

QuickSort(A, l, r)

if $l \geq r$:
return

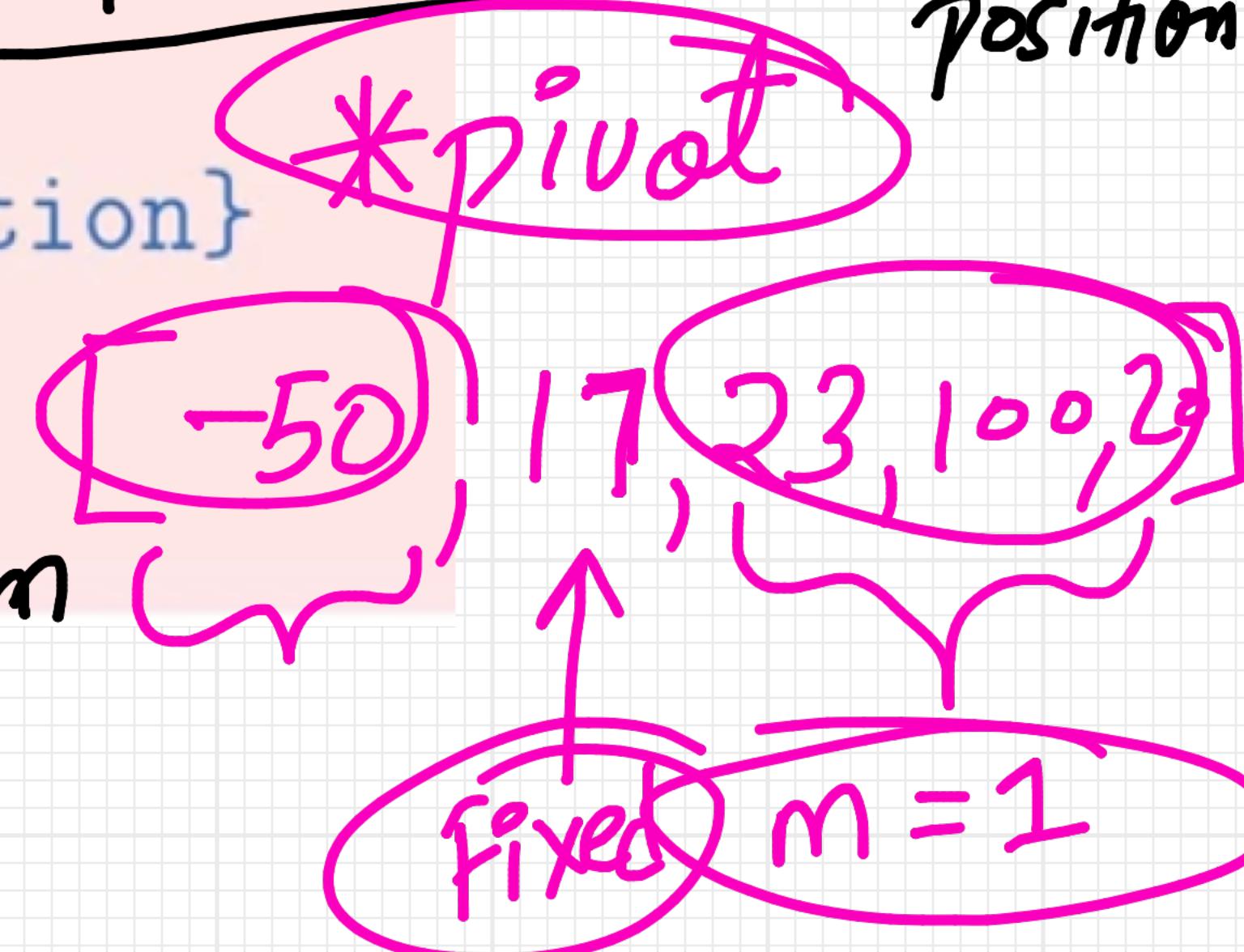
