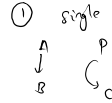


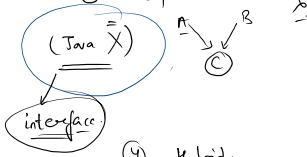
# 4 Pillars of OOPs

1. Inheritance
2. Encapsulation
3. Abstraction
4. Polymorphism

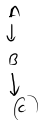
## 1. Inheritance.



## ③ Multiple Inheritance.

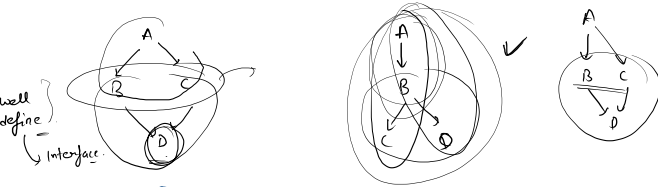


## ② Multi-level



## ④ Hybrid.

(Combination of 2 inheritance)

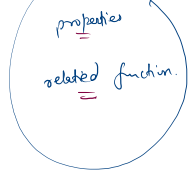


## ②

## Encapsulation.

to combine in a unit.

eg. class.



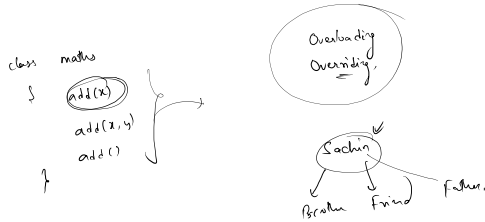
## ③ Abstraction

Hiding complex thing from user and providing useful content.

#### 4 Pillars of OOPS

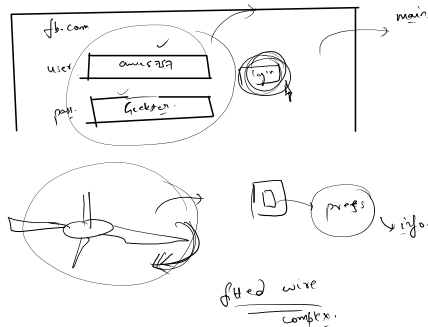
1. Polymorphism
2. Abstraction
3. Encapsulation
4. Inheritance

Polymorphism = poly + morphism  
many forms.



#### 2. Abstraction

Hiding complex things from the user  
& to show necessary info.



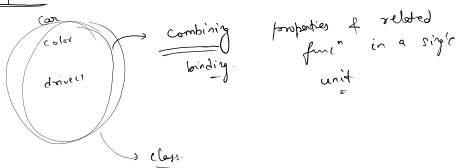
eg  
private. calculateRank ( )

```

{
  sum > 10k → 1
  sum > 5k → 2
  sum > 1k → 3
  likes == 0 → 4
}

```

## Encapsulation:

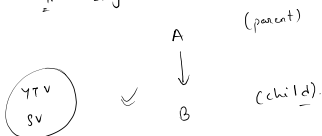


## Inheritance:

↳ Inheriting properties of parent class to child class (✓)

- ★ To reduce cost
- ★ To reuse code.

### 1. Single Inheritance



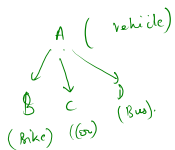
### 2. Multilevel Inheritance:



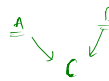
### 3. Hybrid

Combination of more than 1 type of inheritance.

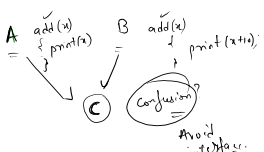
### 4. Hierarchical Inheritance



### Multiple Inheritance



Java



Install

Snstall

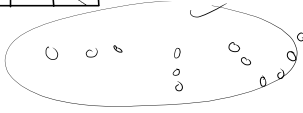
Java ✓

VScode ✓

# Tic Tac Toe (Zero Game)

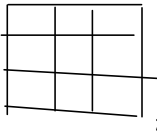
UI  
CLE

0	X	0
	0	
		0

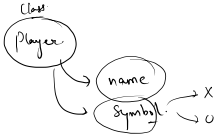


## Design Tic Tac Toe.

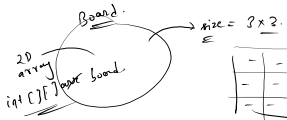
Main



1. 2 players
2. Board (2D matrix).
3. Play.
4. Winner } →



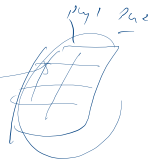
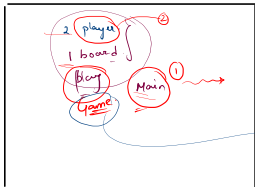
P  
B.



-	-	-
-	-	-
-	-	-

-	X	-
-	-	0
-	-	-

## Tic Tac Toe.



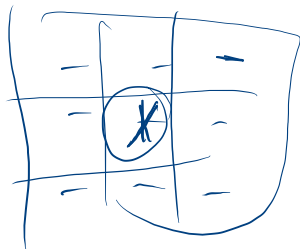
Package

Combination of multiple class.

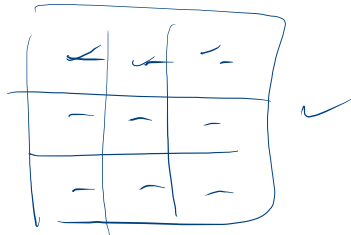
Player  
Board  
Desire

Gate type  
color  
Car

Game



started to play.



-	-	0
-	x	0
-	⊖	x

J  
'0'

H  
'x'

- ✓

check combination.

①  
↓  
②  
→  
③  
↗

		0
	0	
0		

		x
	x	
x		

④  
↘