

CIRCULAR BUFFER

Link to hint file: <http://10.4.3.68/labtest2/P2-hint.c>

Your task is to implement a circular buffer of size N (using an **array**).

A circular buffer is basically an array of fixed size N, but when more elements than N are added to it over time, they overwrite the oldest values.

Initially it is empty.

Your program will be given a sequence of the following 4 commands to update/print its contents:

A n - Append the following n lines to the buffer. If the buffer is full then replace the older entries.

Each of the following n lines will contain strings (without any spaces\tabs) of maximum length 100. They will be single words with alphabets and numbers.

R n - Remove first n elements of the buffer.

These n elements are the ones that were added earliest among the current elements.

L - List the elements of buffer in order of their inserting time.

Q - Quit. Stop scanning for input and exit your program.

Your task is to execute these commands on circular buffer.

Input format:

First line of input contains N, the size of the buffer, followed by a sequence of these commands:

A n - append the following n lines to the buffer

R n - remove first n elements of the buffer

L - list the elements of buffer in order of their inserting time.

Q - quit

Output format:

Whenever L command appears in the input, print the elements of buffer in order of their inserting

time. Element that was added first should appear first.

Sample Input:

```
10
A 3
str1
str2
str3
L
R 1
L
A 1
```

str4
R 2
L
Q

Sample Output:

str1
str2
str3
str2
str3
str4

Constraints:

The following conditions will be satisfied by the test cases, so you need not bother:

1. $0 \leq N \leq 10000$
2. For append command, n can be any non-negative integer
3. The length of the strings to be added will be at least 1 and at most 100
4. For remove command, $n \leq$ Number of elements currently presents in circular buffer
5. $1 \leq$ Total number of commands ≤ 5000

HINT

You can think on your own or debug hint.c to get the pseudo-code/algo.

in hint.c anything that is tried to be printed on stdout is of importance to you.

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