

128. Longest Consecutive Sequence

eg. 21 5 6 4 20 3 5 11 10 12

i



c = 11

ple
~~10~~
9

pre
~~12~~
13

(20 21) → 2 →

pre - ple - 1

22 - 19 - 1 = (2)

ans = 0 2/ (4)

(3 4 5 6) → 4

7 - 2 - 1 = 4

(10 11 12) → 3

13 - 9 - 1 = 3

(21)

5

6

4

20

3

5

11

10

12

ans =

```

1  class Solution {
2      public int longestConsecutive(int[] nums) {
3          HashSet<Integer> hs = new HashSet<>();
4          for(int e : nums){
5              hs.add(e);
6          }
7          int ans = 0;
8          for(int i = 0; i < nums.length; i++){
9              if(!hs.contains(nums[i])){
10                 continue;
11             }
12             hs.remove(nums[i]);
13             int ple = nums[i]-1;
14             int pre = nums[i]+1;
15
16             while(hs.contains(ple)){
17                 hs.remove(ple);
18                 ple--;
19             }
20
21             while(hs.contains(pre)){
22                 hs.remove(pre);
23                 pre++;
24             }
25
26             ans = Math.max(ans, pre - ple - 1);
27         }
28         return ans;
29     }
30 }

```

hs

5	6	4
3		11
10	12	

ple = 20 19pre = 22

1497. Check If Array Pairs Are Divisible by k

Medium 1650 89 Add to List Share

Given an array of integers `arr` of even length `n` and an integer `k`.

We want to divide the array into exactly $(n / 2)$ pairs such that the sum of each pair is divisible by `k`.

Return `true` if you can find a way to do that or `false` otherwise.

eg1

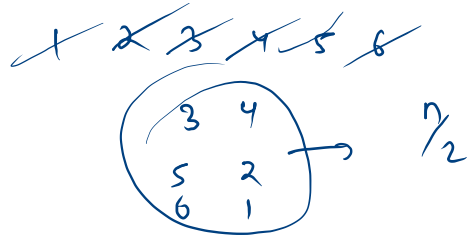
Input: `arr = [1,2,3,4,5,10,6,7,8,9]`, `k = 5`
Output: `true`

eg2

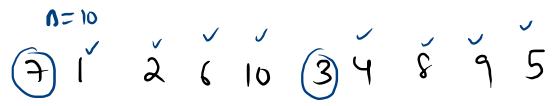
Input: `arr = [1,2,3,4,5,6]`, `k = 10`
Output: `false`

eg3.

k=7

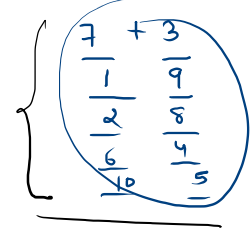


eg. 1.1



K=5

pairs -> 5 true



$n/2 \times 2 = n$

5 yes.

eg2.

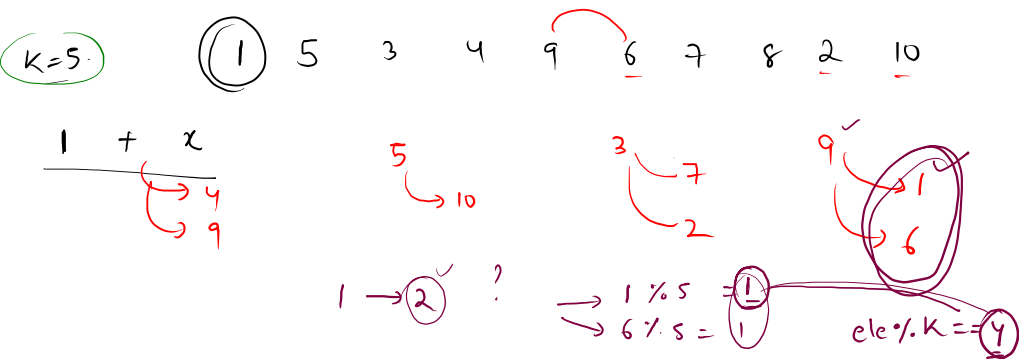
n=6



$$\underline{6} + \underline{4} = 10 \% 10 = 0$$

— —
— —

3 pair
No -> false.



2 → 8

→ 3

7 → 3

→ 8

6 → 9

→ 4

8 → 7

→ 2

ele % K = [0, K-1]

0 → K

10 → 5

freq of ele % K

1	2
0	2
3	2
4	2
2	2

ele % K

1 % K

1 / 5 = 1

5 / 5 = 0

3 / 5 = 3

4 / 5 = 4

9 / 5 = 4

6 / 5 = 1

① 5 3 4 9 6 7 8 2 10

eg. 1. 1 2 3 4 5 6 7 8 9 10

k = 5.

