



More intuition

Suppose we alternate lucky, unlucky, lucky, unlucky, lucky,

$$L(n) = 2U(n/2) + \Theta(n) \quad \textit{lucky}$$

$$U(n) = L(n-1) + \Theta(n) \quad \textit{unlucky}$$

Solving:

$$L(n) = 2(L(n/2 - 1) + \Theta(n/2)) + \Theta(n)$$

$$= 2L(n/2 - 1) + \Theta(n)$$

$$= \Theta(n \lg n) \quad \textit{Lucky!}$$

How can we make sure we are usually lucky?