

Lecture 20 : Template Method Pattern

Page No.	
Date	

Introduction

- Yeh bhi composite pattern ki tarah sirf koi use case specific hi kaam karta.

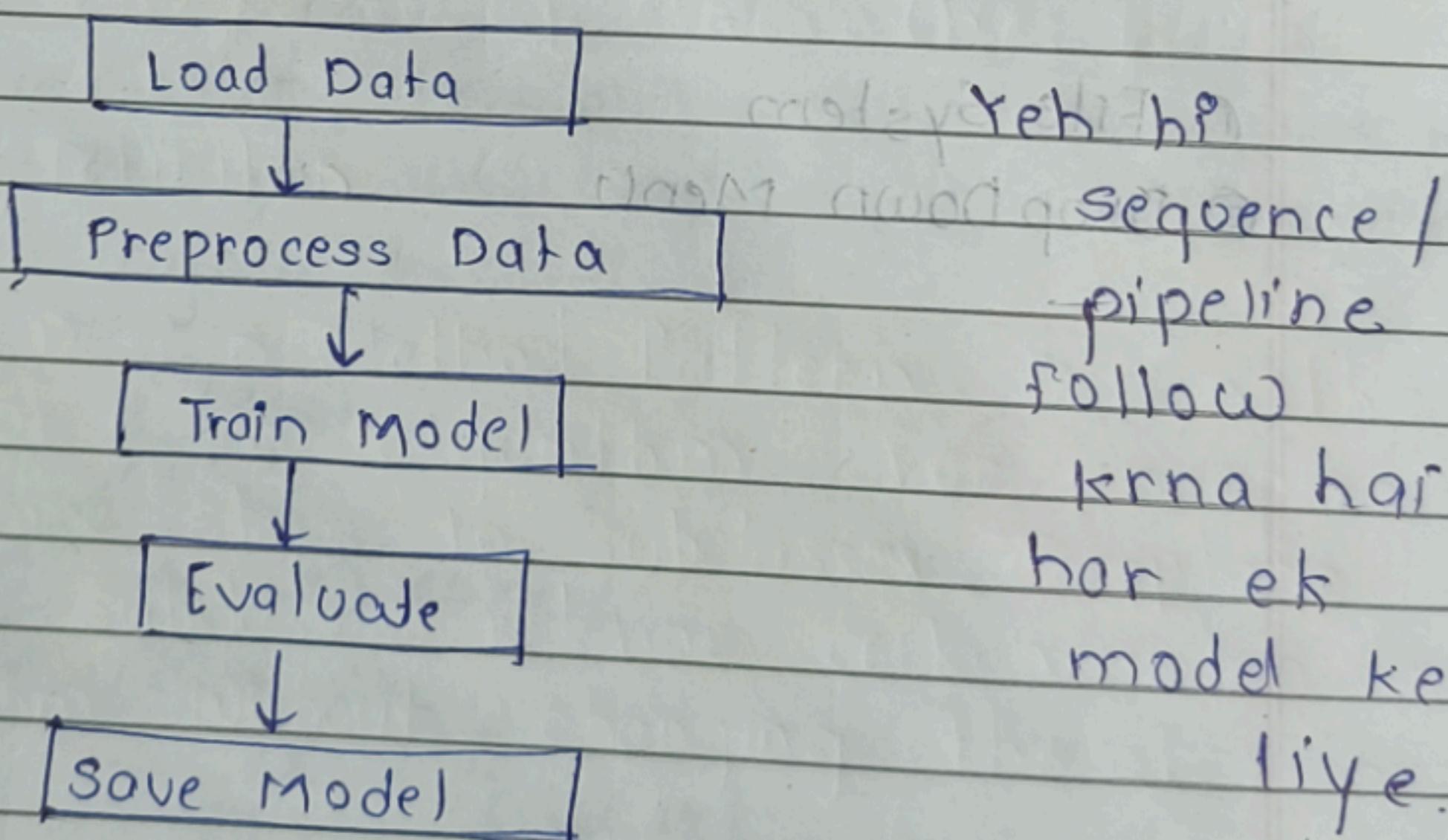
- Previous pattern har problem mein use hoo jaate but yeh specific problem - jaha sequentially task execute hona chahiye woh pattern mein use aata haf

- Solves problem of pipeline

Template Method Design Pattern

- Socho hum ek data scientist hai & humko alog alog AI models par kaam karte and ek pipeline (seq. of steps) follow krte to train model. This pipeline is same for all models.

