




Simple Text Editor

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Problem

Submissions

Leaderboard

Discussions

In this challenge, you must implement a simple text editor. Initially, your editor contains an empty string, S . You must perform Q operations of the following 4 types:

1. $append(W)$ - Append string W to the end of S .
2. $delete(k)$ - Delete the last k characters of S .
3. $print(k)$ - Print the k^{th} character of S .
4. $undo()$ - Undo the last (not previously undone) operation of type 1 or 2, reverting S to the state it was in prior to that operation.

Input Format

The first line contains an integer, Q , denoting the number of operations.

Each line i of the Q subsequent lines (where $0 \leq i < Q$) defines an operation to be performed. Each operation starts with a single integer, t (where $t \in \{1, 2, 3, 4\}$), denoting a type of operation as defined in the *Problem Statement* above. If the operation requires an argument, t is followed by its space-separated argument. For example, if $t = 1$ and $W = "abcd"$, line i will be `1 abcd`.

Constraints

- $1 \leq Q \leq 10^6$
- $1 \leq k \leq |S|$
- The sum of the lengths of all W in the input $\leq 10^6$.
- The sum of k over all delete operations $\leq 2 \cdot 10^6$.
- All input characters are lowercase English letters.
- It is guaranteed that the sequence of operations given as input is possible to perform.

Output Format

Each operation of type 3 must print the k^{th} character on a new line.

Sample Input

```
8
1 abc
3 3
2 3
1 xy
3 2
4
4
3 1
```

Sample Output

c
y
a

Explanation

Initially, S is empty. The following sequence of 8 operations are described below:

1. $S = ""$. We append abc to S , so $S = "abc"$.
2. Print the 3rd character on a new line. Currently, the 3rd character is c .
3. Delete the last 3 characters in S (abc), so $S = ""$.
4. Append xy to S , so $S = "xy"$.
5. Print the 2nd character on a new line. Currently, the 2nd character is y .
6. Undo the last update to S , making S empty again (i.e., $S = ""$).
7. Undo the next to last update to S (the deletion of the last 3 characters), making $S = "abc"$.
8. Print the 1st character on a new line. Currently, the 1st character is a .

f t in

Submissions: [11659](#)

Max Score: 65

Difficulty: Medium

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Current Buffer (saved locally, editable)
C++

```

1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13

```

Line: 1 Col: 1

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