Backtracking - II & Doubt Clearing Session

Foundation Course on Data Structures & Algorithm - Part I

Love Babbar • Lesson 24 • June 4, 2022

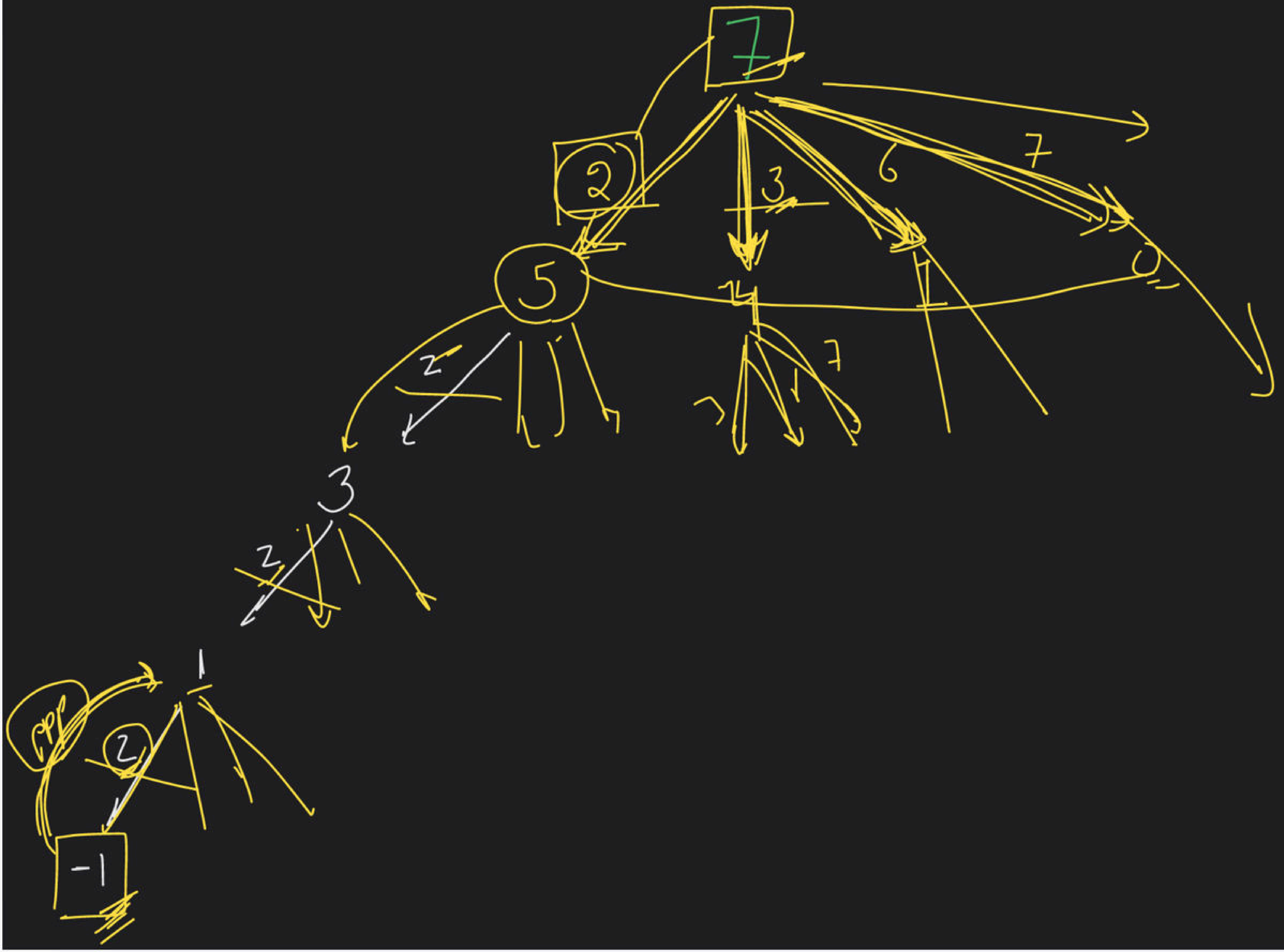
→ ① Backtracking :-

Level-1

candidates[] = { 2 , 3 , 6 , 7 }

target = 7

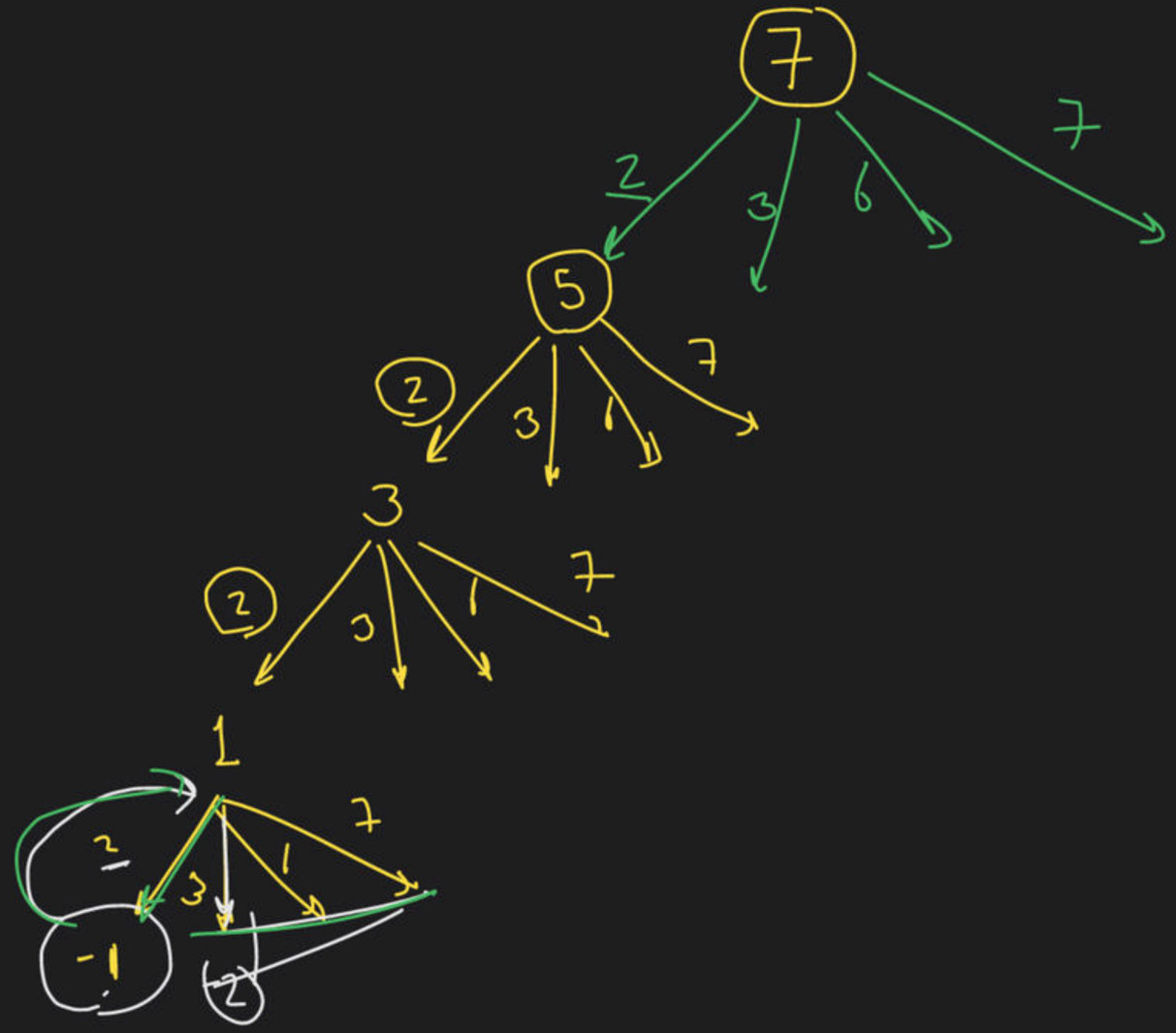
o/p → { [2, 2, 3] , [7] }



{2, 3, 6, 7}

```
if( == 0)
{
    ans store
    return;
}

if (trg < 0)
    return;
```



