

Lecture 28 : Build payment gateway system

Requirements

- should support multiple providers (payment Rayzompay)
- we can easily add new gateways in future.
- There should be a standard payment flow, with required validation.
- Have error handling and retries mechanism.

How for additional features.

- There can be different ways/strategies of retry mechanism (Handle them in code).
 - Linear Retry
 - Exponential Backoff.
- Try adding resumming payment flow

Happy Flow

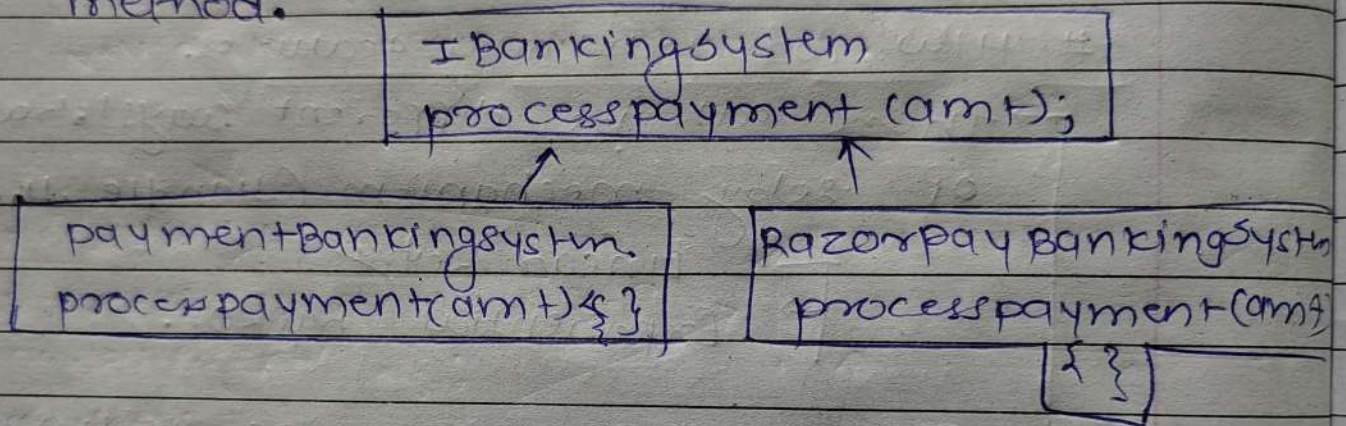
client should only connect with payment gateway and interact with it. internal details should not be known to client.

- client and internal classes will interact with gateway to make call to bank. The bank response back to gateway and gateway gives to classes & client.

1) create a model class which contains only basic information.

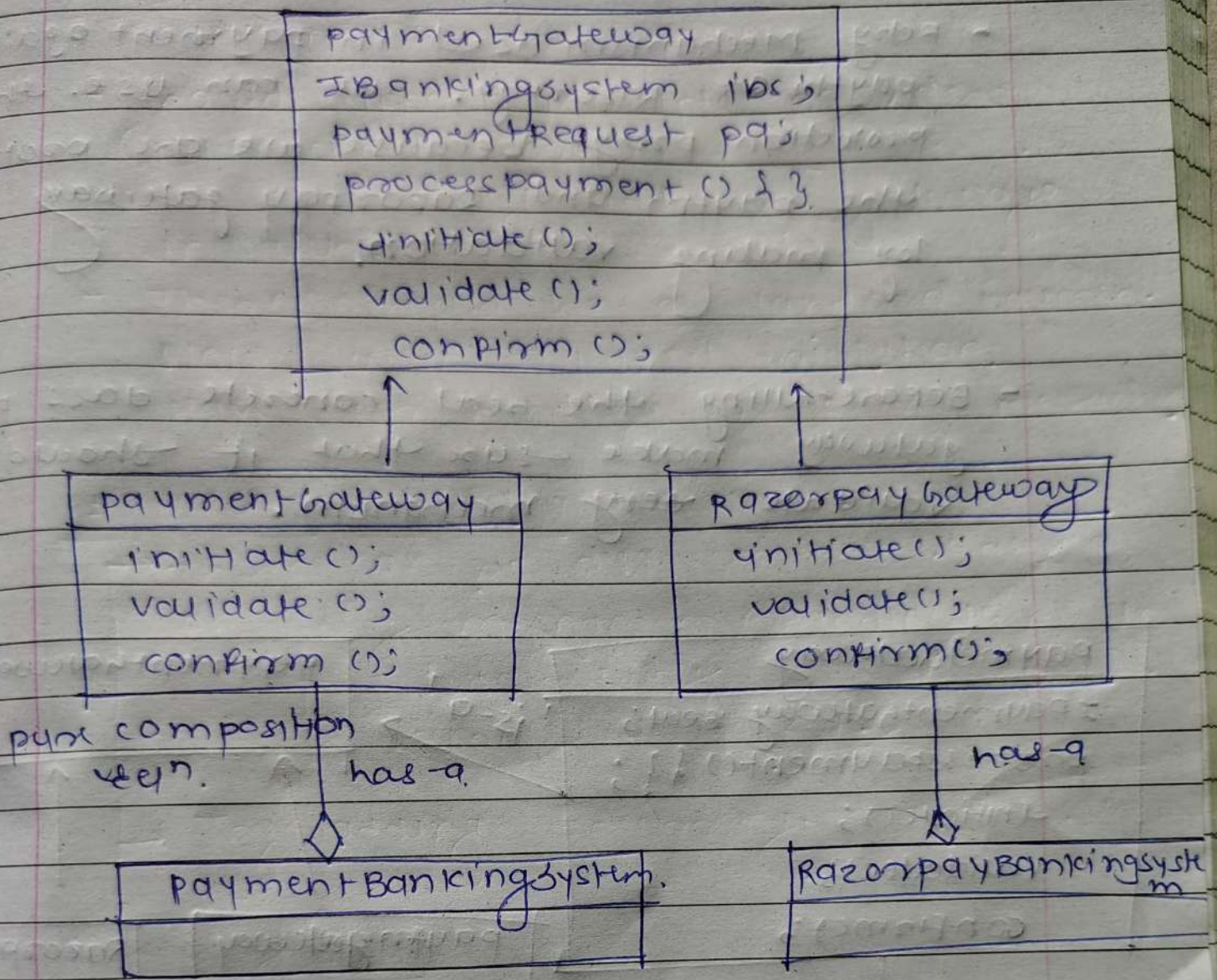
```
paymentRequest {  
    -string sender;  
    -string Receiver;  
    double amt;  
    string currency;  
}
```

