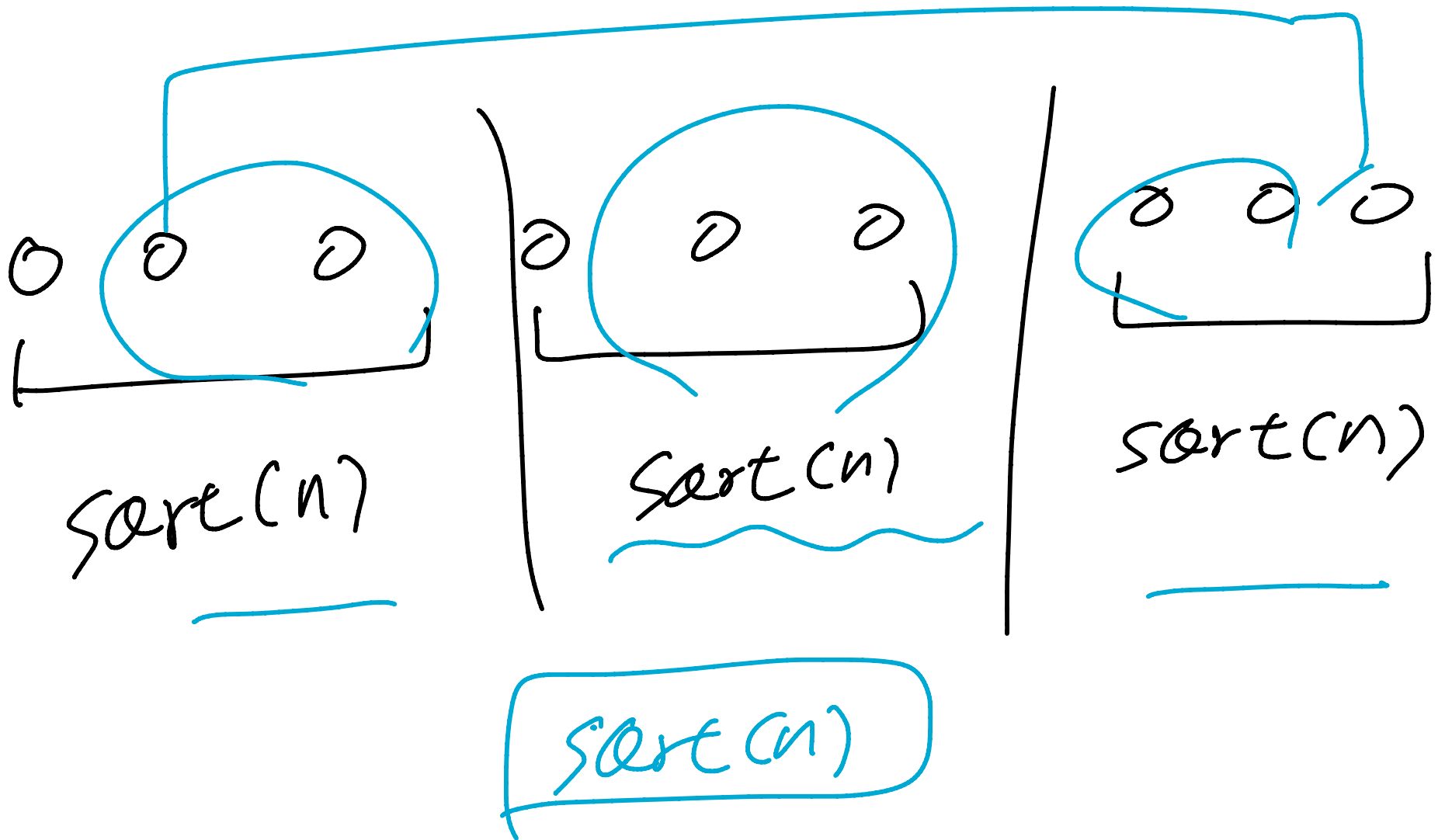
