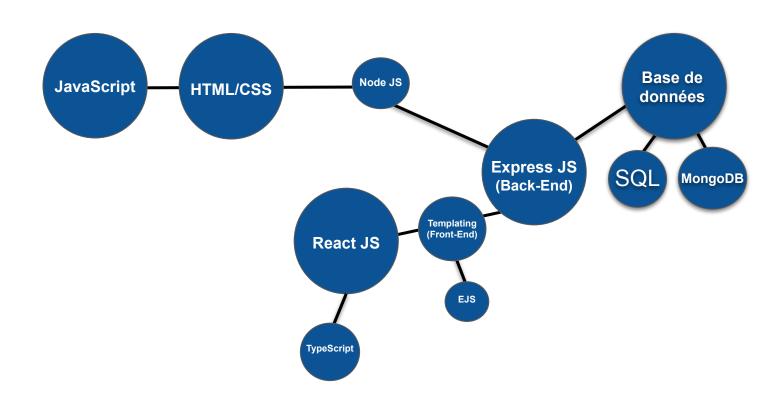


MODULES

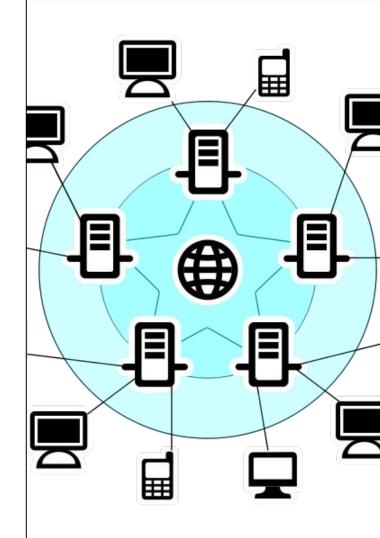


DEFINITION

API stands for Application Programming Interface.

 In the context of APIs, the word Application refers to any software with a distinct function.

 Interface can be thought of as a contract of service between two applications. This contract defines how the two <u>communicate</u> with each other using <u>requests</u> and <u>responses</u>.



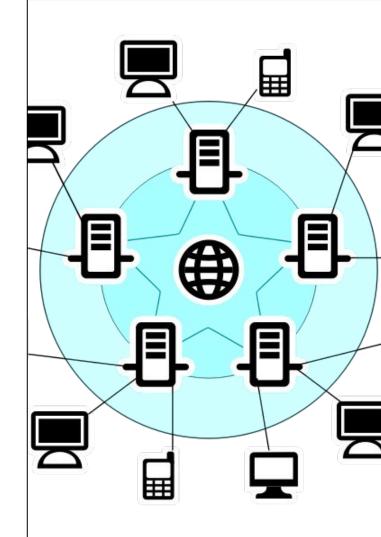
DEFINITION

In other terms, an API is an interface between 2 programs. A way for them to communicate.

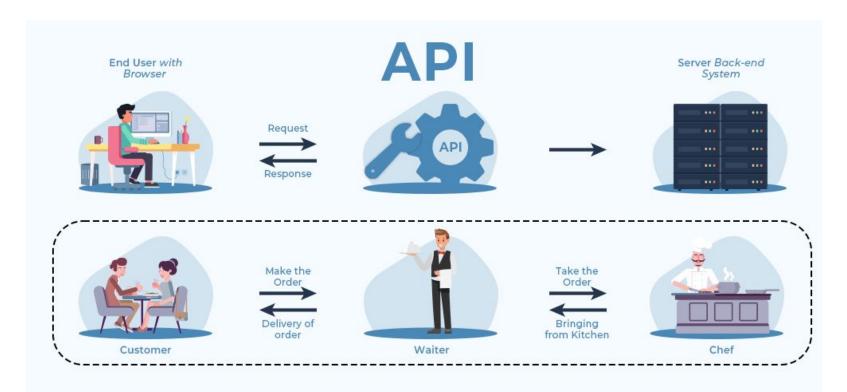
There are many possible protocol for exchanging information between two programs on the web.

One of these is the protocol **HTTP**

(**HTTP**= Hyper Text Transfer Protocol)



The concept



HISTORY

The concept of API predates the very notion of application.

