Today's agenda
↳ How to approach a Problem.
↳ Design a Pen.

⌐ Types of LLD/oops interviews

1. Theoretical: OOPs knowledge

2. Design a system like: bookmyShow, Splitwise, elevator etc.
   HLD based with some LLD concepts

   ⌐ Class diagram → { 45·60 mins }
                    ↓
              No Coding
   ⌐ Big tech giants { Amazon, MS etc.}

3. Machine Coding
   ⌐ Designing + Working Code ~ 2-3 hours

   ⌐ Big startups: PhonePe / walmart / Zomato / Paytm etc.

↳ Machine Coding {2-5 hours}

↳ Clarify requirements
↳ use case diagram
↳ class diagram
↳ Schema design xx
} 45-50 mins

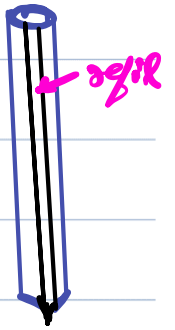↳ implement the code] 1 hr 30 mins

↳ Discussion on code] 10-15 mins

Design a Pen

> Anything that can write is a Pen.

1. Different types of Pen { ball, Gel, fountain }
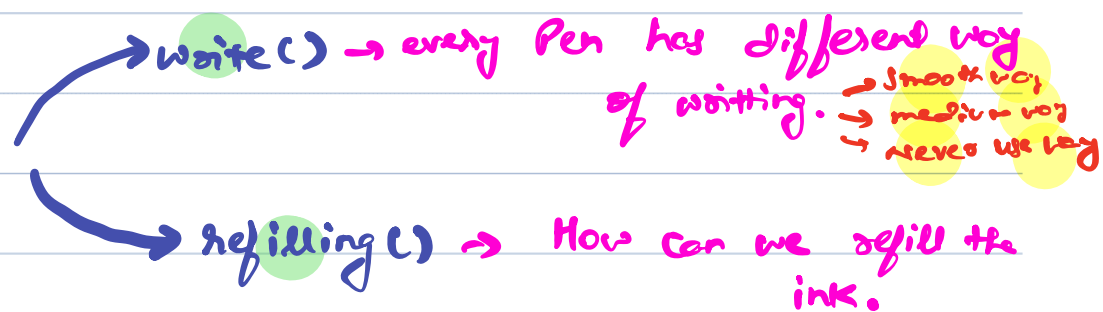2. Pen might have or haven't a refil.
3. Refil will have ink.
   > ink can be of different color or type.

→ refil

4. Refil has a nib. For fountain Pen, Pen will directly have a nib.

5. Every Pen will have brand, cost & weight.

6. Some kind of Pen can be refilled but some can't be

→ write() → every Pen has different way of writting. → smooth way
   → medium way
   → never use key

→ refilling() → How can we refill the ink.

> different way of writting: Strategy design Pattern.

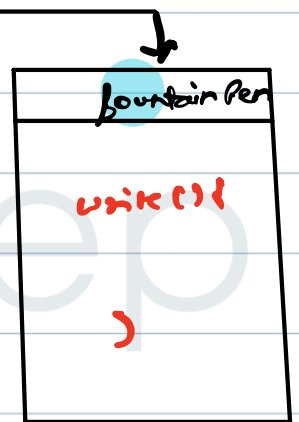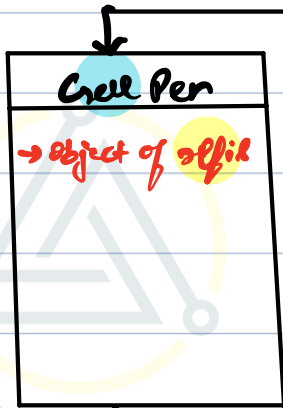> based on the input, we will create a Pen: Factory design pattern

Class diagram

↳ Nouns in requirements.

Abstract class

→

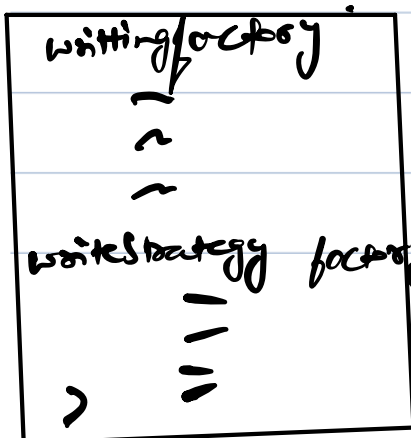| Pen |
| --- |
| brand : String |
| cost : int |
| write(); |

<< refillable >>
refill()

Gell Pen
→ Object of refill

Ball Pen
write () { ⤻

Fountain Pen
write (){ ⤻

Can be refilled ↴

Can't refill ⟵

Category A   **Category B**

Tejhor writing   direct writing   butterflow writing

→ How will you get object of refill in Pen ??

⟵ Strategy impl. for write method.

<< writeStrategy >>

writing factory.
~
~
~
writeStrategy factory(type)
=
=
>

Tejhor writing

write(){
=
)

direct writing string

write(){
=
}

butterflow writing

write(){
=
)

Refil
Ink
Nib

Ink
– color
– list<features>

Nib
– radius
– length