# REST WEB SERIVCES:

# What is WebServices?

**Webservices provides a common platform that allow multiple application build on various programming languages to have the ability to communicate with each other.** [1. What is REST?](http://rest.elkstein.org/2008/02/what-is-rest.html)

REST stands for **Re**presentational **S**tate **T**ransfer. (It is sometimes spelled "ReST".) It relies on a stateless, client-server, cacheable communications protocol -- and in virtually all cases, the HTTP protocol is used.

REST is *an architecture style* for designing networked applications. The idea is that, rather than using complex mechanisms such as CORBA, RPC or SOAP to connect between machines, simple HTTP is used to make calls between machines.

* In many ways, the World Wide Web itself, based on HTTP, can be viewed as a REST-based architecture.

RESTful applications use HTTP requests to post data (create and/or update), read data (e.g., make queries), and delete data. Thus, REST uses HTTP for all four CRUD (Create/Read/Update/Delete) operations.

REST is a lightweight alternative to mechanisms like RPC (Remote Procedure Calls) and Web Services (SOAP, WSDL, et al.).

<http://rest.elkstein.org/>

# Important Terminology:

Client – anyone who makes request(can be a human, a software, a machine etc)

Server – program which receives the request from client, process it and return the reponse.

URL

HTTP requests, HTTP Methods, Headers, Content Types

Response, Status Codes

JSON/XML

## HTTP Methods:

### GET:

To retrieve resource/info only/not modify it in any way.

* GET requests do not change the state of the resource,these are safe methods.
* GET APIs should be idempotent
* It will return the resource if found on the server,with status codes and the response body.
* If the resource is not found, then the relevant status code will be returned.

Ex of GET URL:

HTTP GET <http://google.co.in>

HTTP GET <http://facebook.in>

### POST:

* Create a new resource.
* These are not SAFE methods.
* Not Idempotent(i.e) invoking two identical POST requests will result in two different resources containing the same info(except the resource id).
* It will return a status code,if the resource is successfully created.

Ex of POST URL:

HTTP POST <http://facebook.in/suren/img>

### PUT:

* To update existing resource.
* If the resource does not exist then API may decide to create a new resource.

Ex of PUT URL:

HTTP PUT <http://facebook.in/suren/img>

### DELETE:

To delete a resource

If the resource is present then the resource will be deleted and the relevant status code will be sent back.

DELETE method is idempotent.

## PATCH: It is partially update the resource

## COPY: To copy the existing resources.

# UNIREST

<https://www.baeldung.com/unirest> - TO read more about unirest

# STATUS CODE

### 1XX - Informations

### 2XX – indicates the success of the request:

200 – get request is successfully response,201 – post is successful,202 – put request is successful,204 – No content,203 – Nonauthoritative Info

### 3XX – indicates the redirection to other page:

### 4XX – indicates error in client side

### 5XX – indicates error in server side.

Go to this site: <https://www.restapitutorial.com/httpstatuscodes.html>

# REST ASSURED:

<https://github.com/rest-assured/rest-assured/wiki/Usage>