

Today's agenda
Today's agerda b aueue basics
la Reverse fiost k ele in Queue
4 implement queue using 8tack
4 implement queue using stack 6 Kth number using only 182
AlgoPrep

Stacks -> LI30



11 aveve 10 20 30 40 50 add 4 First in First out (3130) real life en: 1 line 1 task Scheduling Syntan? 6 Quene & Integer > 9 : new LinkedList <>(); 10 20 30 40 50 1 g. add (n) - insert on at the end of queue. 10 9. removel) -> delete element from front. (11) q. size () - No. of element in queue. (v) 9. Peek () -> Return the front element.



y reverse lists		
لم (م)	K elementl iven a Queue, Reverse it's first K elem	rent
K=4		
En: 3	3 10 2 12 19 6 8 10 14	
	.	
1	2 2 6 3 19 6 8 10 14	
lidea		
4 Put first	k elements in 8tack.	
Ly Put Jiss4	k elements in 8tack.	
Ly West Jiest	k elements in 8tack.	
K=4	R elements in 8-tack.	
	R elements in 8tack.	
KEY	AlgoPre	
KEY	2 19 6 8 10 14	
K=4 3 10 2 11	A 19 6 8 10 14	
K=4 3 10 2 11	A 12 2 10 3	
8 10 2 1x	A 19 6 8 10 14	
13 10 2 11 13 8 8 10	2 19 6 8 10 14 24 12 2 10 3	
13 10 2 11 13 8 8 10	A 12 2 10 3	
13 10 2 11 13 8 8 10	2 19 6 8 10 14 24 12 2 10 3	
3 10 2 11 13 8 8 10	2 19 6 8 10 14 24 12 2 10 3	



```
Queve <> Reverse Kelements (Rueue <> 9, int K) (
                 Stock < Integer > S: new Stockes ();
                   for lind iso; ick; i+)
                        S.pw/ q. vemove(1);
T.C: 0 (K+K+ N-K)
                   for lind iso; ick; i+)
s.c: o(s)
                       2.000 ( s. pop());
                     for (ind iso; is n-K; itt) }
                        2. add (2. vemo vel))
                     return 9:
```



a) Implement levene using 8tacks

op: 5 L	179	sem sumo 8 10 sem sem 14 se
		<u> </u>
8		
9		Mides → add efficient
3		adolon): ado on in \$1.
3	8	40(4)
8	8	hemove(): → o(N)
(4)	*	1) move n-1 elements S1 + 32
2	K	1 semove the ary from II
1		move all elements 52 -54
8	9	901100
21	32	

11idea 2 -> sernove efficient

op: 5 4	7 9 14 rem suno 8 10 rem rem
8	* 4
47	g add(m): → o(m)
3 2	y O move all elements \$1 -> \$2
8	8 000 n to S1
7	Put back all elements 52-311
8	semove() -o(1)
4	4 semore brom 31.
8	8
31	52



	h Numbe								
	h Gen	esafe	kth	nume	in in	Series	using	digits	1 and
	K:S	1	2	11	12	21			
	K:7	1	2	11	12	21	22	111	
llidea									
	2	Jigi+	nu	n		5	7	こ	
						7		7	
	2	digit	nur	n	//	12	21	22	
							21 2 2 2 2 2 2	12 221	222
2	3	digit	num	, 111	112	12.1 122	21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	12 221	222
A	3	digit	num wited		345	12.1 122			
A	3	digit	num wited		345	12.1 122		22	



119suedo code

	String Kthnumber (int K) { Duene < String > 2 =;
Arg.	q.add ("1");
c: o(kth)	9. add ("2");
Se: 0(K)	Stoing ans = "";
	Jos (int ist; icsk; itt) { String 1: 9. remove(); if (is=k) (an: 2:3) 9. add (2 + "1"); 9. add (2 + "2");
	3
	Return one;

Break till 10:50 Pm



q.add ("1");	on:21
q. add ("2");	
Stoing ans = ""	111 112 121 122 2112
for lint ist; it) d	4= 21
Stoing 1 = 9. semove (); if lizek) (and : 2.93	(+=2)
9. add (4 + "1"); 9. add (4 + "2");	
3	
Return ans;	
(4)	loPrep



Q) La Generate Kth number in Series using digits I and 2 only Motes only consider even digit number. K:5: 11 22 1111 1221 2112 llideal Li keep generating numbers using I and 2, check even digit Palindrome count then only. return the kth one. 11idea 2 2 digit Pal. 4 digit Pat. -> insert 11 and 22 in the middle 2 digit Pal.

119 suedo code

	Stoing Kth Patindrom (int K)
	Queve < String > 2 = j
	9.add ("1");
A~9.	9.add ("22");
a igit	Stoing ans = "";
r.c: 0(k+n)	
c:o(k)	for lind i=1; i<: k; i++) <
9	
	String temp: 9. Remove L); if (i==k) Lans = temp; 3
	Stoing left: temp. substoing (0, temp. tength ()
	Stoing Right: temp. Substring (templergith) temps
	9. add (left + "11" + zight); 2. add (left + "12" + zight);
	2.000 (left + "12" + sight);
	Return ars;
	3