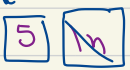
OOPS (Object Oriented Programming)

Test → Sat to Wed
Anytime, 3 hours — 5 Coding Questions ~ Easy to Medium
→ Any Prog Lang

Doubts →
1. ^ XOR operator, 2N + 1
2. 2D ARRAYLIST
3. nextLine()

nextInt



51% Now
Extra line
nextLine()

1 0 \n
2 0 \n
3 0 \n
4 0 \n
5 0 \n

for(---)
S = sc.nextLine();

Bitwise operators → operate on Bits

+ − * / → Arithmetic

& , | , ^ ,

cond1 && cond2 → logical AND

5 & 7 → on bits

5 → 1 0 1
7 → & 1 1 1

1 0 1 = 5

2 | 3

2 = 0 1 0
OR 3 = 0 1 1

0 1 1 = 3

5 & 7 AND

1 & 1 = 1
1 & 0 = 0
0 & 1 = 0
0 & 0 = 0

| OR

1 | 1 = 1
1 | 0 = 1
0 | 1 = 1
0 | 0 = 0

(^) XOR (Exclusive OR)

Two Bits are diff → 1
——— are same → 0

1	^	1	= 0
1	^	0	= 1
0	^	1	= 1
0	^	0	= 0

→ 'Exclusive' → Exactly one of bit should be 1

$5 \wedge 7 = (2)$

⇒ 101
⇒ ^ 111
010 = (2)

~~5 ^ 7 ^ 5~~
2 ^ 5

2 = 010
5 = 101
111 = (7)

output → ~~3 ^ 7~~ ^ (8) ^ ~~3 ^ 7 ^ 5 ^ 5~~

101
101
000

2N + 1 → Array list

↳ Unique No

Bitmasking (skip)

2 unique

2N + 2

select A → 5 ^ 6 ^ 7 ^ 4 ^ 8 ^ 6 ^ 7 = (4)

select B → 8 ^ 11 ^ 11 = (8)

101 110 111 100 1000 101 110 1011 1011

5, 6, 7, 4, 8, 5, 6, 7, 11, 11

res XOR → 8 ^ 6 ^ 7 ^ 8 ^ 4 ^ 8 ^ 6 ^ 7 = ~~8 ^ 4~~

= 4 ^ 8

⇒

4 → 0100

8 → ^ 1000

res ⇒ 1100

one of the bit is set is result (any position)

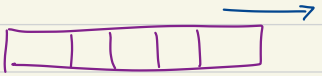
Exclusive

2D ARRAYLIST

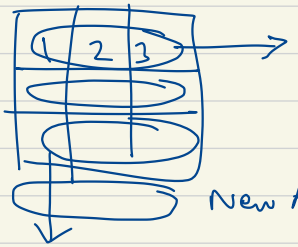
ArrayList

↑

```
ArrayList < Object >  a = new ArrayList <Object> ( );
```



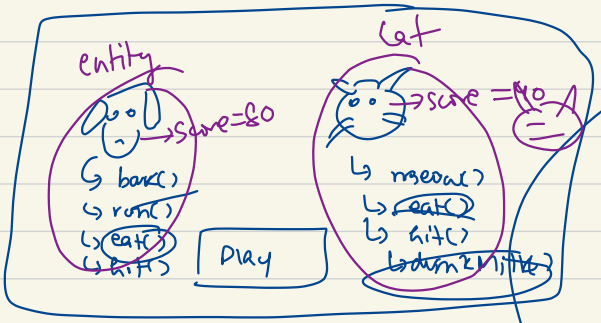
// it can grow dynamically




```
Arraylist < Arraylist<Integer> >  a = new
Arraylist < Arraylist <Integer > > ( );
```