{2, 3, 6, 7}

sorted

if (candidate[i] > target)
return;

early stopping

}

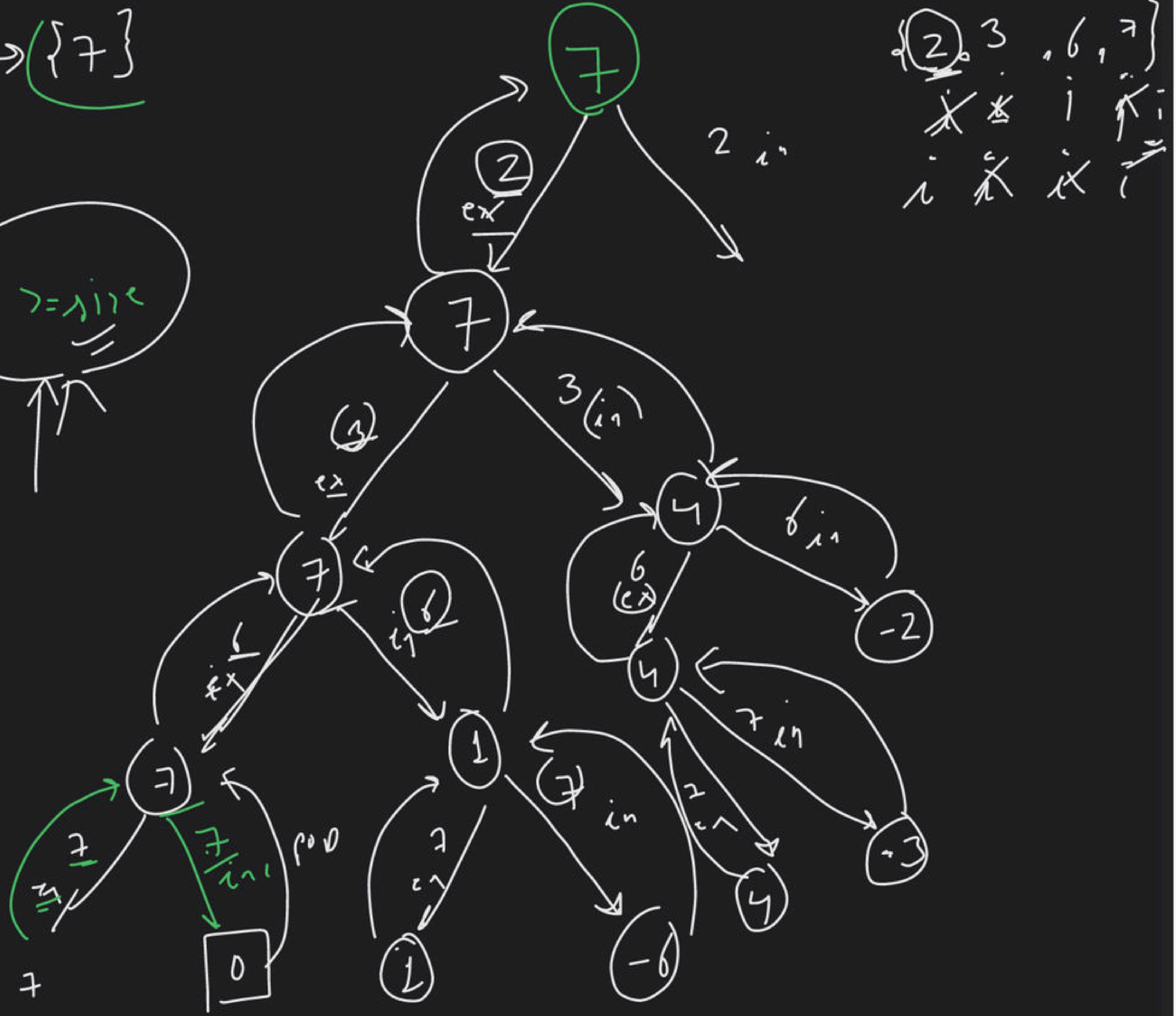
//BC1 == 0 → {7}

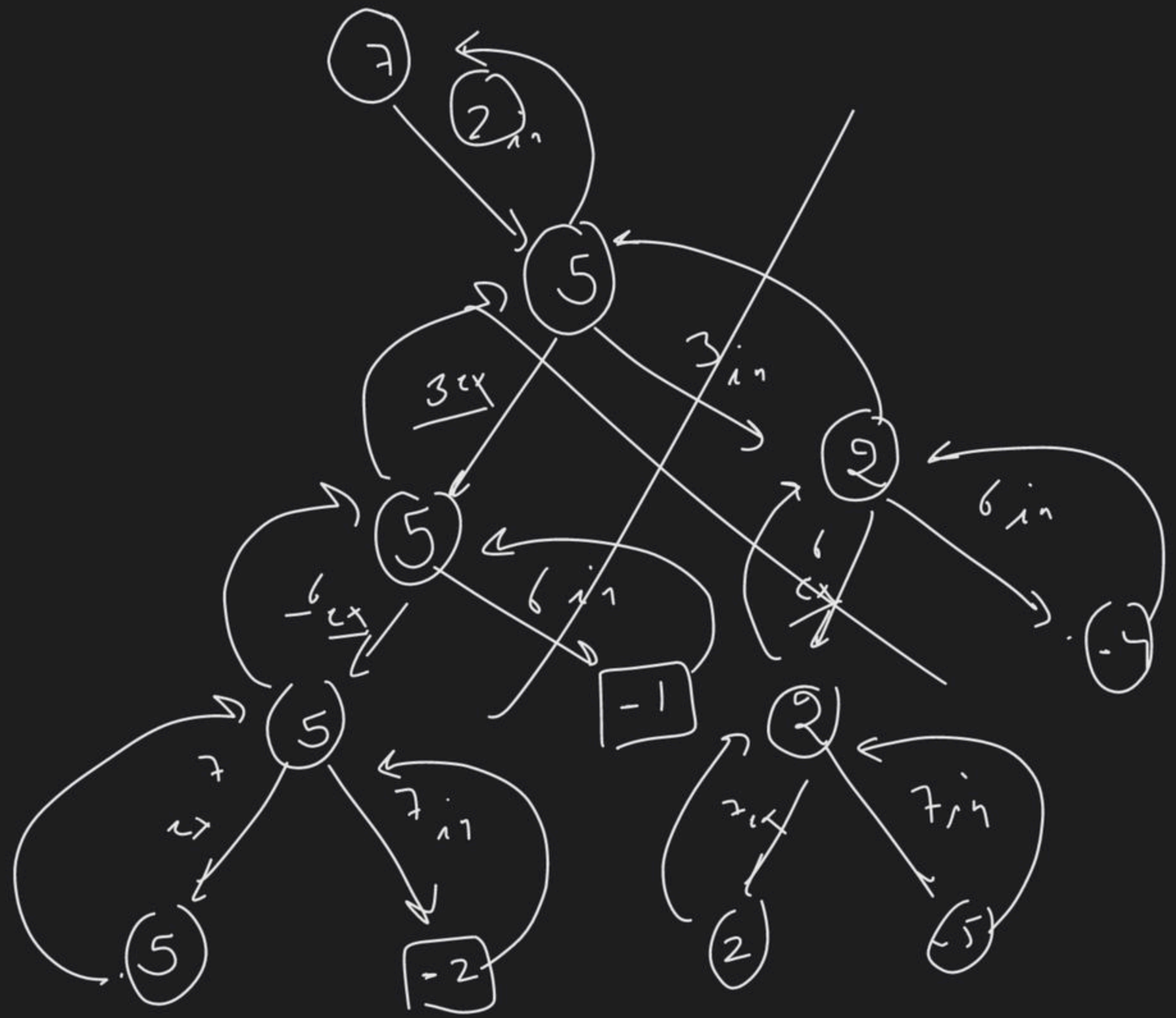
//BC < 0 || i >= size

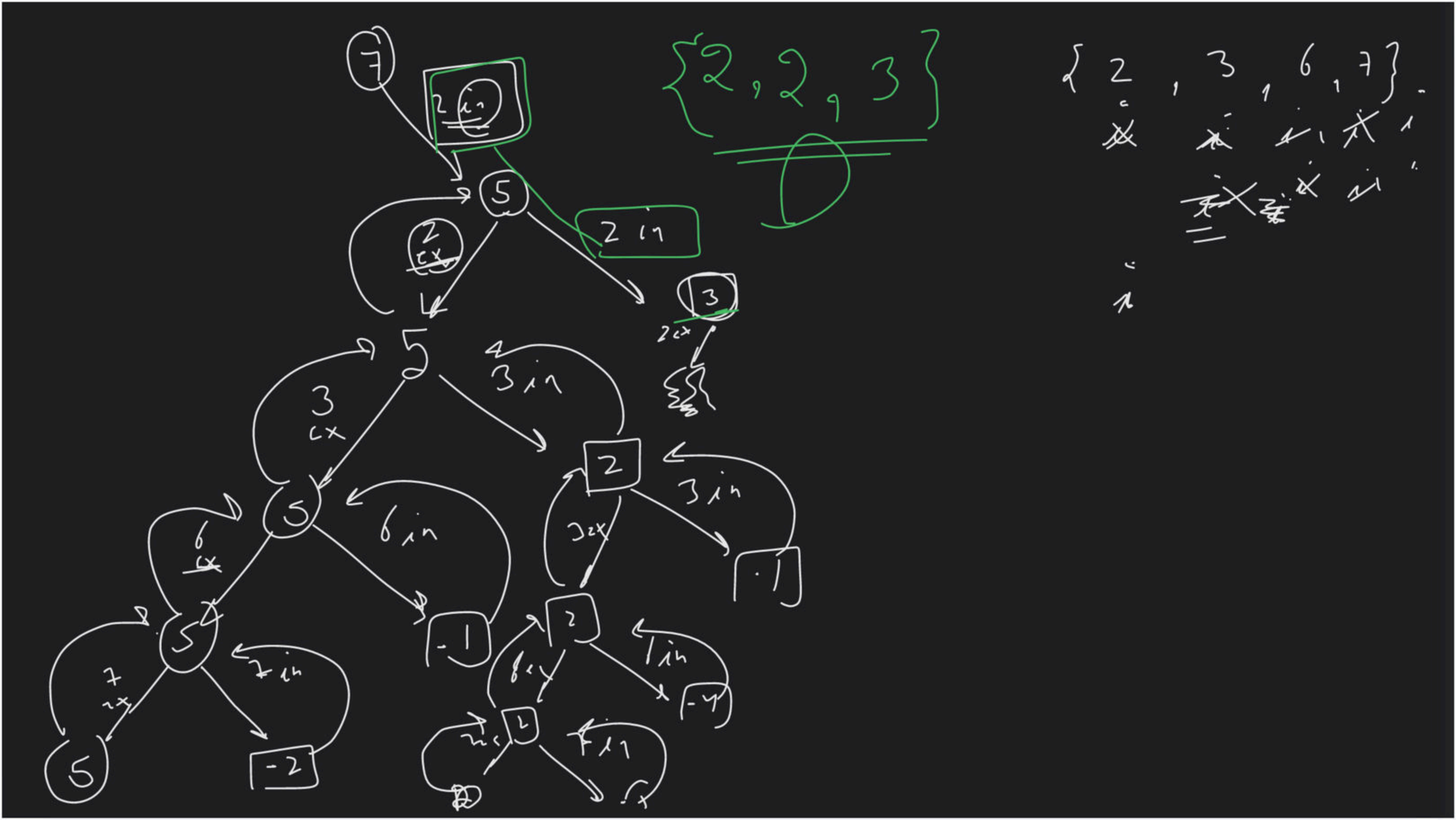
