

How to build Successful API products?

⚠ Application Programming Interfaces (APIs) are systems or applications which enable other systems to connect with them and exchange information in a standard & secure manner

⚠ why do we need APIs

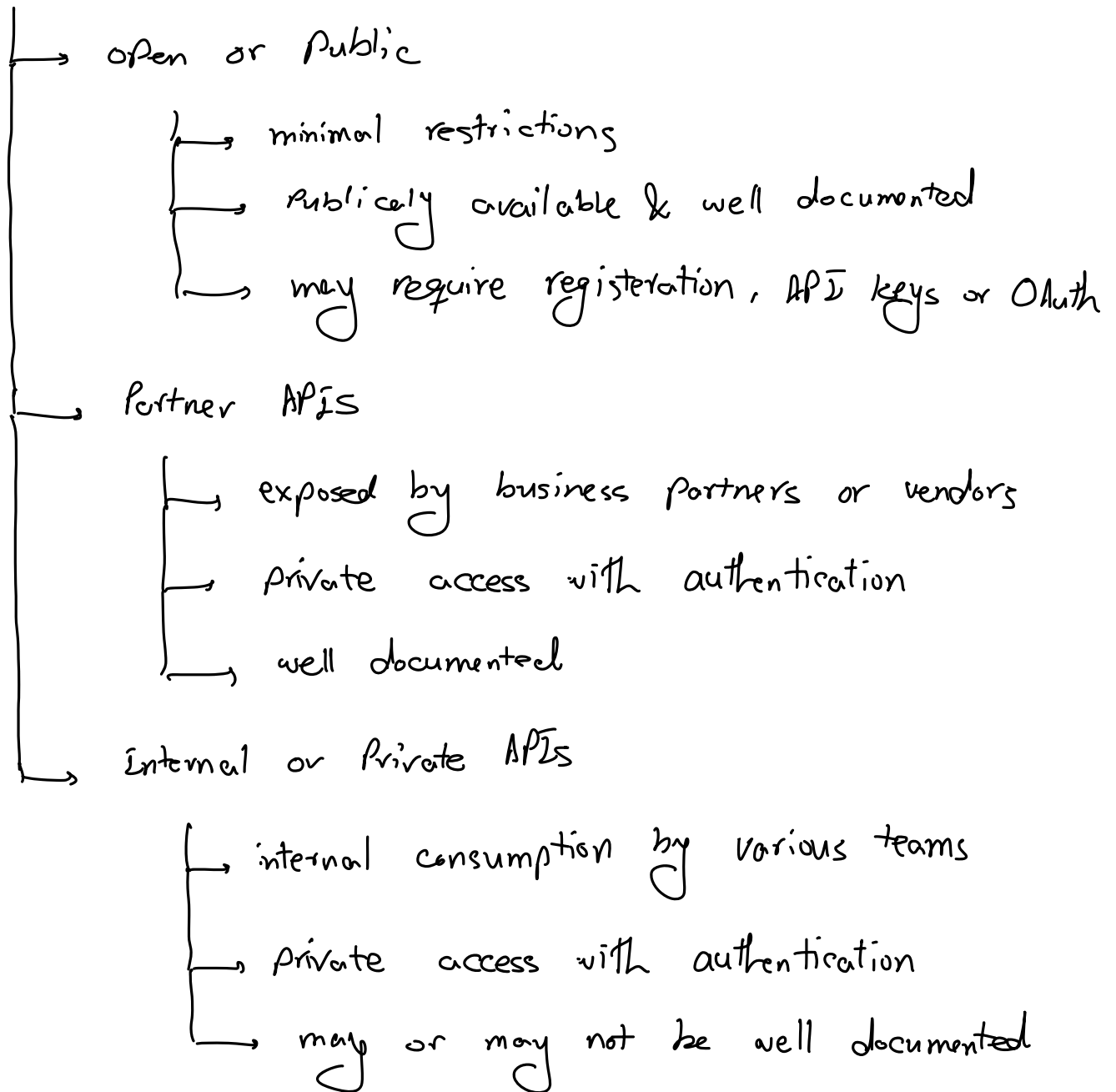
- connect different systems
- exchange information
- take actions

⚠ APIs abstract out the complexity of the application program by creating well defined interfaces for interaction

