May
22-05-2025
Thursday

Day - 11
Lecture - 9

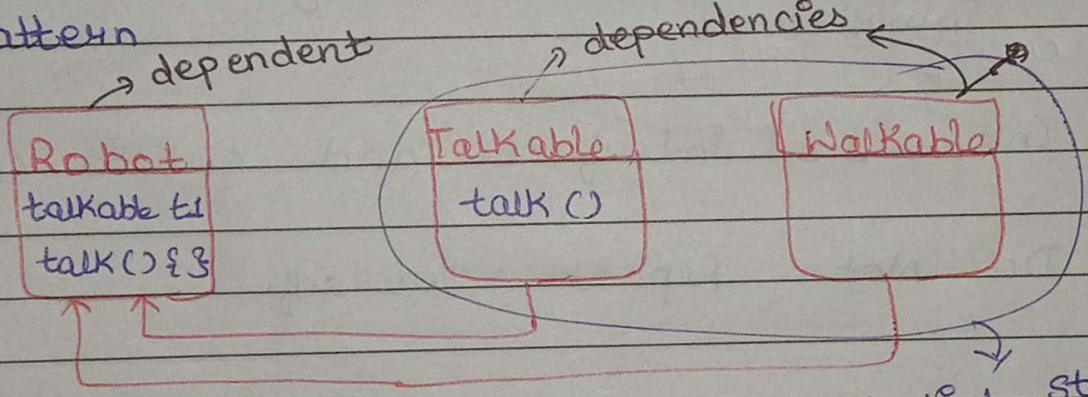
Factory Design Pattern

* Factory Design Pattern

In real world factory make a product

Factory is a class from where we get object.

In last lecture we studied Strategy Design Pattern



They called the method dynamically

Multiple strategies known as algorithm

In Strategic Design pattern we assume that the talkable has one object t1 then he call talk() method and call t1.talk

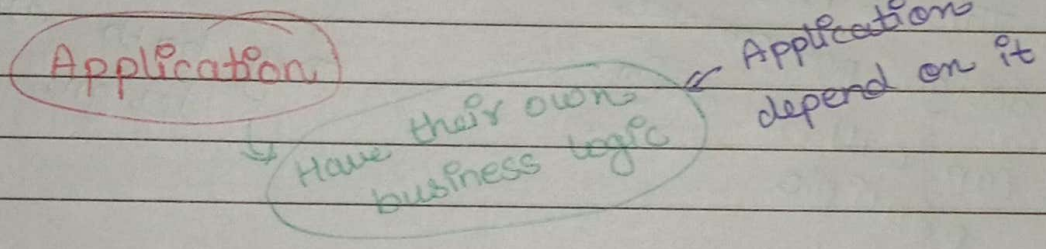
In strategic design pattern we assume that the talkable, walkable functionality has already created object. We only call created method.

t = new Normaltalk() → This is already created

We abstract the whole object creation logic.

When we write code then somewhere we have to define that object creation logic

Aim of Factory design pattern is that we have to separate the business logic from the object creation

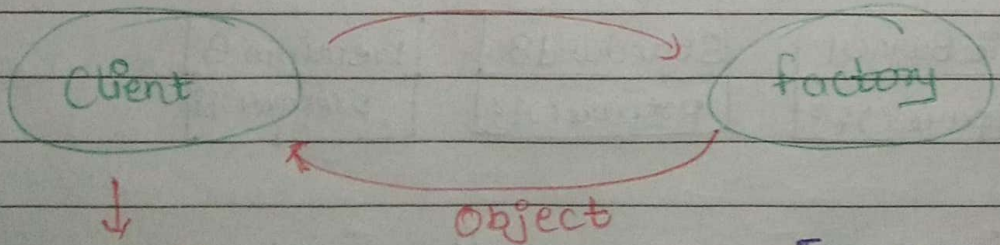


Example :- Notification System

Business logic - Notification Type, how it will go, whom it will go ...

