Tuesday, 10 August 2021 8:31 PM

Q Given an array, you need to find the longest consecutive sequence in the array.

Eg: [2, 12, 9, 16, 10, 5, 3, 20, 25, 11, 1, 8, 6]

Output : [8, 9, 10, 11, 12]

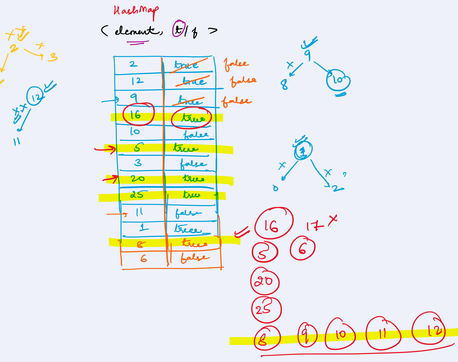
Explanation : [1, 2, 3]
[5, 6]
[8, 9, 10, 11, 12] ans
[16]
[20]
[25]

→ Try to find the start of all possible consecutive sequences

[2, 12, 9, 16, 10, 5, 3, 20, 25, 11, 1, 8, 6]

HashMap
< element, t/f >

2	~~true~~	false
12	~~true~~	false
9	~~true~~	false
16	true	
10	false	
5	true	
3	false	
20	true	
25	true	
11	false	
1	true	
8	true	
6	false	



Q Give an unsorted integer array, return the smallest missing positive integer.

① arr = [1, 2, 0] ans → 3
② arr = [3, 4, -1, 1] ans → 2
③ arr = [7, 8, 9, 11, 12] ans → 1

TC → O(n)
SC → O(1)

→ negative no
→ zeros
→ > n
→ 1
n = arr. length

* First missing (max possible) positive integer is smaller or equal to (n + 1)

n = 8

smaller → 1

① [1, 2, 3, 4, 5, 6, 7, 8] → 9
② [1, 2, 4, 8, 15, 19, 16, 17, 18] → 3
③ [1, 2, 3, 4, 5, 6, 7, 18] → 8

[3, 4, -1, -2, 1, 5, 16, 0, 2, 0]

→ [3, -4, -1, -1, -1, -5, 1, 1, 2, 1]
0 1 2 3 4 5 6 7 8 9

ans → 6

-1 → 1
index → 1
-ve

Q You have (n) coins parallely tossed

3 coins →

c1	c2	c3
H	H	T
H	T	H
T	H	H
.		
.		
.		
.		

Bigger problems → (n)

Smaller problems → (n − 1)

n = 3

n = 2

H H
H T
T H
T T

H H
H T
T H
T T

Q Boardpath

Dice → 6 faces
1 → 6

(start) (end)

→ Infinite throws of a dice.

0 → 4

1111
121
211
112
13
31
4
1

0 → 10

64
46
1111111111.

× 0 start Big problem

dice

x+1 x+2 x+3 x+4 x+5 n+6

smaller problems → 1 2 3 4 5 6

end

6 − 10 → 6 − 10

6 1111
6 121
6 211
6 112
6 31
6 13
6 22

5 − 10

5 5
5 4 1
5 1 4
5 2 3
5 3 2
5 1 1 1 1

0 → 4
1 − 4
2 − 4
3 − 4
4 − 4 — Ans
0 − 4
31

start > end →