

Introduction

- One of the most used design pattern
- This concept is just like our real world business
Agar humne ek shop daali hai toh we don't want
ki ussi jagah par hum saman banaye
- Same concept applies in our code - hum humara
business logic and object creation alog class
mein likhe which will improve readability
of our code.
- Humne purane design pattern - strategy design
pattern mein sikha tha classes banana & robot
class mein hum assume kar rhe the ki object
joh hai woh khi toh ban gaya hogya - Par hum
woh client / business logic mein banata hai
- And in this method humara object creation
will be handled by factory

Types of Factory

- Simple Factory → This is not design pattern
- Factory Method
- Abstract Factory Method } These are design pattern

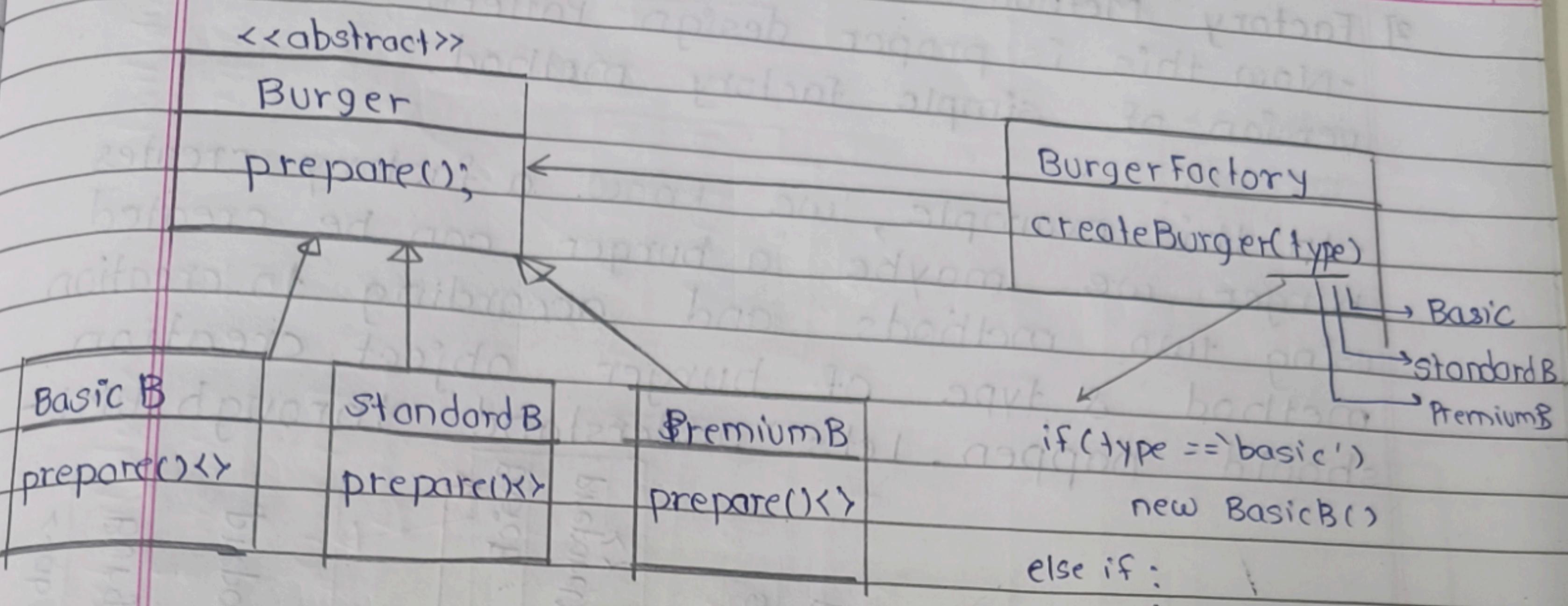
i] Simple Factory Method

- Let's understand this method using an example
of burger shop

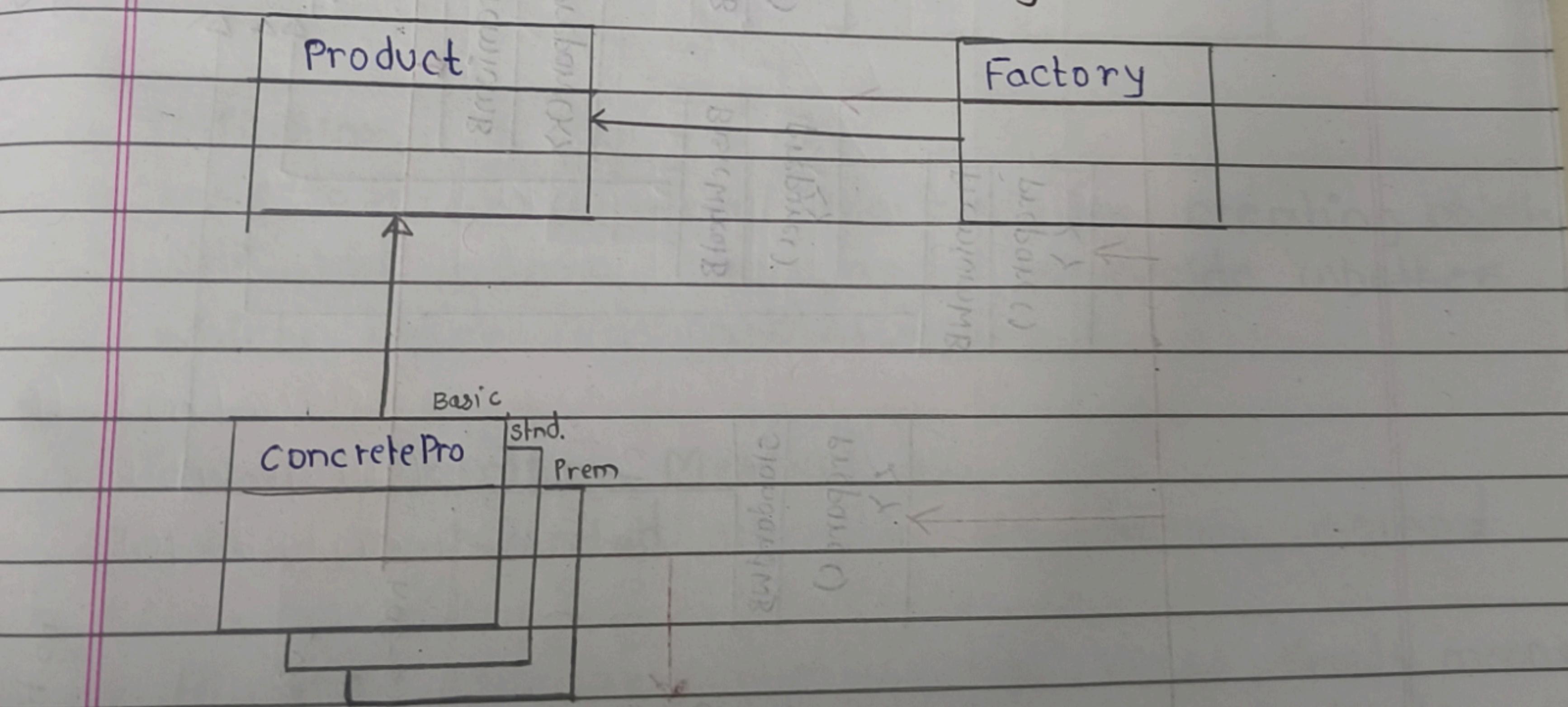
- In the shop will sell three types of Burger and
depending on the type of burger that type of
object will be created using 'if-else'

Basic B
prepared

UML Diagram



Standard UML of simple Factory



Definition :

