Gap Up and Gap Down

John has been analysing stocks and their prices as his latest assignment. Being a beginner in stocks he has selected a stock HRC and collected the following data for n days:

1. $lowPrice_i$: The lowest value of the stock on i^{th} day.
2. $highPrice_i$: The highest value of the stock on i^{th} day.
3. $closePrice_i$: The closing value of the stock on i^{th} day.

Recently he came across the concept of Gap Up and Gap Down.

A stock is considered Gap Up if i^{th} day's low value is higher than the $(i-1)^{th}$ day's close value, and a stock is considered Gap down is i^{th} day's high value is lower than the $(i-1)^{th}$ day's close value.

Now he wants to find out the number of gap ups and gap downs the stock went through for n days.

Input Format

The first line contains an integer N, where N is the number of days for which the stock data was collected.

The next line contains N space separated integers, where $lowPrice_i$ is the lowest value of the stock on the i^{th} day.

The next line contains N space separated integers, where $highPrice_i$ is the highest value of the stock on the i^{th} day.

The next line contains N space separated integers, where $closePrice_i$ is the close value of the stock on the i^{th} day.

Constraints

$1 \leq N \leq 10^5$
$1 \leq lowPrice_i, highPrice_i, closePrice_i \leq 10^3$

Output Format

Print two space separated integers representing the number of gap ups and gap downs observed for the stock respectively.

Sample Input 0

```
5
5 3 7 7 2
10 9 20 15 10
6 8 16 11 6
```

Sample Output 0

```
0 2
```

Explanation 0

There is no Gap Up observed.

There are two Gap Downs observed:

- highPrice[4] < closePrice[3]
- highPrice[5] < closePrice[4]

So we print 0 and 2 as our answer.

Sample Input 1

```
4
2 8 6 12
10 15 13 20
6 12 11 16
```

Sample Output 1

```
2 0
```

Explanation 1

There are two Gap Ups observed:

- lowPrice[2] > closePrice[1]
- lowPrice[4] > closePrice[3]

There are no Gap Downs observed.

So we print 2 and 0 as our answer