

OOPS

↳ Encapsulation → Classes & Objects

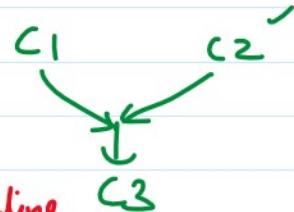
↳ Access Specifiers

↳ Inheritance → C1 Extends C2

↳ Polymorphism

fun1 (int a)fun1 (int a, int b)

Overloading



void fun1 (int a) X int fun1 (int a)

int b = fun1 (10)

@Override

A {

fun() {

}

↳ Polymorphism
↳ Many Forms

B extends A {

@Override
fun()

}

↳ Polymorphism
↳ Overloading
↳ Compile Time
↳ Polymorphism
↳ Static Polymorphism |
↳ Runtime |
↳ Dynamic

→ Abstraction ??
↳



- "declaration" ::

↳

getting all the important functions
without knowing the actual implementation

int sum();

B.T

public int diameter
bt.diameter()

↳ interface ✓

↳ abstract class

i) Interface ??

↳ Prototype

↳ Standard

3 teams

A
Stack
void push(ali)

B
Dynamic Stack
boolean push(ali)

C
MinStack
boolean push(ali)

syso (ds.push)

Standard / Prototype

public void push (int alc); → Interface

↳ func body ?? No

↳ fun defination

public interface SI {

public void push(int el); ✓

Implementation ??

public int size(); ✓

↓
SI

'
public int size();'
↓
Stack

public int peek();

public int pop();

public boolean isEmpty();'

{

class A implements I1{

{

inherit + body bari

Interface → Methods??.

Abstract ✓

↳ Only definition, no body

@ Override ??

↳ Same definition

↳ Args, name, type

Object of Interface → ??

NO!

↳ Class Thodi hai
↓

Body nahi hai

Data members of any Interface

↳ Ho static?? Yes

Final

Static ✓

↳ constant value

↳ value cannot be changed

class Student {

static int nos=0;

 Student() {

 nos++;

}

}



main() {

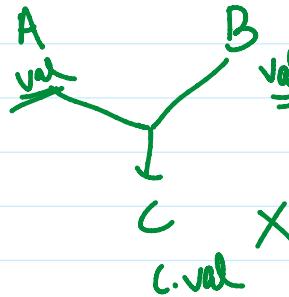
(Student.nos)

1G, 2G, 3G, 4G, 5G

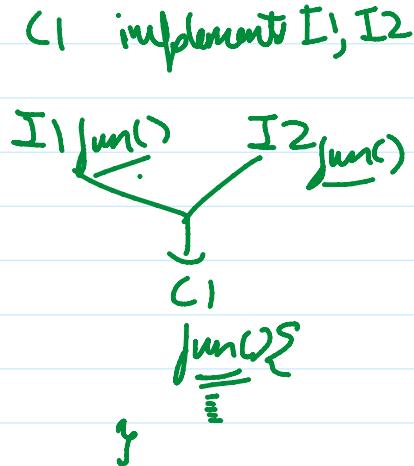
6
- 100 GHz
- 200 GHz

✓

Multiple Inheritance Allowed ??
↳ Classes mein? ↳ Java mein?
No Yes

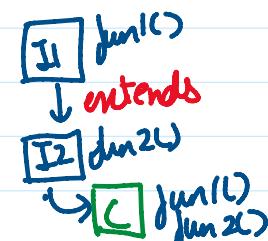
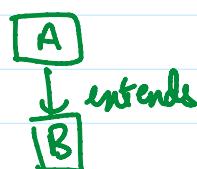
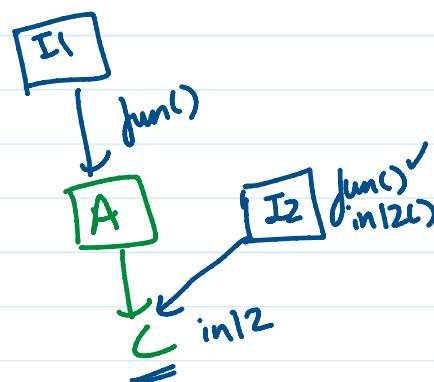


C1 extends C2
↳ One class can extend at max a single class



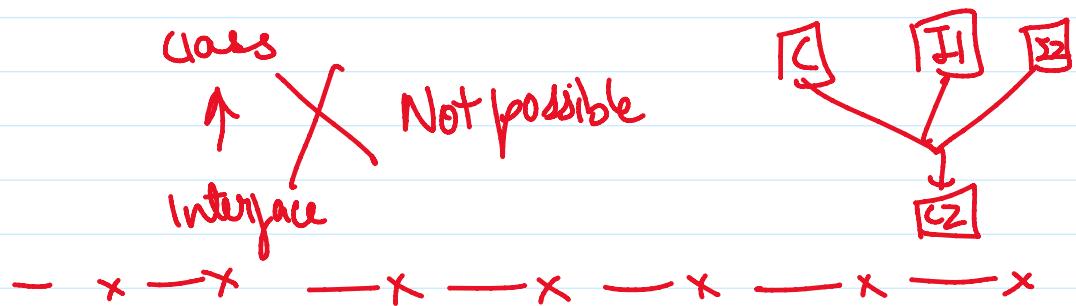
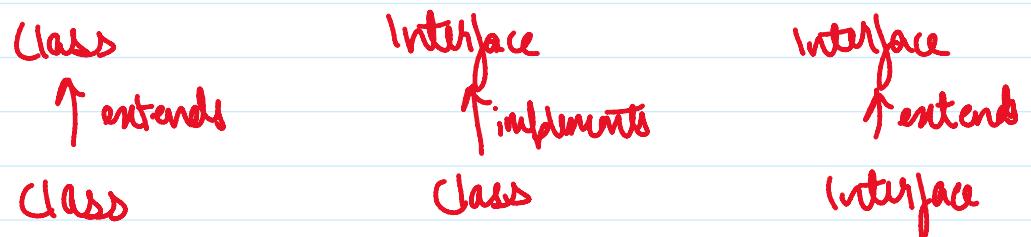
Can a class implement multiple interfaces?
↳ Yes

