
Assignment 1 Water height

The height of the water in a pond changes daily governed by two contributions: the constant decrease of height due to the water outflow and the variable increase of height due to the rain. Given the water height for one day and the rain value r , the water height for the next day can be computed as

$$h_{\text{today}} = h_{\text{yesterday}} + r - 2.$$

If the computed value is negative it should be replaced by 0, indicating that the pond is empty. The computation can be repeated for any number of days, as long as we have rain values.

■ Problem definition

Write a function `water_height` which takes an initial water height h_0 and a vector `r` with rain values for a number of days as input. The function should return a water height after the days have passed. The function should also work if `r` contains only one or no days. (In case of no days, h_0 should be returned.)

■ Solution template

```
def water_height(h0, r):  
    # insert your code  
    return h
```

Input

`h0` A non-negative number with initial water height.
`r` A vector with rain values (non-negative numbers) for a number of days. A vector may contain multiple, only one, or no elements.

Output

`h` The water height after the number of days has passed.
