Queues and Strings

locked

by pruthvishalcodi1

Agent-1 has a string S. Initially, this string is empty. Also, Agent-1 has a sequence of operations. Each operation is of one of the following two types:

- Add character to the end of the string S, so the length of S increases by 1.
- Delete the first character of S, so the length of S decreases by 1.

After each operation Agent-1 asks you the number of distinct substrings of the current string S.Answer his questions!

Input Format

The first line of input contains Q - the number of operations. Then Q lines follow, each of these lines describes the operation.

- Add operation is of the form "+ C", where C is a lowercase English letter.
- Delete operation is of the from "-".

Constraints

- $1 \le Q \le 1000000$

Output Format

Just to make the size of your output smaller, Agent-1 asks you the sum of answers of all Q operations modulo 1000000007.

So, print a single integer - the sum of answers for all operations (the sum of Q numbers) modulo 1000000007.

Sample Input 0

```
8
+ a
+ b
+ a
+ a
-
-
-
+ a
```

Sample Output 0

```
27
```

Explanation 0

The string S transforms as follows:

- After the first operation S = a. The number of distinct substrings is 1: a.
- After the second operation S = ab. The number of distinct substrings is 3: a, b, ab.
- After the third operation S = aba. Answer is 5: a, b, ab, ba, aba.
- After the fourth operation S = abaa. Answer is 8: a, b, ab, ba, aa, aba, baa, abaa.
- After the fifth operation S = baa. Answer is 5: a, b, ba, aa, baa.
- After the sixth operation S = aa. Answer is 2: a, aa.
- After the seventh operation S = a. Answer is 1: a.
- After the eighth operation S = aa. Answer is 2: a, aa.

The sum is 1 + 3 + 5 + 8 + 5 + 2 + 1 + 2 = 27, 27 modulo 1000000007 = 27, so, you should print 27.

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Max Score: 12

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Current Buffer (saved locally, editable) C++14

```
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}
```

Line: 1 Col: 1

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