Collision hui toh → Body kabhi hi define



Can one interface extend/implements multiple interfaces? Inheritance ↳ inheritance +

multiple interfaces? Inheritance → inheritance
 YES!!!! body



Abstract class	Interface
↳ Abstract methods	↳ Abs methods
Abstract Class	Interface
→ Abs meth + Non Abs methods	→ Abs methods
→ No multiple inheritance	→ Yes multiple inheritance
→ Methods / D.M	→ Methods (DM)
↳ private	↳ <u>public</u>
↳ protected	↳ <u>static</u> + <u>final</u>
↳ public	
→ Partial Abs	→ Complete Abstract

→ Partial Abs

→ Complete Abstract

private, protected, public

↳ Encapsulation

Abstraction

= ↳ interfaces + Abstract

GENERICS

class Student {

}

spoo(s);

↳ generic func → Sabka Jawab hai
iske pass

↪ → Kuch - type ki argument ayege toh
process kar dunga

ArrayList < String >

<>

vs

Object

↳ Boundaries ✗

can set
boundaries

this. — o

compareTo

this — o

↳ $> 0 \Rightarrow$ this ki ..

\neq $\overline{t} \geq 0 \Rightarrow$ this ki
 priority ↑
 $A \downarrow 100$
 $B \downarrow 180$
 $= 0$
 $< 0 \Rightarrow$ o ki
 priority

Object extends Comparable
 ↓
 :
 :
 :
 :

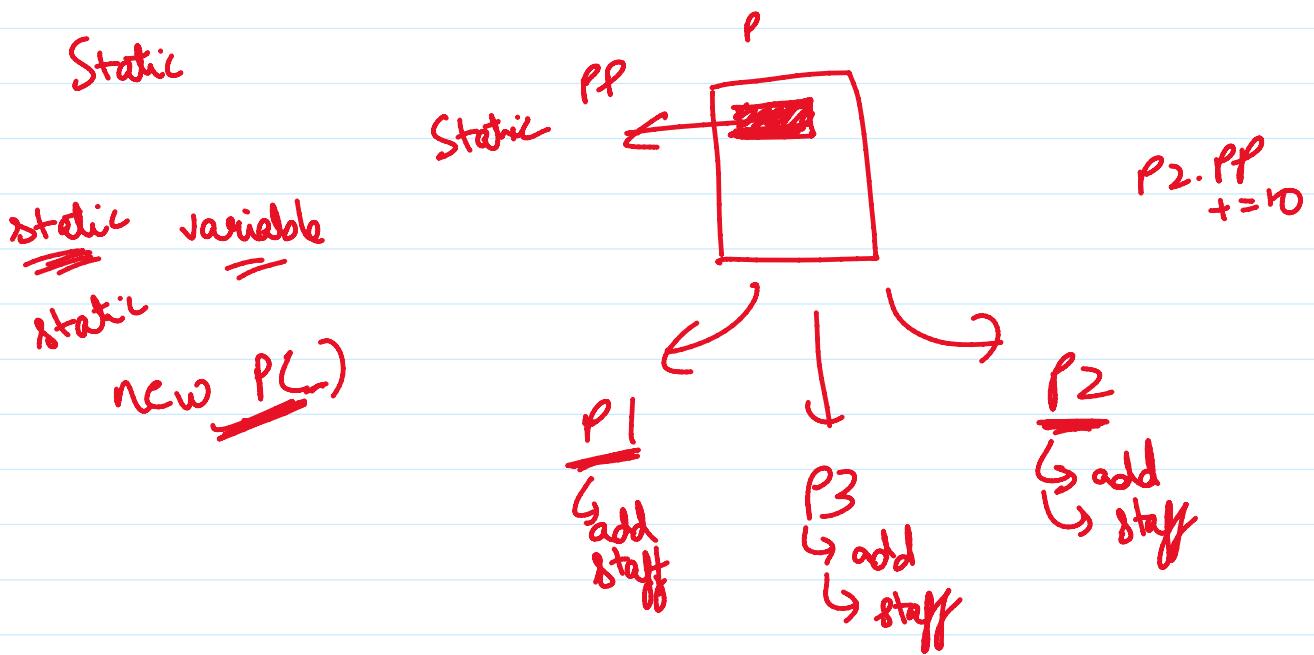
Object
 ↓
Comparable
 implements
I extends Comparable

this.age - o.age

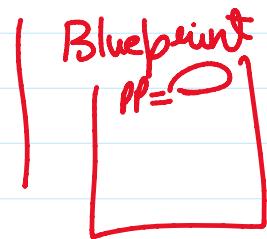
Increasing

o.age - this.age

$\underline{ABC} \geq \underline{DEF}$
 Compare



Heap



PP petrol price

PP. get source()
↳ static

i) $\frac{N \cdot S}{\downarrow} \quad DM$ from S.function
object
static