# The Moss Trouble 

## Assignment 2

Data Structures \& Algorithms
Due date: xx February, 2020

Problem Statement: Molly's class has $N$ students with each student having a grace score of $A[i]$. Seeing the moss results of the previous assignment Molly decided to reduce the grace score of some students. The new grace scores for all students are given as the array $B$ where $B[i]$ denotes the new grace score and $B[i] \leq A[i]$ for all $1 \leq i \leq N$. However Molly can reduce the scores by performing the following operation multiple times. In each operation :

- Choose two indices $L$ and $R(1 \leq L \leq R \leq N)$ and a new score $S$ such that $S \leq A[i]$ for $L \leq i \leq R$.
- Reduce the score of all students from $L$ through $R$ to score $S$. i.e. $A[i]$ becomes equal to $S$ for $L \leq i$ $\leq R$.

Since Molly is a busy person she wants to do the above task in minimum number of operations.

## Input

- The first line consists of a single integer $N$ denoting the number of students.
- The second line contains $N$ space-separated integers $A_{1}, A_{2}, \ldots, A_{N}$ denoting initial grace scores of students.
- The third line contains $N$ space-separated integers $B_{1}, B_{2}, \ldots, B_{N}$ denoting final grace scores of students.


## Output

Print 1 integer - the minimum number of operations needed to obtain the desired scores.

## Constraints

$1 \leq N \leq 10^{5}$
$1 \leq A_{i} \leq 10^{9}$
Time Limit: 2 secs
Memory Limit: 256 MB

## Sample Test Case

| Input | Output |
| :---: | :---: |
| 3 | 2 |
| 313 |  |
| 212 |  |
| 7 | 3 |
| 1345123 |  |
| 1212111 |  |

