

COP 4516

1/21/25

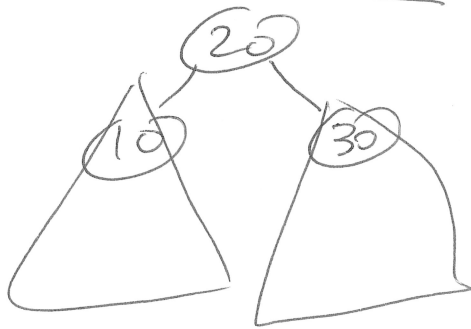
① Trees

(a) Pre, In \rightarrow Post

(b) Ceiling Function

② USACO \rightarrow (c) Modulo Feb 2023

Binary Search Tree



DATA
LEFT
RIGHT

$f(\text{tree } t)$

$f(t \rightarrow \text{left})$

$f(t \rightarrow \text{right})$

USE

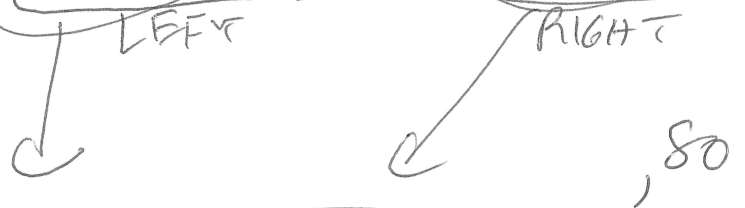
SOLVE
LEFT

RIGHT

INPUT

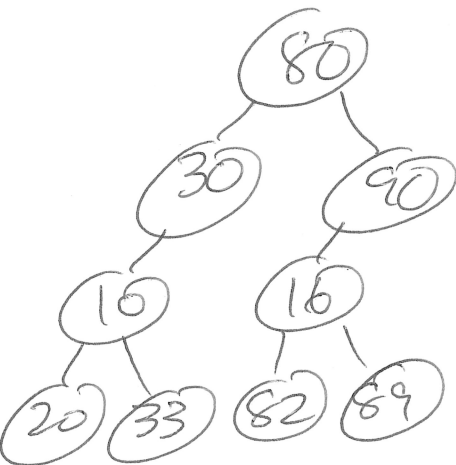
Pre =	80	30, 10, 20, 33	90, 16, 82, 89
In =	20, 10, 33, 30	80	82, 16, 89, 90

POST :

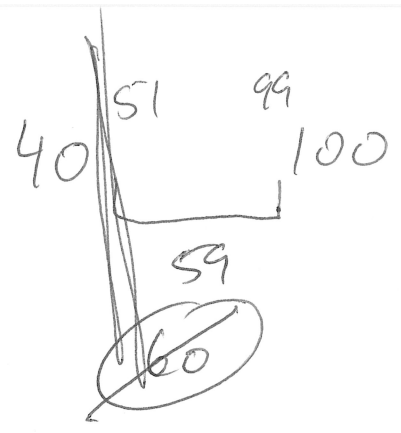


$f(\text{array}, \text{leftI}, \text{rightI})$

pre
array leftInI, rightInI
in,



K 3, 22, 25, $\begin{matrix} 18 \\ \textcircled{19} \end{matrix}$ $\begin{matrix} 2 \\ \textcircled{3} \end{matrix}$ $\begin{matrix} 14 \\ \textcircled{15} \end{matrix}$



$$\left[\begin{matrix} (100 - 3 + 1) \\ (\partial_N - \partial_i + 1) + \underline{K} \end{matrix} \right] \quad 1 \text{ subscription}$$

$$\underline{(\partial_i - \partial_{i+1} + 1)} + K + \underline{(\partial_N - \partial_{i+1} + 1)} + K$$

$$\begin{matrix} (\partial_N - \partial_i) \times 1 \\ - \end{matrix} \begin{matrix} (\partial_{i+1} - \partial_i) \\ -1 \end{matrix} + \underline{2K}$$