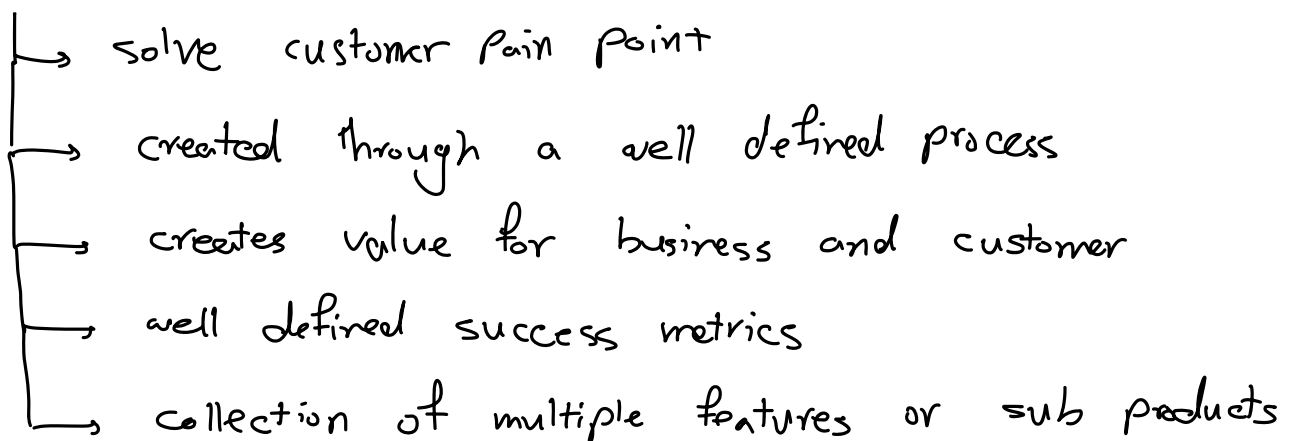
⚠ APIs are the contract between two systems

- API documentation specify the contract details
- every API is designed to a specification
- rules out of the specification needs to be followed to get response

△ types of APIs

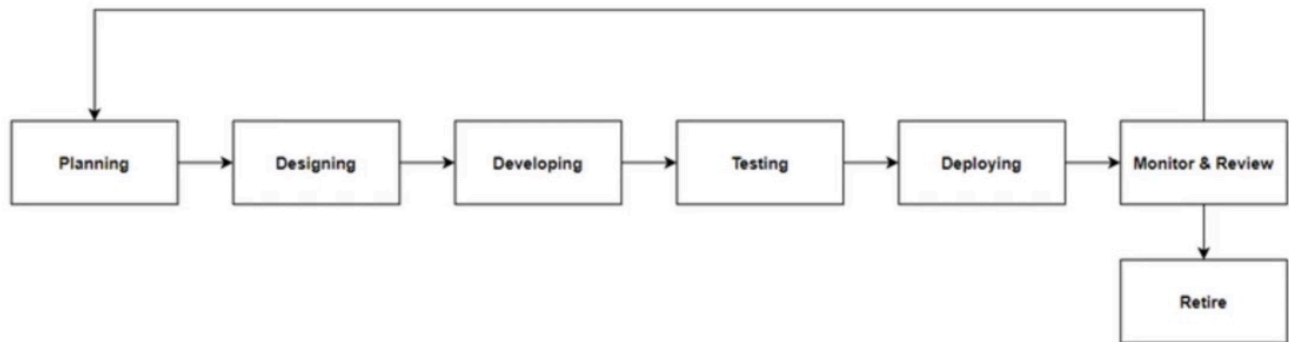


△ characteristics of a product



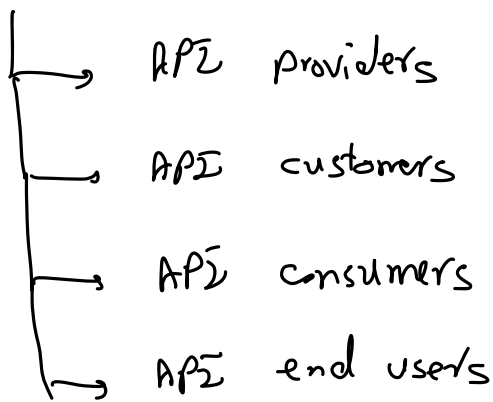
⚠ When an API is significant enough to your business model, you need to consider it as a product