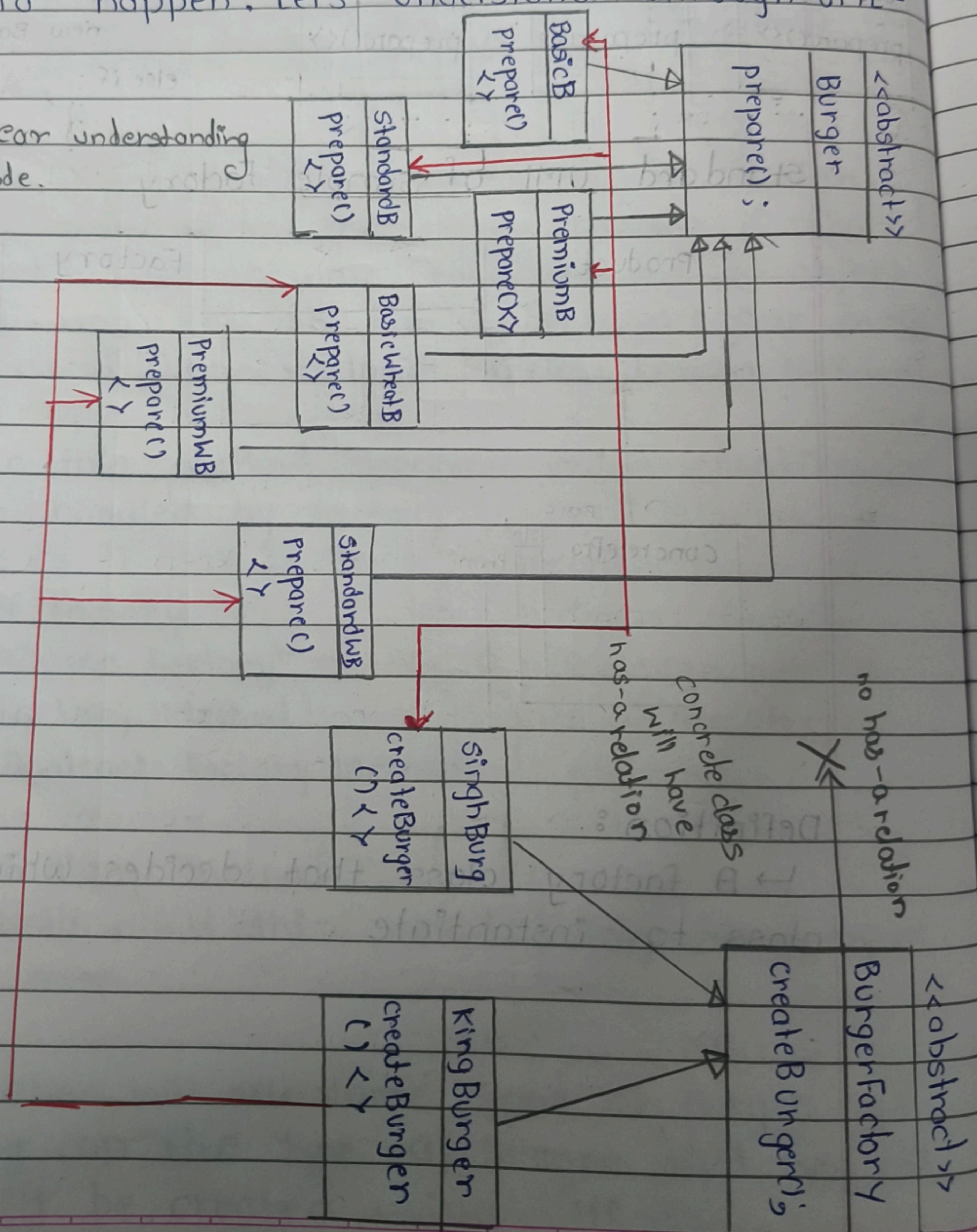
↳ A factory class that decides which concrete class to instantiate

2] Factory Method

- Now this is proper design Pattern, an extended version of simple factory method.