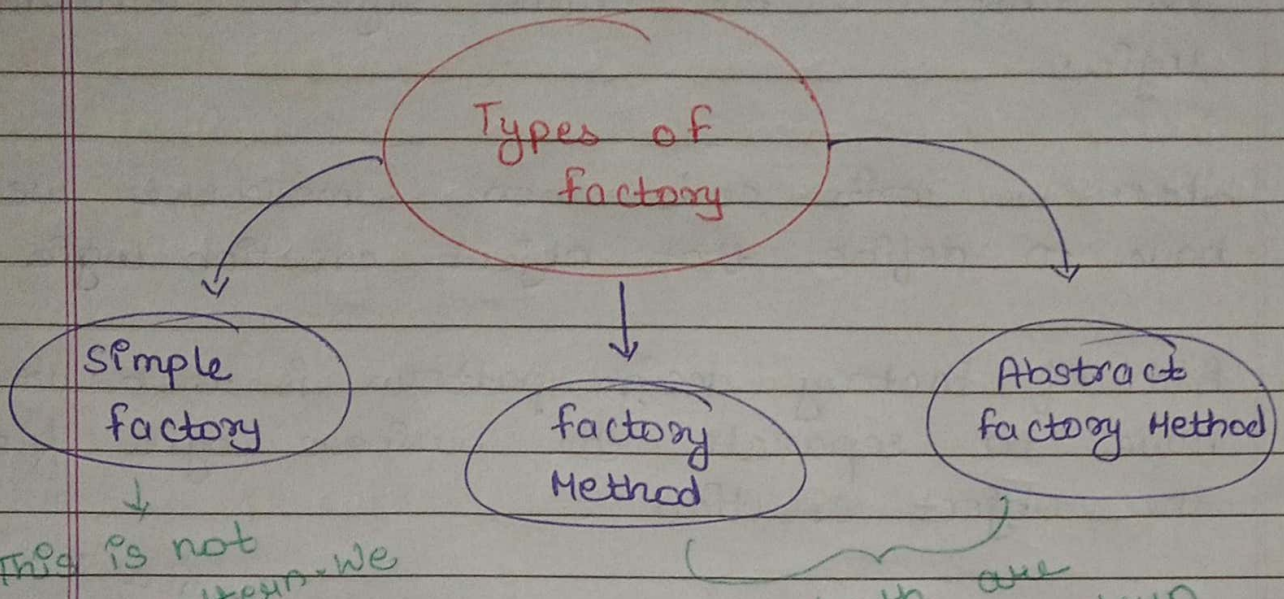
~~Objection~~ Object creation - Where - where the object will be created

