

Java

Date

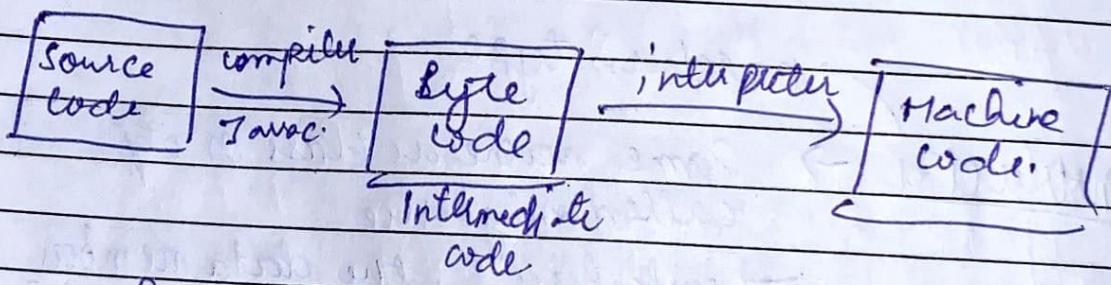
Class → user defined data type which defines properties & its functions.

Human being class
actions → functions
body parts → Object

Class doesn't occupy space until an object is instantiated

Object → An instance of class

JVM → Java Virtual Machine.



Java → feature independent
portable

purely object oriented
robust & secure

multi-thread → main program → small prog
↳ alag alag small prog
execute small
error small
prog prog

name of class.

Date

public class Main {
int x = 5;

public static void main (String [] args) {
Main myObj = new Main ();
System.out.println (myObj.x);
}

space of Variable of obj in heap, starting address stored
in stack

→ no return type

Constructor → Some name as Class or obj
called only once

→ initialises the data members of
new objects generally

Job bhi
new ()
at least it
constructor
will go ho
no

① No arg / parameter

② Parameterised

default constructor

provide default
values to obj
like 0, null
etc -

③ Copy → obj ct in obj

↳ used to
declare & initialize
an obj from
another obj.

many forms

Date

Polymorphism → present same interface for different data types

(1) Compile time → more than one func with same name in diff para
function overloading
some class mai, same name
Ref function w diff parameters use Rota hai.

(2) Run time or Dynamic
func overriding

different - different class mai some name ka func with same or diff parameters use hata h toh us called func overriding

Class A/

public void sum(int x, int y)

{
 = =

 }
 y
 public void sum(int a, int b, int c)

 }{
 = = =
 S

Class A/

public void sum (int x, int y)

{

= =

y
}

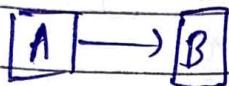
Class B@ extends A
public void sum (int a, b, c)

Inheritance → process in which one object acquires all props and behaviours of parent class.

① derived / child class

parent / base class.

① Single inheritance



Class A of.

=

data member

memberfunc

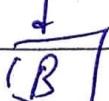
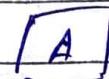
y

Class B extends Class A

of

y

② Multi-level inheritance.



