

Lecture 16 : Adapter Design Pattern

Page No.

Date

Example

Introduction

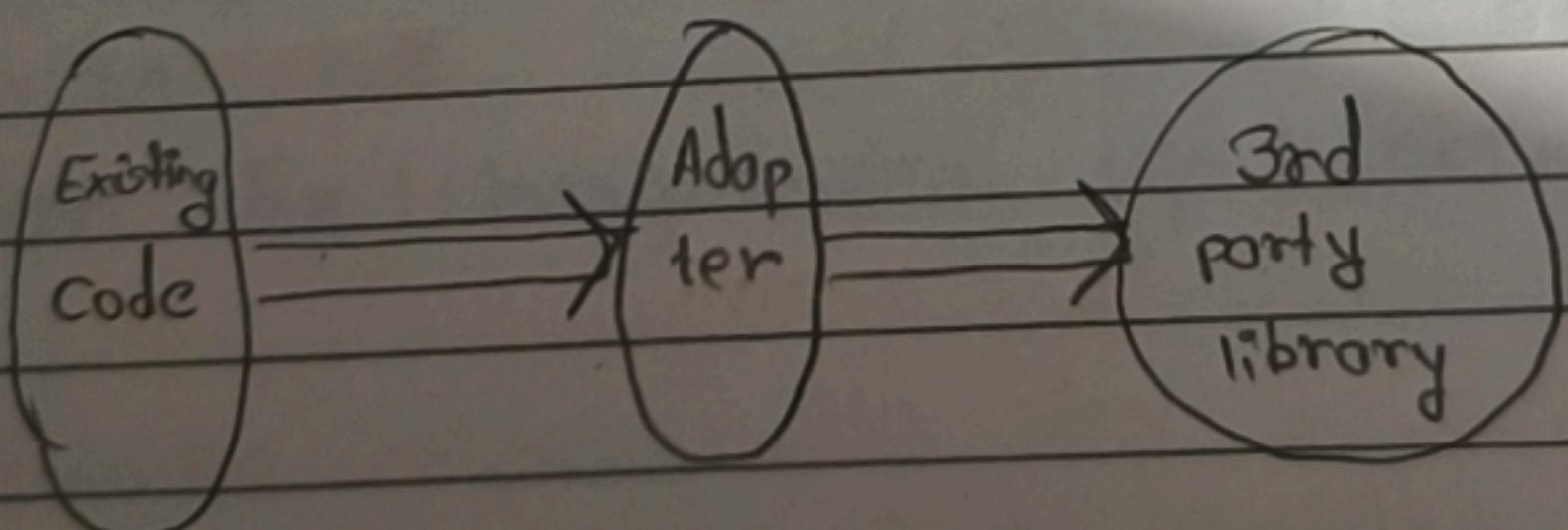
- Let's take an example to understand use case of this pattern: Hum ek hotel room mein gaye waha ka switch and humara charger alag alag socket based hai toh hum ek adapter use kregi jo humare charger ko connect kar payega and adapter ka socket easily room socket mein plug ho jayega

- Another could be type-c to usb converter

- In SD context, two objects which can't interact directly due to constraints unlike beech mein ek adapter laana for making them communicate.

Need for this pattern

1. Hum saare functionalities humare app mein use nhi karte, kuch 3rd parties use krte jisse tasks easily develop ho jaaye. Ex: Notification system, Payment gateways like razorpay

