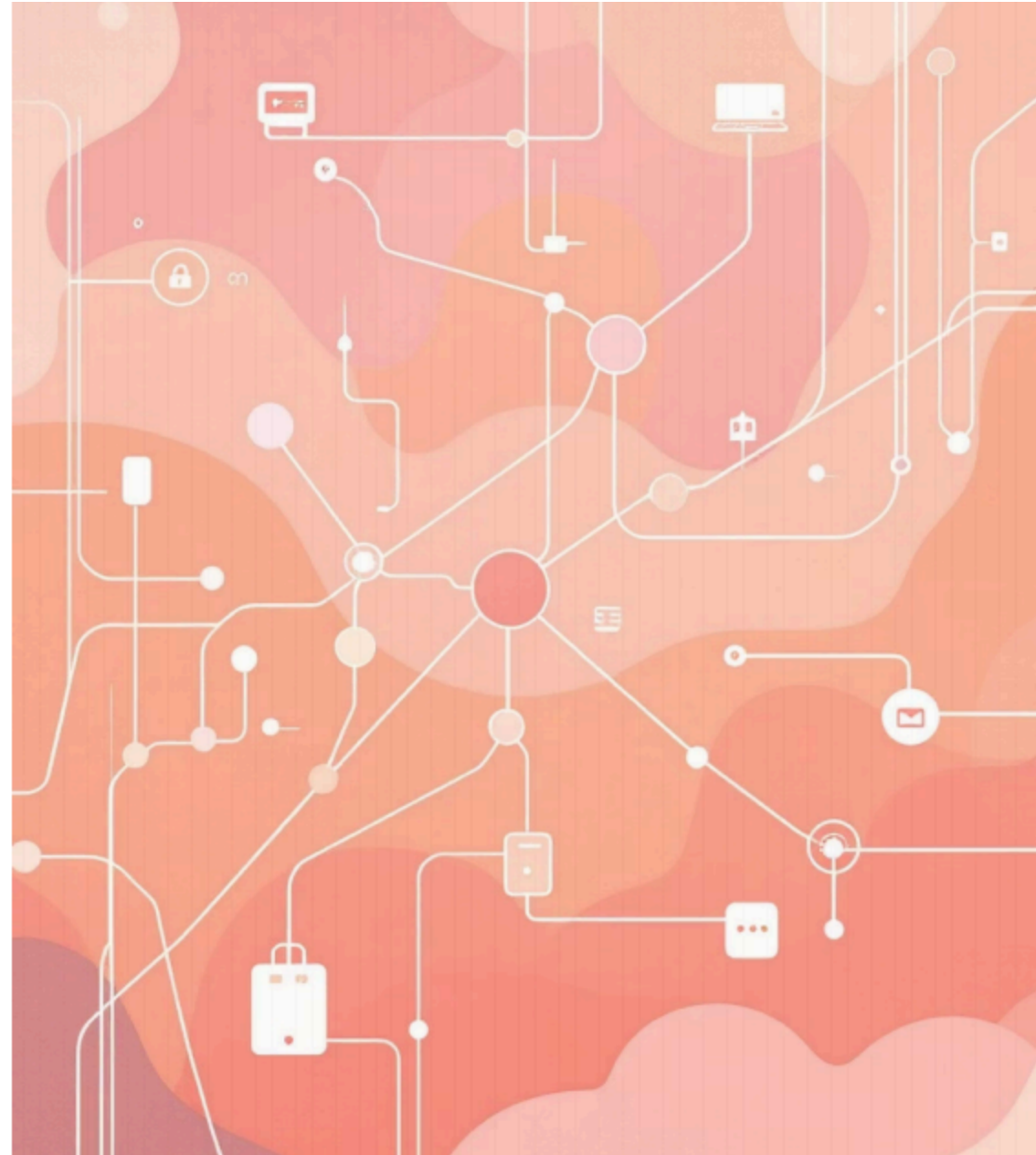


What is an API? & Why We Need It

Understanding the fundamentals of Application Programming Interfaces and their critical role in modern software development



Understanding APIs

What is an API? & Why We Need It

What is an API?