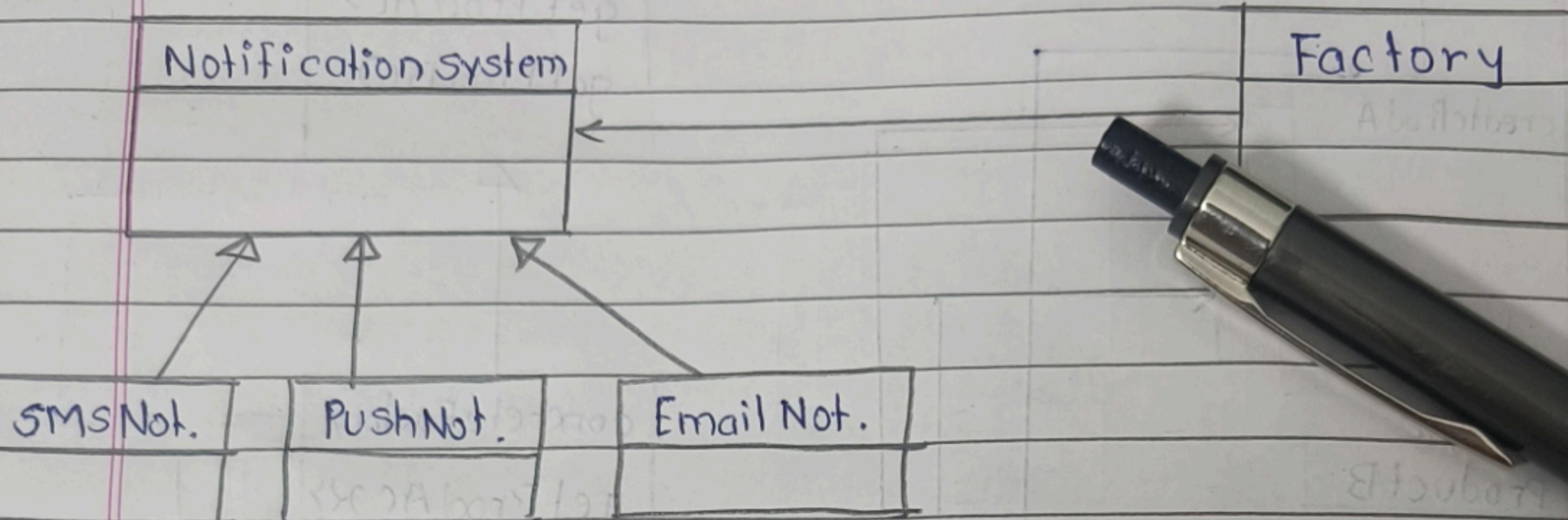
- In this example, we know a factory creates burger we maybe a burger can be created using two methods and according to creation method & type of burger object creation should happen. Let's understand through UML-

For clear understanding
check code.



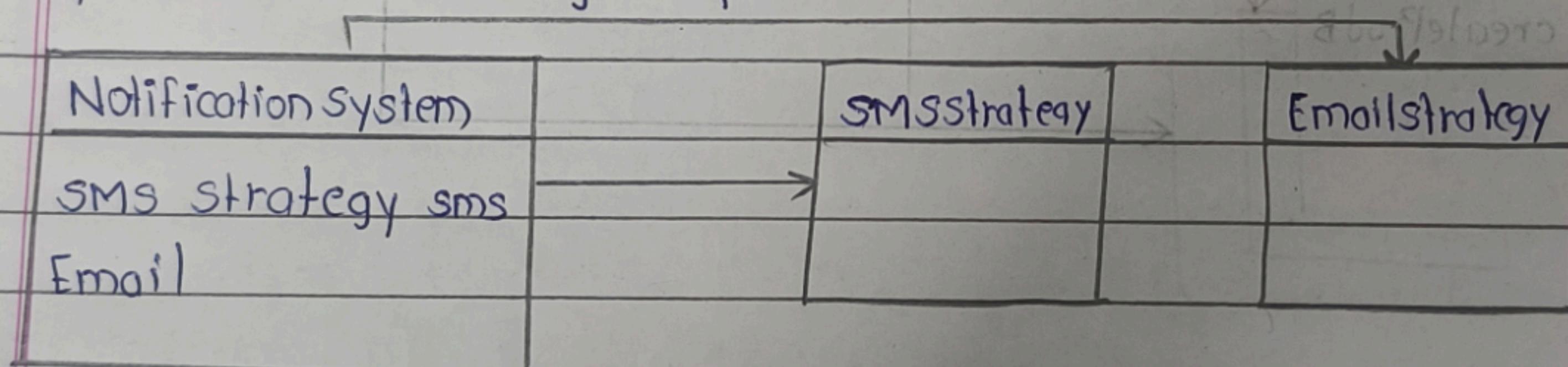
Real - Life Example : Notification System

-We can send notification using various method -
SMS , Push , Email , etc.



