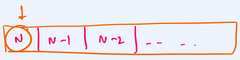
Any doubts ??

Q Largest permutation after almost K swaps



first N natural no

$n \longrightarrow (1 \longrightarrow n)$

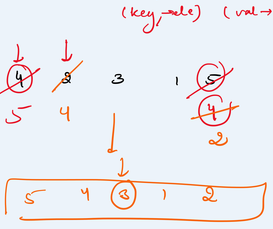
We already know the biggest no. & smallest no.

N N-1 N-2 . . .

Use a hashmap

(key, value) (val → index)

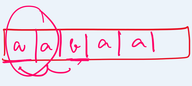
k = 2



Q String without AAA or BBB

a = 4 3 2 b = 1 0

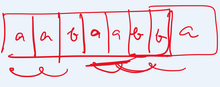
aabaa



a > b

a > b

a = 5 4 3 2 1 b = 3 2 1 0



a > b

a

Q Given 2 same length arrays, out of them, one is sorted, and other is unsorted.

A → sorted

B → unsorted

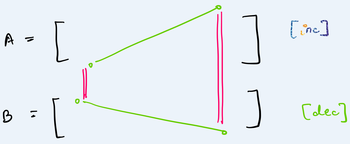
shuffle B such that

$\sum_{i=0}^{n-1} A_i * B_i$ is min possible.

where n is the array length.

A = [-1, 0, 3, 4, 7]

B = [11, -2, 5, 1, 12]



let A & B be of size 2.

A_i, A_j B_i, B_j

$i < j$

let's assume $B_i < B_j$

$x = A_i B_i + A_j B_j$

Need to prove $B_i > B_j$

$y = A_i B_j + B_i A_j$

$x - y$

$(A_i B_i + A_j B_j) - (A_i B_j + A_j B_i)$

We know $A_i \leq A_j$

If $x - y \geq 0$

$\Rightarrow x > y$

If $x - y$ is -ve

$y > x$

If we can prove $x - y \geq 0$

our ans will be correct because $x > y$

$A_i (B_i - B_j) - A_j (B_i - B_j) \geq 0$

$(B_i - B_j)$ (-ve) $(A_i - A_j)$ (-ve)

To prove $x > y$

To make $x - y \geq 0$

we need $B_i - B_j$ to be also negative.

$\Rightarrow B_i - B_j < 0$

$\Rightarrow B_i < B_j$