$$\begin{aligned} & \downarrow \quad \downarrow \\ & (e + e') \% k == 0 \\ & \begin{array}{l} e \% k = x \\ e' \% k = y \end{array} + \begin{array}{l} x \\ y \end{array} \% k == 0 \end{aligned}$$

$$\begin{aligned} 1 \% k &= 1 \\ 9 \% k &= 4 \end{aligned} \rightarrow k$$

$$\begin{array}{|c|c|} \hline 1 & 4 \\ \hline 1 & 9 \\ \hline \end{array} \rightarrow \begin{array}{|c|c|} \hline 1 & 4 \\ \hline \end{array} \% k$$

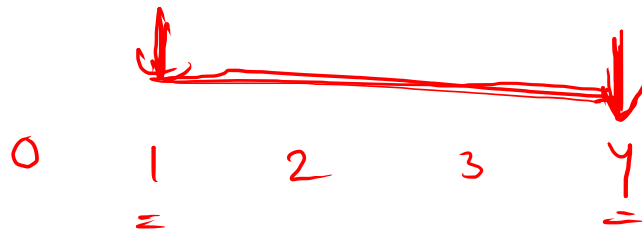
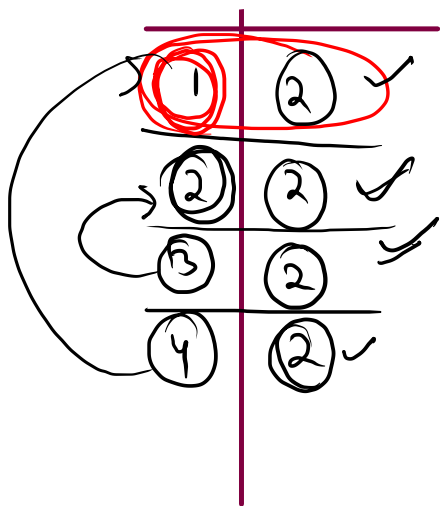
1 5 3 4 9 6 7 8 2 10

$$\begin{array}{r} 107 \\ + \quad 901 \\ \hline \end{array}$$

7.5

$k=5$

	1	2	3	4	5	6	7	8	9	10
	0	1	2	3	4	5	6	7	8	9
%	freq									



$$K=5$$

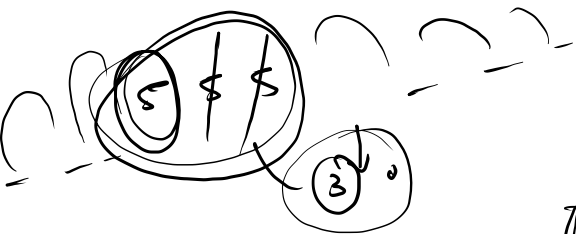
9 ~~4~~ ~~1~~ 9

T/F.

false

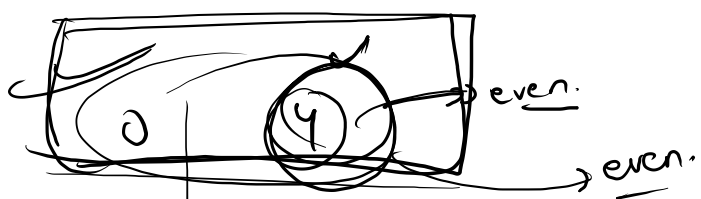
1	1
4	3

$$v_1 \xrightarrow{f} v_2$$



$k=5$?

0
0



fine.

1	
2	
3	
4	

$1 \rightarrow 4$
 $2 \rightarrow 3$
 $3 \rightarrow 2$
 $4 \rightarrow 1$

$0 \rightarrow 0$

$$(-1)$$

$$(0 \text{ --- } k)$$

$$\frac{1}{k}$$

$$k = -1$$

$$\frac{-1 + k}{6k}$$

$$(-1)^{+k}$$

6

True.

