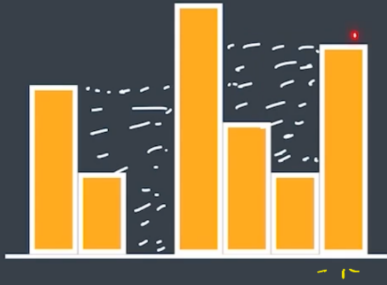


Trapping Rainwater

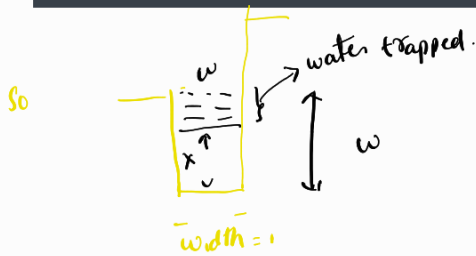
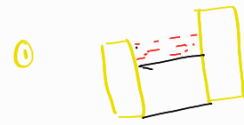
height ≥ 0

Given n non-negative integers representing an elevation map where the width of each bar is 1, compute how much water it can trap after raining.

height = [4, 2, 0, 6, 3, 2, 5]



water can only be trapped only if there are 2 bars beside it.



so water trapped = $w - x$

area = $(w - x) \times \text{width}$

$(\text{water level} - \text{bar level}) \times \text{width}$

→ How to calculate water level??

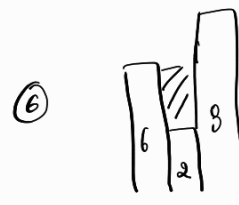
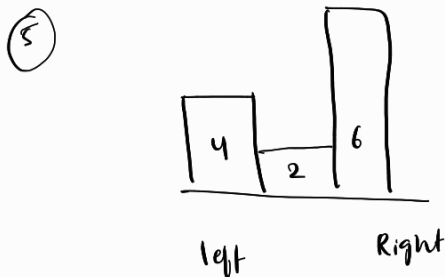


} min required bars = 3



} sorted

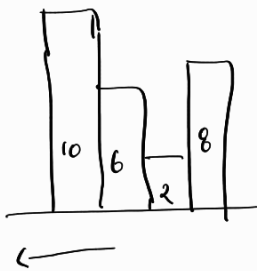
sorted heights



$6 - 2 = 4$

Trapped water level
= $\min(\text{left}, \text{Right}) - 2$

7



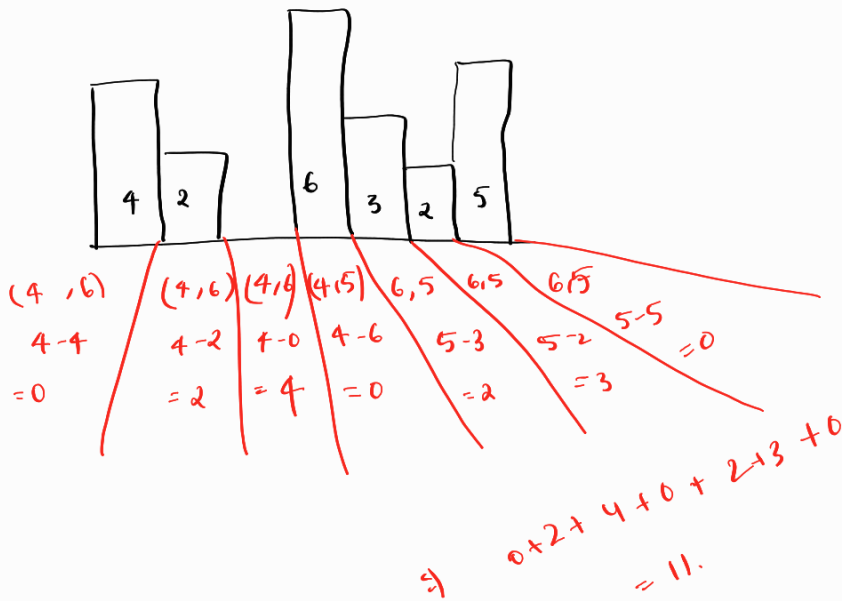
$$\Rightarrow \min(L_{\max}, R_{\max}) - \text{Bar height} \cdot \text{water level.}$$

Left max

Right max = 8

= 10

-ve capacity not allowed.



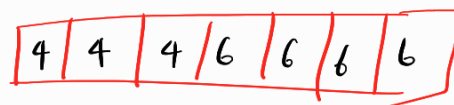
\rightarrow We need an helper array for finding

Right max boundary.

Left max

\Rightarrow

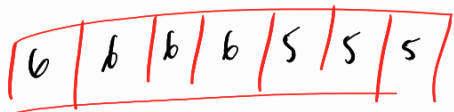
start



Right

max

\Rightarrow



\uparrow

start from here.

Left max boundary &

$$\max(\text{curr}[i], L_{\max}[i-1])$$

curr val

$$\max(\text{curr}[i], R_{\max}[i+1])$$