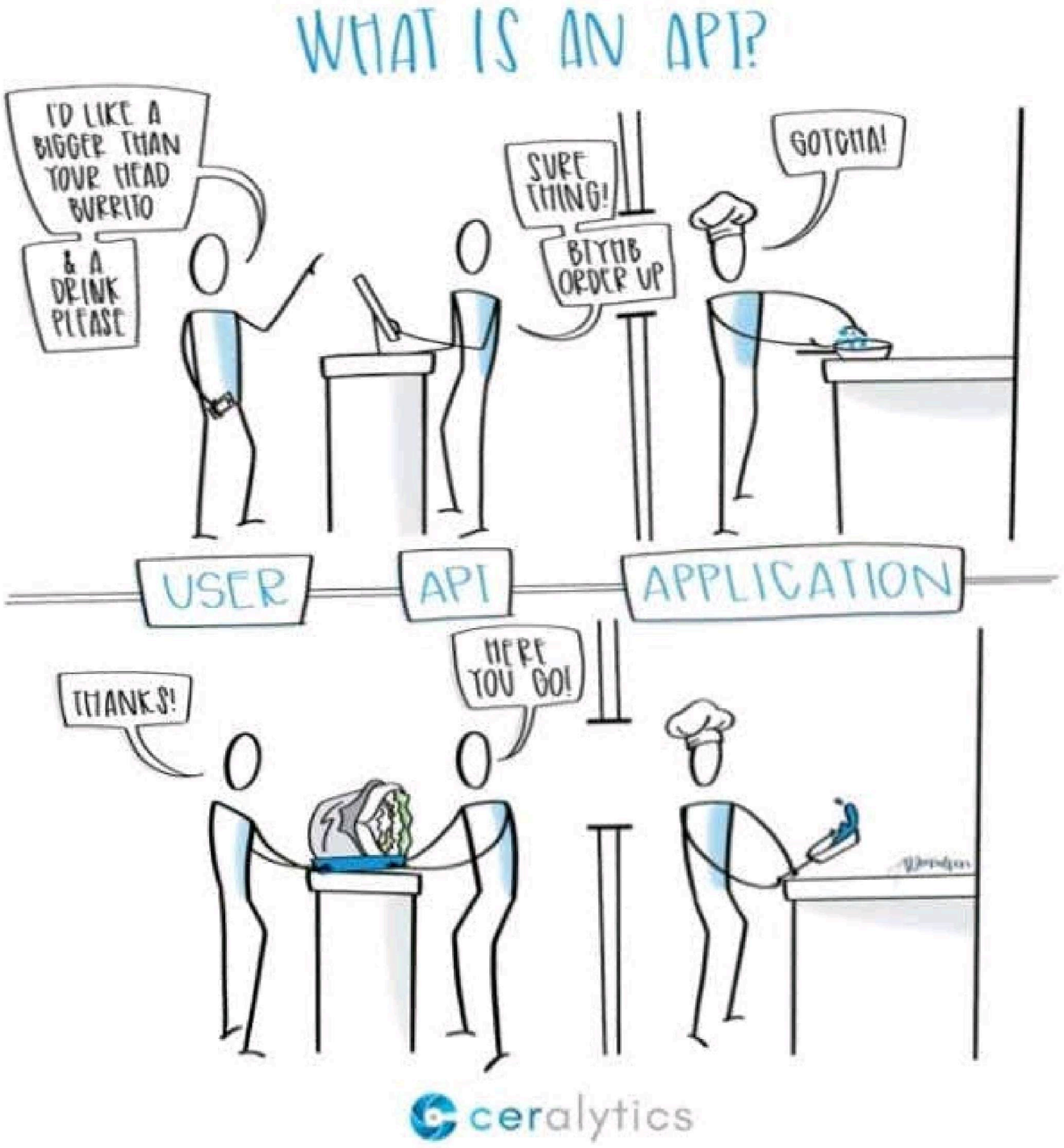
What is an API?