⚠ API product life cycle



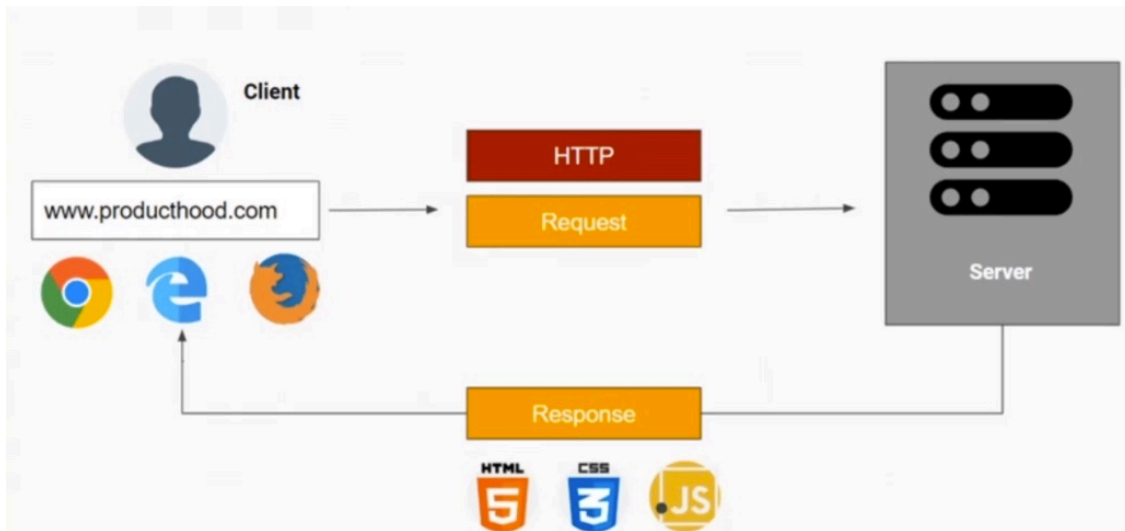
⚠ The success of an API program is measured by how well it moves a business toward its goals

⚠ API stakeholders

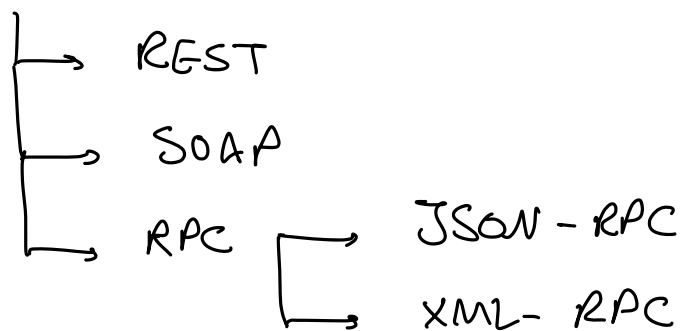


⚠ The Availability, performance, and security of your APIs have a direct impact on the user experience of end-users

⚠ How does the web work?



⚠ API protocols



⚠ API technology

- ① protocols ② request ③ response ④ authentication
- ⑤ endpoint ⑥ headers ⑦ response - codes
- ⑧ payload

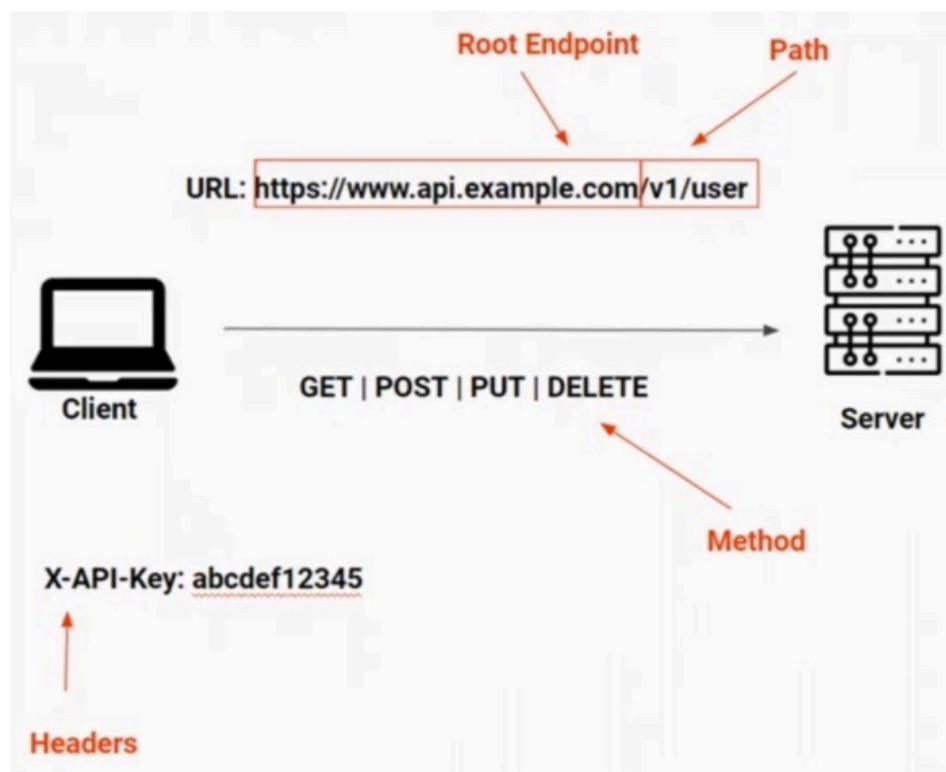
⚠ The client and server should be independent of each other.
The changes you make on the server shouldn't affect the client and vice-versa.