Factory

→ As ~~seen~~ seen, we can solve this problem using previous design pattern like this -

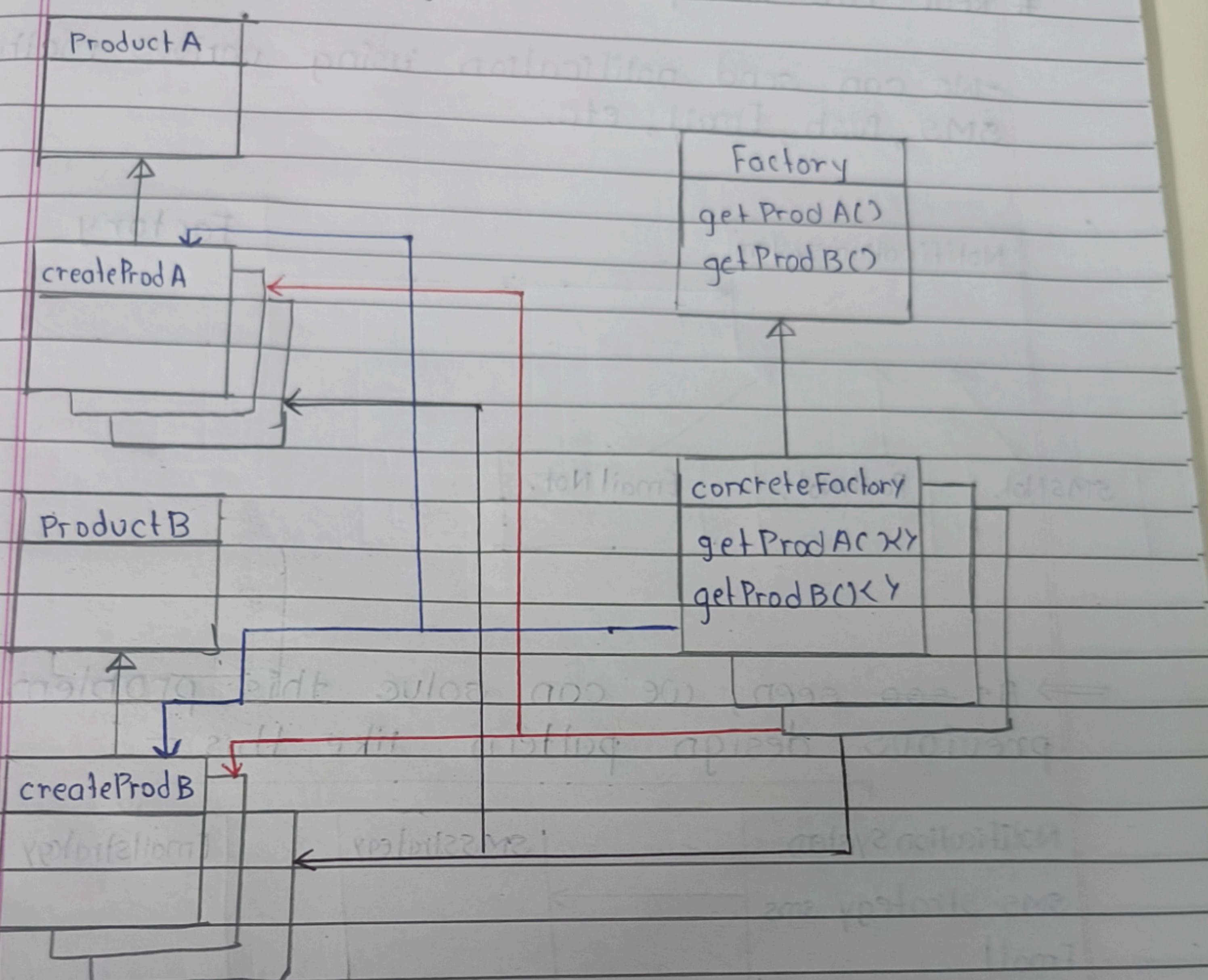


→ So, hum real world problems ko multiple design pattern se solve karte hai => toh yeh subjective choice hoti hai and depend karta hai what work we have to do to choose btw factory & strategy

