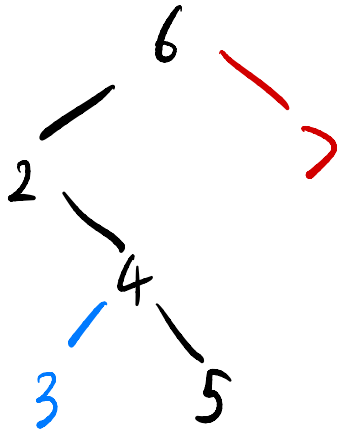
Ex. 36

Take the following binary tree, and say $k=5$. The search path (B) is in black, everything to the left (A) in blue, and everything to the right (C) in red.



$a=3 \in A$ and $b=2 \in B$.

$a > b$, so the inequality $a \leq b \leq c$ does not hold.