//exclude

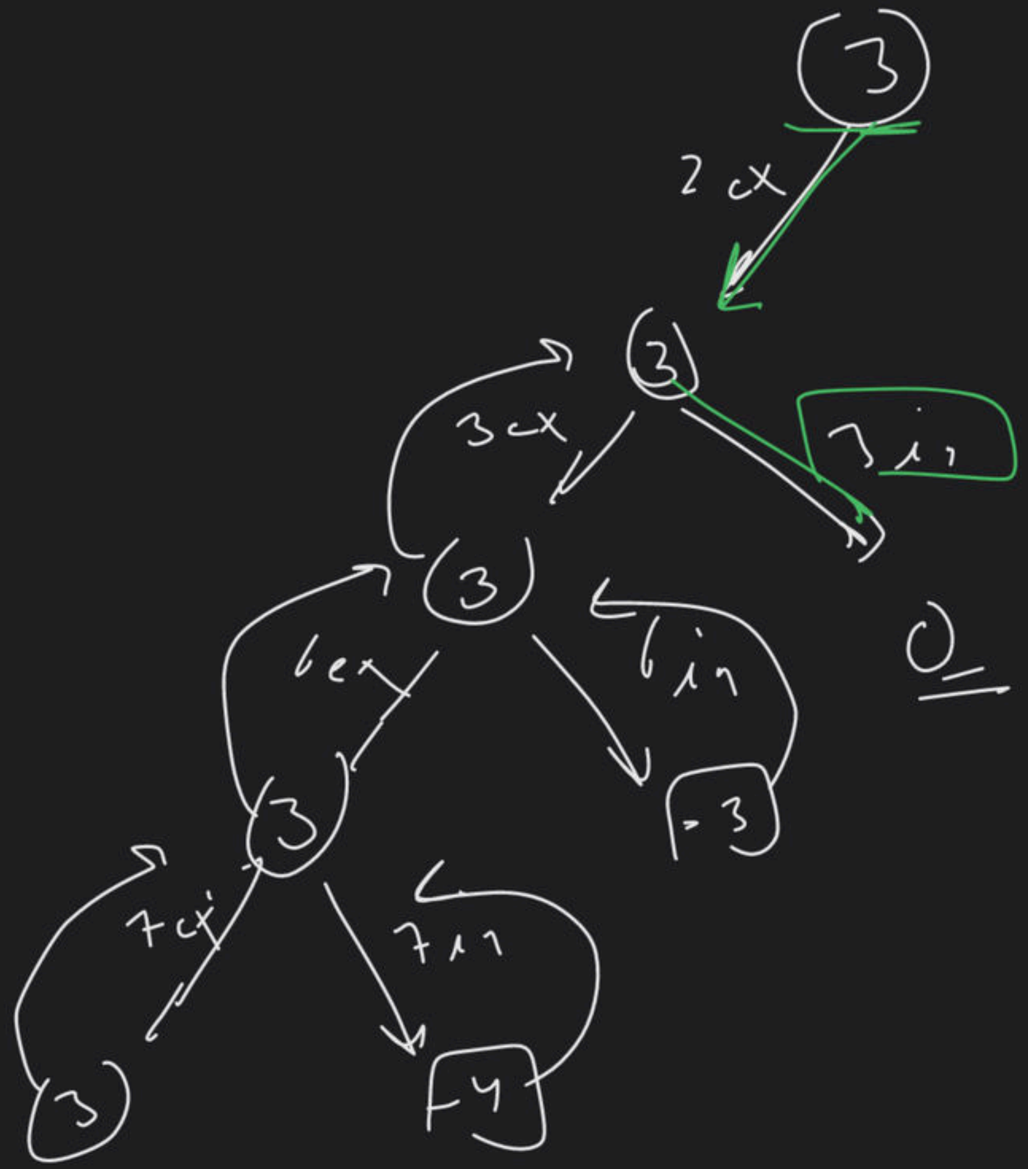
//include

}

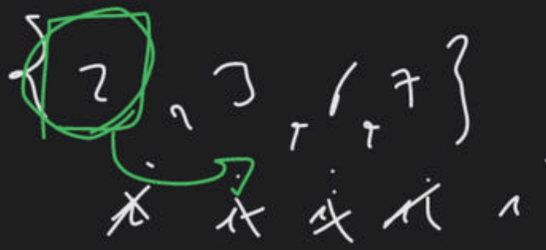



7
2
5
3 left
3 right
5
2
6 left
6 right
6 left
6 right
-1
-5
5
2
7 left
7 right
7 left
7 right
5
-2
2
-5