⚠ REST APIs are stateless

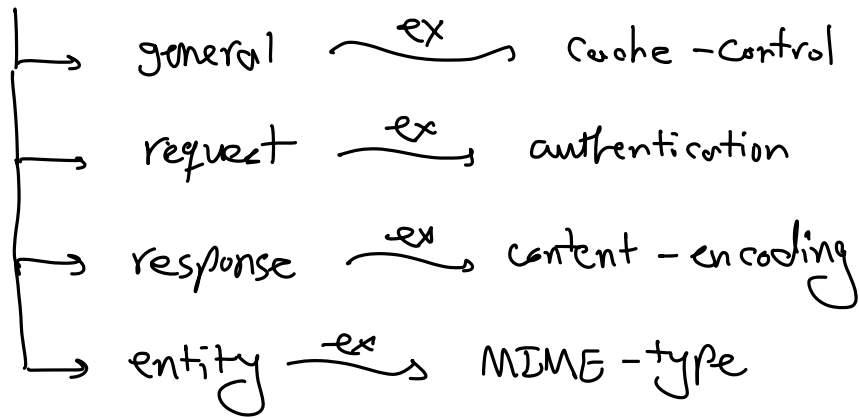
- server does not store client session information
- every request must have all information required to process it
- each request is new and can not be affected by the previous request

⚠ The REST API client should have the ability to cache the responses as this improves the user experience by making them faster and more efficient

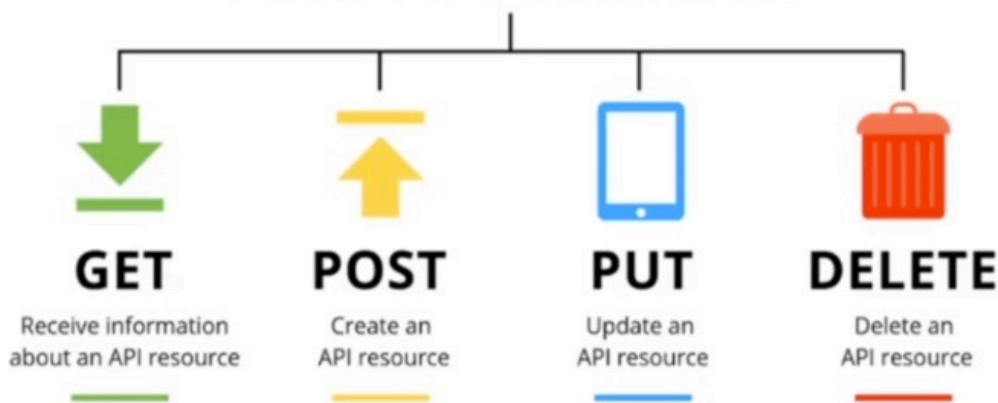
⚠ REST API request anatomy



⚠ Header types



⚠ REST API methods



⚠ JSON is a data format for sending and requesting data through a REST API

- ↳ a collection of name / value pairs or objects
- ↳ an array of ordered list of values

⚠ REST API security

- ↳ authentication \rightsquigarrow who are you?
- ↳ authorization \rightsquigarrow what can you do?

⚠ REST API status codes

- 2XX → successful
- 4XX → client error
- 5XX → server error

⚠ what constitutes good DX (Developer Experience)

- relevant content about API for target groups, and not only for developers
- easy to understand APIs
- integration flows
- examples
- prices clearly stated

⚠ API metrics for engineering and dev-ops team

- uptime
- cpu usage
- memory usage
- request per minutes
- average and max latency
- error per minute

⚠ API metrics for product or business teams

- usage growth
- unique consumers
- top customers by usage
- retention
- time to first hello world
- calls per business transaction
- SDK and version adoption

⚠ API documentation

- a quick start instructions
- list all APIs
- authentication
- sand box environment
- sample codes, SDKs or libraries
- API support
- API status