

$K=1 \rightarrow \text{Smallest}$

$K=2 \rightarrow \text{2nd Smallest}$

1 -2 -3 7 5 4 3
 $i \quad j$

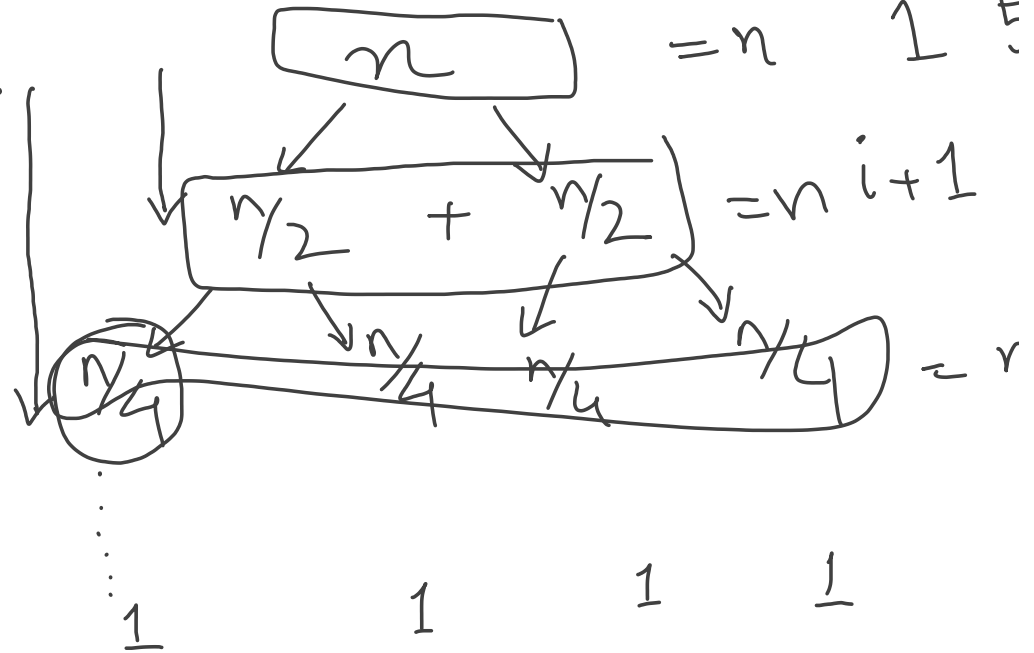
1 -2 -3 2 5 4 3

$prt=2$

$i \quad j$
 1 5

$n \rightarrow \frac{n}{2}$

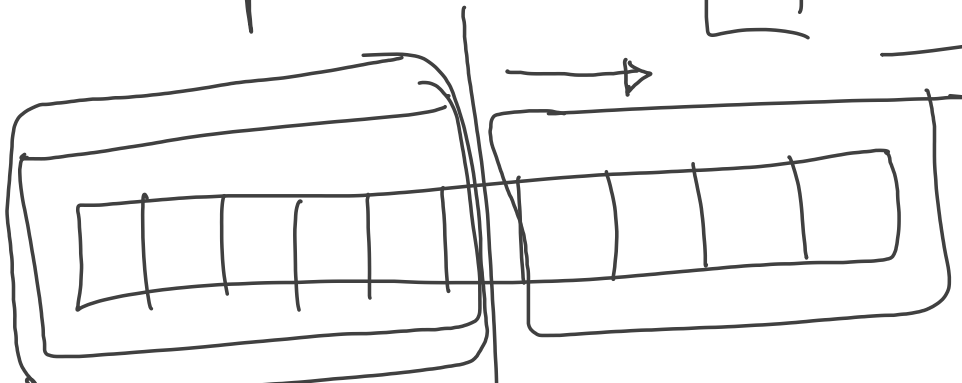
$O(n \log_2 n)$



5 [5 5 5 5 5 5 5]

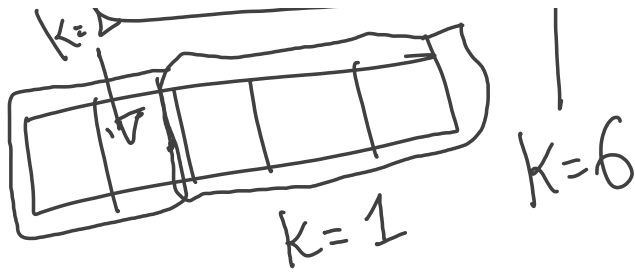
$prt=5$

$[sp+1 \sim pT]$



$K=2$

n



$$n \rightarrow \overline{2}$$

$$10 \dots 0$$



$$= n + \frac{n}{2} + \frac{n}{4} + \frac{n}{8} + \dots$$

$$\cancel{1.99 \dots 9} = X$$

$$= n \left(1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots \right)$$

$$\approx 2n$$

