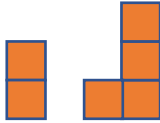


How Much Water?

Consider a track of land having two parallel walls that are 1-foot apart. On the ground between the two walls are markings that are 1-foot apart (i.e., marking 1ft x 1ft squares between the two walls). Atop each square marking, there is a vertical stack of zero or more 1ft x 1ft x 1ft cement blocks.



How many cubic feet of water is trapped after a rainfall?

Note: 1ft x 1ft x 1ft = 1 cubic foot

Write a function

```
int howmuchwater(unsigned int a[], int n)
```

where

`a[]` is a 1D array where `a[i]` reports the number of blocks stacked atop square `i`

`n` is the number of elements in `a[]`

and returns the cubic feet of trapped water from blocks described in `a[]` if `n>0` and `a[]` is non-null, otherwise returns -1.

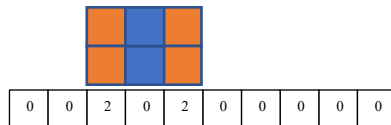
File you must submit: `soln_func.cc`

Examples:

`a[] = {0, 0, 2, 0, 2, 0, 0, 0, 0, 0}, n=10`

Returns: 2

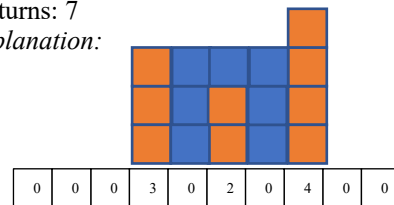
Explanation:



`a[] = {0, 0, 0, 3, 0, 2, 0, 4, 0, 0}, n=10`

Returns: 7

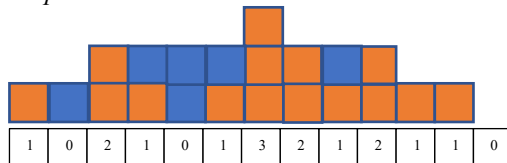
Explanation:



`a[] = {1, 0, 2, 1, 0, 1, 3, 2, 1, 2, 1, 1, 0}, n=13`

Returns: 6

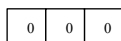
Explanation:



`a[] = {0, 0, 0}, n=3`

Returns: 0

Explanation:



`a[] = {0, 0, 1}, n=3`

Returns: 0

Explanation:



`a[] = NULL, n=3`

`a[] = {0, 0, 0}, n=0`

Both return: -1

Explanation: Neither satisfies $n>0$ and `a[]` is non-null.