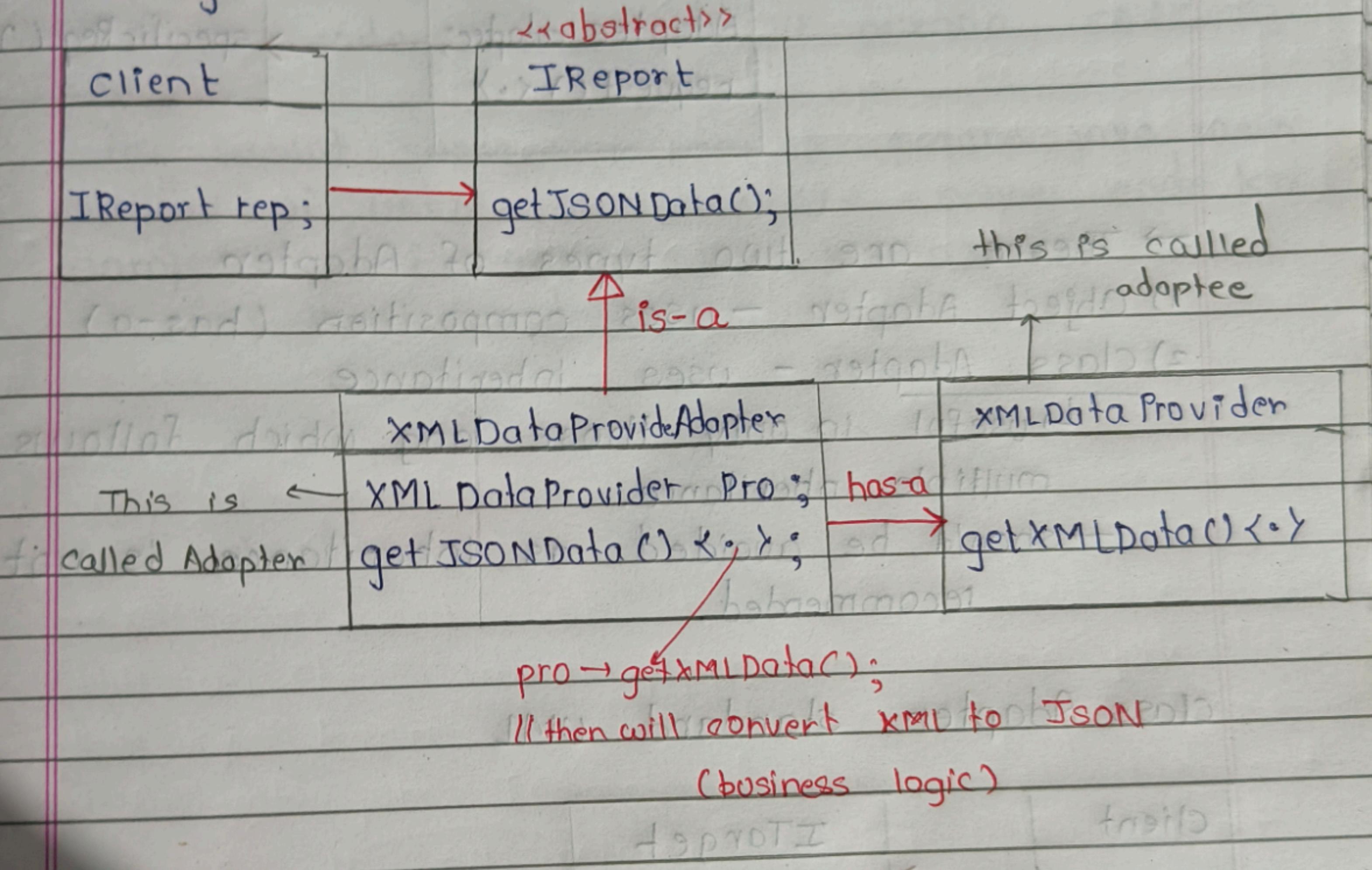


2. Agar humari library kuch our lang. mein return kare & we are expecting other lang

3. Hume tightly couple nhi krna ; isse agr third-party lib change ho toh bas adapter chnge krna pe

Example and its UML Diagram

- Humara ek application hai jisse report chahiye and we need it in json format and humari job library hai it is returning it in XML format toh ab humara adapter XML ko JSON mein convert krne ke liye madat / kaam karega.

