

## CQ 4

Correctness & Loop invariant: (HackerRank)

what is the problem? given two inputs:

$s$  - size of array

arr - list of nums that make up array

→ return the nums of arr in order

example)

$s = 6$

arr = 7 4 3 5 6 2

returns 2 3 4 5 6 7

A array =  $\begin{bmatrix} 3 & 2 & 1 \\ & j & \end{bmatrix}$

code template:

for  $i$  to array length

val =  $A[i]$

$j = i - 1$  → 2 → 1

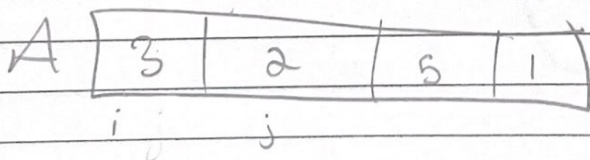
→ 3 → 2

while  $j > 0$  &  $A[j] > \text{val}$ :

$A[j+1] = A[j]$  → 1

$j = j - 1$  → 1

$A[j+1] = \text{val}$  → 2 → 2



$i > j$ ?

$A[i] = A[j]$