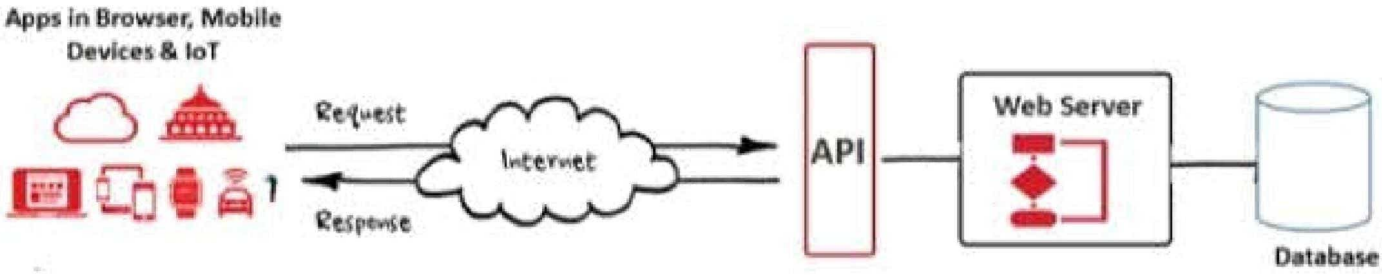
If one were to google 'What is an API?', you'll most probably get something of the sort:

> **"API stands for Application Programming Interface, which is a software intermediary that allows two applications to talk to each other."**

It is actually as simple as that.



An API is a software which can be used by other softwares, to communicate with other softwares or even hardwares. It acts as a bridge between different softwares and devices.



API acting as a bridge across softwares and hardware devices

There are so many applications using different technologies and programming languages, which use APIs to interact with each other.

How does an API work?

Say, If you were to build a software application for banking and your friend has already deployed a calculator application for calculating simple interest and compound interest, you probably wouldn't write the whole code from scratch, you would re-use the pre-

wouldn't write the whole code from scratch, you would re-use the pre-existing external software components so as to prevent re-inventing the wheel and make your life as a developer easier.

But what if your friend is not willing to share his application's source code with you, as he doesn't want to compromise the security of his code or what if your friend's app uses some technology which you are not familiar with, how would you be able to use it in your own application?

The solution is for your friend to make an **Application Programming Interface or an API** and give its endpoint to you. Using this endpoint you can make API calls, which would help the two applications in communicating easily.

Abstraction

Let's take the example of an elevator for this.

Think of an elevator as a software component for a while. Its API would include information about what it can do, like go up, go down, open the doors, etc. It would also include information or an API Documentation about how you could make it do those things. For instance, if you're on the ground floor and want to go up to the fourth floor, you would just push the button for the fourth floor.

to intercept all incoming requests, and manage all the authentication, rate limiting, billing and analytics. **API gateways** provide a single point of entry to your applications, which bundle or encapsulate the internal software architecture and also help in providing APIs tailored to different clients.

Types of Web APIs

Web APIs are APIs that can be accessed using the HTTP protocol. It can be categorized on the basis of who all can view and use it as follows:

- **Open/Public APIs**: These are available to the developers or the external users with minimal restrictions.

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- **Open/Public APIs**: These are available to the developers or the external users with minimal restrictions. Example is Twitter API.
- **Internal APIs**: These are used within an organization to exchange data and resources, and are hidden from any external user.
- **Partner APIs**: These are similar to Public APIs, but these feature restricted access, meant for business partners. These are very common in Software as a service (SaaS) ecosystems.

Types of Web API Architectures and Protocols

Different use cases call for different implementations and architectures. This also means different accepted data types and commands. Following are some of the most used architectures and protocols to construct an API:

- REST (Representational State Transfer): is a sought after web API architecture. To be a REST API, an API must adhere to certain architectural constraints, like Client-Server Architecture, Statelessness, Cacheability, Layered System, etc. These are primarily used to access and work with data, and require minimum bandwidth.

Conclusion

As we have seen, APIs are an integral part of software development, which makes the whole process more understandable, less complex and more efficient. It also helps developers and businesses to collaborate with each other to build some exciting services.

I hope that the introduction of this article doesn't sound all gibberish now, and it does make some sense to you!