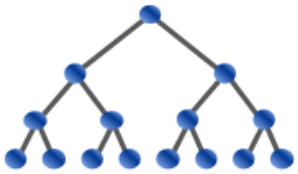
USA Computing Olympiad



USACO 2023 US Open Contest, Bronze
Problem 1. FEB

Return to Problem List

Contest has ended.

Submitted; Results below show the outcome for each judge test case

1 * 34.9mb 297ms	2 * 35.3mb 315ms	3 * 35.1mb 305ms	4 * 34.9mb 314ms	5 * 34.7mb 308ms	6 * 34.9mb 311ms	7 * 35.3mb 307ms	8 * 34.9mb 307ms	9 * 45.2mb 1528ms	10 * 45.8mb 1631ms	11 * 44.6mb 1573ms	12 * 48.2mb 1746ms
13 * 46.3mb 1651ms	14 * 47.6mb 1772ms	15 * 38.9mb 683ms	16 * 47.6mb 1778ms	17 * 46.4mb 1729ms	18 * 51.8mb 2116ms	19 * 47.8mb 1746ms	20 * 51.0mb 2001ms				

English (en)

Bessie and Elsie are plotting to overthrow Farmer John at last! They plan it out over N ($1 \le N \le 2 \cdot 10^5$) text messages. Their conversation can be represented by a string S of length N where S_i is either B or E, meaning the ith message was sent by Bessie or Elsie, respectively.

However, Farmer John hears of the plan and attempts to intercept their conversation. Thus, some letters of S are F, meaning Farmer John obfuscated the message and the sender is unknown.

The *excitement level* of a non-obfuscated conversation is the number of times a cow double-sends - that is, the number of occurrences of substring BB or EE in S. You want to find the excitement level of the original message, but you don't know which of Farmer John's messages were actually Bessie's / Elsie's. Over all possibilities, output all possible excitement levels of S.

INPUT FORMAT (input arrives from the terminal / stdin):

The first line will consist of one integer N.

The next line contains S.

OUTPUT FORMAT (print output to the terminal / stdout):

First output K, the number of distinct excitement levels possible. On the next K lines, output the excitement levels, in increasing order.

SAMPLE INPUT:

```
4
BEEF
```

SAMPLE OUTPUT:

```
2
1
2
```

SAMPLE INPUT:

```
9
FEBFEBFEB
```

SAMPLE OUTPUT:

```
2
2
3
```

SAMPLE INPUT:

```
10
BFFFFFEBFE
```

SAMPLE OUTPUT:

```
3
2
4
6
```

SCORING:

- Inputs 4-8: $N \leq 10$
- Inputs 9-20: No additional constraints.

Problem credits: William Yue and Claire Zhang

Language: C

Source File: Choose File No file chosen

Submit Solution

Note: Many issues (e.g., uninitialized variables, out-of-bounds memory access) can cause a program to produce different output when run multiple times; if your program behaves in a manner inconsistent with the official contest results, you should probably look for one of these issues. Timing can also differ slightly from run to run, so it is possible for a program timing out in the official results to occasionally run just under the time limit in analysis mode, and vice versa. Note also that we have recently changed grading servers, and since our new servers run at different speeds from the servers used during older contests, timing results for older contest problems may be slightly off until we manage to re-calibrate everything properly.

Previous In-Contest Submissions:

Sun, Mar 26, 2023 13:34:22 EDT (Java)
Sun, Mar 26, 2023 13:35:54 EDT (Java)
Sun, Mar 26, 2023 13:43:56 EDT (Java)
Sun, Mar 26, 2023 15:28:27 EDT (Java)
Sun, Mar 26, 2023 15:29:32 EDT (Java)
Sun, Mar 26, 2023 15:32:43 EDT (Java)
Sun, Mar 26, 2023 15:54:48 EDT (Java)
Sun, Mar 26, 2023 16:04:18 EDT (Java)
Sun, Mar 26, 2023 16:47:33 EDT (C++17)
Sun, Mar 26, 2023 16:50:24 EDT (Java)
Sun, Mar 26, 2023 16:51:20 EDT (Java)
Sun, Mar 26, 2023 16:53:47 EDT (Java)