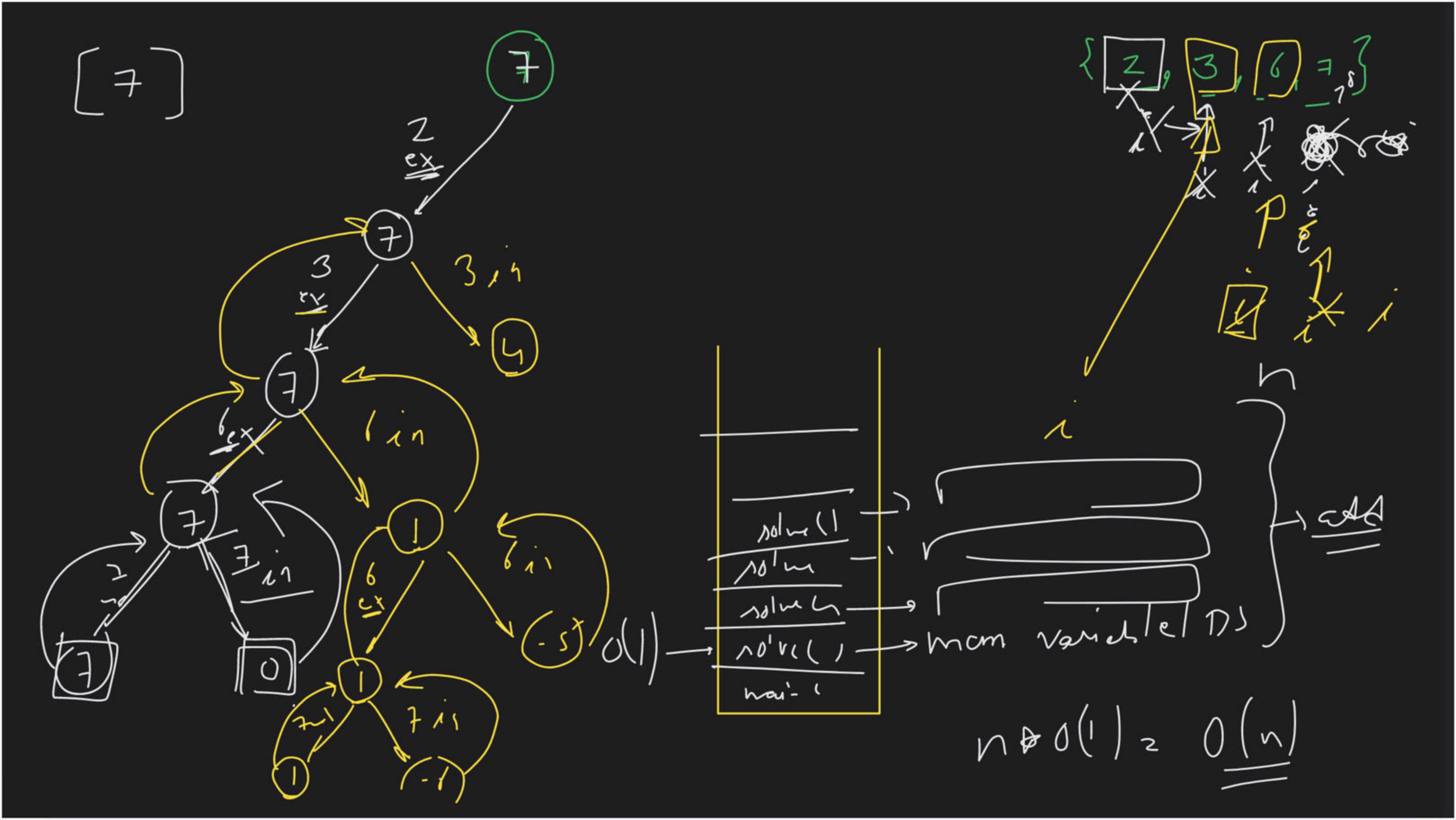

{2, 2, 3}
{2, 3, 6, 7}



0=

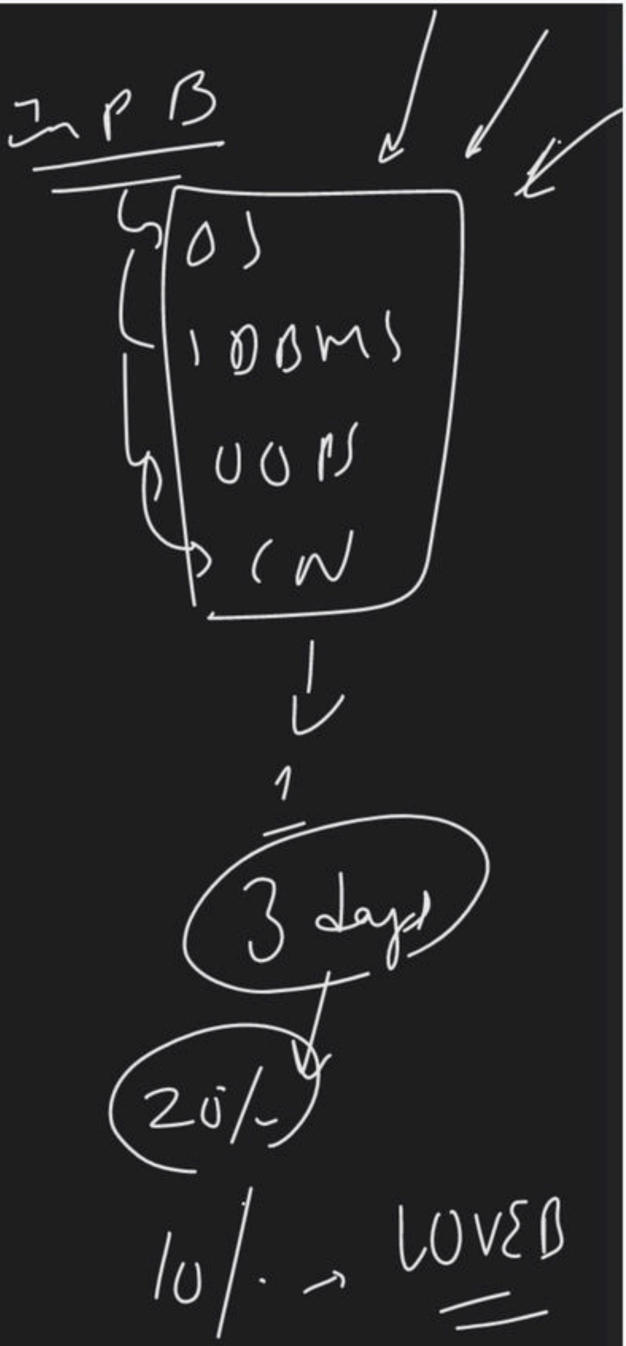


II

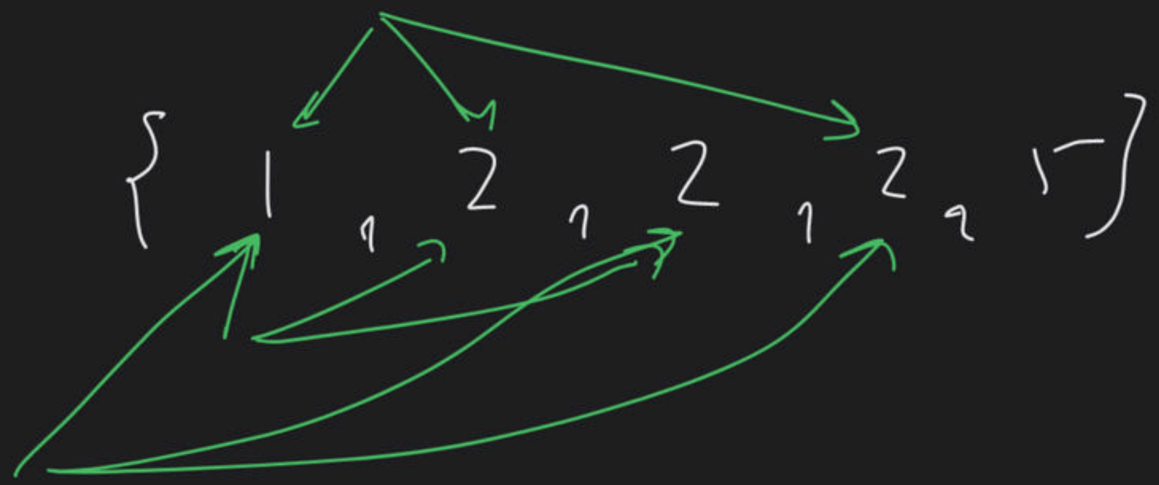

[7]
7
2
ex
7
3
ex
3, 4
4
7
1 in
ex
7
2
ex
7 in
0
1
6
ex
6 in
