

[Problem Solving] Stack of pizzas

You have three stacks of pizzas where each pizza has the same diameter, but they may vary in height. You can change the height of a stack by removing and eating its topmost pizza any number of times.

Find the maximum possible height of the stacks such that all of the stacks are exactly the same height. This means you must remove zero or more cylinders from the top of zero or more of the three stacks until they are all the same height, then return the height.

Note: Code has to be runnable via console.

Example:

h1 = [1, 2, 1, 1]

h2 = [1, 1, 2]

h3 = [1, 1]

There are 4, 3 and 2 pizzas in the three stacks, with their heights in the three arrays. Remove the top 2 pizzas from h1 (heights = [1, 2]) and from h2 (heights = [1, 1]) so that the three stacks all are 2 units tall. Return 2 as the answer.

Note: An empty stack is still a stack.

Function Description

`int equalStacks(int h1[], h2[], h3[])`

Write an `equalStacks` function with the following parameters:

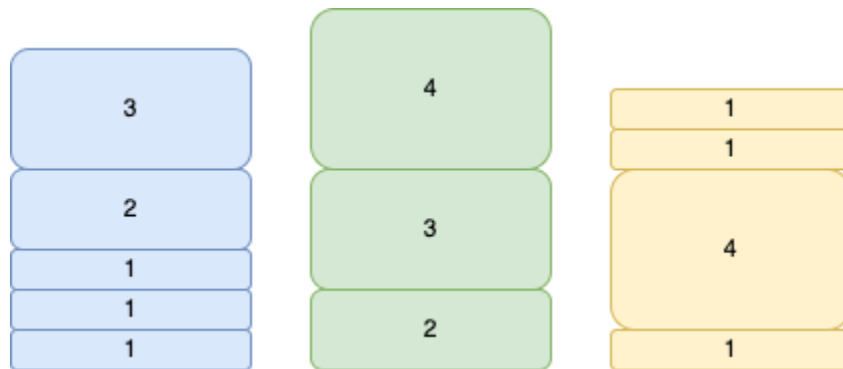
- `int h1[n1]`: the first array of heights
- `int h2[n2]`: the second array of heights
- `int h3[n3]`: the third array of heights

Returns

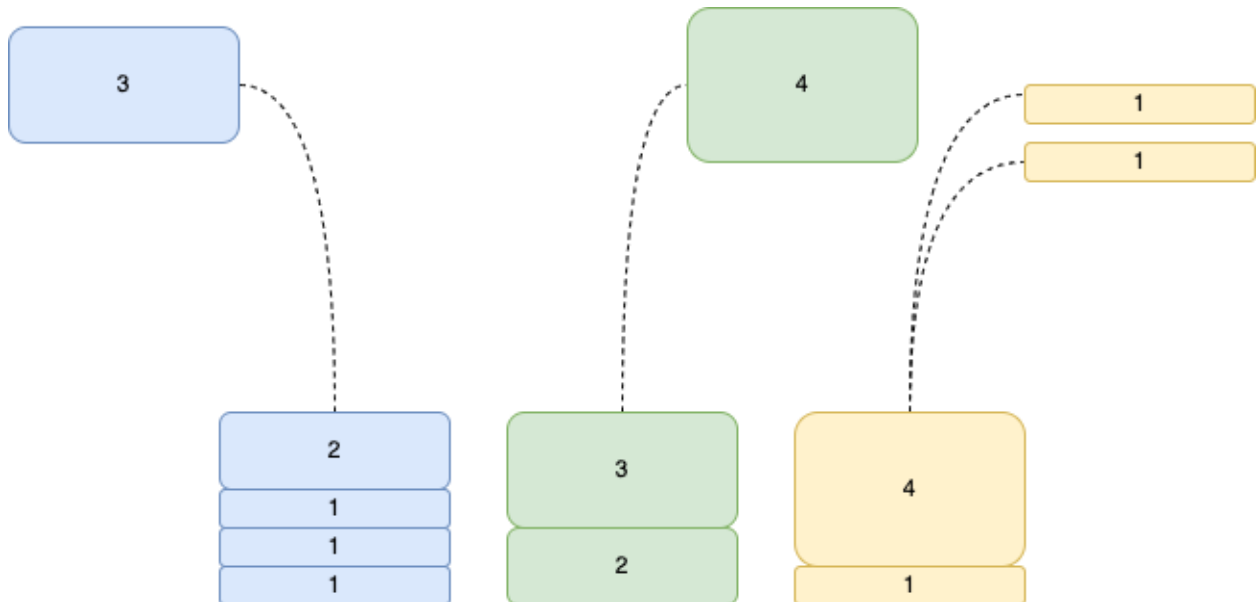
`int`: the height of the stacks when they are equalized

Explanation

Initially, the stacks look like this:



To equalize their heights, remove the first pizza from stacks 1 and 2, and then remove the top two pizzas from stack 3 (shown below).



The stack heights are reduced as follows:

1. $8 - 3 = 5$
2. $9 - 4 = 5$
3. $7 - 1 - 1 = 5$

All three stacks now have **height = 5**, the value to return.