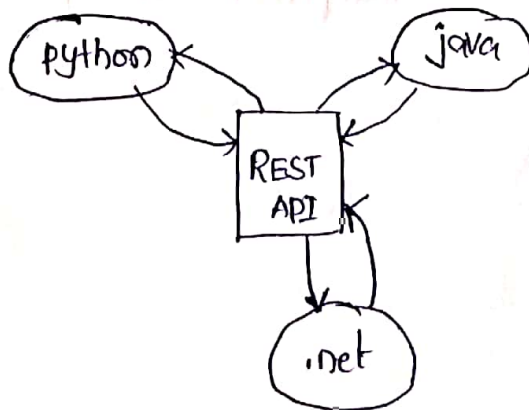


Django Rest framework:-

- * If we want to learning rest api then free requisites are python, and django
- * Django Rest framework is a third party framework, it is not developed by django people
- * DRF is build on the top of django framework only. so it is an extension of django only, it means the concepts which are available in django framework, all are available in restapi also. Along with django concepts, rest api providing some extra concepts @ module @ class @ functions.
- * By using of these modules @ classes rest api provides ready made code instead of developers developing. so that DRF is getting more popularity in now a days
- * DRF is providing so many modules to develop the Restful API's very easily
- * REST is a language independent, so we use it in java, .net, python...



- why should we learn REST API? what is the importance of REST API?
- if:- REST API provides so many advantages automatically it reduces the lot of burden on developers @ programmers, it decreasing the more lines of codes by using ready made module @ classes
- * it increases the performance of application

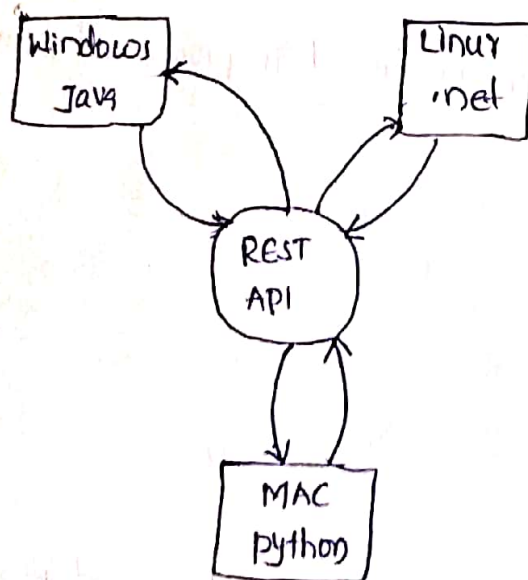
- * it reduces the complexity of coding
- * it saving the development time
- * it providing built in security classes (Token authorization) to customizing the third party persons when they are using our APIs
- * it providing the serializer concept to converting one type data into another type

→ the APIs which are developed by using the rest principles & guidelines are called as REST APIs

→ the Rest APIs are using the http protocols (GET, POST, PUT, DELETE)

→ Rest APIs are also called as 'RESTFUL API'S' (or) 'RESTFUL WEBSERVICES'

→ Rest APIs are language independent as well as platform independent. It means irrespective of language (Java, .net, python....) and independent of platforms (windows, linux....) REST APIs can communicate all the applications in entire world.



INTER OPERABILITY :-

It is nothing but language - independent and platform independent.

Types of webservices:-

Generally we have two types of webservices

1. soap based webservices
2. Rest full based webservices

Soap based webservices:-

- * Soap stands for 'Simple Object Access protocol'. Soap is always used XML based datatype. XML having lot of drawbacks that why people are not using Soap based web API's
- * The biggest problem of XML is heavy weight (heavy code)

eg:-

```
<employee>  
  <empl>  
    <empl-No>101 </empl-No>  
    <empl-Name>Suresh </empl-Name>  
  </empl>  
</employee>
```

- * Heavy bandwidth required to share with other
→ for example if any data is transferred from provider application to consumer application then more internet speed is required. for more internet speed more money we are spending

