Day 7 : 19 Sep 2024

Web Service

Giving the service for web application when both application running using different technologies or language.

Amazon -🡪 Spring boot --🡪

Payment -🡪 Paypal spring boot

Paytm Django

Gpay Express Node

Phone pay Asp.net

Credit card Php

Net banking

Etc

Java req (XML/JSON)

App1 XML/JSON App2

Java python res(XML/JSON) Python

XML: eXtensible Markup language

JSON : JavaScript object notation.

Web Service

Type of web service

1. SOAP Web Service : simple object access protocol. In SOAP web service we can consume and produce the data only in the form of xml. SOAP web service base upon SOA (Service Oriented Architecture).

WSDL file

.net Java

Consumer Producer

findAccountDetails(int accno)

using wsdl file they create code with respective language and using that code they can send soap request and get the soap response.

1. Rest Full Web Service :In Rest full web service we can consume and produce the data any format base upon application requirement like text, html, xml, json or any other media type. Rest full web service not base upon any architecture. We expose our resources as web service. Servlet or jsp or spring controller etc.

Implementation of Rest full web service using Java

1. JAX\_RS with Jersey tool (Java API for XML Rest full web service)
2. Spring boot provided implementation of rest full web service.

If our controller is @Controller then our view must be html or jsp or thymeleaf etc.

Here view and controller are tightly coupled.

If our controller is @RestController then our view can be any frontend technologies like Angular or React js or any other application like python, php , asp.net or rest client.

Here view and controller are loosely coupled.

Create project using spring initializer with starter as web starter.

In Rest API

Get Method : the get the resource

1. Return string in different format like plain text, html, xml etc.
2. Get resource like employee or customer or login or account.

In json format (or xml)

1. With get we can use two technique to pass the information from client to rest api
   1. Query param

URL?key=value if pass single value

URL?key=value&key=value pass multiple value

* 1. Path param

URL\value1 single value

URL\value1\value2 multiple value

Retrieve query or select query

Post method : This method generally use to store the data in db.

It is use to create the resource like insert query

Frontend technologies pass the object in the form of json or xml.

Delete method : This method is use to delete the resource from db.

Like delete query. We receive the information using path param

Delete query

Put method or patch method : which method is use to update the existing records.

Update query

Put is use to update whole object using pk property

Patch is use to update partial object using pk property

Rest API testing using CURL

Get method

curl -X GET <http://localhost:9191/employee_json>

post method

test simple post method

curl -X POST <http://localhost:9191/post_test>

this post method passing json data to end point

test post method with passing employee object in json format.

curl -X POST <http://localhost:9191/store_employee>

-H "Content-Type:application/json"

-d '{"id":100,"name":"Steven","salary":45000}'

Put method to update the salary

curl -X PUT http://localhost:9191/emp\_json -H "Content-Type:application/json" -d '{"id":100,"name":"Steven","salary":45000}'

delete method url

curl -X DELETE <http://localhost:9191/emp_delete/100>

1. jdbc
2. jdbcTemplate
3. ORM (Hibernate or JPA)

Spring JPA Data

Using Spring JPA data we can hide dao or database logic. They provide abstraction for DAO layer.

JPA Data provide two core interfaces

1. CrudRepository : generic ORM repository
2. JpaRepository : jpa specific repository.

These repository base upon java 8 features which internally provided default implementation for entity class.

If we need custom query then we can use JPQL.

We create EmployeeRestAPI with db ie mysql using JpaRepository

Starter 🡪 web

Starter -🡪 jpa

Dependency 🡪 mysql