This both should be separate because code become complex if we both put them

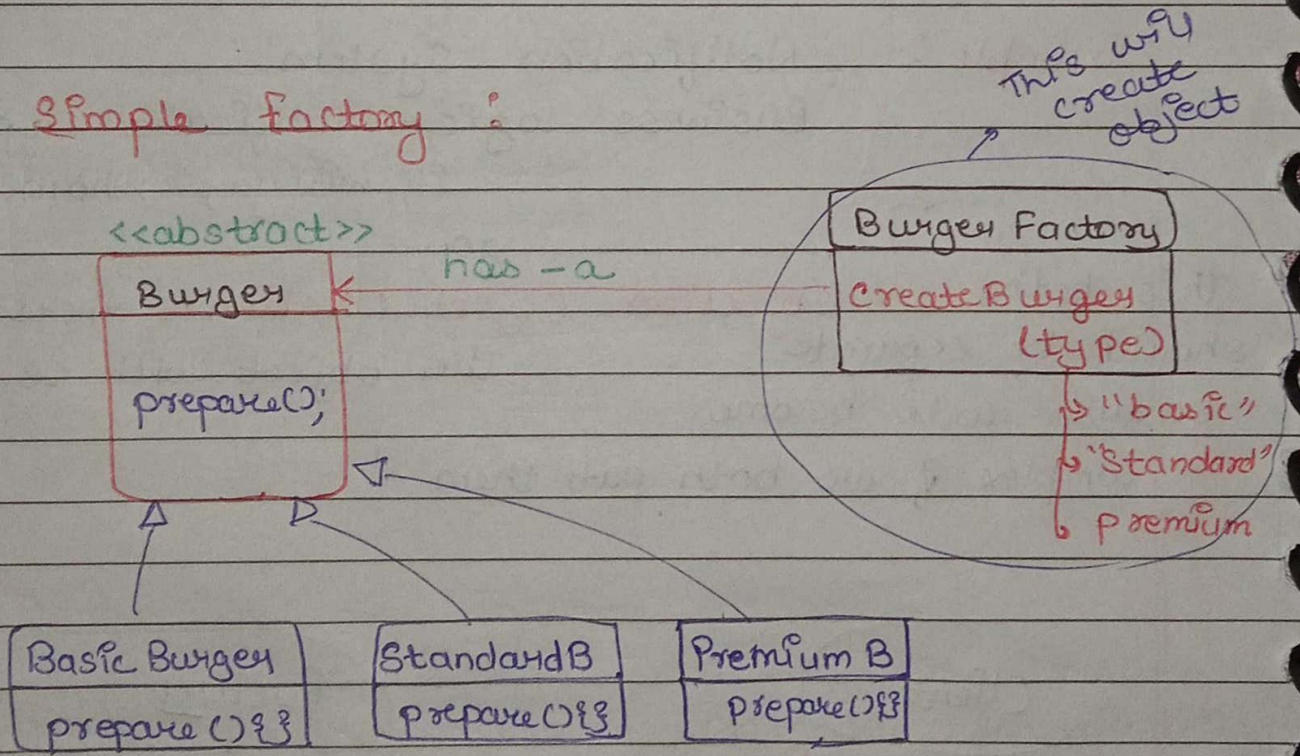


We don't tell client how object will be created

In every OOPS Principle design pattern we keep thinking how we can decouple client from application

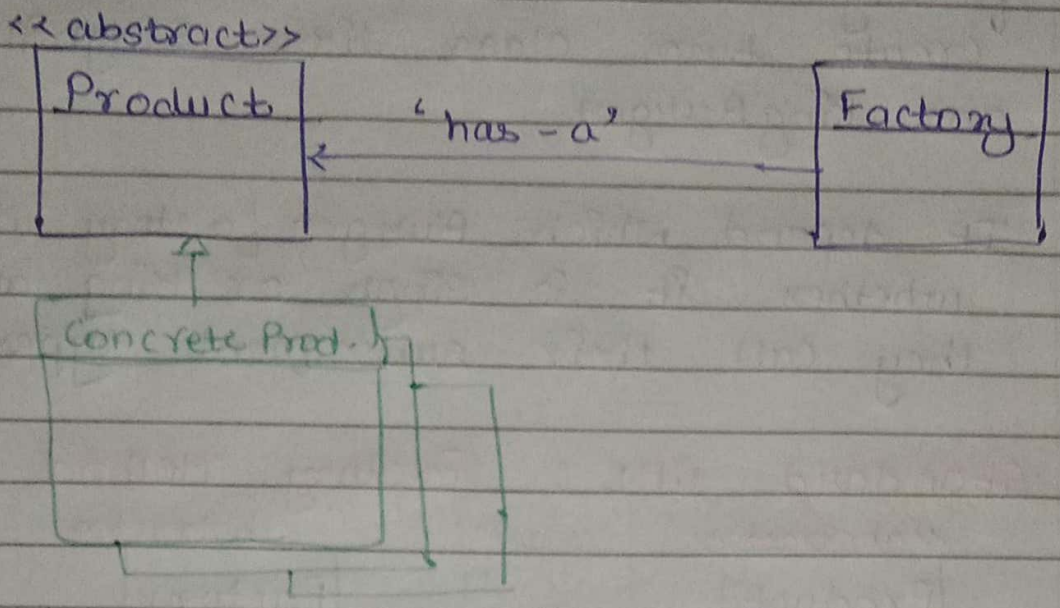


(1) Simple factory :

