
String insertion

P21174_en

Quinzè Concurs de Programació de la UPC - Semifinal (2017-06-29)

Implement an efficient data structure to keep a dynamic array $A[0..]$ of strings, with two operations:

- 'I' $s\ i$: Increase the size of A by one (like $A.push_back("")$); Move every string at a position j such that $j \geq i$ one position to its right. Store the string s at the i -th position, which now is empty.
- 'C' j : Print the j -th character (0 based) of the whole array, considering the concatenation of all its strings from left to right.

Input

Input consists of just one case. Assume that each s has between 1 and 10 lowercase letters, each i is between 0 and the current number of strings, and each j is between 0 and the current number of characters minus one. The total number of operations is at most $3 \cdot 10^5$. An 'E' marks the end of the input.

Output

Print a line with the letter at the j -th position for each 'C' operation.

Sample input

```
I hello 0
C 0
C 4
I bye 0
C 0
C 7
I hi 1
C 4
C 1
C 9
E
```

Sample output

```
hoboiyo
```

Problem information

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