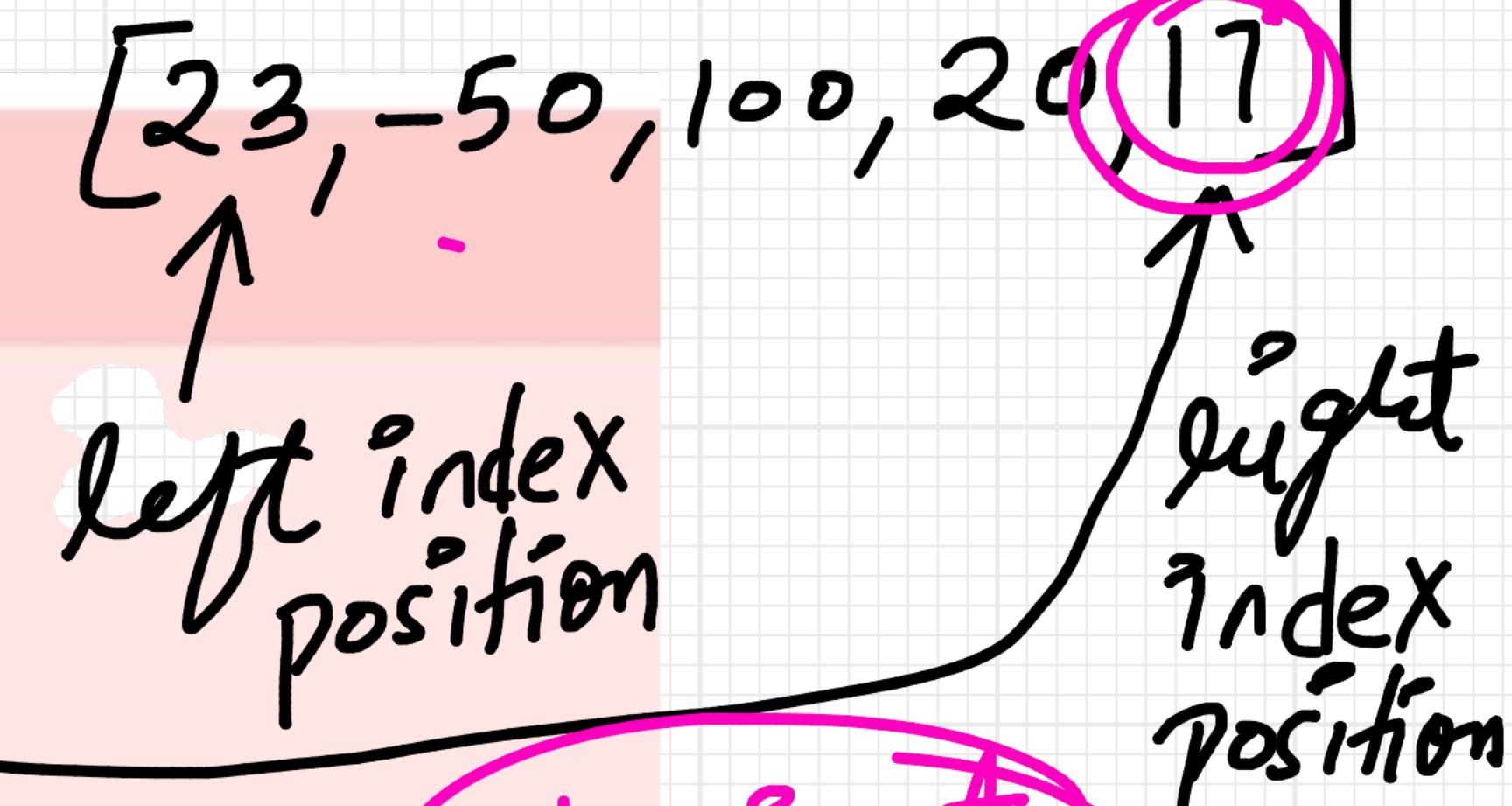
$m \leftarrow \text{Partition}(A, l, r)$