2 British scientists: Maurice Wilkes and David Wheeler use a catalog listing all the subroutines that a program can use.

This catalog is technically an API: it gives a user instructions for launching subroutines.





POSTMAN

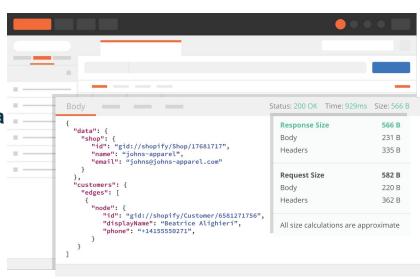


APIs are used to make different applications communicate with each other. To make a direct call without a user interface we need a tool:

Postman is an excellent tool for managing and testing APIs. And maybe the most famous one.

It offers to send requests, instead of the user. The data can be in several forms, here in JSON.

A lot of other tools now copy its interface like https://hoppscotch.io/



POSTMAN: why use it?



Postman offers several tools and features, such as:

- API requests: Allows users to create and run requests to ensure their APIs are working correctly
- 2. **API Collection:** Groups related requests into collections, making it easier to organize and execute API calls;
- 3. **Documentation:** Offers the ability to create interactive documentation for your APIs, making it easier to share information with other developers;
- 4. **Collaboration:** Facilitates teamwork by allowing users to easily share their collections and documentation with teammates.

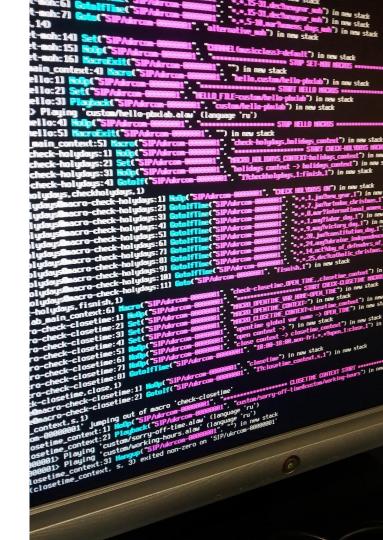
```
Status: 200 OK Time: 929ms Size: 566 E
                                                       Response Size
                                                                                   566 B
"data": {
                                                       Body
                                                                                  231 B
    "id": "gid://shopify/Shop/17681717",
                                                       Headers
                                                                                  335 B
     "name": "iohns-apparel".
     "email": "johns@johns-apparel.com"
                                                                                  582 B
                                                       Request Size
"customers":
                                                       Body
                                                                                  220 B
  "edges":
                                                       Headers
                                                                                  362 B
       "id": "gid://shopify/Customer/6581271756",
       "displayName": "Beatrice Alighieri",
                                                       All size calculations are approximate
        "phone": "+14155550271".
```



Other solution make requests

Vous croiserez peut-être la commande CURL qui permet d'envoyer des requêtes HTTP depuis le terminal. Cette commande peut-être utilisée autant en local qu'à distance:

curl -X POST "http://localhost:5000/test"
ou
curl https://www.google.com/search?q=sncb





What is a REST API

REST (REpresentational State Transfer) is the name of a type of software architecture.

REST is the <u>standard</u> to communicate with web services.

It allows diverse systems to communicate seamlessly, ensuring that information can be shared and processed across different platforms efficiently.

REST recommends the use of <u>5 HTTP methods</u> or 'verbs' to create a <u>dialogue between a client and a server.</u>

NB: the other transfer is called SOAP

G-03T18:42:18.018"

ger.handlers.RequestHandle message": "Duration Log": "null": "null": "null": "null": "null": "c" afd8-46ac-9745-839146a20f09 }{"timestamp":"2017-06-03T18:43:335.030" rtdata_new.json", "class":"com.orgmanager.hang 0jm9trnd3s3n7wg0k", "sizeChars":"48455", , "level":"INFO", "webURL":"/app/page/report bfa8-4e7d-8047-498454af885d", "sessionID":"1 "timestamp":"2017-06-03T18:46:921.000", "del r.handlers.RequestHandler", "method":"handle message":"Duration Log", "durationMillis":"1 on/file", "webParams": "file=chartdata_new.js 19e2-4a60-88d7-6ead86e273d1", "sessionID":"1 {"timestamp":"2017-06-03T18:42:18.018", "del r.handlers.RequestHandler", "method": "handle essage":"Duration Log", "durationMillis":"508 alyze", "webParams":"null", fd8-46ac-9745-839146a20f09", {"timestamp":"2017-06-03T18:43:335.030 tdata_new.json", "class":"com.orgmanager , "level": "INFO", "weburl": bfa8-4e7d-8047-498454af885d jm9trnd3s3n7wg0k", "sized jm9trnd3s3n7wg0k", "weburL "timestamp": "2017-06-03T18:46:9 r.handlers.RequestHandler.

