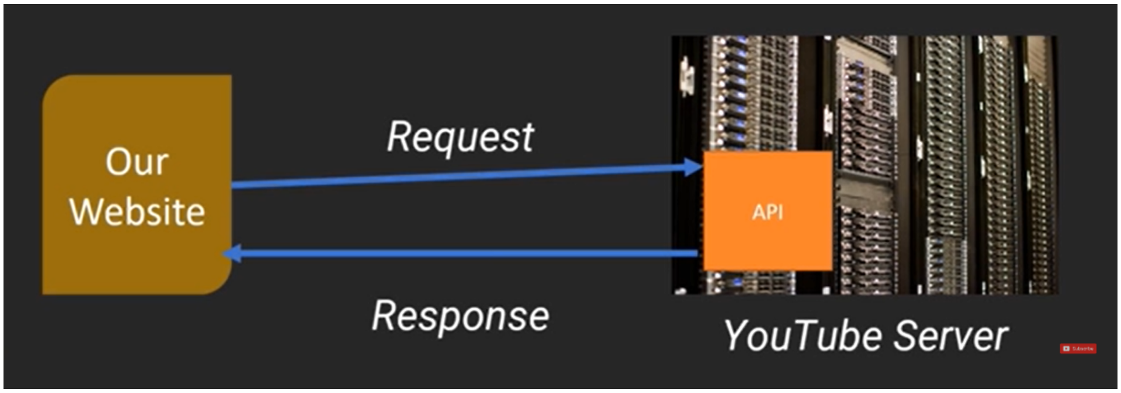
API (Application Programming Interface)

example, google ke server pe kuch set of code already programmed hai to agar woh codemujhe use krna hai to mai ussko call kr skta hu aur woh mujhe repsonse dega.
Payment gateway integrate krna hai to hum usme bhi api use krte hai kyuki hum itna bada system thodi bana skte ki iske account mai credit aur uske account mai debit krna hai hum sidha API call karenga jo already bani hui hai unke servers pe.
Hum bhi apni API ko public kr skte hai fir user uss api ko call krke humara code use kr skta hai.

It is set of rules that allo programs to talk to each other. The developer creates the API on the server and allows the client to talk to it.
means maine likha hua program dusre program ko contact kr skta hai.

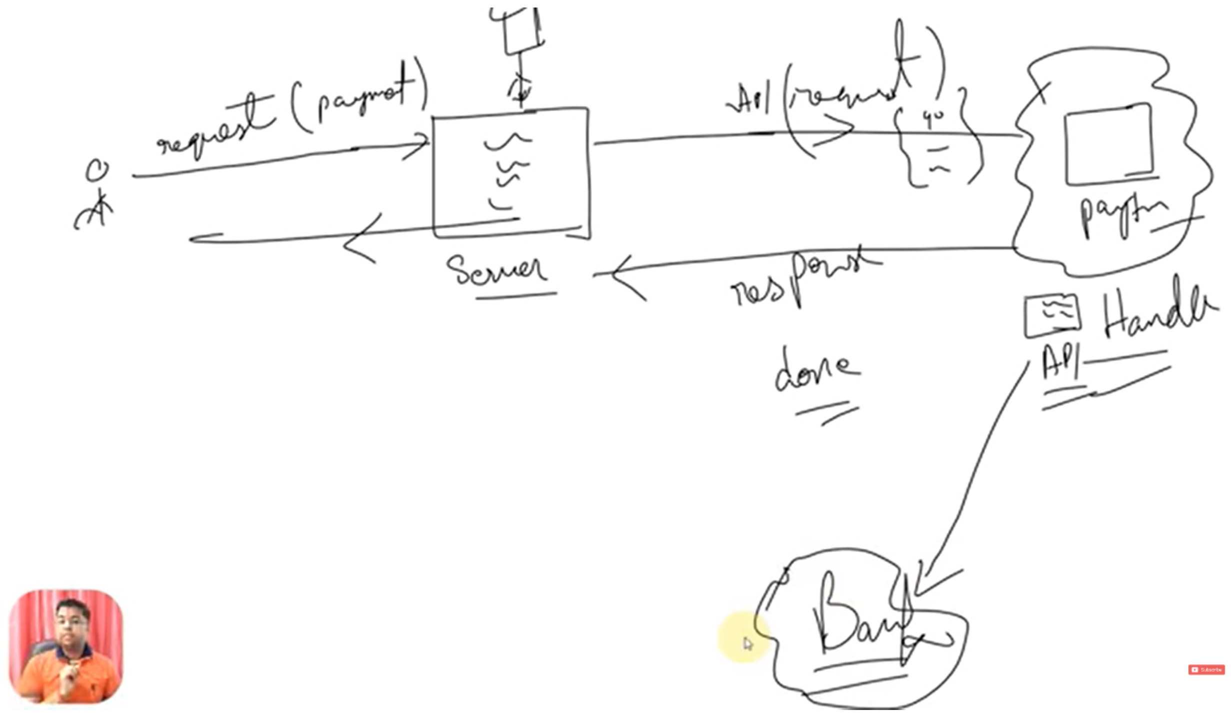
Example:



Humne ek website banayi hai aur hume humari website pe youtube ke videos dikhane hai hum chahte hai ki uss channel pe koi naya video update hua to woh humari website pe bhi update ho. Woh sara data youtube se server pe hai. to hum chahte hai ki humara likha hua program youtube se server pe likhe hue program ko contact kare. uske liye youtube ne APIs likkhe rakha hai jinko hum URL se request bhej skte hai. hume HTTP ko use krke request marni hai. unki taraf se jo response ayega woh ya to JSON mai hoga yafir XML mai. hum request JSON ke format mai bhejenge to response bhi JSON format mai ayega.

