CSGE602040 - Data Structures and Algorithms
Even Semester - 2020/2021
Lab 2
Deadline: Sunday, 04-04-2021, 23.55 WIB

Malfunctioning Computer Keyboard

Description

Mister Master has a computer used for activities such as Studi Dengan Alam (SDA). But in before, Jarjar, who needed a computer for writing secret code, destroyed Mister Master's computer. The destroyed part was discovered from a driver that translates command instructions from keyboard inputs is not working as expected for some action when doing operations for data processing.
Action-action that were mentioned are :

- `ADD C`
  - If operation `INS` has already been called for some **odd times** (1 times, 3 times, 5 times, etc.), then `ADD C` will perform the following operations: Replace a character C which is in the right position of the current cursor if available. If not available, then adding a character C in the current position of cursor. After this operation, the cursor will move to the right of character C that has just replaced other characters or been added.
  - If operation `INS` has already been called for some **even times** (0 times, 2 times, 4 times, etc.), then `ADD C` will perform the following operations: Adding a character C in the current position of cursor. After this operation, the cursor will move to the right position of character C that has just been added.
- `DEL` is an action for deleting a character in the right position of the current cursor. If there's no character in the right position of the cursor, then this operation will do nothing.
- `HOME` is an action for moving the cursor to the most left position of all characters that are available on the screen.
- `END` is an action for moving the cursor to the most right position of all characters that are available on the screen.
- `RIGHT` is an action for moving the cursor to the right, past a character. If there's no character on the right of the cursor, then skip this instruction.
- `LEFT` is an action for moving the cursor to the left, past a character. If there's no character on the left of the cursor, then skip this instruction.
- `INS` is an action for switching the type of operation in `ADD C`

Help Mister Master repair his keyboard so that it will be able to work the same as before it was destroyed. As replacement, Mister Master will do Q scenario testing for checking whether the implementation that you have done is correct or not.

Inputs

Input begins with a number Q which represents the number of test scenario.

For the next Q line, input is a collection of operations that have been described in the question description.

Outputs

A String which is the final result of processing all the operations.

Limitation

- $1 \leq Q \leq 10^6$
- C is alphanumeric character (a-z, A-Z, 0-9)

Input Example 1

```
10
ADD O
ADD T
ADD E
HOME
DEL
ADD P
ADD U
ADD N
END
ADD N
```

Output Example 1

```
PUNTEN
```

Explanation 1

i	QUERY	Results of Query-i	Number times INS called
		|	0
1	ADD O	O|	0
2	ADD T	OT|	0
3	ADD E	OTE|	0
4	HOME	|OTE	0
5	DEL	|TE	0
6	ADD P	P|TE	0
7	ADD U	PU|TE	0
8	ADD N	PUN|TE	0

9	END	PUNTE|	0
10	ADD N	PUNTEN|	0

Input Example 2

```
17
ADD I
LEFT
ADD S
LEFT
ADD A
RIGHT
RIGHT
ADD K
HOME
ADD 1
ADD 2
ADD 3
HOME
INS
ADD S
ADD D
ADD A
```

Output Example 2

```
SDAASIK
```

Explanation 2

i	QUERY	Result of Query-i	Number times INS called
		|	0
1	ADD I	I|	0
2	LEFT	|I	0
3	ADD S	S|I	0
4	LEFT	|SI	0
5	ADD A	A|SI	0
6	RIGHT	AS|I	0
7	RIGHT	ASI|	0

8	ADD K	ASIK|	0
9	HOME	|ASIK	0
10	ADD 1	1|ASIK	0
11	ADD 2	12|ASIK	0
12	ADD 3	123|ASIK	0
13	HOME	|123ASIK	0
14	INS	|123ASIK	1
15	ADD S	S|23ASIK	1
16	ADD D	SD|3ASIK	1
17	ADD A	SDA|ASIK	1

Input Example 3

```
26
DEL
DEL
RIGHT
RIGHT
LEFT
LEFT
HOME
END
HOME
ADD L
INS
ADD A
ADD B
INS
ADD 2
ADD D
ADD A
ADD P
ADD E
ADD T
INS
ADD 1
ADD 0
ADD 1
LEFT
ADD 0
```

Output Example 3

```
LAB2DAPET100
```

Explanation 3

i	QUERY	Result of Query-i	Number times INS called
		|	0
1	DEL	|	0
2	DEL	|	0
3	RIGHT	|	0
4	RIGHT	|	0
5	LEFT	|	0
6	LEFT	|	0
7	HOME	|	0
8	END	|	0
9	HOME	|	0
10	ADD L	L|	0
11	INS	L|	1
12	ADD A	LA|	1
13	ADD B	LAB|	1
14	INS	LAB|	2
15	ADD 2	LAB2|	2
16	ADD D	LAB2D|	2
17	ADD A	LAB2DA|	2
18	ADD P	LAB2DAP|	2
19	ADD E	LAB2DAPE|	2
20	ADD T	LAB2DAPET|	2

21	INS	LAB2DAPET|	3
22	ADD 1	LAB2DAPET1|	3
23	ADD 0	LAB2DAPET10|	3
24	ADD 1	LAB2DAPET101|	3
25	LEFT	LAB2DAPET10|1	3
26	ADD 0	LAB2DAPET100|	3