is "+name);

    document.write("<br>Value of res is "+res);

    document.write("<br>Value of obj is "+obj);

    </script>

</body>

</html>

JavaScript operators

1. Arithmetic operator : +, -, \*,/ and %
2. Logical operator : &&, || and !
3. Conditional operator : >, >=, <, <= , ==, !=, ===
4. Assignment operator =
5. Increment and decrement operator ++, --
6. Typeof operator or functions

== operator is use to check the value but === operator is use to check the value as well as there data types.

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

**var** a=10;

**var** b="10";

    document.write("== <br>")

    document.write(a==b)

    document.write("<br> === <br>")

    document.write(a===b)

    </script>

</body>

</html>

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

**var** n;

    document.write("type of data type of n "+typeof(n))

    n=10

    document.write("<br>type of data type of n "+typeof(n))

    n=10.10

    document.write("<br>type of data type of n "+typeof(n))

    n="RAvi Kumar"

    document.write("<br>type of data type of n "+typeof(n))

    n = true;

    document.write("<br>type of data type of n "+typeof(n))

    n = new Date();

    document.write("<br>type of data type of n "+typeof(n))

    </script>

</body>

</html>

If statements

1. Simple if statement
2. If else
3. Nested if
4. If ladder or if else if

Switch statement

While loop

Do while loop

For loop

Switch statement coding

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

**var** n = 20;

    switch(n){

        case 1:document.write("1st block");

                break;

        case 2:document.write("2nd block");

                break;

        case 3:document.write("3rd block");

                break;

        case 4:document.write("4th block");

                break;

        default :document.write("wrong block")

    }

    document.write("<br>Finish")

    </script>

</body>

</html>

Do while code

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

**var** i =1;

**var** n =10;

   do {

        document.write(i+"<br>")

        i++;

   }while(i>n);

    </script>

</body>

</html>

Function : function is use to write set of instruction to perform a specific task.

2 types

1. Pre-defined functions or built in function
2. User-defined function

Pre-defined function

1. alert() : alert is a pre-defined function which help to display the pop message.
2. prompt() : this function is use to receive the value from keyboards.
3. parseInt() : it is use to convert string to integer
4. parseFloat() : it is use to convert string to float
5. eval() : it is use to convert string to number it may be int or float.

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

**var** a = prompt("enter the value of a ")

**var** b = prompt("enter the value of b")

**var** sum = eval(a)+eval(b);

    alert("sum is "+sum)

    </script>

</body>

</html>

Use-defined function

Syntax

function functionName(parameterList) {

}

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

  <script type="text/JavaScript">

**function** fun() {

        alert("Welcome to user defined function")

    }

**function** addNumber(a,b){

**var** sum = a+b;

        alert("Sum is "+sum)

    }

**function** empInfo(id,name,salary){

        salary = salary+200;

        return salary;

    }

  </script>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

    fun();

    addNumber(100,200);

**var** updatedSalary = empInfo(100,"Ravi",12000)

    alert(updatedSalary)

    </script>

</body>

</html>

Events : It is a interaction between user and components. Components are may be keyboards, mouse, html forms like button, textfield, radio button etc.

Event is a bridge between html and JavaScript code.

All event in JavaScript start with on keywords then followed by event name

Like on\*

Types of events.

onClick

onDblClick

onMouseOver

onMouseOut

onKeyUp

onKeyDown

onSubmit

onBlur

onFocus

onChange

onSubmit etc

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

  <script type="text/JavaScript">

**function** fun() {

        alert("Welcome to user defined function")

    }

  </script>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <input type="button" value="Click Here" onclick="fun()">

</body>

</html>

HTML Form Validation using JavaScript as well as HTML5

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <p>Welcome to HTML Web Page</p>

    <script type="text/JavaScript">

**var** name = prompt("Enter the name")

    alert("Welcome to JavaScript coding.."+name)

    </script>

</body>

</html>

JavaScript

jQuery

Ext JS

Angular JS

React JS

Vue JS

Few are JavaScript library and few are JavaScript framework.

Node JS, Node js is a open source, platform independent as well as Language independent JavaScript run time environment for JavaScript library or Framework base upon Chrome V8 engine.

Node js is use event-driven and non blocking io as stable networking application.

Event driven architecture.

Java Program -🡪 JRE

Any JavaScript library or Framework -🡪 Node JS

Because of node js we can write any JavaScript program outside web browser.

Using node js we can run JavaScript using command base.

Using Node js we can create SSJS (Server Side JavaScript Programs).

Before Node js we can create only CSJS(Client Side JavaScript).

SSJS help to create web application using JavaScript,

We can create REST API using JavaScript we can connect any data base sql or no sql database using JavaScript

SQL 🡪 MySQL, Oracle

No SQL 🡪 Mongo DB

HTML/CSS/CSJS ---------🡪 Node JS (Web Application /RESTAPI --🡪connect database --🡪 Database)

Using JavaScript

Node js contains different type of modules.

Module means like a package in java.

Module is a collection of functions, classes, interfaces, enum etc.

Type of modules

1. local modules
2. external modules : We have install those modules

to run the node js

open the command prompt using cmd

REPL Environment : Read Eval Print and Loop

Node JS (SSJS) : We can’t use document as well as window object.