- * parsing the XML data is taking more time, so it is not efficient

parsing :- parsing means reading the data from XML object type into another object type

- * XML providing low performance

- * Implementing the soap based web API's are more complexing

- * development time and cost of the project is increasing

- * XML data, human being understand is more complex, but machine can understand easily

BCZ of all the common problems people are not using soap based web

services

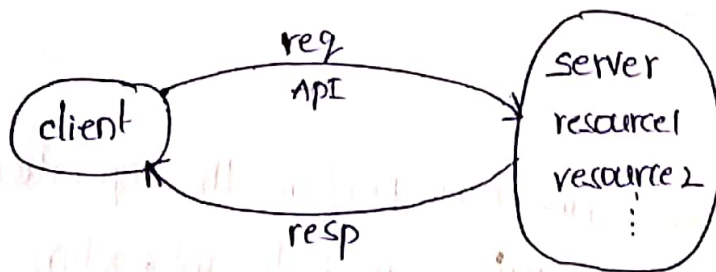
Advantages:-

- * SOAP supports multiple types of protocols
eg:- http, smtp, FTP,
- * It uses 'WSDL' (Web Service Description Language)
- * If we want to send the data from one application to another application we need one special language called 'WSDL'
- * Due to this WSDL data has getting more secure, when transferring between two applications
- * No limit on size of the data, while carrying

RESTFUL based webservices:-

REST stands for 'Representation State Transfers'. Each URL is representation of an object by using HTTP protocols. we can perform operations related to particular objects

Ex:- GET, PUT, DELETE,



Advantages:-

- * Restful web services are using the json type based data
- * JSON is a lightweight component
- * Example: $\{ k : v, key : value \}$
 $\{ "eno" : 20, "ename" : "Srinivas" \}$
- * When transferring of JSON data over the network is required less bandwidth
- * No WSDL language required, means we can expose directly our JSON data over the networks by using URL's

- * Providing high performance of application
- * easy development like a dictionary format. it maintaining the curly brace, key, value. for example: {k:v, k:v}
- * complexity is reducing because of less code
- * Readability increasing
- * Development time saving
- * test of the project saving
- * Human understandable message format like plaintext

Because of above all benefits Restful based architecture is getting more popular in now a days

Disadvantages:-

- * Restful based architecture providing less secure to data where compared to XML
- * it supports only http protocol to perform operations on database, but not smtp, and FTP protocols.

Purpose of the Http methods:-

By using Http protocol, we will perform the operations on database. it is providing some Http methods to interacting with database. for example: GET, POST, PUT, DELETE ---

GET - Retrieve data from a remote server, it can be a single resource or a list of resources

POST - Create a new resource on the remote server (into db. via backend technologies)

PUT - update the data on the remote server

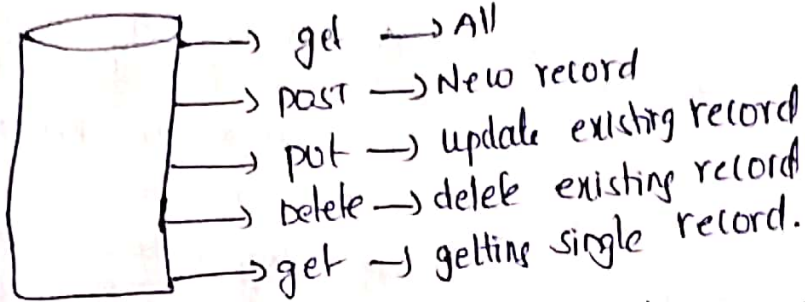
DELETE - Delete data from the remote server

Q:- As a programming developer how you do communicate with database?

Ans:- By using HTTP methods

Q:- As a database developer how do you communicate with database?

Ans:- By using SQL CRUD commands



Relation between database CRUD operation & HTTP protocol

C → create → post

U → Retrieve/Read → GET

R → update → PUT

D → Delete → DELETE