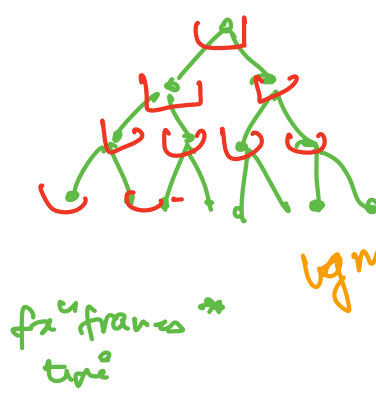
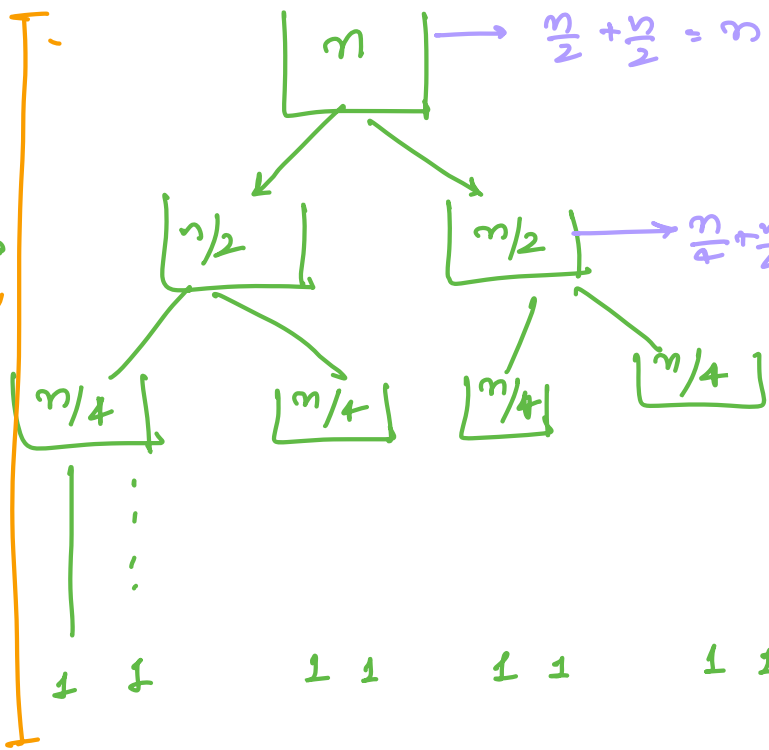


Shortcut:



