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## USACO 2023 US OPEN CONTEST, BRONZE PROBLEM 1. FEB

English (en) 

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

#### 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