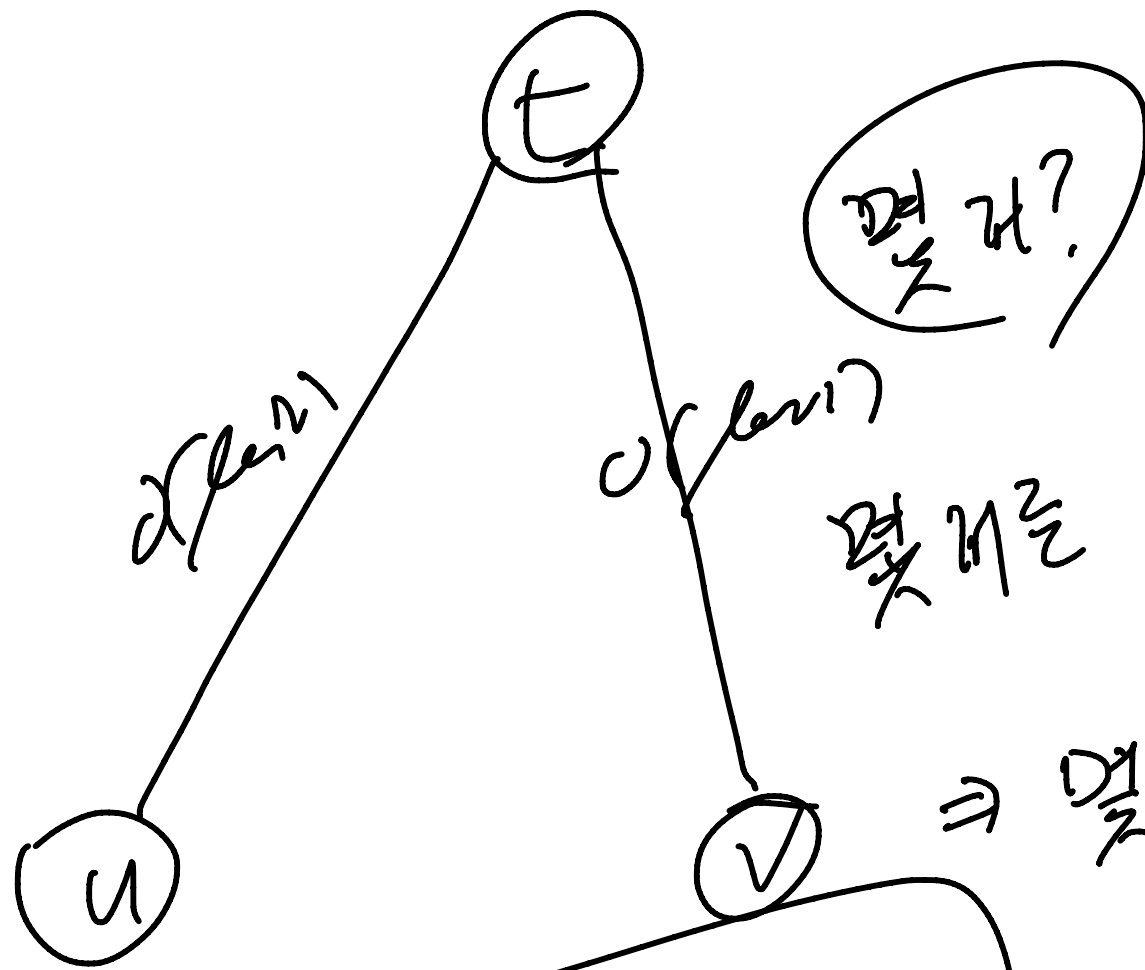