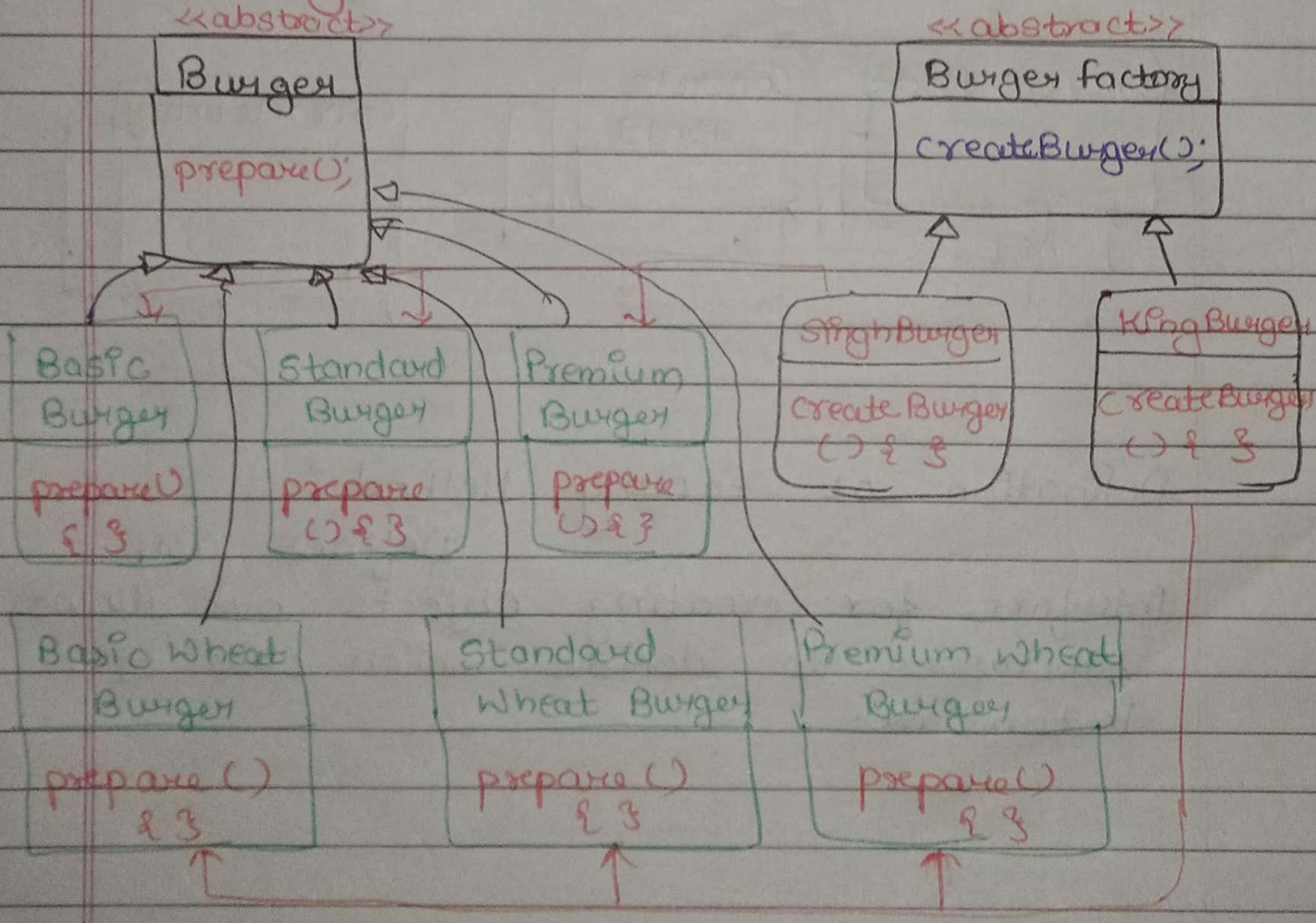


Simple Factory - A factory class that decides which concrete class to instantiate