lg n



Level
 n
 $n/2 + n/2 = n$
 $n/3 + n/3 = n/2$
 $n/3 \cdot 4 = n$
 $1 \cdot n = n$

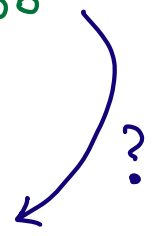
m lg n

Quick Sort

0	1	2	3	4	5	6	7	8
50	40	80	90	70	10	30	60	100

Pivot
70

0	1	2	3	4	5	6	7
50	40	10	30	60	90	80	100
< 70					> 70		

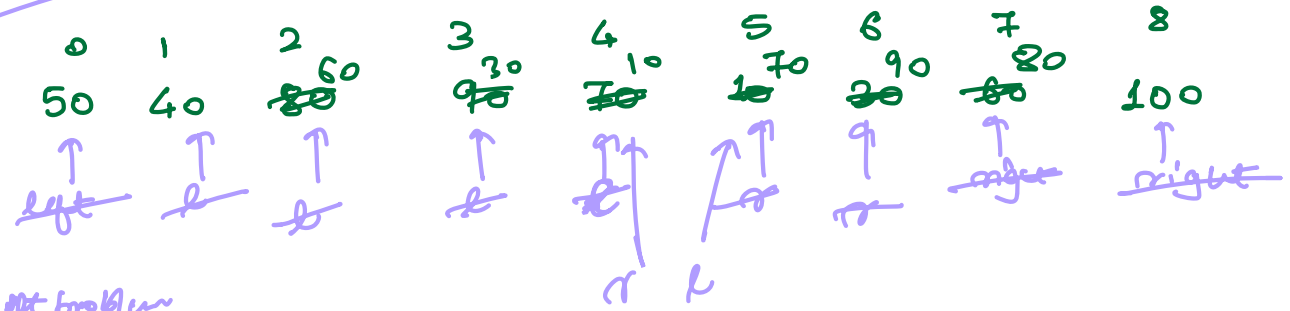


left: < 70
right: > 70

10	30	40	50	60	80	90	100
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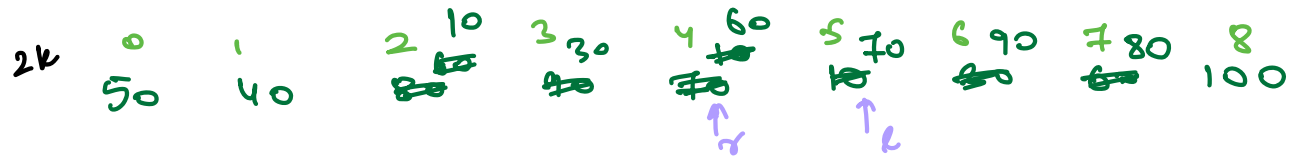
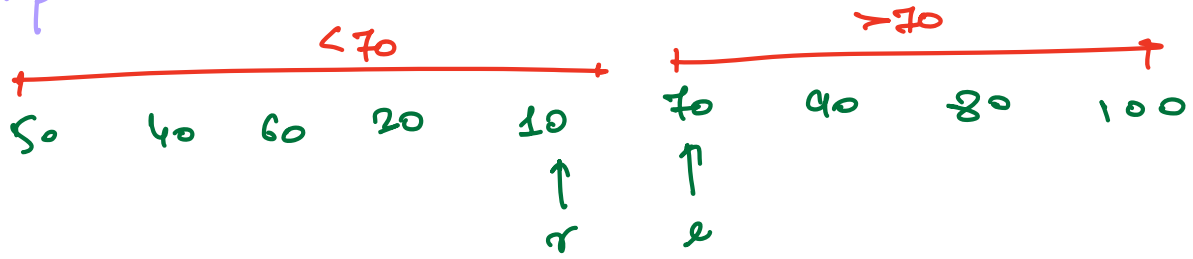
Partitioning

Pivot = 70

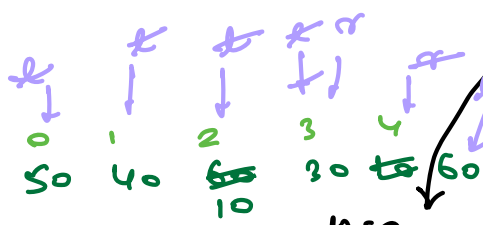


left problem
right problem

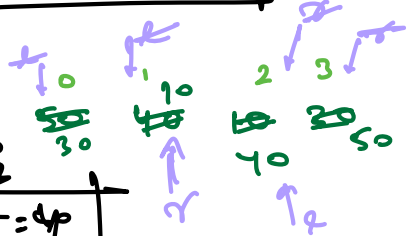
swap



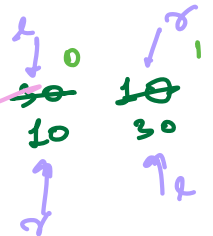
arr: 2k	10=0
mid: 4	w=8
qs(2k, 0, 4)	
qs(2k, 5, 8)	



arr: 2k	10=0
mid: 2	w=4
qs(2k, 0, 2)	
qs(2k, 4, 4)	

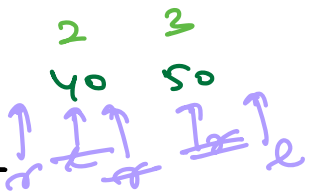


arr: 2k	10=0
mid: 1	w=3
qs(2k, 0, 1)	
qs(2k, 2, 2)	



arr: 2k	10=0
mid: 0	w=1
qs(2k, 0, 0)	
qs(2k, 1, 1)	

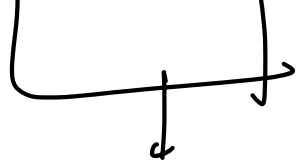
arr: 2k	10=2
mid: 2	w=3
qs(2k, 2, 2)	
qs(2k, 3, 3)	



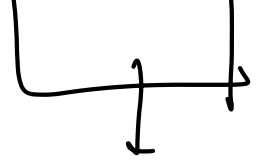
arr: 2k	10=0
mid: 0	w=0

10=2	w=1
------	-----

10=3	w=2
------	-----



$$b > a \quad \underline{\underline{bc}}$$



$$b = a$$