



Unlock the Power of AR Beginner's Guide ➔



B R I D G E

ILLUSTRATION

WHAT IS AN API?

An API (Application Programming Interface) is like a bridge that allows different software applications to communicate and work together seamlessly.

Restaurant Analogy



Request

You, as the customer, make a request. This is like telling the waiter what you want to order.



Restaurant Analogy



Processing

The API (waiter) takes your request to the server (kitchen), where it is processed.



Restaurant Analogy



Response

The server (kitchen) prepares the response (your food) and the API (waiter) brings it back to you.



API Types

Web APIs

A web API is a tool that allows apps to communicate online, sharing data or services through standard requests and responses.

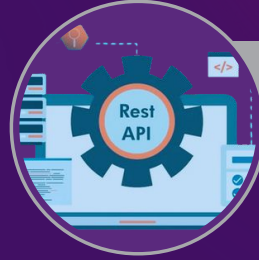
Library APIs

A library API offers tools that allow developers to use a software library's functions without understanding its internal workings.

Operating System APIs

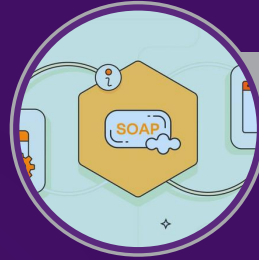
An Operating System API allows applications to interact with the OS, accessing resources like files, memory, and hardware.

Flexible vs. Rigid APIs



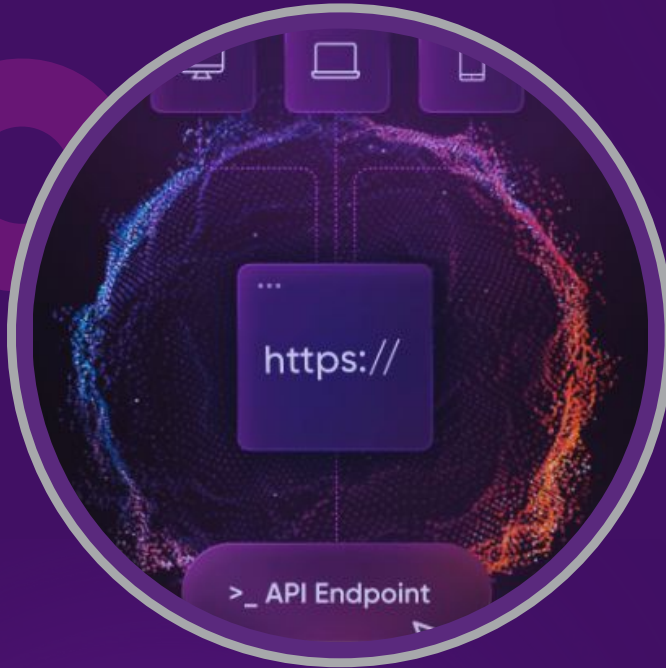
R.E.S.T. (Representational State Transfer)

This flexible approach uses HTTP requests for CRUD (Create, Read, Update, Delete) operations, often handling data in JSON format.



S.O.A.P. (Simple Object Access Protocol)

SOAP is a messaging protocol for exchanging structured data between applications over a network. Unlike REST, it follows strict standards and communication rules.



Endpoints

Endpoints are unique URLs that provide access to an APIs functionality. Each endpoint serves a specific purpose within the API.

For instance, the endpoint: `https://api.trackhs.com/api/pms/units` might be used to retrieve data for all units in a specific Track instance.

HTTP Methods

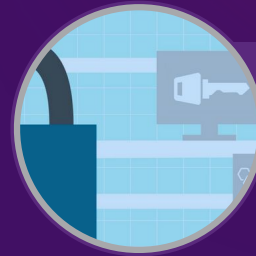
Create	→	POST	} HTTP Methods
Read	→	GET	
Update	→	PUT	
Delete	→	DELETE	



- **POST:** Used to send new data to the server, typically for creating new resources.
- **GET:** Used to retrieve data from the server, such as fetching information or resources.
- **PUT:** Used to update or replace existing data on the server.
- **DELETE:** Used to remove data or resources from the server.

