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Web API

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Definitions

API - An application Programming Interface (API) is a set of subroutine definitions, protocols, and tools for building application software.

RESTful API – A RESTful API is an API that uses HTTP requests to GET, PUT, POST and DELETE data. RESTful API is also referred to as a RESTful web service, which is based on REST technology.

REST - (Representational State Transfer) is an architectural style, and approach to communications that if often used in the development of Web services.

JSON – JavaScript Object Notation is a minimal, readable format for structuring data.

Node.js – Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications.

MySQL – MySQL is an open source relational database management system (RDBMS) based on Structured Query Language (SQL).

Postman – Postman is a HTTP client for testing web services. This software makes RESTful API testing very easy.

Questions

What is an API? Very plainly, an API is a set of rules and specifications that software programs can follow to communicate between each other. If two software programs wish to interact with each-other, an API serves as an interface between them. It’s a bit like how the UI(User interface) on a computer is used to facilitate interaction between humans and computers.

Where and when is an API used? An API is used anywhere when two systems must work together to reach a goal that they cannot do by themselves. For example, you’re shopping on Amazon and you want to buy a product with your credit card. You enter in all your information, credit card number, address, phone number, etc. and the system will tell you whether or not what you submitted is correct. In order for this scenario to happen, the application has to grab your data and send it to another application to check for correctness, than send the information back to the start. It’s a very simple example, but a lot of different API’s are used because the parts all need to work together to accomplish you purchasing the product.

What is a Web API? A web API does what it says in its name. It is an API over the web which is accessed using HTTP protocol.

What does my program do? My program is a very simple RESTful API. The two main technologies involved are Node.js and MYSQL database. You can search for any combination of column/element and if that combination exists in the database, it will return a JSON object. For example, let’s say you wanted to know if a person with a medrecid id of 10 existed in the database. You could simply type http://localhost:3000/medrecid/10/ and that would show whether or not the row exist.

What makes REST so good? The most common answer to this question is, it minimizes the coupling between client and server components in a distributed application. Coupling in the software world means the “degree to which software components are dependent upon each other”. In a deeper sense, this means that if our server is going to be used by a lot of different clients, then we’ll be able to make updates to the server often without ever needs to update the client program.

What is the best language/framework for building and developing a REST API? There isn’t really a “best” language for building /developing a REST API. The reason for that is because all of the languages that support API building have extensive and large libraries that will help to build a good API. What’s recommended for building an API is really choosing a language of comfort, or using a language that suits closely to the project parameters. For example the purpose is to create an API that deals with JSON, then you’ll want to use NodeJS/Javascript because more than likely you’re going to have a lot of JSON objects to deal with. Among the popular frameworks you have ExpressJS from NodeJS, Slim from PHP, Sintara from Ruby, and Nancy from .NET, but there are many, many more.

How do the pieces of my program work together? Like I mentioned above, there are two main components of my program. REST.js and Server.js. The REST.js portion is what handles the routes of the REST API. A route for a REST API is just the words/symbols tacked onto at the end of a URL. The Server.js portion is when we get connected to the MySQL database, we configure the express module to how we want it, and actually start the server.

What tests/scripts can you run with POSTMAN that are helpful to testing your RESTful API? With POSTMAN you can test useful pieces of your API like how long it takes to generate a response, what the resulting status code was, the value of the JSON value, whether or not a string is contained in the JSON object, etc. With POSTMAN you can also run pre-request scripts, which are executed before the request is sent. This is ideal for cases when you want to test your program with random characters, or if you want to include the time-stamp in your request header.

What devices can use this RESTful API? Any device that can type in a URL and has an internet connection should be able to use this API.

1. Cloud environment
2. Push to linux environment
3. JRE/Drools pacakage in linux environment
4. Replicate inside of the linux environment
5. Date of birth numeric?