Example 2.

humne website banayi hai server pe jo courses bhechti hai, to user ko course buy krna hai to user se payment ki request aayi but humne apne server pe payment ka code nhi likha hai to hum yaha 3rd party website use karenge like Paytm. Paytm sara transaction handle karega, iske adnar jo code likha hua hai uski unhone API banake rakhi hogi, aap documentation mai unke padh skte ho ki kya kya urls fire krni hai, konsa get post method use krna hai. unko jo jo data chahiye hum URL mai dedenge. aur woh response dedega ki transaction done hogya. fir hum apne server pe rakhe hue database ko update krdenge ki transaction hogya. Aur paytm ke through hi humare bank mai payment receive hoga.



REST (Representational State Transfer)

API subperset hai aur REST API subset hai API ka

A set of constraints to be used for creating web services.
kuch rules, constraints hai jiko hum use karenge apni APIs ko create karne keliye.

Rules:

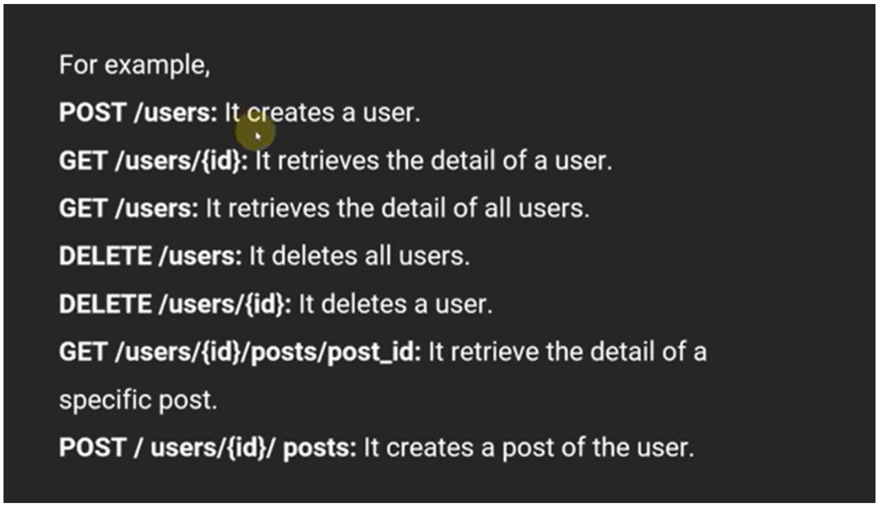
1) Client-server : client url ki help se request bhejega to server pe chize execute hogi and then hum response milega. client and server hona chahiye
2) Stateless : stateless communication hoga over http means server client ki koi bhi information store nhi kr skta.
3) Cacheable - means data ko cache kr skte hai performance increase krne keliye. agar client ke data cache krliya to ab cache ki property true hai to data cache hogya to apki performance increase as barbar request nhi jayegi.
4) Layered Architecture: yeh request kisi server se ja skti hai, kisi proxy server se ja skti hai, kisi application se ja skti hai koi dikkat nhi hogi.

so yeh standard chize hai jo REST APIs follow karegi

The important methods of HTTP are:

(jab bhi hum client se request bhejenge server ko to client ko kuch methods follow krne honge aur woh method HTTP ke honge kyuki hum communication http pe krhe honge)

1) GET: It reads a resource. (jab resource ko get krna hoga to you'll use get method)
2) PUT: It updates as existing resources.
3) POST: It creates a new resource.
4) DELETE: It deletes the resource.



For example,

POST /users: It creates a user.

GET /users/{id}: It retrieves the detail of a user.

GET /users: It retrieves the detail of all users.

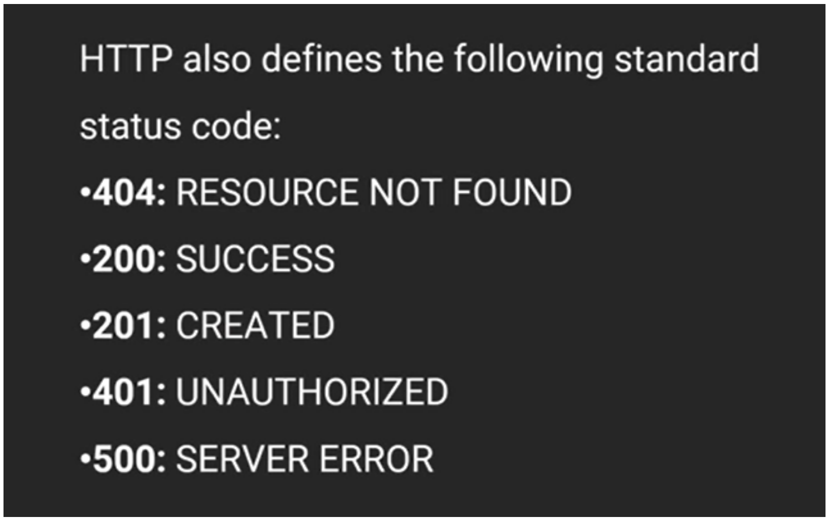
DELETE /users: It deletes all users.

DELETE /users/{id}: It deletes a user.

GET /users/{id}/posts/post_id: It retrieve the detail of a specific post.

POST / users/{id}/ posts: It creates a post of the user.

Jab hum request bhejenge to server humne kuch response answer dega in status code:



HTTP also defines the following standard status code:

•**404:** RESOURCE NOT FOUND

•**200:** SUCCESS

•**201:** CREATED

•**401:** UNAUTHORIZED

•**500:** SERVER ERROR