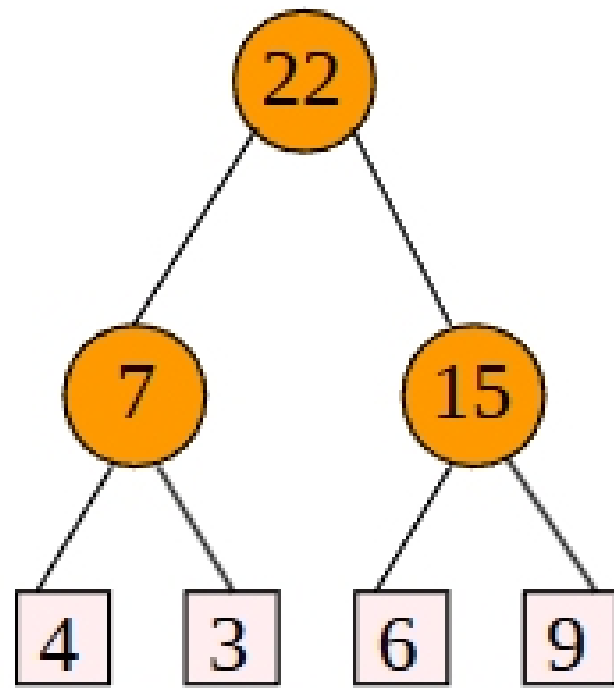
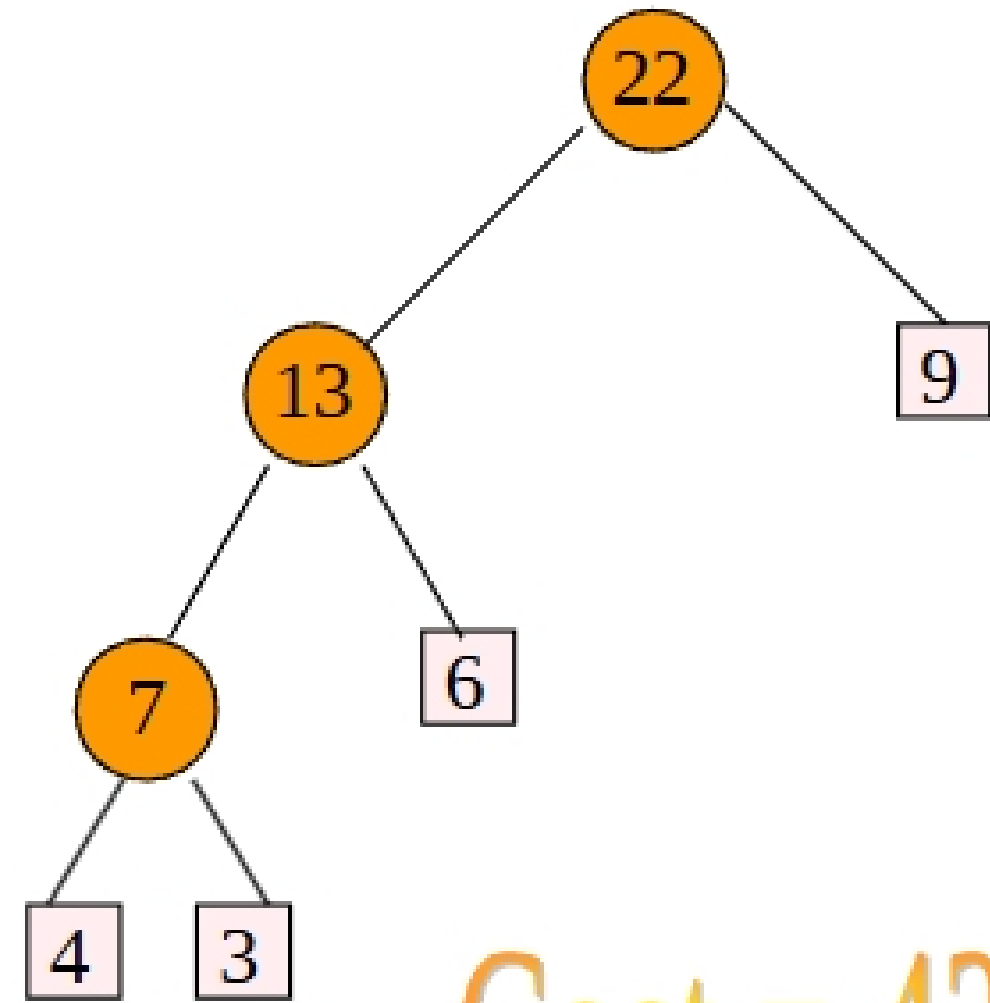