Authentication

APIs often require some form of authentication to ensure that the request is coming from a legitimate source.



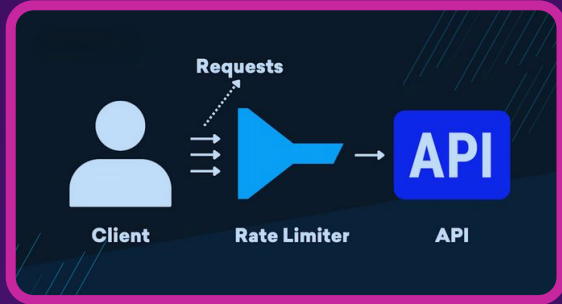
API KEYS

Simple tokens provided by the API service to identify the client.



OAuth

A secure and flexible method allowing users to grant third-party access to their resources without sharing their credentials.



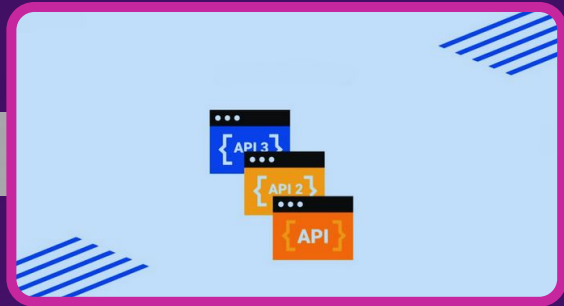
Rate Limiting

APIs often have rate limits, which restrict the number of requests a client can make within a certain time period. This prevents abuse and ensures fair usage.

- **200 OK:** The request was successful.
- **400 Bad Request:** The request was malformed or invalid.
- **401 Unauthorized:** Authentication is required or has failed.
- **404 Not Found:** The requested resource does not exist.
- **500 Internal Server Error:** The server encountered an unexpected condition.



API Versioning



- APIs often have versions (e.g., V1, V2) to ensure that changes to the API do not break existing applications that depend on it. This allows developers to upgrade to new versions at their own pace or by specified dates.



API Documentation



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- Great APIs come with comprehensive documentation, which is essential for understanding how to use the API, including the available endpoints, required parameters, and examples of requests and responses.
- Track's API Documentation:
<https://developer.trackhs.com/>.

What is Postman?



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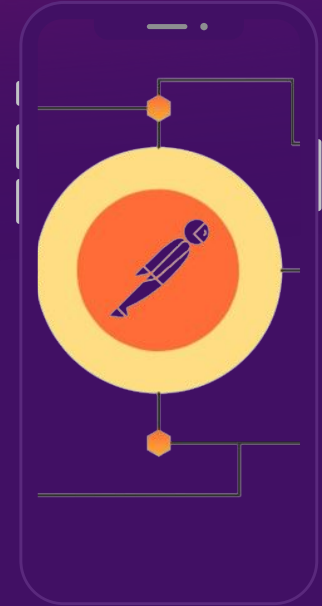
Postman is a popular API development and testing tool that helps technical resources such as developers interact with APIs.

Postman Key Features

Request Methods: Supports all HTTP methods like GET, POST, PUT, DELETE.

Parameters and Headers: Easily add parameters, headers, and body content for requests.

Authentication: Supports various authentication methods like Basic Auth and OAuth.



Next Slide





Example & Use Case



Practical Examples

Working through practical examples of API usage can be incredibly beneficial.

[Link to data spreadsheet](#)



Track API Documentation

Learn how to effectively read Track's API documentation and POST new images to an existing unit.



Postman API

Learn how to use Postman to successfully make API calls.



Track Application

We should now see the newly uploaded data displayed on the frontend of the application.





Thank You!

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