(i) Standard UML Diagram for Simple factory



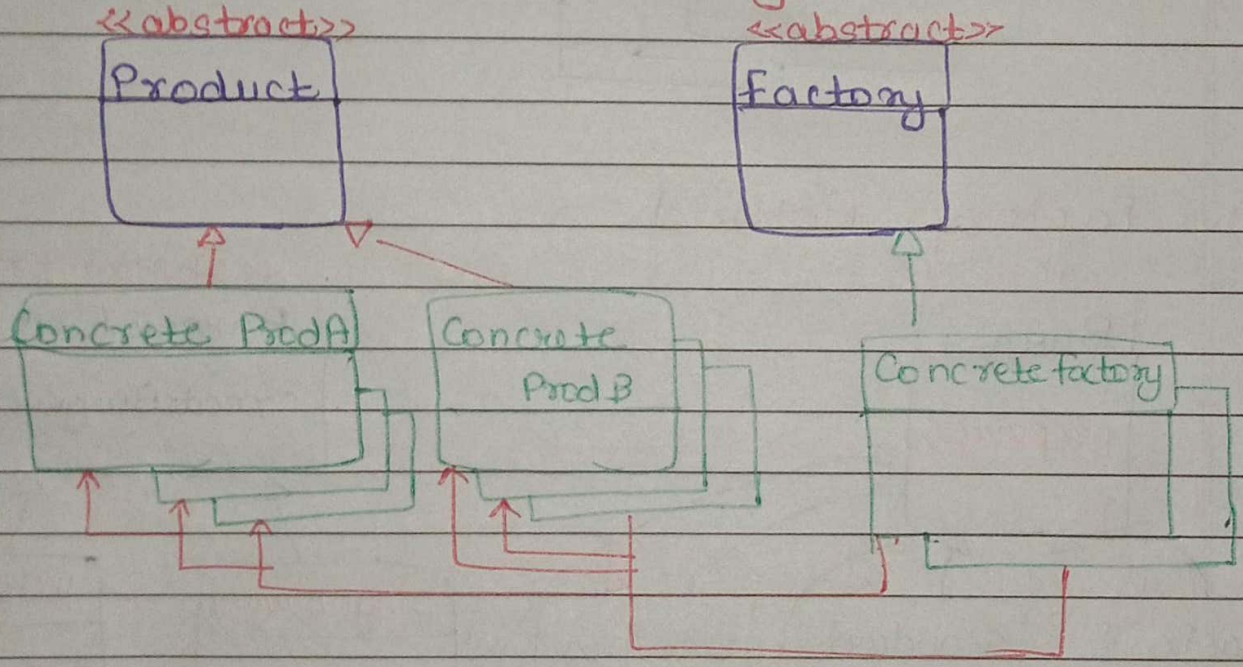
(ii) Factory Method



In Abstract we create the Burger factory as an abstract and then create two class like SinghBurger and KingBurger

It depend which Burger factory we call whether it is Singh or King and then they call their subsequent types