-5
1
7 in
1
7 in
-1
O(1)
solve(1
solve
solve
solve( )
main
{2, 3, 6, 7}
P
i
h
i
mem variable DS
call
n * O(1) = O(n)

Ques-2

{2, 5,



5



{ 2 , 5 , 2 , 1 , 2 }

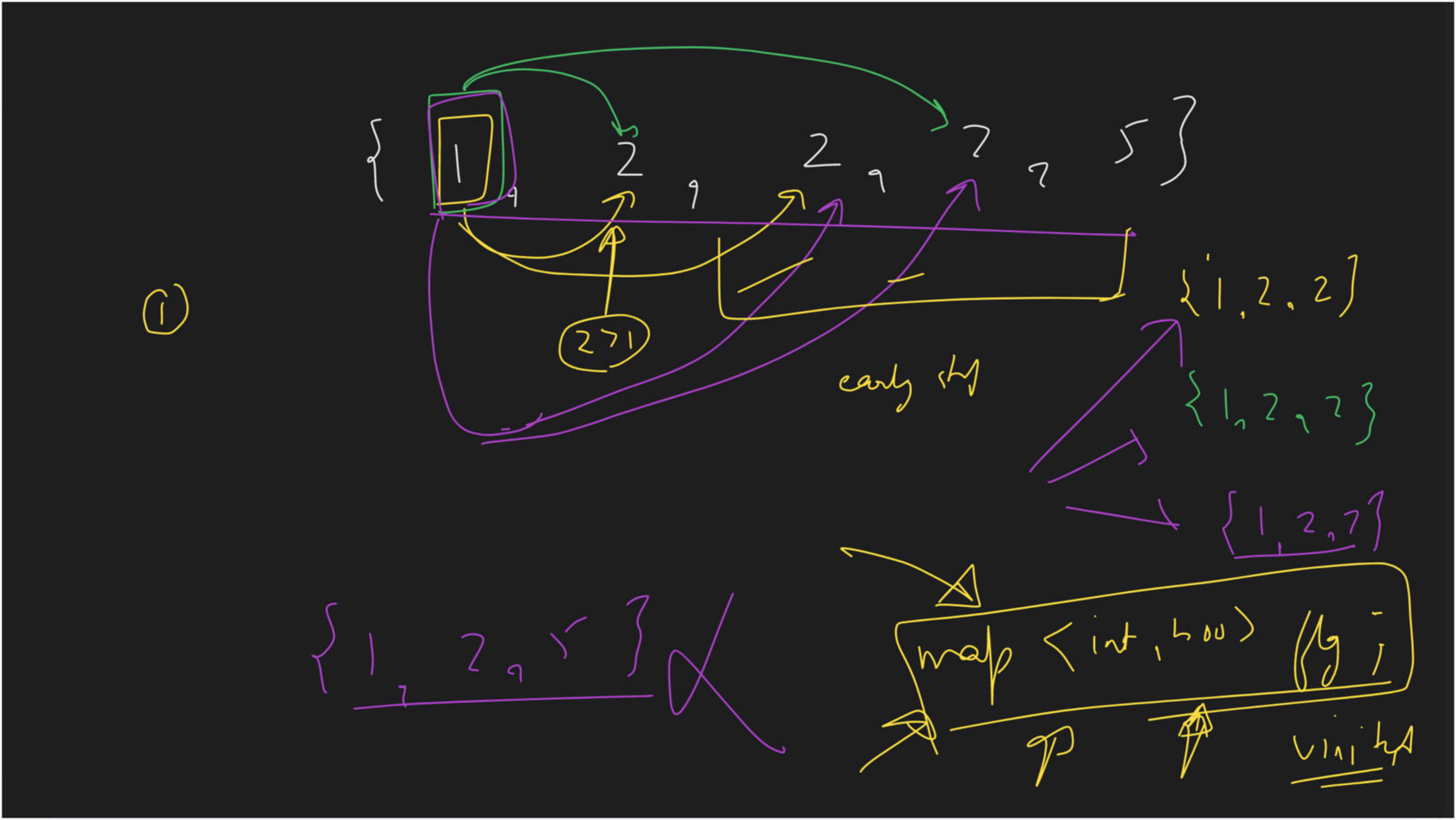
{ 1 , 2 , 2 }

[5]