Factory : jb object creation logic separate krna ho

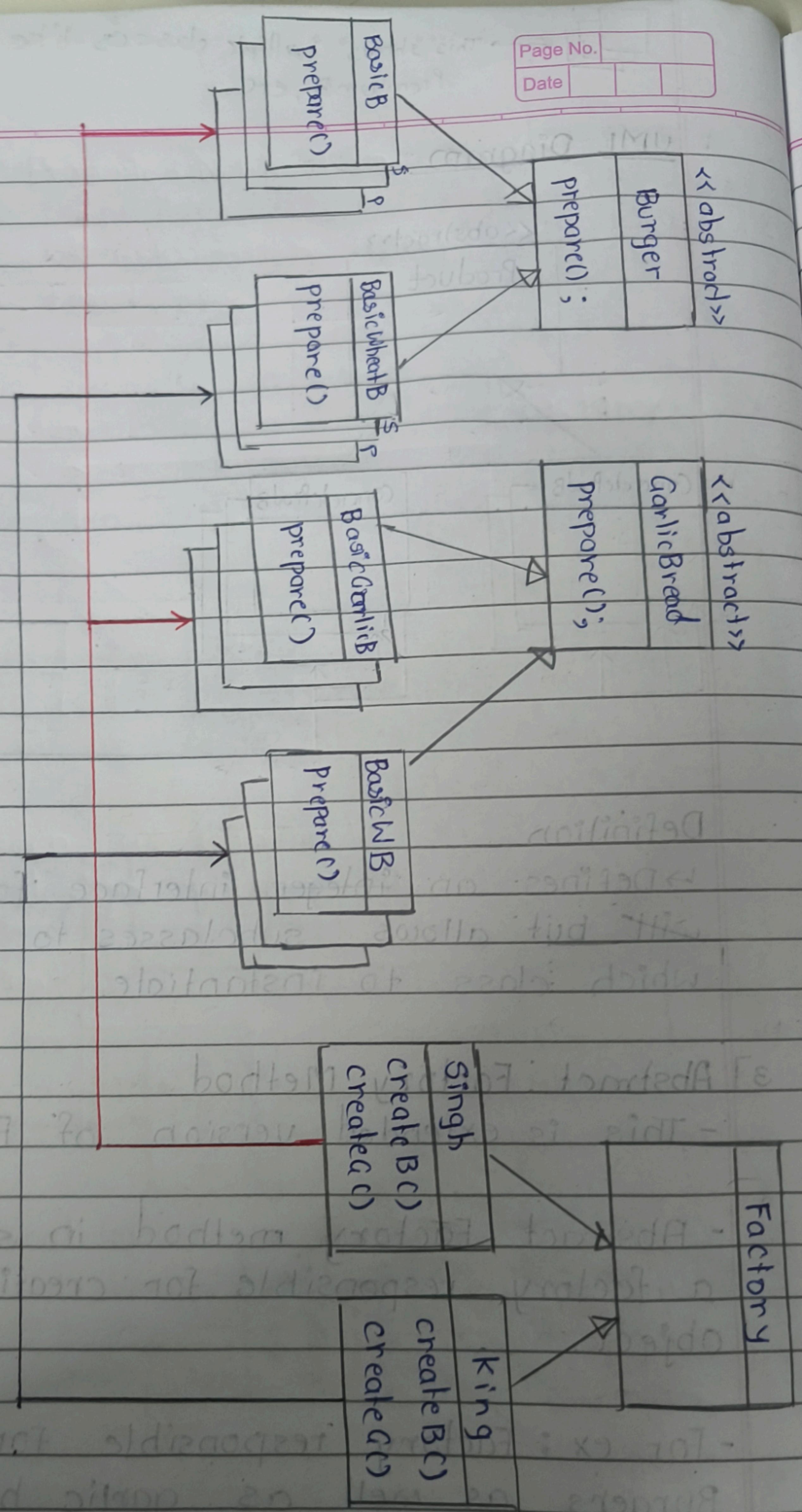
Strategy : runtime par algo vary karne hain - yha object bna hain bss use krne hain

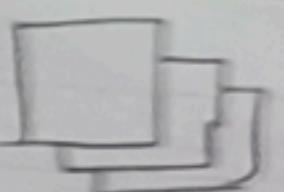
Standard UML Diagrams



Definition

→ Provides an interface for creating families of related objects without specifying their concrete classes.

