Rest API

A RESTful API is an application program interface(API)that uses HTTP requests to GET, PUT and DELETE data. There are some basic, different understandings of REST API. For us to be able to distinguish between a regular API and REST API there are some features REST API must have.

The first feature is that a REST API should be stateless this is each request from client to server must contain all of the information necessary to understand the request, and cannot take advantage of any stored context on the server. Session state is therefore kept entirely on the client. Since resources are referred to as the group of collected data and expression, rather than just data which means any type of resources like pictures, audio, word ;by using URI that makes it the only way to define the web resource since it is defined as documents or files by their URI. Rest API is mainly incorporated associated with HTTP, URI, JSON, XML and HTML.

For its ability to use URI to define web resources, that clarifies it is indeed a rest expected functionality. (R) for Representation here means a web object or an attribute could be represented by other forms, for example, a text format file can be transformed as HTML, JSON and XML or a picture could be transferred as .Jpg and .Png. Since the only way to define the web resource since it is defined as documents or files by their URI, URI is used to define web resource, while URI use sentences like “Accept” and “Content-Type” to point type of resource.

The communication between client and server can only be done by using HTTP. HTTP status code also used in transfer state of server, such as 200 means success, 500 means server error and 300 means client error. That enables interaction between a client and server, which is called state transfer. There are various methods of HTTP which can be used for different operations; GET, POST, PUT and DELETE are the methods.

All these operations since they behave in different manners depending with the function needed, they get, post, put that is updating and delete resources simultaneously. Client-Server Architecture, Statelessness, Cache ability, Layered System, Code on demand and Uniform Interface are the main fundamentals of REST

Explaining each of them, Statelessness is the requests from the clients that contain needed information, and a client holds session’s state. Client-Server Architecture simplifies the components of server to improve scalability. Layered system is when a client doesn’t know which layer they exactly on, that is the most needed function. Cache ability, On the World Wide Web (www), clients can cache requests as well as they have the ability to define requests as cacheable or not.

GIT

GIT is a version control system which for tracking the changes of a file developed by multiple programmers. GIT is primarily used in software or websites. GIT is developed by Linus Torvalds who is the developer of Linux. GIT is pretty suitable for a larger scale project development, as an example, the main advantage of using GIT is that GIT can track changing history about whole project, if there are some errors occurred during developing period, programmers could find it from history list directly rather than look through the whole code.

Secondly, If developing a larger scale project, it is not possible for all programmers to use just one computer or laptop. So that, when applying GIT, each programmer can share the file which is already on the server. Then, they can update their part from their local server. In conclusion, GIT is an efficient tool for larger and group project developing. When using GIT, all your files will be stored in an online repository.

Source a latest version of (pro git a Chinese book)

REST API IN PROJECT (GOOGLE MAPS)

For the PHP project done by my colleague and i, we had an opportunity to learn and practice the use of rest API. We thought of making use of GOOGLE REST API. For Google has many different APIs, some are rest and some are not therefore it opened some doors for some without a full understanding of the differences to have their own conspiracy theories to confuse whether

Google maps uses rest API or not. I will refer back to the definition of what is REST API?, by having that in mind REST does not enforces message format as XML or JSON or but it supports both, but SOAP (Simple Object Access Protocol)is XML based message protocol, it doesn't support JSON. Since Google Map APIs support both JSON and XML, it can be safely said they they are implemented in REST. Further if you look at the URI of Google map api , you will see that they are resources based just like REST URI should be ,for example to get the directions resource you hit this URI down below.

https://maps.googleapis.com/maps/api/directions/json?origin=Boston,MA&destination=Concord, MA& waypoints=Charlestown,MA|Lexington,MA&key=YOUR_API_KEY

Now expagorationg on how the rest API works on our site as a project to provide a client with specific need/requested information. A client can get Google Maps directions through HTTP interface, with requests constructed as URL string, by the client using the text strings or latitude/longitude coordinates to identify the needed locations along with the user API key. Web services like these use HTTP requests to specific URLs, passing URL parameters as arguments to the services. Generally, these services return data in the HTTP request as either JSON or XML for parsing and/or processing by your application that is why I'm so convinced that Google maps surely uses rest api from my point of view and understanding. There are other many ways

and processes of how Google maps can provide a client with depending with the requested information. It might be direction, distance, elevation, roads and time zone without mentioning many other more which they all use an API. We wish if we could have done more complex examples of a rest API to implement it in our project, but we later realized that time became more jealous of our work therefore the planned idea was beyond our scope. ***Sources for the information is mixed, both from the pure understanding of what is a rest api from lectures and more of supporting statements I used which I got from a personal book named (REST API rulebook by Mark Masse) and from Google maps by itself
https://developers.google.com/maps/web-services/overview

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