{ 1 , 2 , 2 , 2 , 5 }

//BC1

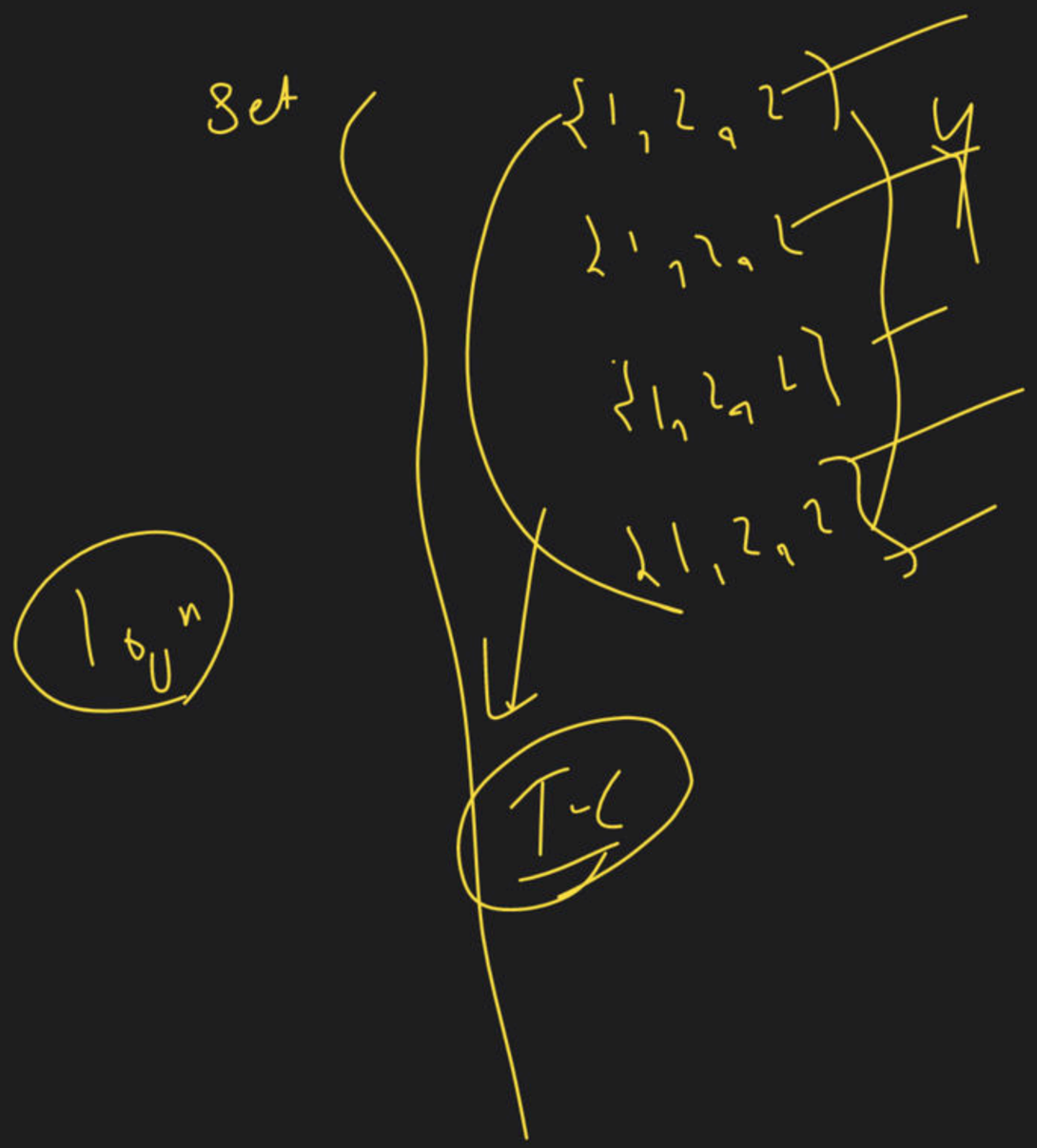
//BC2


{ 1 2 2 2 5 }
(1)
2 > 1
early stop
{1, 2, 2}
{1, 2, 2}
{1, 2, 5}
{1, 2, 5}
map<int, bool> vis;

→ 100 !

→ 80

→ 20 !



→ vector

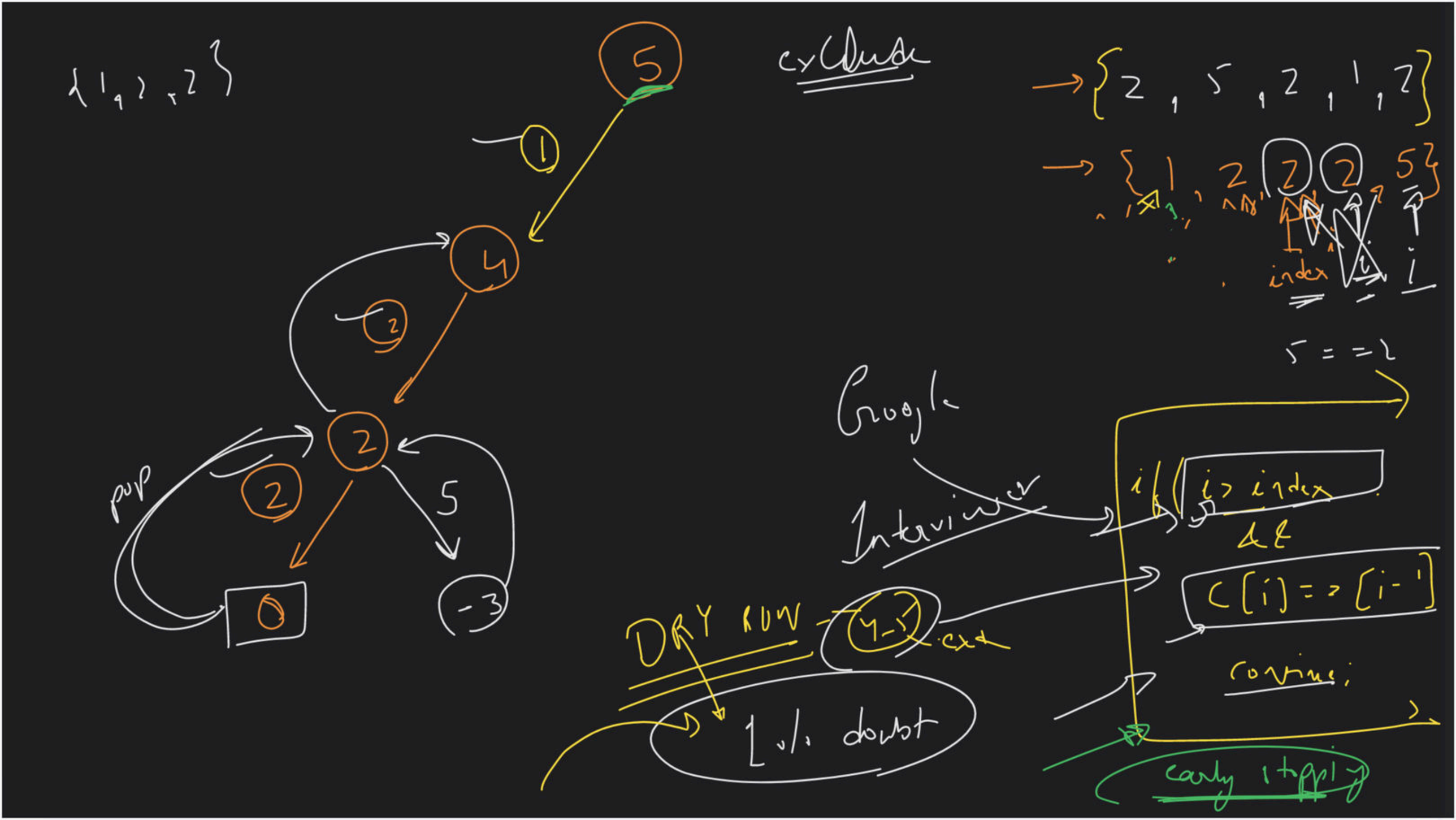
O(1)