{ $A[m]$ is in the final position}

QuickSort($A, l, m - 1$)

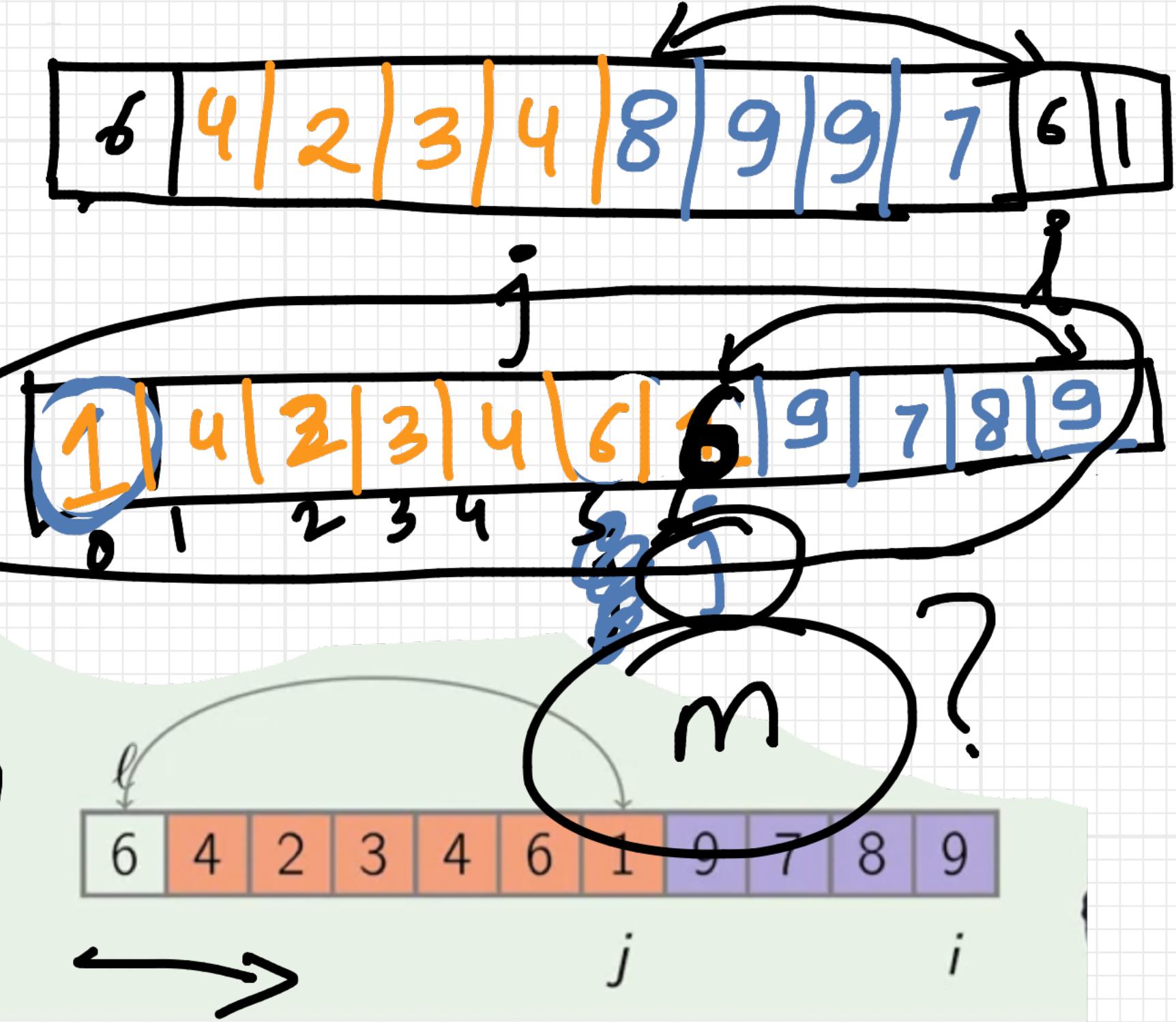
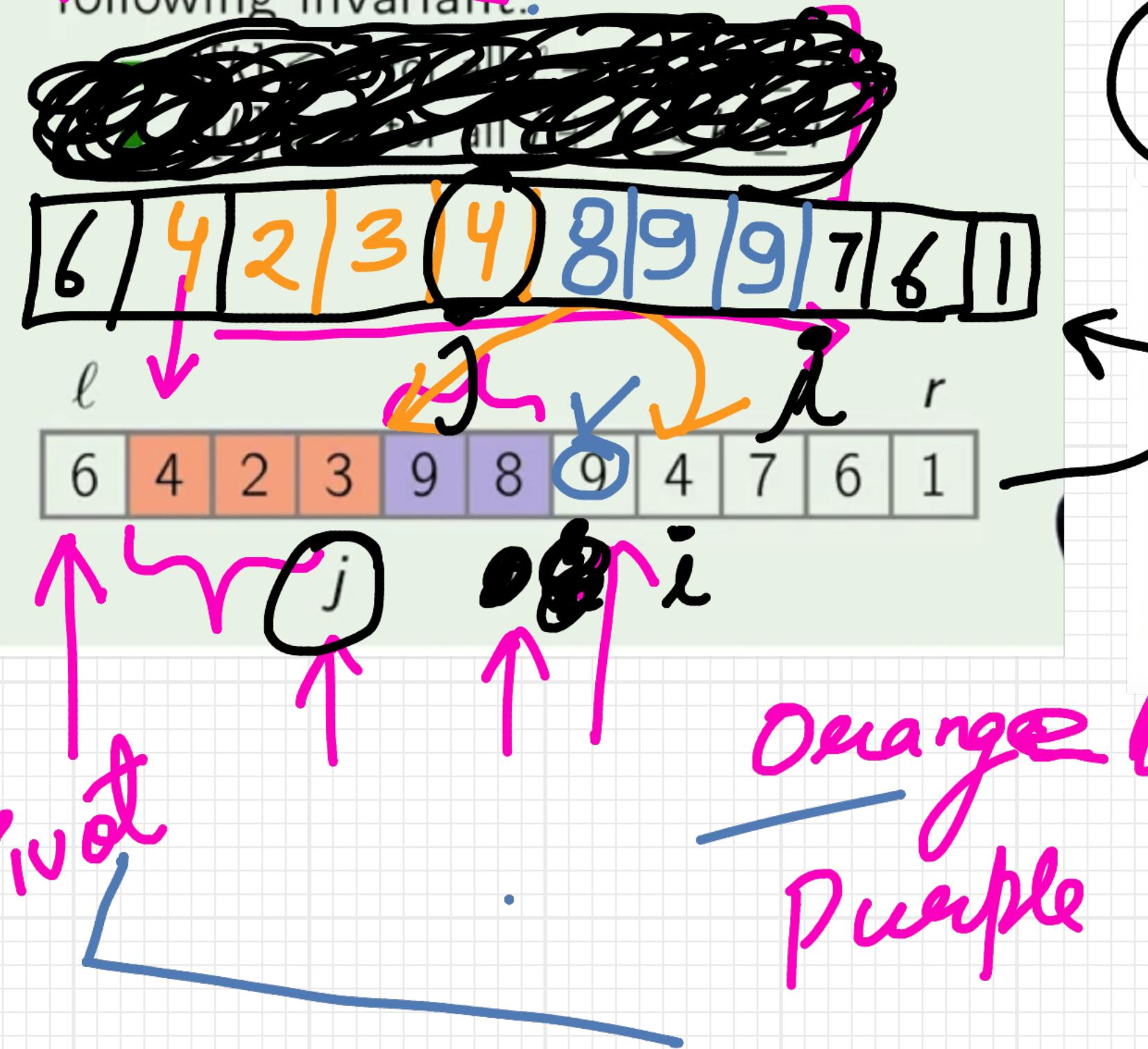
QuickSort($A, m + 1, r$)

Recursive Algorithm



Partitioning: example

- the pivot is $x = A[\ell]$
- move i from $\ell + 1$ to n maintaining the following invariant.



Orange first elements < pivot
 Purple " "
 " " > pivot