Object Oriented Prog

Not a ~~Logic~~ / Algo way of writing code in terms objects



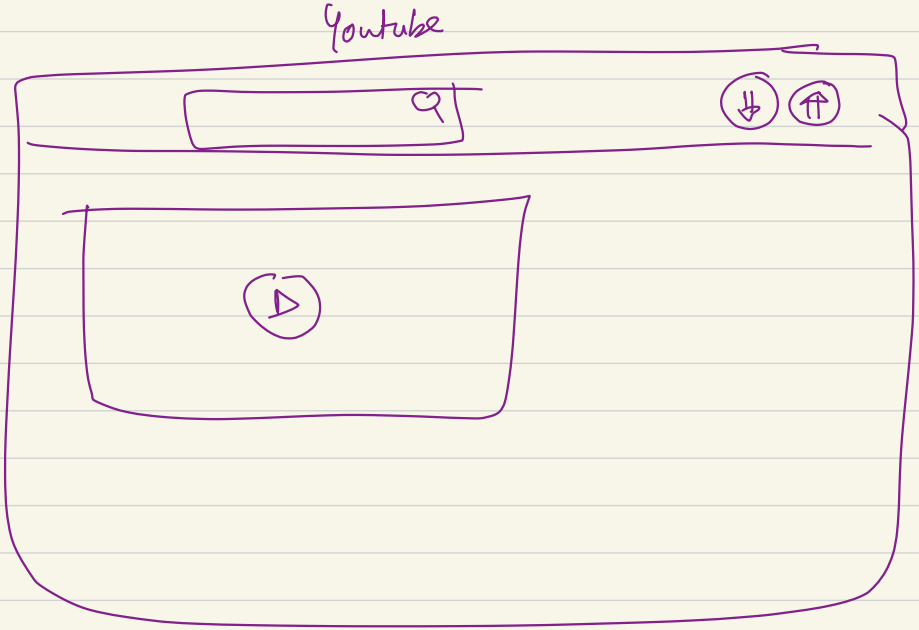
vgly

```
class Game( ){
    void bark( ){
    }
    void Dog run( ){
    }
    void catrun( )
}
```

```
void eat( ){
    if
    if
}
```

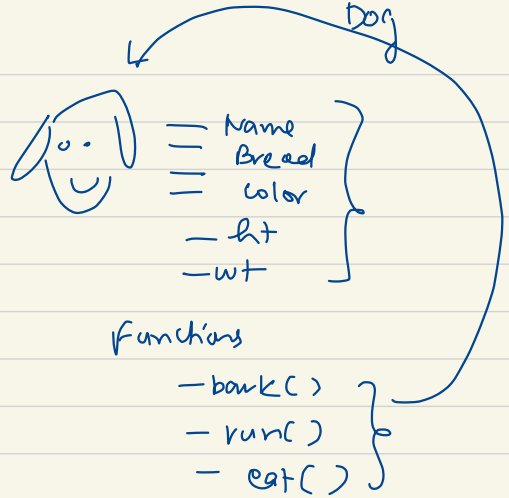
```
Game (
    Dog d
    cat c_i
}
```

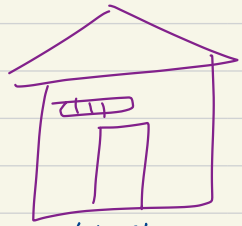
~~int dog score~~
~~int cat score~~
~~int cat2 score~~



Search Bar
↳ ≡

Video ~~Player~~
↳ play()
↳ Pause()
↳ (Vext Video()





Properties
→ Address
→ windows - 4
→ area - 1000 sqft
→ Cost - $ 1000
knows

Object
(Real time memory)

→ TurnOnLight();
→ Lock();
→ UnLock();
Actions (functions)

Blueprint
(class)

Lines of Code with no actual existence

class Dog { }

class House { }

Class
- data members
- methods

Data Members can be public (by default) and they can be made private.

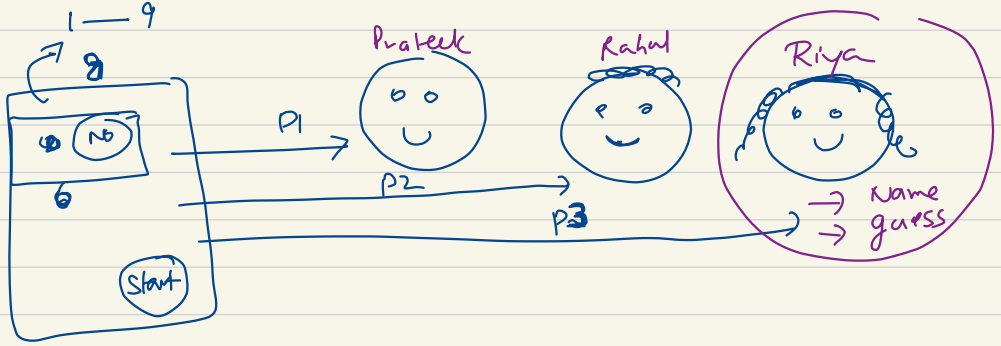
If you want to read private data, you can create a getter function.
If you want to write private data, you can create a setter function inside the class.

Special Function => Constructor (name is same class name)
=> To init the objects of that class (Parametrised Constructor)

Class just like a template, you have a create Objects of that class.

10.40

- Guess Game



Game stops when some guess correctly
If all 3 guess fail → everyone get a new chance

```
Game {
    expected Number = ?
    Players p1, p2, p3
    start() {

    }
}
```

```
class Player {
    name
    guess =
    void makeGuess() {
        guess → (1, 9)
    }
}
```

Test ( )

↳ main( )

↳ game start( ).

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