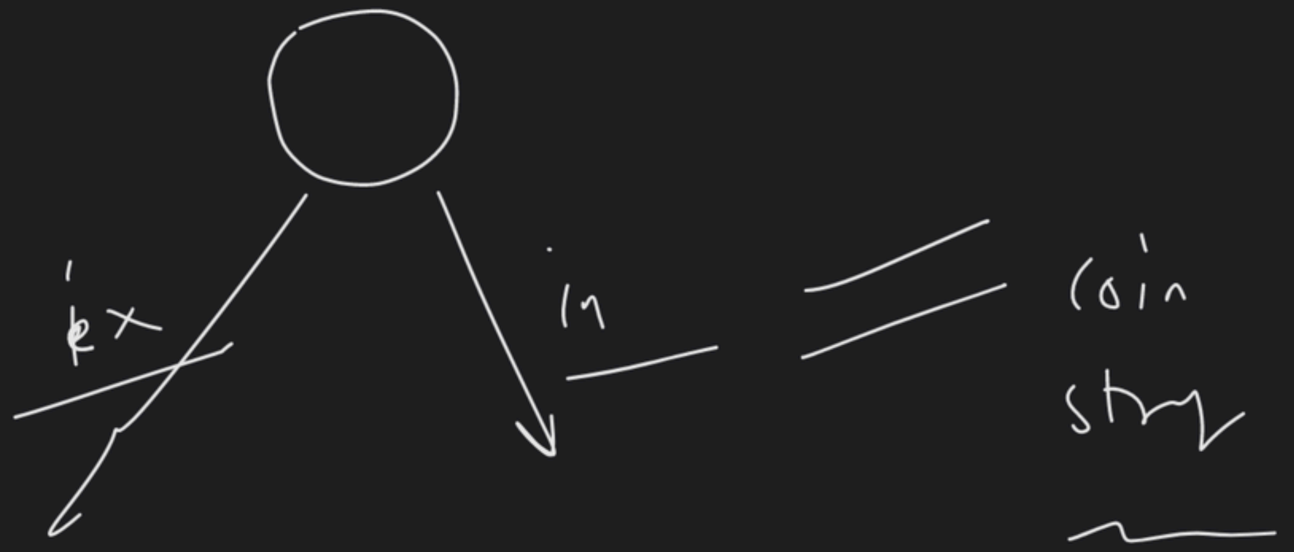
Vector

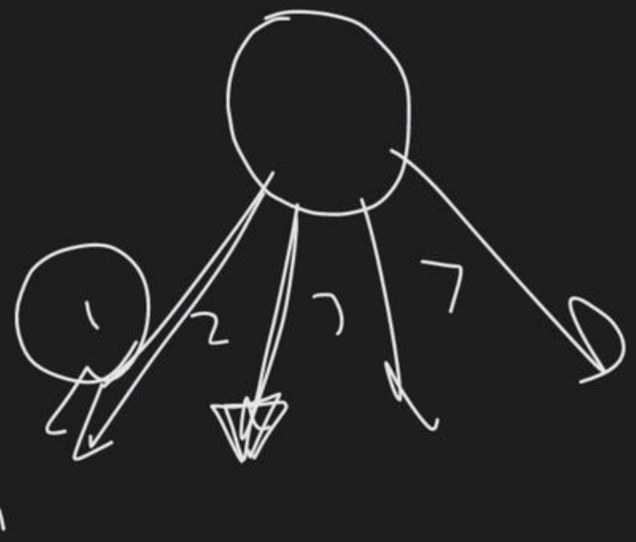
→ list

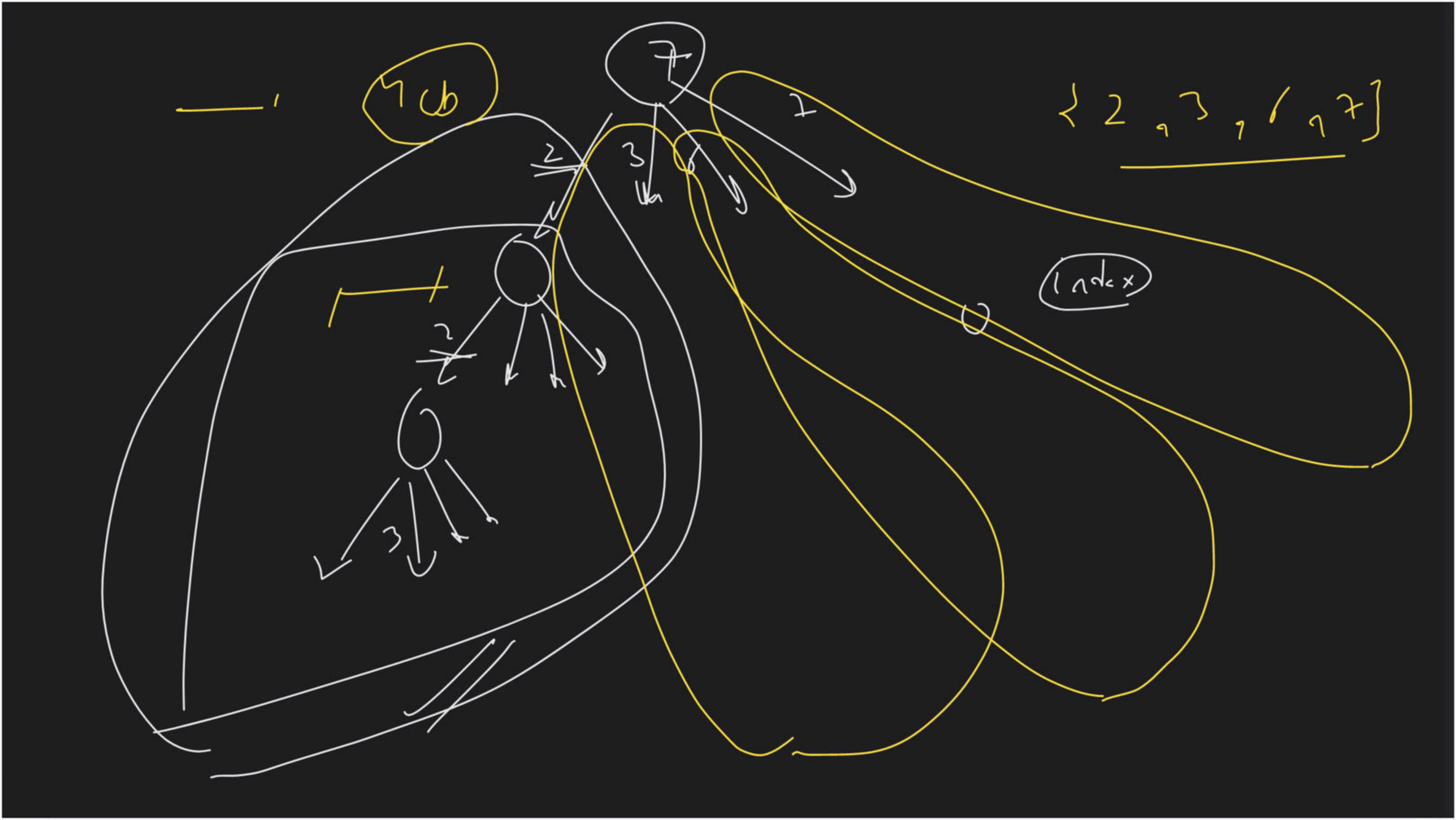
O(log n)

n


{1, 2, 2}
5
exclude
1
4
2
2
pop
2
5
0
-3
{2, 5, 2, 1, 2}
{1, 2, 2, 2, 5}
index
i
s == 2
Google
Interviewer
DRY RUN
4-1
exit
1 v/s doubt
i > index
&&
C[i] => [i-1]
continue;
early return


rx
in
coin
stry




{2, 3, 5, 7}
index

Level III

$K = 3$

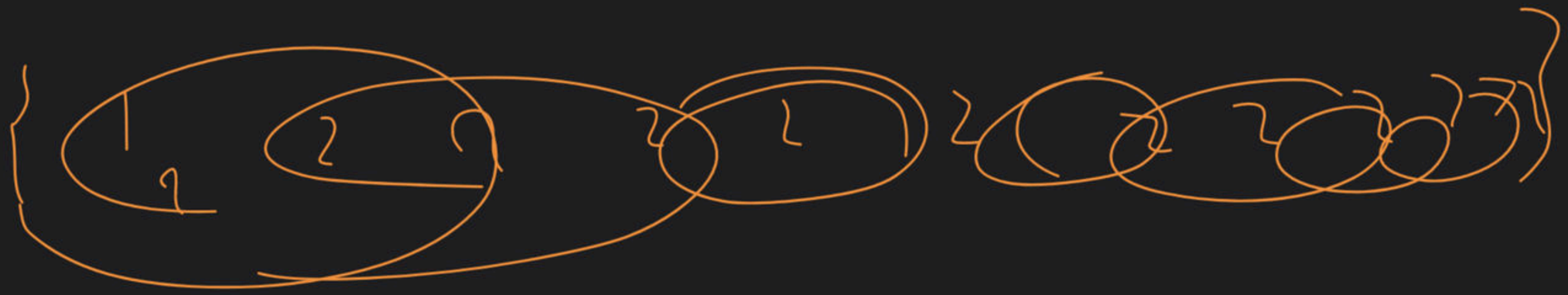
$n = 7$ ← target

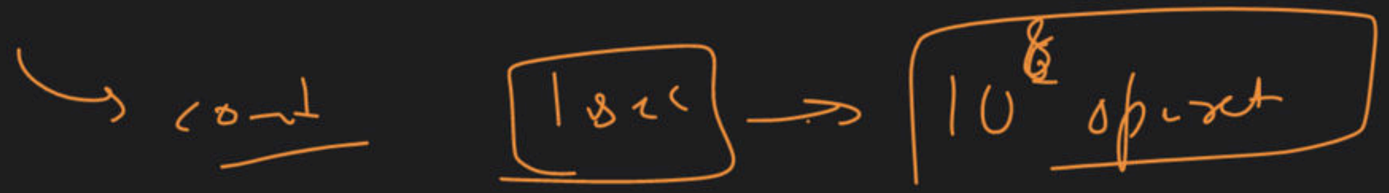
9 digits $\{1, 2, 3, 4, \ldots, 6, 7, 8, 9\}$

