**How does a Web API work? Understanding and Usage -** [Souvik Brahma](https://medium.com/@jitbrahma?source=post_page-----4ef1c457a5de--------------------------------) Jan 22, 2022

API is the short form of Application Interface Protocol. As the name suggests it is a system that makes two applications communicate with each other. Let's understand API in detail.

Let's consider an example of Gopal as a reference. Gopal stays with his mom and dad in a colony. That colony has got a grocery shop. Whenever Gopal’s parents need anything for the household, they send Gopal to the grocery shop to get them.

Here we can consider Gopal as an API, where his parents are considered as the client-side, and the shopkeeper is considered as the server, who serves the request by Gopal when he goes to the shop.

Diagram, shape

Description automatically generated

Let's understand the flows that worked here. Gopal's parents had something to get from the grocery store. So they sent Gopal to the store to get those items. Gopal goes to the store and asks for the list of items that Gopal’s parents mentioned. The shopkeeper gets that list from Gopal and then he arranges the listed items. Once all the items got arranged the shopkeeper gives the arrangement to Gopal in return for some money.

API works in pretty much the same way. You stay at your house, like Gopal’s parents. If you need anything you call an API like Gopal to get the data from the grocery shop that is the server here. Once the API reaches the server, the server receives appropriate parameters from the API, and depending upon the requirements, the server replies back to the API which then reaches back to the frontend with the reply.

Lately, the term API is most often used to describe a particular kind of web interface. These Web APIs are a framework for interacting with a web server. It is a great tool for exposing your data and service to different-different devices and helps businesses use the internet as a cost-effective way to expand their business.

Diagram

Description automatically generated

Expecting you have an idea of how a Web API works, let's look into a few public APIs. To do that let's install Postman on our computer. [Postman](https://www.postman.com/) (#MadeInIndia) is a tool that helps to test APIs without creating code for testing, which was the norm earlier. It offers a sleek user interface where one can send a request by mentioning the proper parameters the API expects. It can be either [downloaded as an app](https://www.postman.com/downloads/) or you can use a web version of it. Once installed and setup is done, below is what you will get.

Graphical user interface, text, application, email

Description automatically generated

Here you can mention the following things.

1. Request Type  
   1. GET  
   2. POST
2. Host Address and Details
3. Header
4. Route
5. Payload

Let's discuss these things in an elaborate way.

**Request Type -**There are multiple types of requests. There are also different types of protocols, but here we will discuss only HTTP. A REST API can be called using different methods like GET, POST, PUT, DELETE. The most common methods among these are GET and POST.

*REST stands for****RE****presentational****S****tate****T****ransfer which is a web standard and architecture pattern for creating APIs.*

Difference between GET and POST.

**GET**requests can be cached and can be saved for bookmarks. They have length restrictions and they are not used to dealing with sensitive information. Get requests are only used to fetch data, not to store or modify any data.

**POST**requests are never cached and not stored in browser history. They don't have any restrictions with data length, and cannot be bookmarked.

**Host Address and Details -**Just like in the example above, Gopal’s mom had to mention the address or the name of the grocery store from where Gopal had to bring the grocery. Likewise for an API also we need to mention the host URL, to which the API will go and hit. An address consists of various params. IP address and the PORT number are the most important params among them. Typically a server running in your localhost at PORT 3000 should have an URL like this. ‘http://localhost:3000’.

**Header -**In case we need to send extra parameters or metadata or some descriptive params to the request, we do it using the header. Setting a proper header is important to specify how that API reacts. You can mention the content type of an API from headers.

**Route -**A server does not handle only one type of request, but it handles various types of requests. Starting from inserting or updating simple data to big operation, a server handles it all. So we route our API to reach a correct endpoint for the request to get handled.

**Payload -**Finally payload is the data that we send to the server while doing the API call. This is the data that gets handled by the dedicated route. These parameters or the key are defined beforehand while designing the APIs.

Now, let's call an API form [https://fakestoreapi.com](https://fakestoreapi.com/) using postman.



In postman just put this URL and change the method to GET since this is a get method, used just to fetch some data.

Once you click submit, if the stars are aligned, you get a response.

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This API basically returns an object of an item from e-commerce where the id of the object is 1.

**How can you create your first API?**

An API can be written in many ways. In today’s world, there are many frameworks and libraries using which writing an API becomes simple. [Express](https://expressjs.com/) (Node.js framework), [Django](https://www.djangoproject.com/) (Python framework), PHP, Java all these things are all most commonly used.