

A. Hotelier

time limit per test: 1 second  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

Amugae has a hotel consisting of 10 rooms. The rooms are numbered from 0 to 9 from left to right.

The hotel has two entrances — one from the left end, and another from the right end. When a customer arrives to the hotel through the left entrance, they are assigned to an empty room closest to the left entrance. Similarly, when a customer arrives at the hotel through the right entrance, they are assigned to an empty room closest to the right entrance.

One day, Amugae lost the room assignment list. Thankfully Amugae's memory is perfect, and he remembers all of the customers: when a customer arrived, from which entrance, and when they left the hotel. Initially the hotel was empty. Write a program that recovers the room assignment list from Amugae's memory.

Input

The first line consists of an integer  $n$  ( $1 \leq n \leq 10^5$ ), the number of events in Amugae's memory.

The second line consists of a string of length  $n$  describing the events in chronological order. Each character represents:

- 'L': A customer arrives from the left entrance.
- 'R': A customer arrives from the right entrance.
- '0', '1', ..., '9': The customer in room  $x$  (0, 1, ..., 9 respectively) leaves.

It is guaranteed that there is at least one empty room when a customer arrives, and there is a customer in the room  $x$  when  $x$  (0, 1, ..., 9) is given. Also, all the rooms are initially empty.

Output

In the only line, output the hotel room's assignment status, from room 0 to room 9. Represent an empty room as '0', and an occupied room as '1', without spaces.

Examples

input

8  
LLRL1RL1

output

1010000011

input

9  
L0L0LLRR9

output

1100000010

Note

In the first example, hotel room's assignment status after each action is as follows.

- First of all, all rooms are empty. Assignment status is 0000000000.
- L: a customer arrives to the hotel through the left entrance. Assignment status is 1000000000.
- L: one more customer from the left entrance. Assignment status is 1100000000.
- R: one more customer from the right entrance. Assignment status is 1100000001.
- L: one more customer from the left entrance. Assignment status is 1110000001.

Codeforces Round #578 (Div. 2)

Contest is running

01:56:44

Contestant



→ Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Score table

	Score
<a href="#">Problem A</a>	500
<a href="#">Problem B</a>	1000
<a href="#">Problem C</a>	1250
<a href="#">Problem D</a>	2000
<a href="#">Problem E</a>	2000
<a href="#">Problem F</a>	2500
Successful hack	100
Unsuccessful hack	-50
Unsuccessful submission	-50
Resubmission	-50

\* If you solve problem on 00:00 from the first attempt

- 1: the customer in room 1 leaves. Assignment status is 1010000001.
- R: one more customer from the right entrance. Assignment status is 1010000011.
- L: one more customer from the left entrance. Assignment status is 1110000011.
- 1: the customer in room 1 leaves. Assignment status is 1010000011.

So after all, hotel room's final assignment status is 1010000011.

In the second example, hotel room's assignment status after each action is as follows.

- L: a customer arrives to the hotel through the left entrance. Assignment status is 1000000000.
- 0: the customer in room 0 leaves. Assignment status is 0000000000.
- L: a customer arrives to the hotel through the left entrance. Assignment status is 1000000000 again.
- 0: the customer in room 0 leaves. Assignment status is 0000000000.
- L: a customer arrives to the hotel through the left entrance. Assignment status is 1000000000.
- L: one more customer from the left entrance. Assignment status is 1100000000.
- R: one more customer from the right entrance. Assignment status is 1100000001.
- R: one more customer from the right entrance. Assignment status is 1100000011.
- 9: the customer in room 9 leaves. Assignment status is 1100000010.

So after all, hotel room's final assignment status is 1100000010.

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