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Q&A : [question.startlink.help](#)





몇 개?

$O(2^N)$

몇 개를 만나냐?

\Rightarrow 몇 번 \checkmark 무지한
정답가
찾아볼까?

$\Rightarrow O(\log N)$

사실 2
이상의

$\left\{ \begin{aligned} &PSum[x] \Rightarrow \text{root에서 } x\text{까지 가는데} \\ &\quad \text{비트의 횟수} \end{aligned} \right\}$

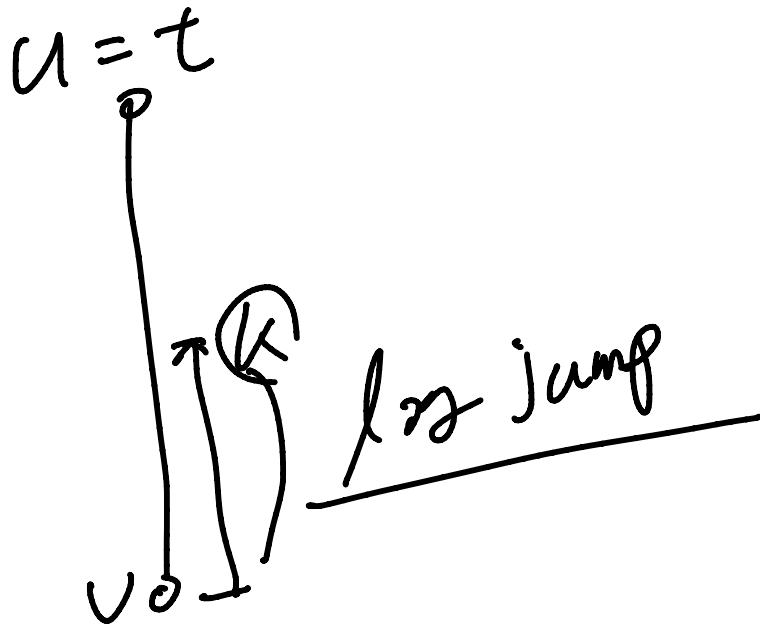
1. no hld

$$\ast PSum[u] + PSum[v] - 2 * PSum[lca(u, v)]$$

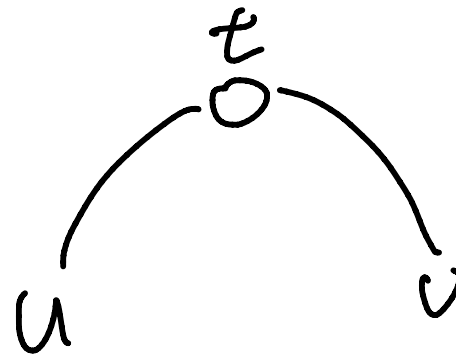
2. hld

$$Query(u, lca(u, v)) + Query(v, lca(u, v))$$

$$1. \quad lca \Rightarrow t$$



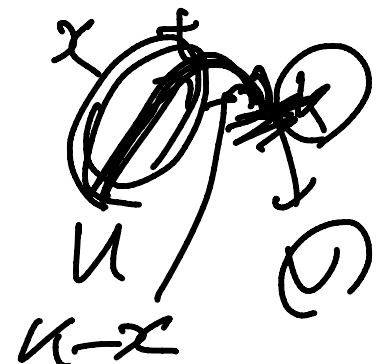
2.



2-1

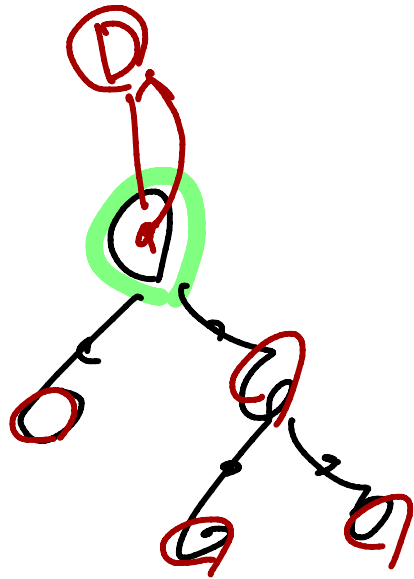


2-2



$$\log t [v] - (k-x)$$

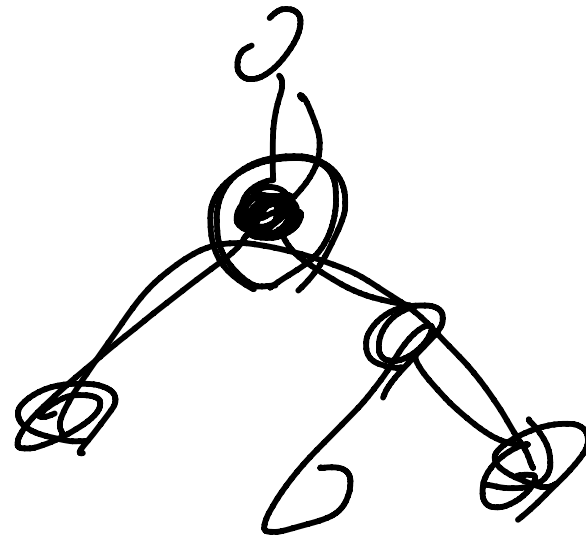
1. dummy root



2. $root \in \{t, z, \lambda, \tau\}$

$u \rightarrow v$

lca $(u, v) \Rightarrow t$



$\left. \begin{array}{l} \text{검은색} \Rightarrow 1 \\ \text{흰색} \Rightarrow 0 \end{array} \right\} \text{Query}(1, v)$

\Rightarrow 1번부터 v 번까지
 가는데 판다는 것은
 점점의 수

$Q(1,1) \quad Q(1,2) \quad Q(1,3) \quad \dots \quad Q(1,v)$

\Rightarrow 간지 풀기.

\Rightarrow 다분탐색

1. 간선 cost \Rightarrow 0 또는 1

1은 연결, 0은 끊어짐.

Query (u, t) + Query (v, t)

\Rightarrow u에서 v로 가는 경로들 존재하는 간선의 수.

$$\text{Length}[u] + \text{Length}[v] - 2 \cdot \text{Length}[t]$$