Class A of

=

}

Class B extends A of

y

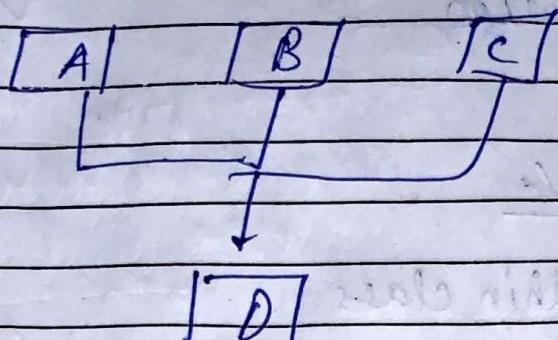
Class C extends f

y

not in Java

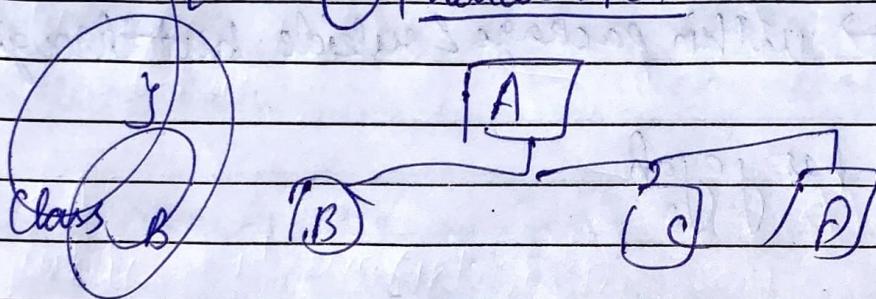
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③ Multiple



class A{}

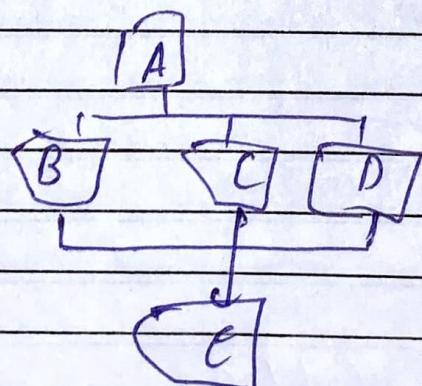
④ Hierarchical



B - ex 1

class A
class B

⑤ Hybrid Hierarchical + multiple.



→ name same as class name
Date

Constructor → automatically called during obj creation

Access Modifiers in Java

- ① Private → only within class
- ② Default → only within package + within class
- ③ Protected → within package & outside but through child
- ④ Public → har jagah

Encapsulation → Wrapping code and data together in a single unit

→ hide

→ setter, getter

Abstraction → hide implementation and show off only functionality

what ✓ how X

Achieve abstraction

① Abstract Class
(0 → 100%)

- can't be instantiated
- needs to be extended & implemented.
- abstract keyword

```
abstract class Animal {
    abstract void walk();
    void breathe();
    cout ("This animal")
}
Animal()
```

② Interface (100%)

blueprint of class.

- multiple inheritance achieve.
- achieve abstraction.

interface

class	extends	implements	interface
class	class	class	interface
	implements		interface

```
interface Animal {
    void walk()
}
```

```
class Horse implements Animal
```

Error → mistakes.

① Compile-time

compile karte
hme error

eg. : syntax

② Runtime

I note
run karte hue
error

eg. : a/o
array out of index

Exception → Run-time par jo error gaya hota hai

Exception Handling → Runtime ~~par jo error~~
^{pe kech}
aata hai, ^{use find, remove}
statement that
try → causes ^{karna}

catch → handles

finally → execute the necessary
part of the code

throws → throws exception

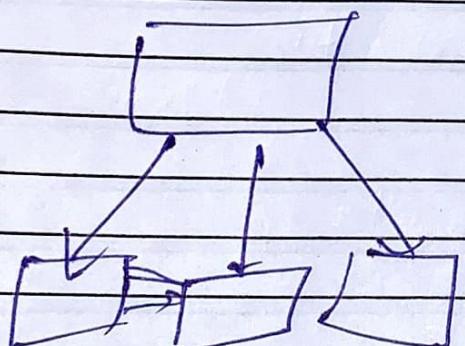
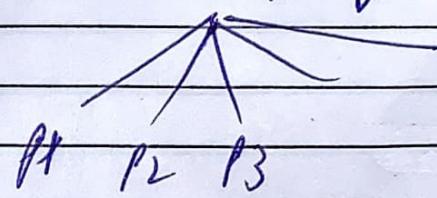
throws → declare an exception.
there may occur.

<u>throw</u>	<u>throws</u>
<u>throws</u> ex cp	declare:
checked + uncheck	
one throw	multiple throws

Threads → light weight process
 ↗
 shared mem → Smaller part of any prog.

Multi-threading

main prog



Java package → Bunch of classes.

API

user defined

(run())

- ① lang
- ② util
- ③ I/O
- ④ awt
- ⑤

Date

byte → variable 8 bit

Catch → handles the exception

try → finds what causes.

double → 64 bit float

final →

finally →