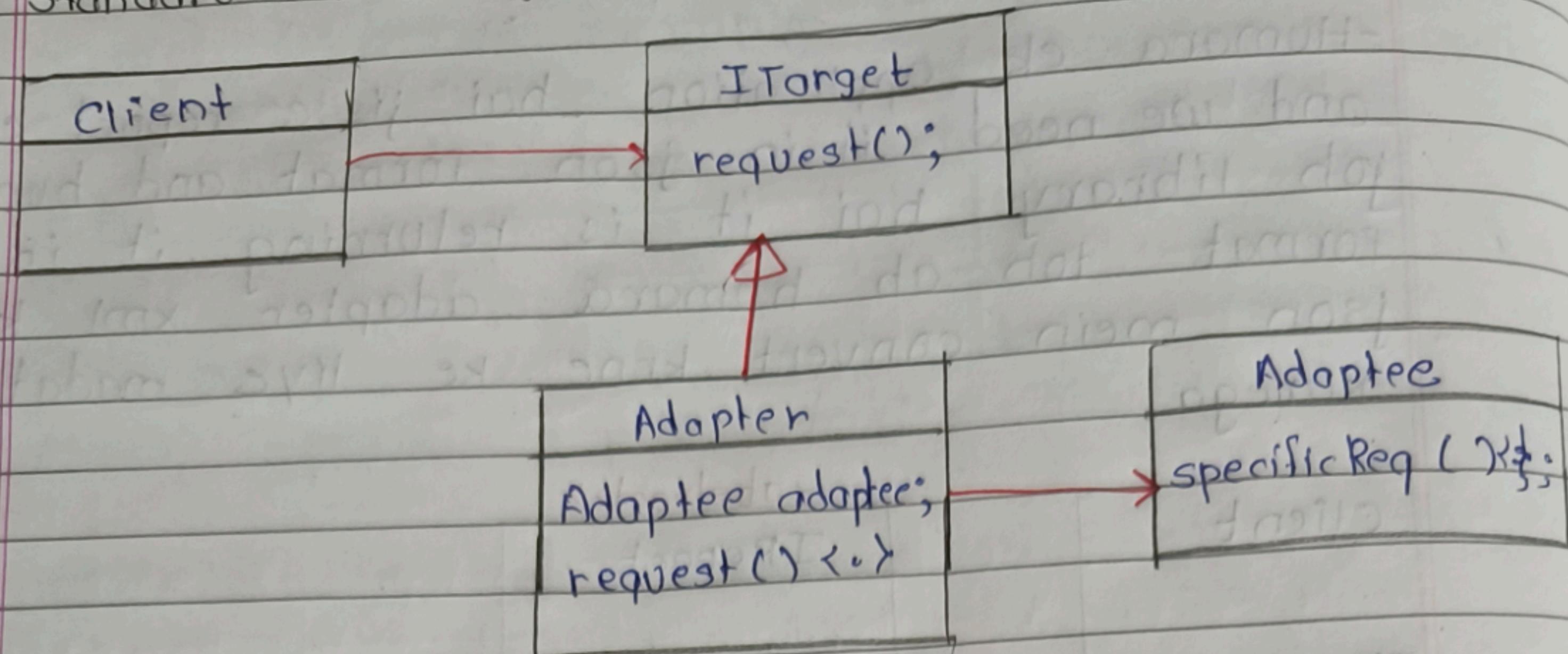


Standard definition

- Adapter converts the interface of a class into another interface that client expects.

Adapter lets classes work together that couldn't otherwise because of incompatible interface.

Standard UML (Object Adapter)



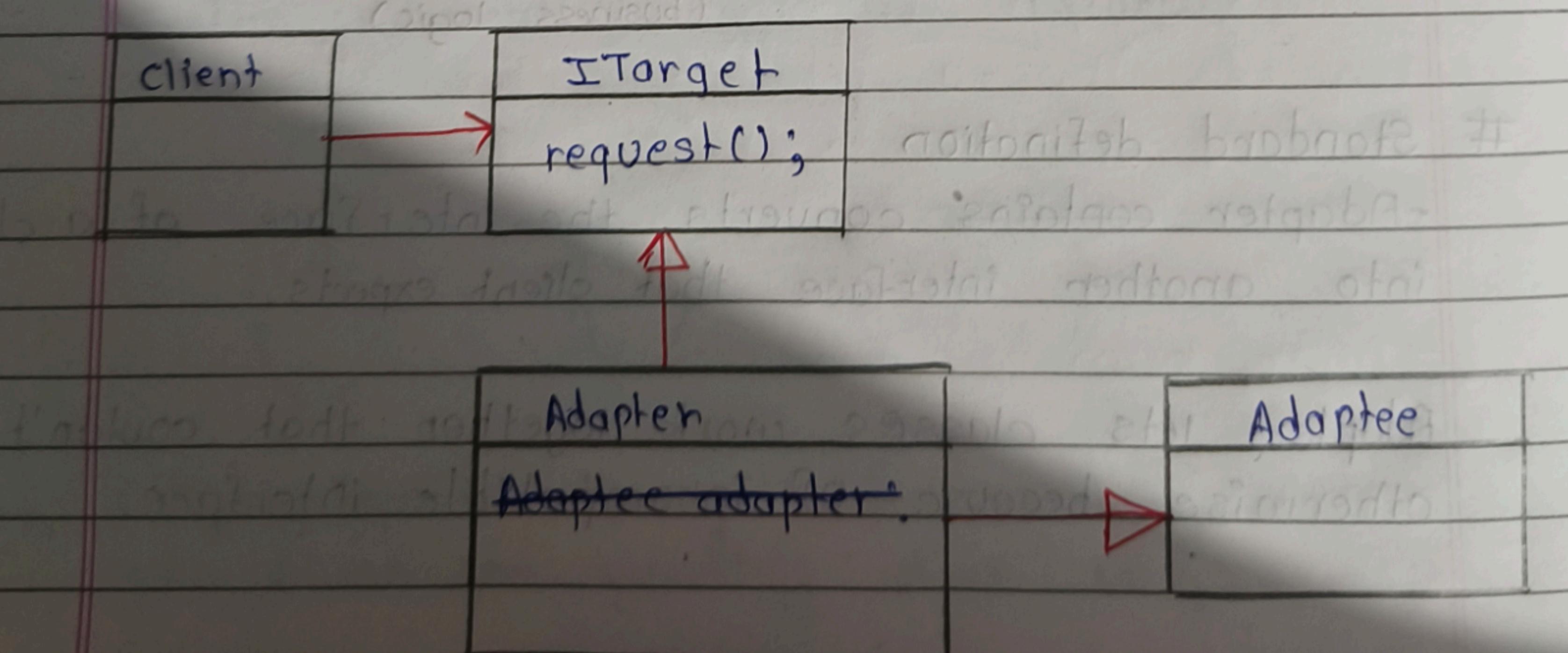
→ There are two types of Adapter

- 1) Object Adapter - uses composition (has-a)
- 2) Class Adapter - uses inheritance

↳ useful in only those lang which follows multiple inheritance.

→ should be avoided as inheritance is not recommended.

class Adapter & standard UML



Real World use case

① 3rd party vendor

→ I have my application code & vendor's code to make both of them communicate we can use adapter.

② Legacy code

- Legacy code yaane bahot purana code

- Ab bahot saare applications purane java mein build hai unko aur humare naye code ko compatible & communicate karana hai toh we will need adapter.