2) now create gateway which will interact with banking system. with processpayment method.

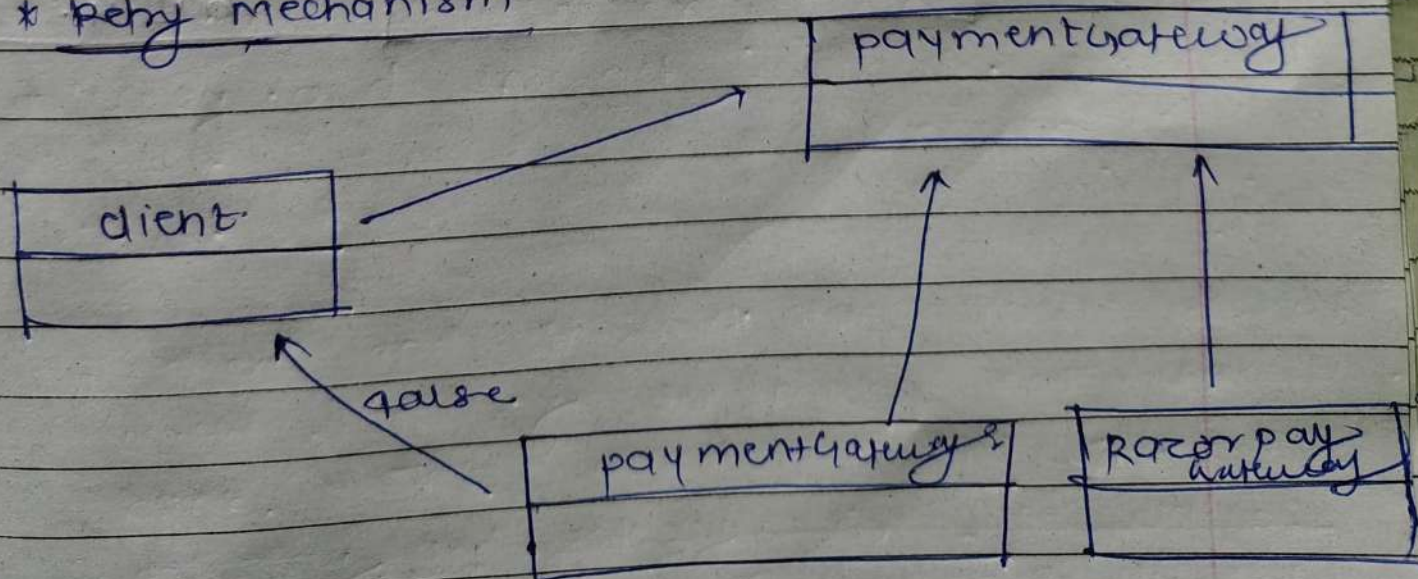


3) The object of the IBankingSystem can't be stored as reference as it exists on external server. ~~as it~~ we will need to take it as a proxy i.e. remote proxy which will interact with banking system.

4) we can assume that IBanking hierarchy completely works as proxy means it calls to 3rd party vendors through internet.



* Retry mechanism



- Proxy mechanism used in payment gateway paytm or razorpay. we can use the protection proxy because we are protecting the paytm and razorpay gateway by making validation.

- Before calling the real concrete class proxy gateway make sure that it should validate every mechanism.