Sample / ex Pipeline:



- We do i.e. koi alternat template

UML Diagram

- Pebble 1 bonayega

- Human abstrac in which ko koi kyuki declare

- Whenever koi bl implement declare

- Temp executi power

- We don't want developer to make mistake i.e. koi step skip kare yaa sequence alternat karde. Isliye hum already developed template / pipeline use karte.

UML Diagram for Model Training

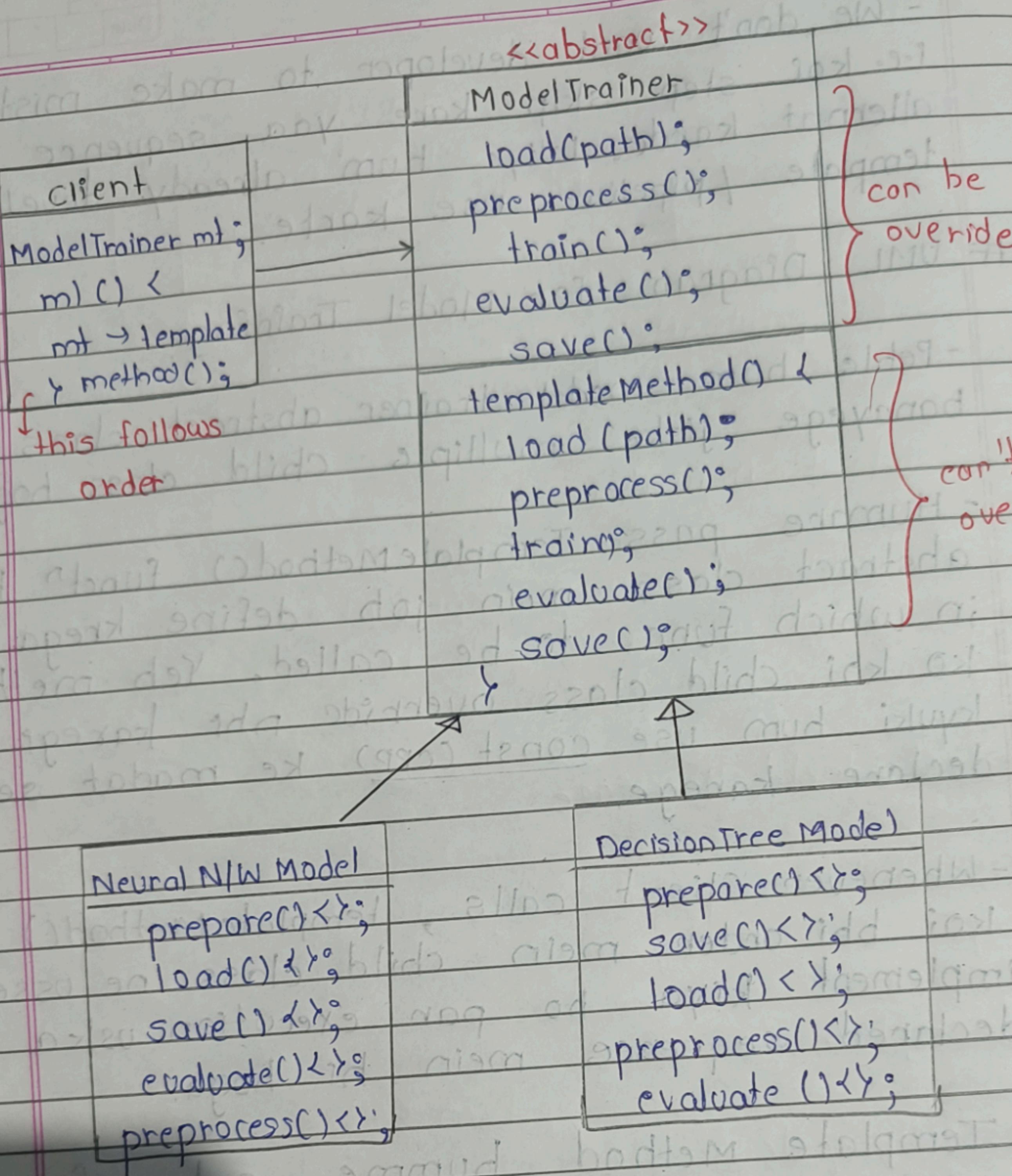
- Pehle hum model trainer abstract class banayege. jiske multiple child class hoge.

- Humare pass TemplateMethod() funct' hogा abstract class mein job define krega order in which func to be called. Yeh method ko koi child class override nahi karegi kyuki hum use const (C++) ke madat se declare karege.

