

REST Ful Web Service !!!

Two types of WEB SERVICES

1. SOAP XML based web service
2. REST FUL web service ===

What is a web service ---

Service that provides a functionality

Client calls a remote method on the server

Client and server may not be using same platform/language

client call is sent to server in a platform/language independent way

Using HTTP (RESTful WS)

Using SOAP protocol with XML (SOAP based WS)

The API runs on server side , it returns data to the caller again in platform neutral way (xml/json)

Http response is carrying the return value in xml /json } RESTful WS

SOAP based xml is carrying the return value } SOAP based WS

Steps for building a REST application in Spring Boot

1. Create a new spring start project
2. Add dependencies of REST , Tomcat
3. Write a controller ----- BEAN managed by Spring
4. Write the service methods that can be called by clients

Client -postman , browser -- fire the calls to the service !!!

What does API do ? Service	How to call that API ? Url + http method
Hello message is returned	GET , /hi

localhost:8080/hi

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|
Tomcat Server 8080
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|
Spring WEB Container
|

mapping GET /hi	call the sayHello() method using the object of RestControllerBean
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Collect return value and send to the client via HTTP response

-Spring Boot Automatic component scanning happens for all the packages and sub-packages of the @SpringBootApplication class .
-If your package is not a part of the above package then you must OVERRIDE the automatic component scanning , provide manual component scanning by using ---@ComponentScan(give list of packages to be scanned)

Postman is HTTP CLIENT ---- using this we can **fire any http method request**

DOWNLOAD POSTMAN-----[Download Postman | Try Postman for Free](#) **download the app**

Browser has limited methods -----

- Browser can be used to fire GET requests by default
 - For post request we will need HTML FORM method =post and submit button .
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Universal **THUMB RULE** !!! Convention !!!

CRUD operation

If user wants to ADD new DATA	use POST method
If user wants to CHANGE existing DATA	use PUT method
If user wants to REMOVE existing DATA	use DELETE method
If user wants to GET some data	use GET method

SEND data from http request to the REST API

1. Pass as **query** parameters , also called as **request** parameters
<http://localhost:8080/maths/sum?num1=10&num2=20>
 2. pass as path parameters
<http://localhost:8080/maths/sum/10/20>
 3. pass as JSON objects in Request Body
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- HW --- Create a Spring starter project , --add Spring-web, configuration-processor, devtools
1. Create firstcontroller with a constructor and sayHello API exposed as {GET [/hi]}
 2. Create SecondController ,no constructor , API with all methods get, post, put delete {GET [/test/getit] } {POST [/test/postit] } , {PUT [/test/putit] }, {DELETE [/test/deleteit] } , write sysouts in all methods
 3. Write a mathscontroller

```
{GET [/maths/sum?n1=44&n2=45&n3=99] }  
{GET [/maths/product/44/45/99] }  
{GET [/maths/intdiv?n1=44&n2=45] }  
{GET [/maths/floatdiv/44/45] }  
{GET [/maths/subtract?n1=44&n2=45] }
```