$$k = 5$$

$$(-1) + 5 \cdot 1.5 = 4 \cdot 1.5 = 4$$

$$6 \cdot 1.5 = 1$$

$$-1 \cdot 5 = ?$$

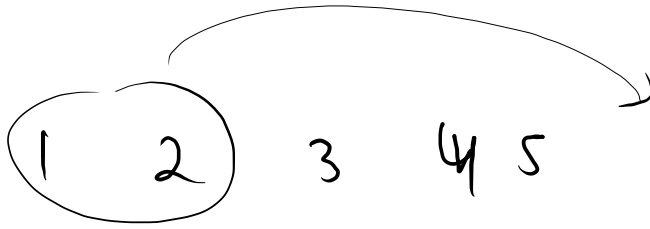
1	1
4	

$$k \cdot n$$

$$k \cdot \frac{1}{n}$$

$$\left(\frac{1}{n} \right)$$

array rotate
k times

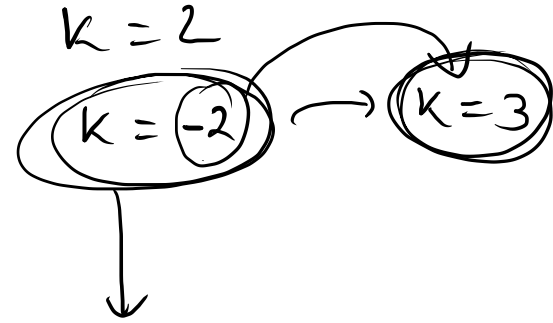


$$k=2$$

4 5 1 2 3

$$k=3$$

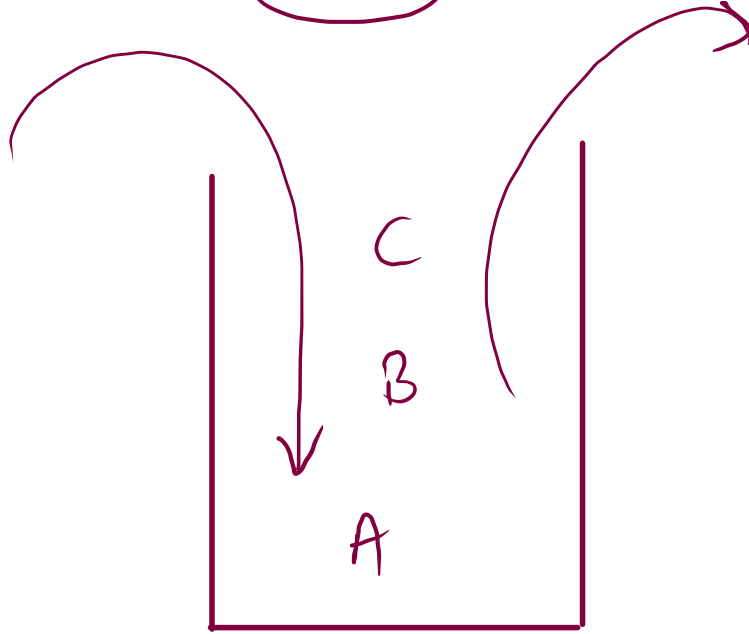
3 4 5 1 2 \rightarrow



3 4 5 1 2

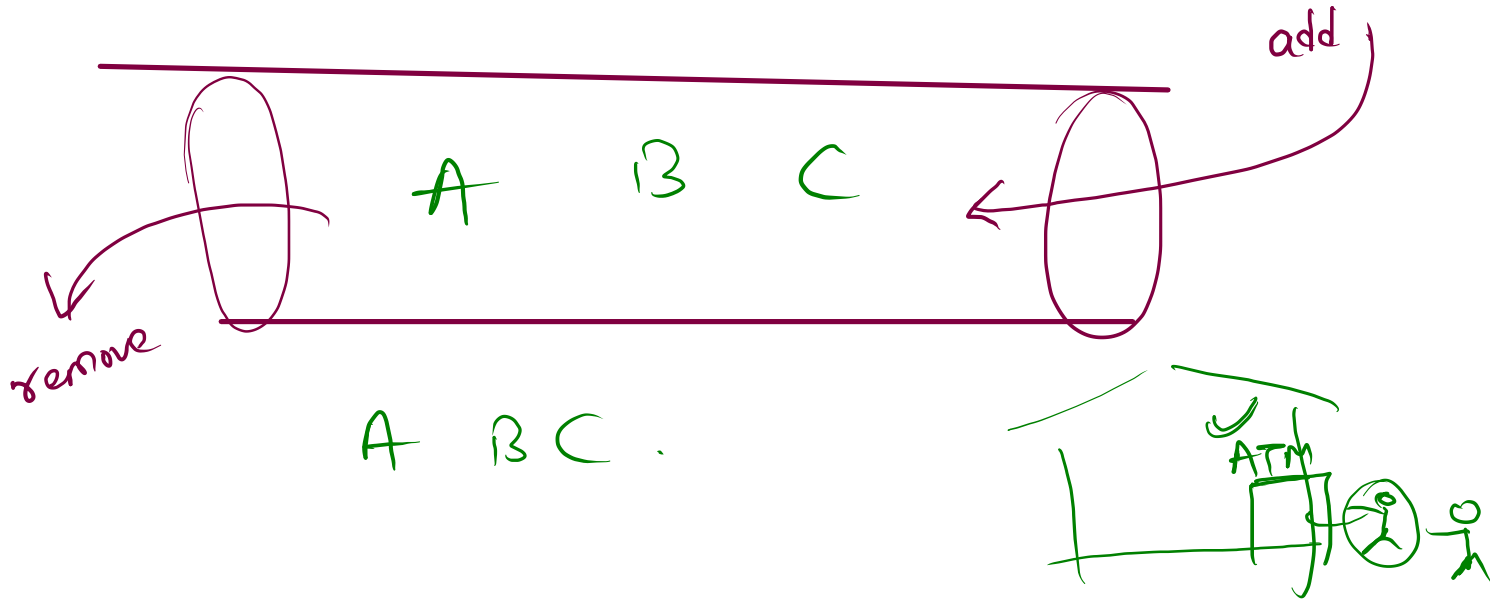
$$k = -2 + 5 = \underline{3}.$$

Stack → (LIFO)



↓ ↓ ↓
C B A.
→

Queue. → FIFO
first in First out.



Queue 

Collections.

Java