**Practical No : 09**

**Date:** 07/10/2024

**Problem Statement:**

**Create a web service which returns a sum of two numbers.**

**Code:**

**SumController.java**

package com.example.SumWebService;

import org.springframework.http.ResponseEntity;

import org.springframework.web.bind.annotation.GetMapping;

import org.springframework.web.bind.annotation.RequestParam;

import org.springframework.web.bind.annotation.RestController;

@RestController

public class SumController {

@GetMapping("/sum")

public ResponseEntity<String> getSum(@RequestParam(name = "a") Integer a,

@RequestParam(name = "b") Integer b) {

int sum = a + b;

return ResponseEntity.ok("The sum of " + a + " and " + b + " is " + sum);

}

}

**JavaWebServiceApplication.java**

package com.example.SumWebService;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class SumWebServiceApplication {

public static void main(String[] args) {

SpringApplication.run(SumWebServiceApplication.class, args);

}

}

**web.xml**

<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee

http://xmlns.jcp.org/xml/ns/javaee/web-app\_3\_1.xsd"

version="3.1">

<servlet>

<servlet-name>CalculatorService</servlet-name>

<servlet-class>com.sun.xml.ws.transport.http.servlet.WSServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>CalculatorService</servlet-name>

<url-pattern>/CalculatorService</url-pattern>

</servlet-mapping>

</web-app>

**index.html**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Sum Calculator</title>

</head>

<body>

<h1>Sum Calculator</h1>

<input type="number" id="num1" placeholder="Number 1" required>

<input type="number" id="num2" placeholder="Number 2" required>

<button id="calculate">Calculate</button>

<h2 id="result"></h2>

<script>

document.getElementById('calculate').onclick = async () => {

const num1 = document.getElementById('num1').value;

const num2 = document.getElementById('num2').value;

const response = await fetch('http://localhost:8080/SumWebService/CalculatorService', {

method: 'POST',

headers: {

'Content-Type': 'text/xml'

},

body: `

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:cal="http://example.com/">

<soapenv:Header/>

<soapenv:Body>

<cal:sum>

<a>${num1}</a>

<b>${num2}</b>

</cal:sum>

</soapenv:Body>

</soapenv:Envelope>`

});

const text = await response.text();

const parser = new DOMParser();

const xmlDoc = parser.parseFromString(text, 'text/xml');

const sum = xmlDoc.getElementsByTagName('return')[0].childNodes[0].nodeValue;

document.getElementById('result').innerText = `The sum is: ${sum}`;

};

</script>

</body>

</html>

**Soap Request XML:**

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"

xmlns:cal="http://example.com/">

<soapenv:Header/>

<soapenv:Body>

<cal:sum>

<a>5</a>

<b>10</b>

</cal:sum>

</soapenv:Body>

</soapenv:Envelope>

**Response XML:**

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"

xmlns:cal="http://example.com/">

<soapenv:Header/>

<soapenv:Body>

<cal:sumResponse>

<return>15</return>

</cal:sumResponse>

</soapenv:Body>

</soapenv:Envelope>

**Output:**