- Whenever Client calls , templateMethod() toh koi bhi order mein child class ne usse implement kiya ho par execution uska declared sequence mein hr hogा.

- Template Method humme order of execution ko constant/same rakhne ki power deti hai

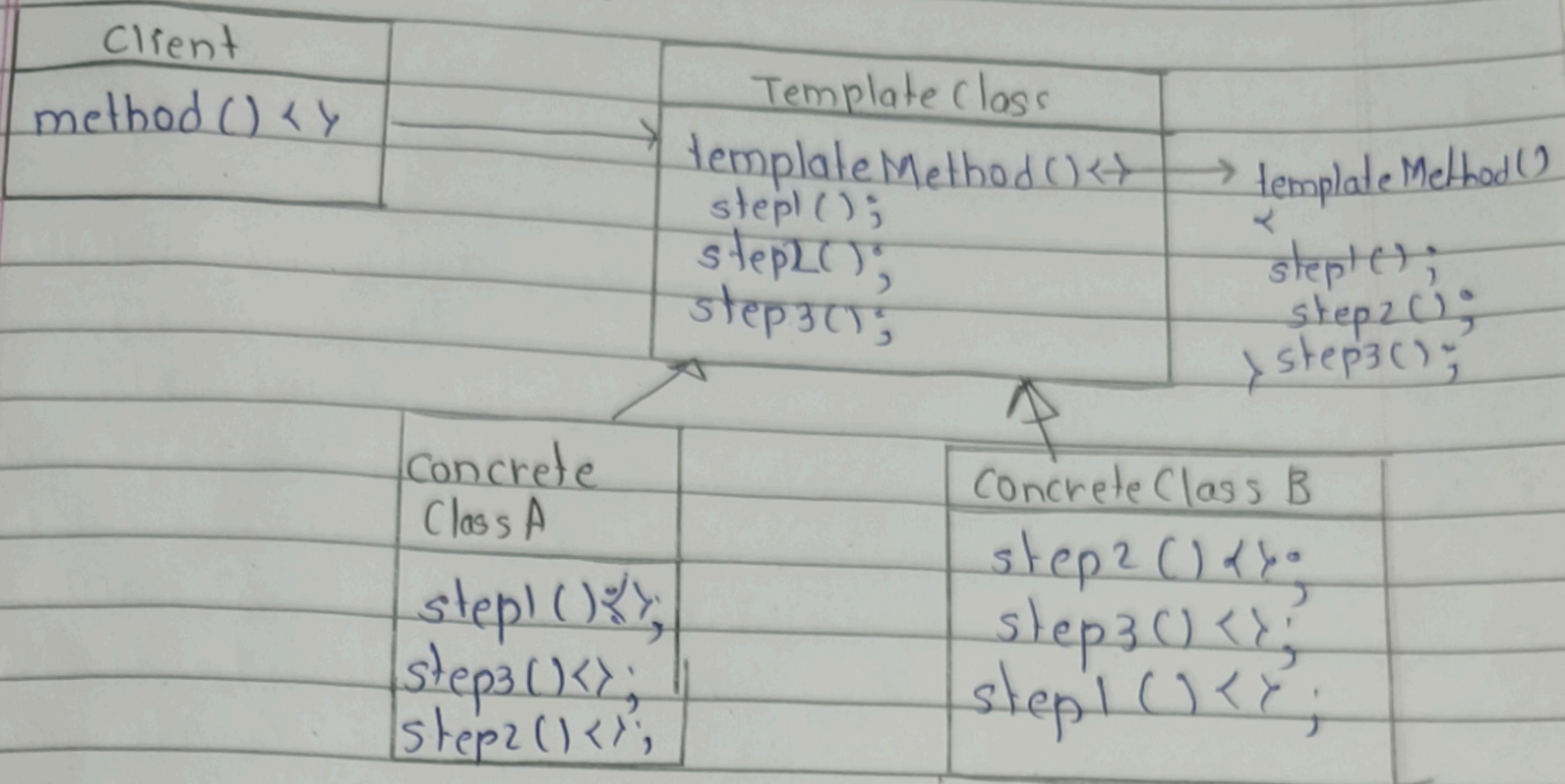
Standard



standard definition

Template Design Method Pattern Design the skeleton of an algorithm for an operation defining some steps to subclasses. Template method let subclasses redefine certain steps of an algorithm without changing the algorithm structure.

Standard UML Diagram



Real World Use Case

Used in scenarios where we want to follow order / sequence of execution

Examples -

① UPI Payment

- validate balance
- amount
- pin
- debit
- credit