

🎁 Codeforces celebrates 10 years! We are pleased to announce the crowdfunding-campaign. Congratulate us by the link <https://codeforces.com/10years>.

## D. Irreducible Anagrams

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Let's call two strings  $s$  and  $t$  *anagrams* of each other if it is possible to rearrange symbols in the string  $s$  to get a string, equal to  $t$ .

Let's consider two strings  $s$  and  $t$  **which are anagrams of each other**. We say that  $t$  is a *reducible anagram* of  $s$  if there exists an integer  $k \geq 2$  and  $2k$  non-empty strings  $s_1, t_1, s_2, t_2, \dots, s_k, t_k$  that satisfy the following conditions:

1. If we write the strings  $s_1, s_2, \dots, s_k$  in order, the resulting string will be equal to  $s$ ;
2. If we write the strings  $t_1, t_2, \dots, t_k$  in order, the resulting string will be equal to  $t$ ;
3. For all integers  $i$  between 1 and  $k$  inclusive,  $s_i$  and  $t_i$  are anagrams of each other.

If such strings don't exist, then  $t$  is said to be an *irreducible anagram* of  $s$ . **Note that these notions are only defined when  $s$  and  $t$  are anagrams of each other.**

For example, consider the string  $s = \text{"gamegame"}$ . Then the string  $t = \text{"megamage"}$  is a reducible anagram of  $s$ , we may choose for example  $s_1 = \text{"game"}$ ,  $s_2 = \text{"gam"}$ ,  $s_3 = \text{"e"}$  and  $t_1 = \text{"mega"}$ ,  $t_2 = \text{"mag"}$ ,  $t_3 = \text{"e"}$ :

### Codeforces Round #616 (Div. 2)

Finished

#### → Practice?

Want to solve the contest problems after the official contest ends? Just register for practice and you will be able to submit solutions.

Register for practice

#### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

$$s = \overbrace{\text{game}}^{s_1} | \overbrace{\text{gam}}^{s_2} | \overbrace{\text{e}}^{s_3}$$

$$t = \underbrace{\text{mega}}_{t_1} | \underbrace{\text{mag}}_{t_2} | \underbrace{\text{e}}_{t_3}$$

On the other hand, we can prove that  $t = \text{"memegaga"}$  is an irreducible anagram of  $s$ .

You will be given a string  $s$  and  $q$  queries, represented by two integers  $1 \leq l \leq r \leq |s|$  (where  $|s|$  is equal to the length of the string  $s$ ). For each query, you should find if the substring of  $s$  formed by characters from the  $l$ -th to the  $r$ -th has at least one irreducible anagram.

## Input

The first line contains a string  $s$ , consisting of lowercase English characters ( $1 \leq |s| \leq 2 \cdot 10^5$ ).

The second line contains a single integer  $q$  ( $1 \leq q \leq 10^5$ ) — the number of queries.

Each of the following  $q$  lines contain two integers  $l$  and  $r$  ( $1 \leq l \leq r \leq |s|$ ), representing a query for the substring of  $s$  formed by characters from the  $l$ -th to the  $r$ -th.

## Output

For each query, print a single line containing "Yes" (without quotes) if the corresponding substring has at least one irreducible anagram, and a single line containing "No" (without quotes) otherwise.

## Examples

input	Copy
<pre>aaaaa 3 1 1 2 4 5 5</pre>	
output	Copy
<pre>Yes No Yes</pre>	



input	Copy

## → Problem tags

- binary search
- constructive algorithms
- data structures
- strings
- two pointers
- \*1900

No tag edit access

## → Contest materials

- Announcement (en) 
- Tutorial (en) 

```
aabbbbbbc
```

```
6
```

```
1 2
```

```
2 4
```

```
2 2
```

```
1 9
```

```
5 7
```

```
3 5
```

output

Copy

```
No
```

```
Yes
```

```
Yes
```

```
Yes
```

```
No
```

```
No
```

### Note

In the first sample, in the first and third queries, the substring is "a", which has itself as an irreducible anagram since two or more non-empty strings cannot be put together to obtain "a". On the other hand, in the second query, the substring is "aaa", which has no irreducible anagrams: its only anagram is itself, and we may choose  $s_1 = "a"$ ,  $s_2 = "aa"$ ,  $t_1 = "a"$ ,  $t_2 = "aa"$  to show that it is a reducible anagram.

In the second query of the second sample, the substring is "abb", which has, for example, "bba" as an irreducible anagram.

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