

03 : 21 : 31 : 34  
DAY HRS MIN SEC

## June Circuits '20

LIVE

Jun 20, 2020, 09:30 PM IST - Jun 27, 2020, 09:30 PM IST

7  
LIVE EVENTS

INSTRUCTIONS

PROBLEMS

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## Palindromic substrings

Max. score: 100

**Note:** This is an approximate problem. There is no exact solution. You must find the most optimal solution. Please refer to the sample explanation to ensure that you understand the problem correctly.

## Problem statement

You are given a string  $S$  of  $N$  length consisting of lowercase Latin characters ( $a - z$ ). You are required to decompose  $S$  into  $K$  consecutive non-empty substrings such that every character is present in only one substring.

If substrings are  $S[1], S[2], S[3], \dots, S[K]$ , then select an array  $B$  that is a permutation of  $1$  to  $K$  denoting that it is of size  $K$  and include every element from  $1$  to  $K$ .

You are required to form a new string  $V = S[B[1]] + S[B[2]] + \dots + S[B[k]]$ .

**Note:** The number of palindromic substrings in  $V$  is  $X$  (of length greater than 1).

Your task is to maximize  $X$ .

## Input format

- The first line contains two space-separated integers  $N$  and  $K$ .
- The second line contains a string  $S$  of lowercase Latin characters.

## Output format

- In the first  $K$  lines, print one integer denoting the end index of the  $i^{th}$  substring (indexes are 1 based).
- In the next line, print  $K$  space-separated integers denoting array  $B$  (permutation of  $1$  to  $K$ ).
- The end index of substrings should be in increasing order.

## Verdict and scoring

- Your score is equal to the sum of the values of all test files. The value of each test file is equal to the value of  $Z$  that you find.
- If decomposition of string  $S$  is invalid or array  $B$  is invalid, then you receive a wrong answer verdict.

## Constraints

?

- $N = 1000$
- $50 \leq K \leq 100$
- 25% test files have at most **8** distinct characters in  $S$ .
- 25% test files have at most **16** distinct characters in  $S$ .
- 50% test files have at most **26** distinct characters in  $S$ .

## SAMPLE INPUT



```
4 2
abab
```

## SAMPLE OUTPUT



```
2
4
2 1
```

## Explanation

$S_1 = ab$

$S_2 = ab$

$V = S[B[1]] + S[B[2]] = S[2] + S[1] = ab + ab = abab$

Number of substrings which are palindromic = 2

$Z = 2$

Sample Test is for understanding purpose. Constraints in test files are as mentioned above.

**Time Limit:** 3.0 sec(s) for each input file.

**Memory Limit:** 256 MB

**Source Limit:** 1024 KB

**Marking Scheme:** Score is assigned when all the testcases pass.

**Allowed Languages:** Bash, C, C++, C++14, C++17, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, Java 14, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, Racket, Ruby, Rust, Scala, Swift-4.1, Swift, TypeScript, Visual Basic

## CODE EDITOR

Save

C (gcc 5.4.0)



```
1 /*
2 // Sample code to perform I/O:
```



```

4  #include <stdio.h>
5  int main(){
6      int num;
7      scanf("%d", &num);          // Reading input from STDIN
8      printf("Input number is %d.\n", num);    // Writing output to STDOUT
9  }
10
11 // Warning: Printing unwanted or ill-formatted data to output will cause the test
12 // cases to fail
13
14 // Write your code here
15

```

1:1 vscode


☒ Provide custom input

COMPILE &amp; TEST

SUBMIT

 **Tip:** You can submit any number of times you want. Your best submission is considered for computing total score.

Your Rating: ★★★★★

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