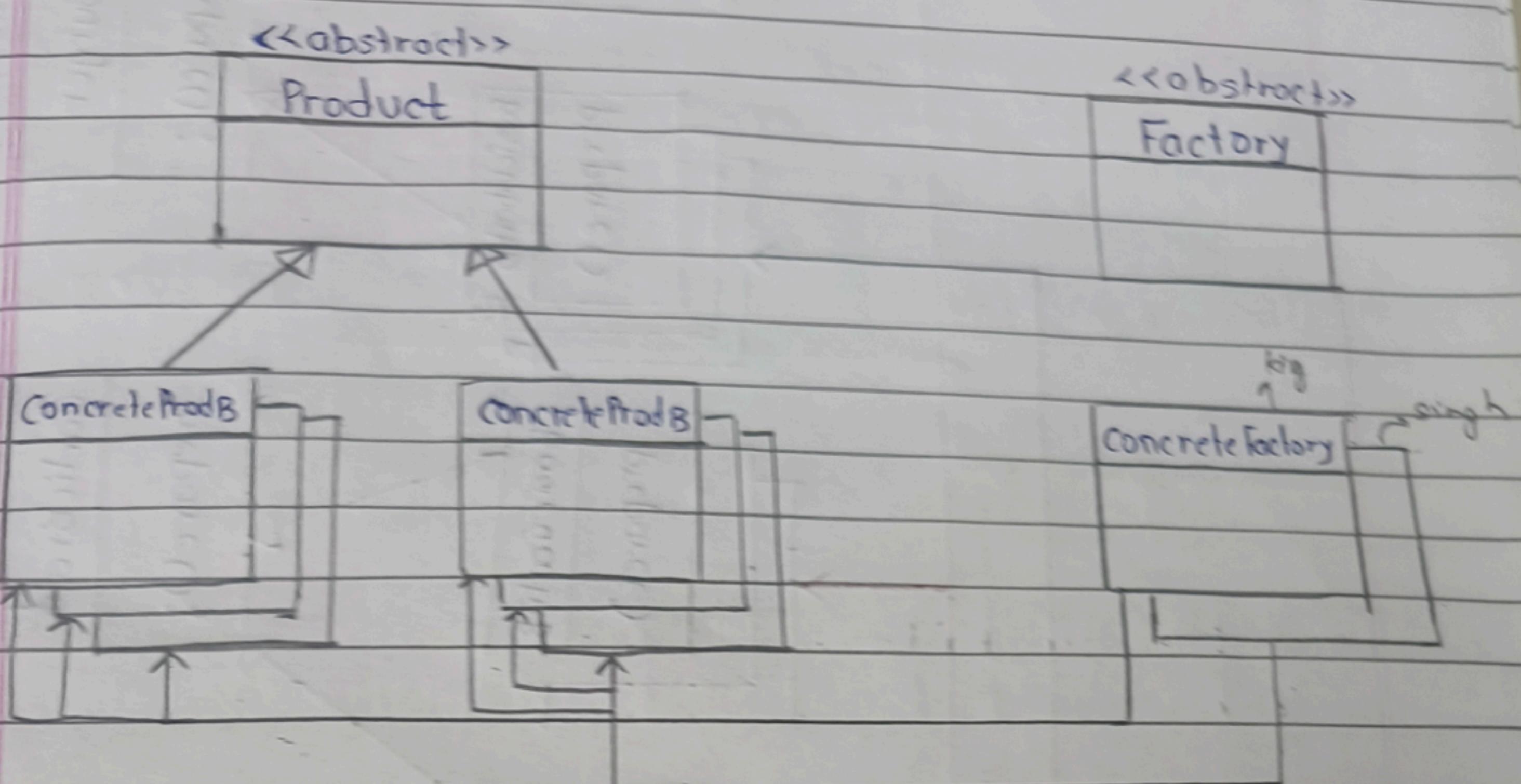




→ This shows multiple classes like basic, PremiumB, etc.

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UML Diagram



Definition

→ Defines an ~~integer~~ interface for creating objects, ~~with~~ but allows subclasses to decide whether which class to instantiate.

3] Abstract Factory Method

- This is extended version of Factory method

- Abstract Factory method in short simply means a factory responsible for creating multiple objects.

- For ex: Factory responsible for creating Burgers as well as garlic breads.