HTTP methods

The 5 REST HTTP methods have different functionality:

- → GET : Retrieves a resource
- → POST : Places (or initializes) a resource
- → PUT : Replaces an existing resource
- → PATCH : Modifies an existing resource
- → DELETE : Deletes a resource

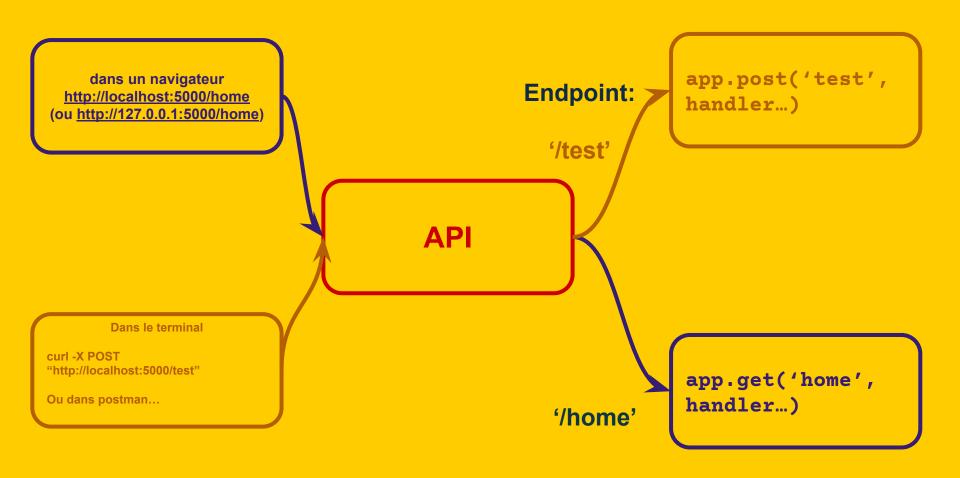




Chaque requête sur un endpoint correspond une action sur l'API Action liée à Requête URL (via endpoint 1 navigateur) Une url, qui commence par '/' et qui finit par... n'importe quoi. Action liée à **Votre API** endpoint 2 (Écoute et redirige) Requête URL (via Action liée à Postman/CURL)

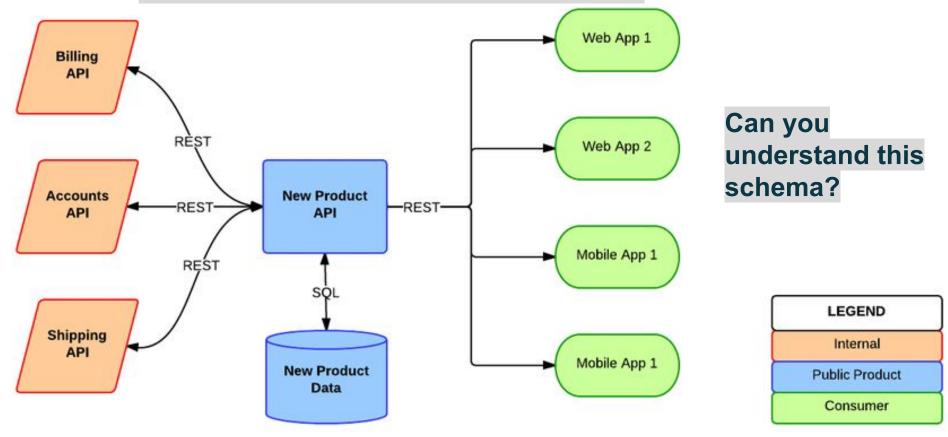
endpoint 3

Un endpoint est une adresse url à laquelle donne accès l'API





In some companies, they create one big API which communicate with others internals APIs



Ex: Amazon

