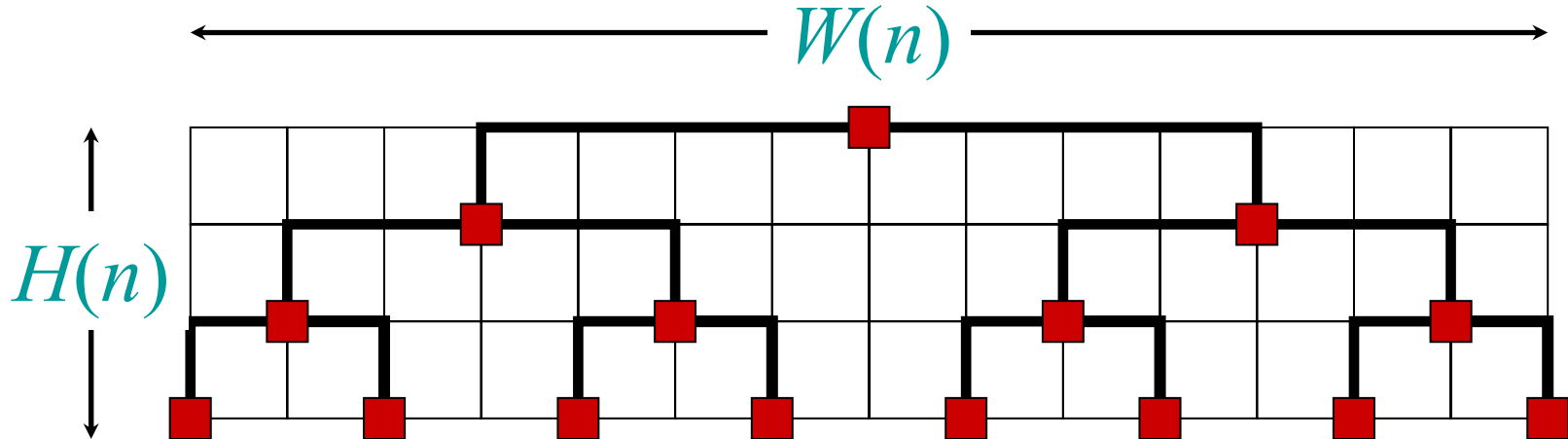




# VLSI layout

**Problem:** Embed a complete binary tree with  $n$  leaves in a grid using minimal area.



$$\begin{aligned} H(n) &= H(n/2) + \Theta(1) & W(n) &= 2W(n/2) + \Theta(1) \\ &= \Theta(\lg n) & &= \Theta(n) \end{aligned}$$

$$\text{Area} = \Theta(n \lg n)$$