Question - 1
Shifting Strings

The following operations on a string are defined:

- *Left Shift*: A single circular rotation of the string in which the first character becomes the last character and all other characters are shifted one index to the left. For example, *abcde* becomes *bcdea* after one left shift and *cdeab* after two left shifts.
- *Right Shift*: A single circular rotation of the string in which the last character becomes the first character and all other characters are shifted one index to the right. For example, *abcde* becomes *eabcd* after one right shift and *deabc* after two right shifts.

Example

s = 'abcdefg'

leftShifts = 2

rightShifts = 4

The string *abcdefg* shifted left by 2 positions is *cdefgab*. The string *cdefgab* shifted right by 4 positions is *fgabcde*, the string to return.

Function Description

Complete the function *getShiftedString* in the editor below.

getShiftedString has the following parameter(s):

string s: the string to shift
int leftShifts: number of shifts left
int rightShifts: number of shifts right

Returns:

string: a string shifted left or right

Constraints

- $1 \le \text{length of } s \le 10^5$
- $0 \le leftShifts, rightShifts \le 10^9$
- String *s* consists of lowercase English alphabetic letters only, ascii[a-z].

▼ Input Format for Custom Testing

Input from stdin will be processed as follows and passed to the function.

The first line contains *s*, the string to shift.
The second line contains an integer, *leftShifts*.
The third line contains an integer, *rightShifts*.

▼ Sample Case 0

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Sample Input 0

```
STDIN          Function
-----          --------
abcd     →     s = "abcd"
1        →     leftShifts = 1
2        →     rightShifts = 2
```

Sample Output 0

```
dabc
```

Explanation 0

Initially, *s* is *abcd*.

1. *leftShifts = 1 : abcd → bcda*
2. *rightShifts = 2 : bcda → abcd → dabc*

The function then returns *dabc*.

▼ Sample Case 1

Sample Input 1

```
STDIN          Function
-----          --------
a        →     s = "a"
0        →     leftShifts = 0
1        →     rightShifts = 1
```

Sample Output 1

```
a
```

Explanation 1

A one character string is unchanged regardless of the number of shifts performed.

Question - 2
Calculate Region

There is a straight line of students of various heights. The students' heights are given in in the form of an array, in the order, they are standing in the line.

Consider the region of a student as the length of the largest subarray that includes that student's position, and in which that student's height is equal to maximum height among all students present in that subarray. Return the sum of the region of all students.

For example-

- *heights = [1, 2, 1]*
- The longest subarray in which the first student's height is equal to maximum height among all other students is [1]; thus, the length of

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the region of the first student is 1.
- The longest subarray in which the second student's height is equal to maximum height among all other students is [1, 2, 1]; thus, the length of the region of the second student is 3.
- The longest subarray in which the third student's height is equal to maximum height among all other students is [1]; thus, the length of the region of the third student is 1.
- Thus, the sum of the lengths of all regions of all students is *1+3+1 = 5*.

Function Description
Complete the function *calculateTotalRegion* in the editor below. The function must return the desired sum of all regions.

calculateTotalRegion has the following parameter(s):
heights: an array of the heights of students standing in the line

Constraints
- 1 ≤ length of heights ≤ 10^5
- *1 ≤ heights[i] ≤* 10^9

▼ Input Format For Custom Testing

The first line contains the only integer n that denotes the size of the array *heights*.

The next *n* lines contain one integer that denotes *heights[i]*.

▼ Sample Case 0

Sample Input For Custom Testing

```
3
1
2
1
```

Sample Output

```
5
```

Explanation
The input corresponds to the example given in the statement. The answer is *5* and it is explained in the statement.

▼ Sample Case 1

Sample Input For Custom Testing

```
4
1
1
1
1
```

Sample Output

```
16
```

Explanation
For example :

heights [1,1,1,1]
- The longest subarray in which first student's height is equal to maximum height among all other students is [1, 1, 1, 1], thus the

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region of the first student is 4.

- The longest subarray in which the second student's height is equal to maximum height among all other students is [1, 1, 1, 1], thus the region of the second student is 4.
- The longest subarray in which the third student's height is equal to maximum height among all other students is [1, 1, 1, 1], thus the region of the third student is 4.
- The longest subarray in which the fourth student's height is equal to maximum height among all other students is [1, 1, 1, 1], thus the region of the fourth student is 4.
- Thus, the sum of the region of all students is *4+4+4+4 = 16*.

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