# Optimal Merging Of Runs



Cost = 44

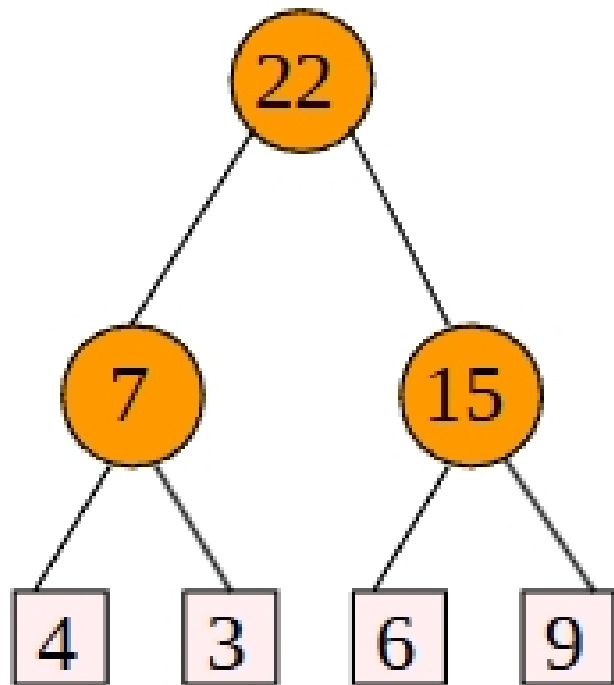


Cost = 42

Best merge order?

# Weighted External Path Length

$WEPL(T) = \sum(\text{weight of external node } i)$   
\* (distance of node  $i$  from root of  $T$ )

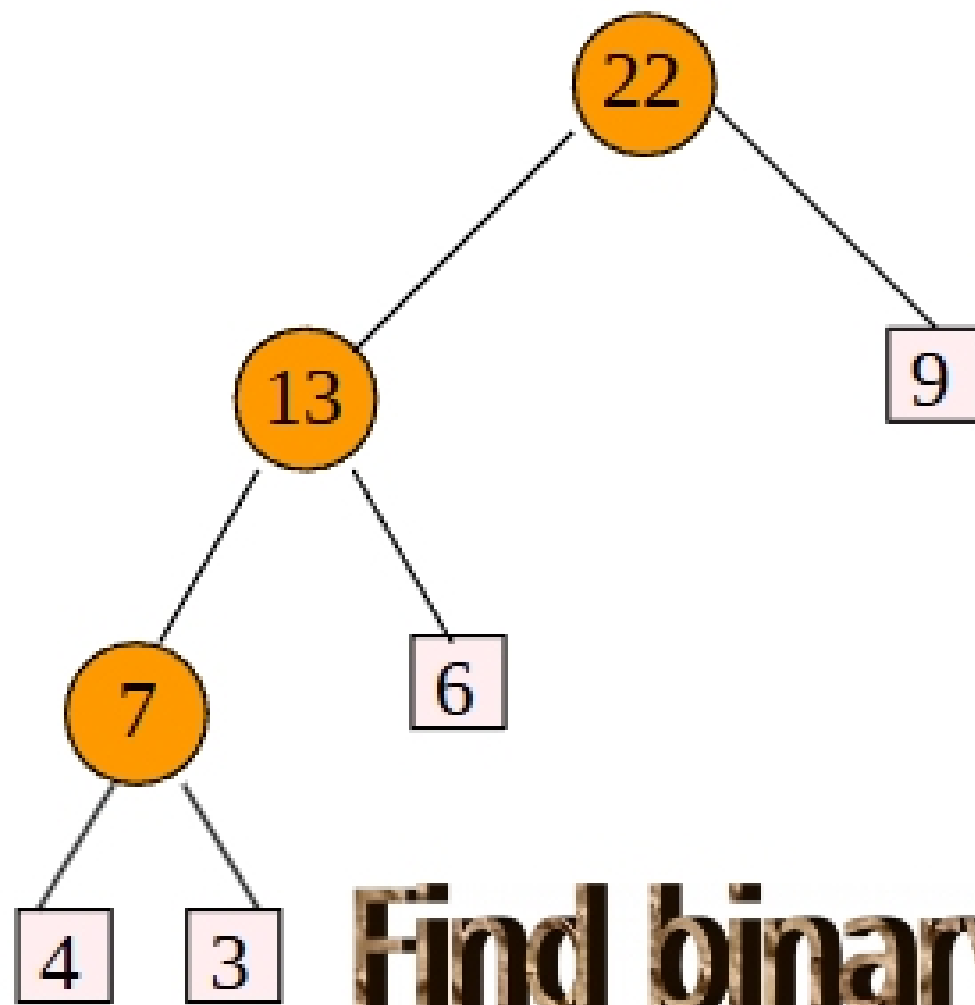


$$\begin{aligned} WEPL(T) &= 4 * 2 + 3 * 2 + 6 * 2 + 9 * 2 \\ &= 44 \\ &= \text{Merge Cost} \end{aligned}$$

# Weighted External Path Length

$$\text{WEPL}(T) = \sum(\text{weight of external node } i)$$

\* (distance of node  $i$  from root of  $T$ )



$$\begin{aligned}\text{WEPL}(T) &= 4 * 3 + 3 * 3 + 6 * 2 + 9 * 1 \\ &= 42\end{aligned}$$

= Merge Cost

**Find binary tree with minimum WEPL.**