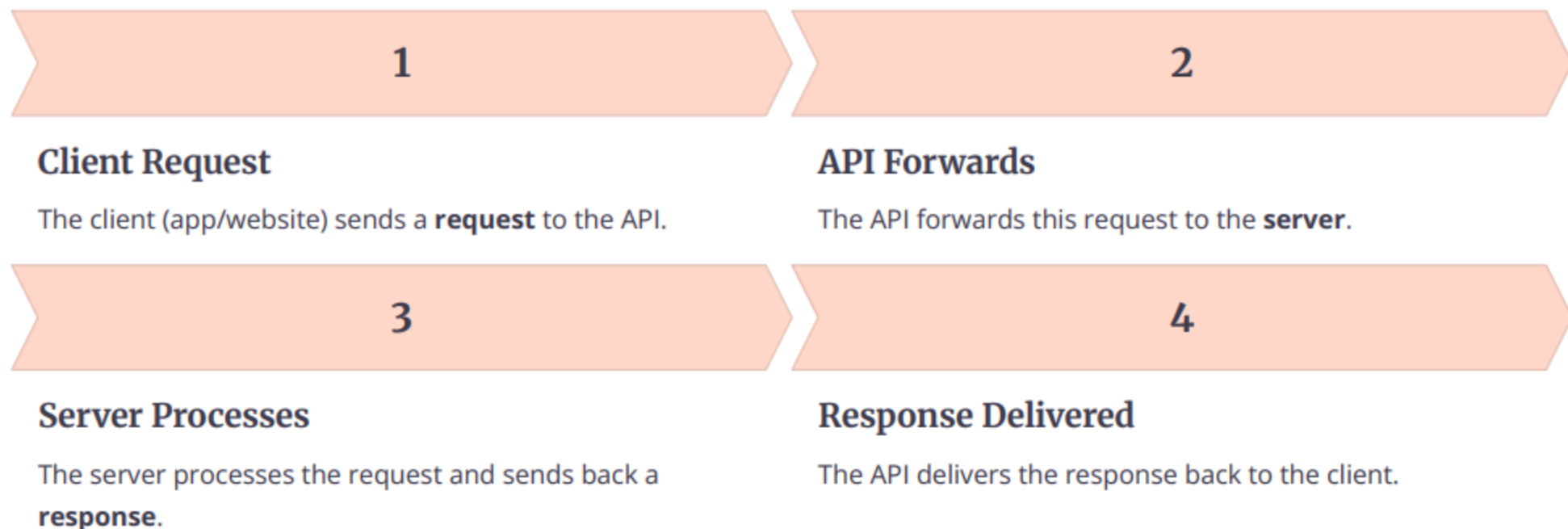
An **API (Application Programming Interface)** is a set of rules that allows different software applications to communicate with each other. It acts as a bridge between two systems so they can exchange data.

Why do we need an API?

- To connect frontend (website/app) with backend (server/database)
- To share data between different applications
- To reuse services instead of writing everything from scratch
- To make applications more scalable and secure

How API Works (With Real-Time Example – Updated)

How an API works:



Real-Time Example (Online Shopping App):

When you open a product page in an **online shopping app like Amazon or Flipkart**, the app uses an API to:

Fetch product details

Show price and stock
availability

Display product images
and reviews



What is Postman? & Why We Need It

What is Postman?

Postman is a tool used by developers to **test APIs** without writing full application code.

Why do we need Postman?

- To test API requests (GET, POST, PUT, DELETE)
- To check whether the API is working correctly
- To debug errors easily
- To view API responses in a structured format

How Postman Works (With Example)

How Postman works:

01

Open Postman

02

Enter the API URL

03

Select request type (GET, POST, etc.)

04

Click Send

05

View the response



Example:

If you enter: <https://api.example.com/users>

Postman will send a **GET request** and show a list of users returned by the server.

What is Authentication & Authorization?

Authentication:

Authentication is the process of **verifying who you are**.

Example: Logging in using username and password.

Authorization:

Authorization is the process of **deciding what you are allowed to do**.

Example:

- Student can view courses
- Admin can add or delete users

Why It Is Compulsory to Use Them & What Happens If Not Used

Why authentication and authorization are compulsory:

Protect user data

Prevent unauthorized access

Maintain data privacy

Control user roles and permissions

If we do not use them:

Anyone can access sensitive data

High risk of hacking and data breaches

No control over user actions

The system becomes insecure and unreliable
