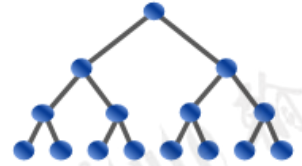


# USA Computing Olympiad



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## USACO 2024 DECEMBER CONTEST, BRONZE PROBLEM 3. IT'S MOOIN' TIME

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 English (en) ▼

Farmer John is trying to describe his favorite USACO contest to Elsie, but she is having trouble understanding why he likes it so much. He says "My favorite part of the contest was when Bessie said 'It's Moonin' Time' and mooed all over the contest."

Elsie still doesn't understand so Farmer John downloads the contest as a text file and tries to explain what he means. The contest is defined as a string of lowercase letters of length  $N$  ( $3 \leq N \leq 20\,000$ ). A moo is generally defined as the substring  $c_i c_j c_j$  where some character  $c_i$  followed directly by 2 occurrences of some character  $c_j$  where  $c_i \neq c_j$ . According to Farmer John, Bessie moos a lot, so if some moo appears at least  $F$  ( $1 \leq F \leq N$ ) times in the contest, that might be from Bessie.

However, Farmer John's download might have been corrupted, and the text file might have up to one character that differs from the original file. Print all possible moos that Bessie could have made taking the potential error into account, sorted in alphabetical order.

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

The first line contains  $N$  and  $F$ , representing the length of the string and the frequency threshold for a moo by Bessie.

The second line contains a string of lowercase letters of length  $N$ , representing the contest.

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

Print out the number of possible moos that Bessie makes, followed by a lexicographically sorted list of the moos. Each moo should appear on a separate line.

### SAMPLE INPUT:

```
10 2
zzmoozzmoo
```

### SAMPLE OUTPUT:

```
1
moo
```

In this case, no character change affects the answer. The only moo Bessie made was "moo".

### SAMPLE INPUT:

```
17 2
momoobaaaaaqqcqq
```

### SAMPLE OUTPUT:

```
3
aqq
baa
cqq
```

In this case, the  $a$  at position 8 (zero-indexed) could have been corrupted from a  $b$  which would have resulted in "baa" being a moo that Bessie made twice. Alternatively, the  $q$  at position 11 could have been corrupted from a  $c$  which would have resulted in "cqq" being a possible moo that Bessie made. "aqq" can be made by swapping the  $c$  with an  $a$ .

### SAMPLE INPUT:

```
3 1
ooo
```

### SAMPLE OUTPUT:

```
25
aoo
boo
coo
```

doo  
eoo  
foo  
goo  
hoo  
ioo  
joo  
koo  
loo  
moo  
noo  
poo  
qoo  
roo  
soo  
too  
uoo  
voo  
woo  
xoo  
yoo  
zoo

**SCORING:**

- Inputs 4-8:  $N \leq 100$
- Inputs 9-13: No additional constraints.

Problem credits: Suhas Nagar

Contest has ended. No further submissions allowed.