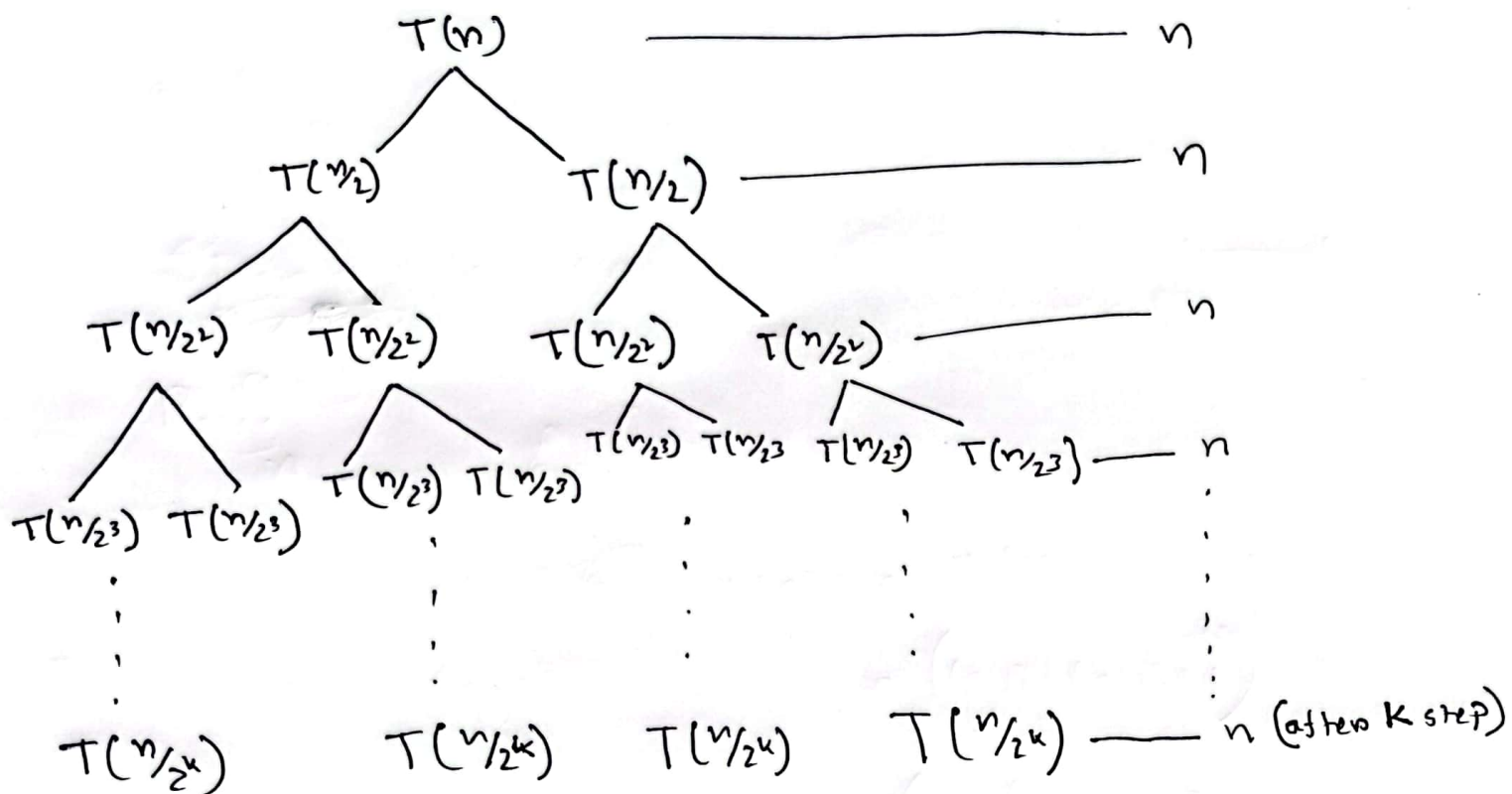


$$* T(n) = 2T(n/2) + n$$



$$\begin{aligned} \text{Now, } \frac{n}{2^k} &= 1 \\ \Rightarrow n &= 2^k \\ \therefore k &= \log_2 n \end{aligned}$$

$$\begin{aligned} \therefore \text{Time Complexity } &O(kn) \\ &\Rightarrow O(n \log_2 n) \end{aligned}$$