$\{1, 2, 4\} \rightarrow 7$

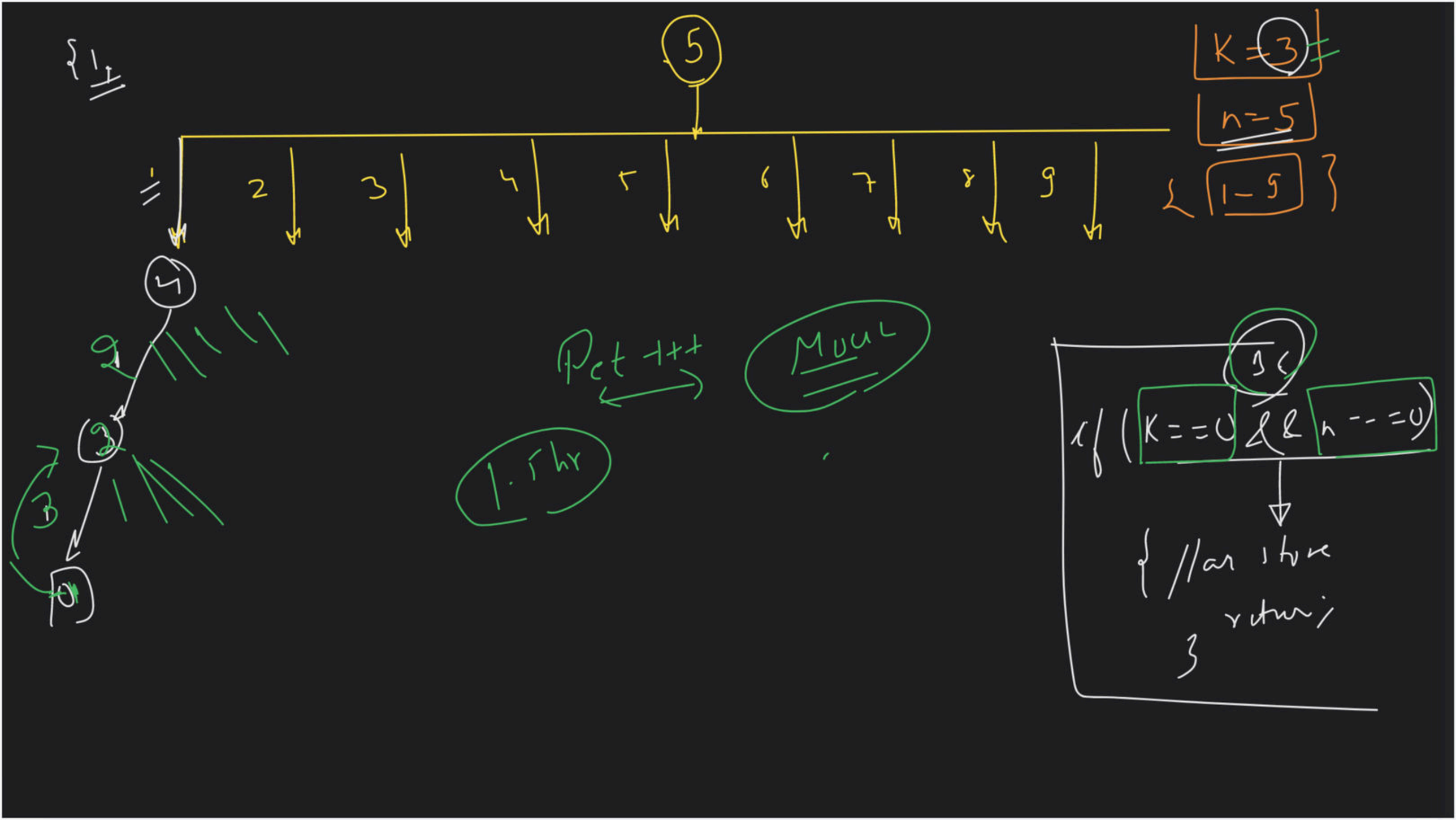
$n = 9$ $\{\_, \_, \_\} \rightarrow$ ✗

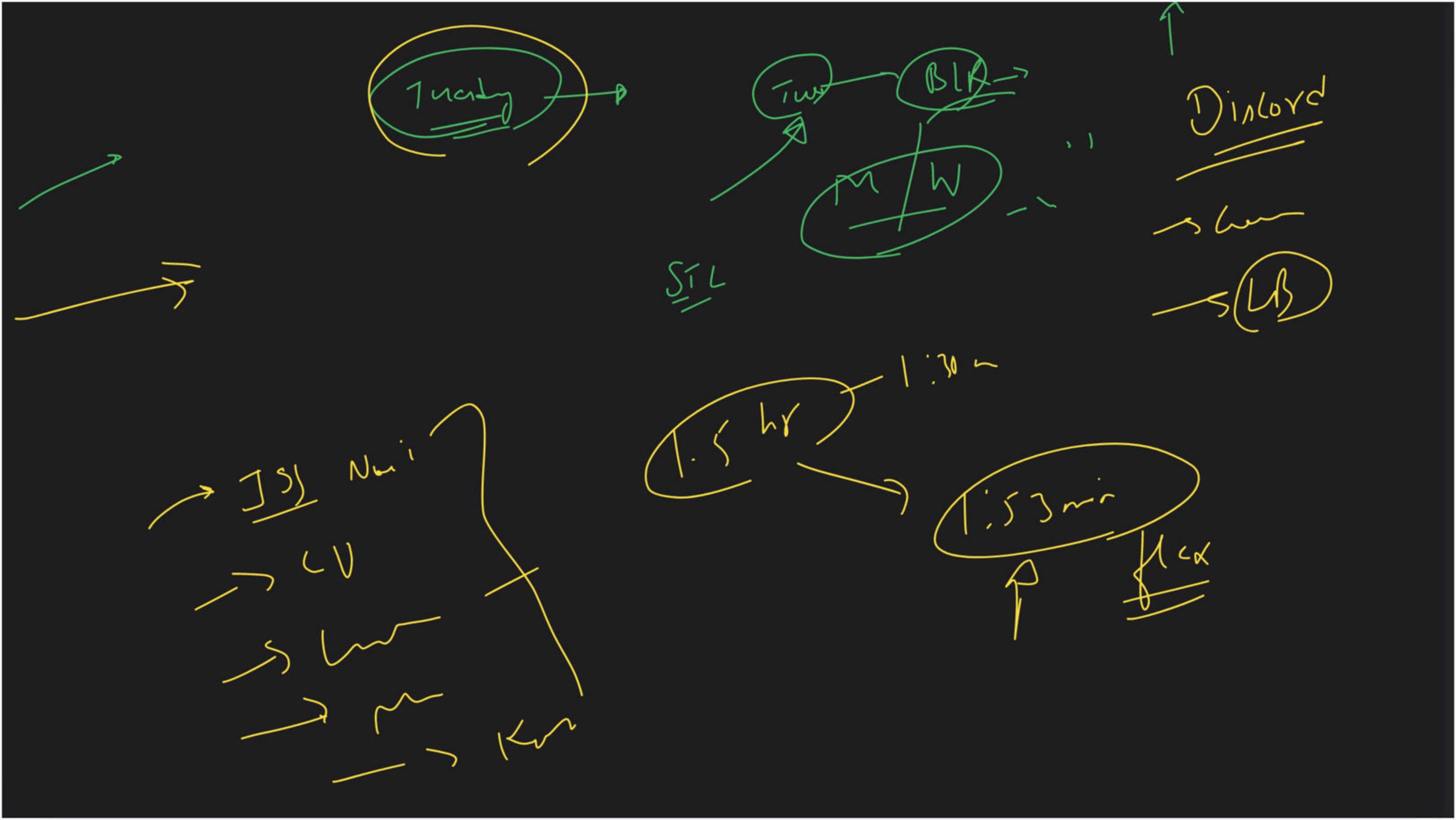
$\{1, 2, 6\}$ dans Π $\;|||\;$ $\{2, 3, 4\}$ Π', $\{1, 3, 5\}$ Π''






O(1)


5
K=3
n=5
1-9
1
2
3
4
5
6
7
8
9
Pet ++
Mual
1 Thr
if (K==0 && n--==0)
{ //action
return;
}


Discord
SIL
1:30
1:53 min