

# Competitive Programming SS24

Submit until end of contest



## Problem: (Advanced) Alliterations (2 second timelimit)

Paul and his pals play a puzzle, patiently piecing together perfect phrases. The playful pastime proceeds as follows: In the center lies a lengthy list of letters. From this players pick portions, procuring all picked pieces. With these they craft clever catchy sentences, considering continuous alliterations: Each expression ensures that every word must maintain matching initials.



Your irresistable ice cream. <sup>1</sup>  
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While playing this game, Paul considers different substrings of the large string of letters  $s$  in the center of the table. For each substring he wants to find out which letter appears most often. Can you help him?

**Input** The input consists of:

- One line with two integers  $n$  and  $q$  ( $1 \leq n, q \leq 10^5$ ), the length of the string  $s$  and the number of substrings Paul considers.
- One line with a string  $s$  containing  $n$  lowercase english characters, describing the list of letters on the table.
- $q$  lines, each containing two integers  $a$  and  $b$  ( $1 \leq a \leq b \leq n$ ) containing the start and end of a substring Paul considers.

**Output** For each of the  $q$  substrings output one line containing the most common character. If multiple characters are most common, output the lexicographically smallest one.

### Sample Input 1

```
6 4
ababac
1 6
2 4
2 5
6 6
```

### Sample Output 1

```
a
b
a
c
```

<sup>1</sup>The image shown is for illustrative purposes only. The actual product may vary in appearance, including but not limited to color, design, and features. You may or may not receive any ice cream during the contest.

