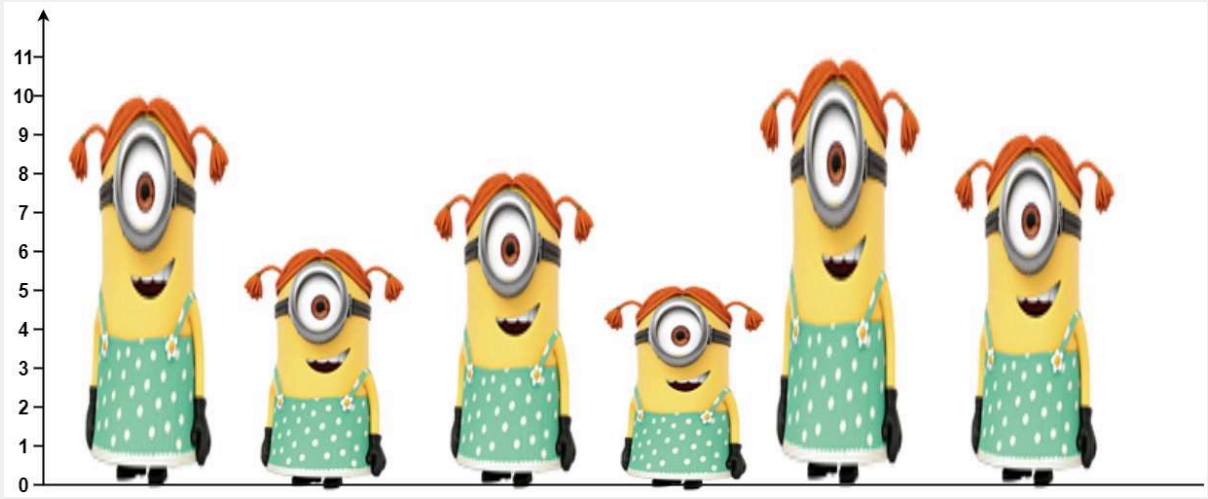
1- Problem- Leetcode #1944 - *Number of visible people in the queue*

There are n people standing in a queue, and they numbered from 0 to n - 1 in **left to right** order. You are given an array heights of **distinct** integers where heights[i] represents the height of the ith person.

A person can **see** another person to their right in the queue if everybody in between is **shorter** than both of them. More formally, the ith person can see the jth person if i < j and min(heights[i], heights[j]) > max(heights[i+1], heights[i+2], ..., heights[j-1]).

Return *an array* answer *of length* n *where* answer[i] *is the* ***number of people*** *the* ith *person can* ***see*** *to their right in the queue*.

Example 1:



2- Problem- Leetcode #232 - *Implement Queue using Stack*

Implement a first in first out (FIFO) queue using only two stacks. The implemented queue should support all the functions of a normal queue (push, peek, pop, and empty).

Implement the MyQueue class:

- void push(int x) Pushes element x to the back of the queue.
- int pop() Removes the element from the front of the queue and returns it.
- int peek() Returns the element at the front of the queue.
- boolean empty() Returns true if the queue is empty, false otherwise.

Notes:

- You must use **only** standard operations of a stack, which means only push to top, peek/pop from top, size, and is empty operations are valid.
- Depending on your language, the stack may not be supported natively. You may simulate a stack using a list or deque (double-ended queue) as long as you use only a stack's standard operations.

Example 1:

Input
["MyQueue", "push", "push", "peek", "pop", "empty"]
[[], [1], [2], [], [], []]
Output
[null, null, null, 1, 1, false]

Explanation
MyQueue myQueue = new MyQueue();
myQueue.push(1); // queue is: [1]
myQueue.push(2); // queue is: [1, 2] (leftmost is front of the queue)
myQueue.peek(); // return 1
myQueue.pop(); // return 1, queue is [2]
myQueue.empty(); // return false

3- Problem- Leetcode #1700 - *Number of students unable to eat*

The school cafeteria offers circular and square sandwiches at lunch break, referred to by numbers 0 and 1 respectively. All students stand in a queue. Each student either prefers square or circular sandwiches.

The number of sandwiches in the cafeteria is equal to the number of students. The sandwiches are placed in a **stack**. At each step:

- If the student at the front of the queue **prefers** the sandwich on the top of the stack, they will **take it** and leave the queue.
- Otherwise, they will **leave it** and go to the queue's end.

This continues until none of the queue students want to take the top sandwich and are thus unable to eat.

You are given two integer arrays students and sandwiches where sandwiches[i] is the type of the i_{th} sandwich in the stack (i = 0 is the top of the stack) and students[j] is the preference of the j_{th} student in the initial queue (j = 0 is the front of the queue). Return *the number of students that are unable to eat.*

Example 1:

Input: students = [1,1,0,0], sandwiches = [0,1,0,1]
Output: 0
Explanation:
- Front student leaves the top sandwich and returns to the end of the line making students = [1,0,0,1].
- Front student leaves the top sandwich and returns to the end of the line making students = [0,0,1,1].
- Front student takes the top sandwich and leaves the line making students = [0,1,1] and sandwiches = [1,0,1].
- Front student leaves the top sandwich and returns to the end of the line making students = [1,1,0].
- Front student takes the top sandwich and leaves the line making students = [1,0] and sandwiches = [0,1].
- Front student leaves the top sandwich and returns to the end of the line making students = [0,1].
- Front student takes the top sandwich and leaves the line making students = [1] and sandwiches = [1].
- Front student takes the top sandwich and leaves the line making students = [] and sandwiches = [].
Hence all students are able to eat.

Example 2:

Input: students = [1,1,1,0,0,1], sandwiches = [1,0,0,0,1,1]
Output: 3