Coding Area

tcscodevita.com/main_page.jsp

04Hr 43Min 10Sec

Your Contest Ends At
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Palindromic Count

+

Problem Description

Given a string Str, and a set of numbers (S) which determine the length of palindromic substrings contained within Str, find out the count of all such palindromes.

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Constraints

0 < N <= 10 ^ 4

0 < M <= 10 ^ 4

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Input

First line contains an integer N which is length of string

Second line contains a string of length N containing all lowercase characters

Third line contains an integer M which is the number of elements in set S

Fourth line contains M space separated integers which correspond to lengths of palindromic substrings that must be found within Str

Output

Count of all palindromic substrings which are of lengths corresponding to numbers in set S

Time Limit

1

Examples

Example 1

Input

12

abccbaabccba

1

6

Output

3

Explanation:

There will be 3 palindromic substrings of length 6

abccbaabccba

abccba**abccba**

abc**cbaabc**cba

Note: - Palindrome **abcccba** is counted twice since it appears twice in original string Str i.e. abccbaabccba

Example 2

Input

8

xyxzyxyz

3

1 3 5

Output

11

Explanation:

There will be 8 palindromic substrings of length 1

There will be 2 palindromic substrings of length 3

xyxzyxyz

xyxz**yxy**z

There will be 1 palindromic substring of length 5

xyx**zyxyz**

So total count is 11

Upload Solution [Question : C]

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