

③ Reverse k first element of a queue

Input: $Q \{ 10, 20, 30, 40, 50 \}$

$k = 3$

Output: $Q \{ 30, 20, 10, 40, 50 \}$

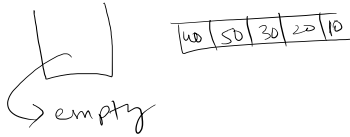
Solution:- We need a stack.

① pop k elements from queue and push them to stack

② Now contents of stack and queue are as follows

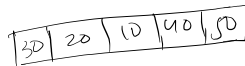


③ Push all k elements from stack to queue so, now



④ Now pop $(q.size() - k)$ elements (queue) one by one and simultaneously push them to queue

So, now



Done

3
3
2

$$\begin{aligned} T.C &= O(k + k + (q.size() - k)) \\ &= O(k + q.size()) \\ &= O(n) \end{aligned}$$

$$S.C = O(k) \text{ (stack)}$$