

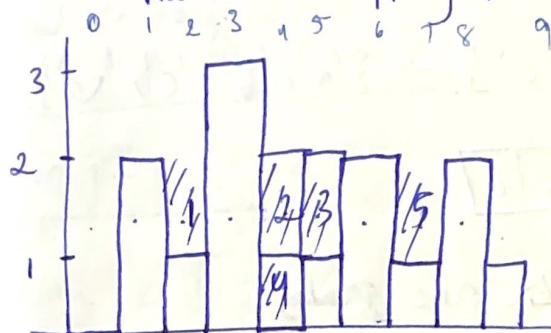
Sample Lab

RAIN WATER HARVESTING.

Given n non-negative integers representing the elevation map where width of every bar is 1; find the maximum water that can be saved.

0, 2, 1, 3, 0, 1, 2, 1, 2, 1

Rainwater Trapping Problem.



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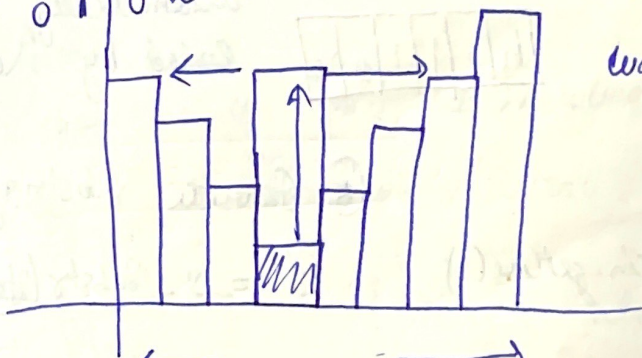
$$10 - 1 = 9$$

$$16 - 8 = 8$$

units of water.

	0	2	1	3	0	1	2	1	2	1
left	0	2	2	3	3	3	3	3	3	3
Right	3	3	3	3	2	2	2	2	2	0
Water	0	0	1	0	2	1	0	1	0	0

Precompute.
(Include current building).



Water = 5.

$left[0] = a[0]$. Left most target.

$right[n-1] = a[n-1]$.

for (int $j=0$; $j < n$; $j++$)
 if ($a[j-1] > left[j-1]$)
 $left[j] = a[j-1]$
 else
 $left[j] = left[j-1]$

$\sum \min(left[i], right[i]) - \text{height of } i^{\text{th}} \text{ building.}$

for (int $j=n-2$; $j \geq 0$; $j--$)

for (int $j=n-2$; $j \geq 0$; $j--$)
 if ($a[j+1] > right[j+1]$)
 $right[j] = a[j+1]$

else
 $right[j] = right[j+1]$