

**PRACTICE** 

COMPETE

JOBS

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Q Search



pruthvishalcodi1 >

All Contests > ALCoding Summer Long challenge 2 > Queues and Strings

# Queues and Strings



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Problem

Submissions

Leaderboard

Discussions

Editorial

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

# Sample Output 0

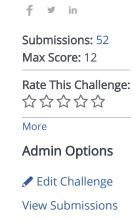
27

# **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 10000000007 = 27, so, you should print 27.



```
C++14
 Current Buffer (saved locally, editable) & 40
   1 ▼#include <cmath>
   2 #include <cstdio>
   3
     #include <vector>
   4 #include <iostream>
   5 #include <algorithm>
   6 using namespace std;
   7
   8
   9 vint main() {
  10 ▼
          /* Enter your code here. Read input from STDIN. Print output to STDOUT */
  11
          return 0;
  12 }
                                                                                                     Line: 1 Col: 1
<u>♣ Upload Code as File</u> Test against custom input
                                                                                       Run Code
                                                                                                     Submit Code
```

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