* Standard UML : Factory Method

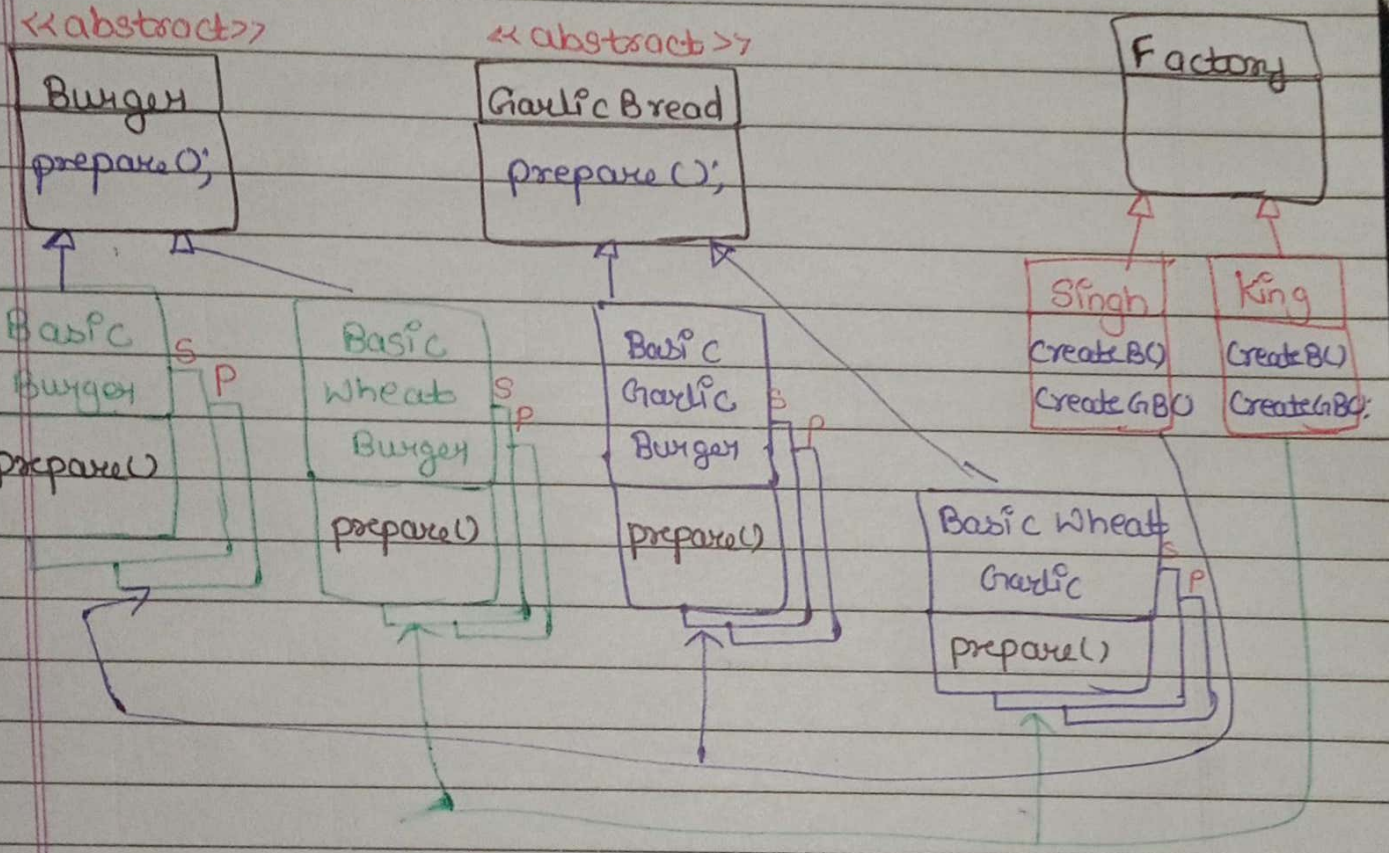


Defination of factory Method :

Defines an interface for creating objects but allows subclasses to decide which class to instantiate.

Provides an interface for creating families of ~~rel~~ ~~reate~~ related objects without specifying their concrete classes.

(iii) Abstract Factory Method: That factory which ~~make~~ is responsible for making more than one object



Standard UML Diagram.