# Weighted Uniform Strings



A weighted string is a string of lowercase English letters where each letter has a *weight*. Character weights are  $\bf 1$  to  $\bf 26$  from  $\bf a$  to  $\bf z$  as shown below:

а	1
b	2
С	3
d	4
е	5
f	6
g	7
h	8
i	9
j	10

11		
12		
13		
14		
15		
16		
17		
18		

s	19	
t	20	
u	21	
V	22	
w	23	
х	24	
у	25	
z	26	

We define the following terms:

• The weight of a string is the sum of the weights of all the string's characters. For example:

apple	1 + 16 + 16 + 12 + 5 = 50
hack	8 + 1 + 3 + 11 = 23
watch	23 + 1 + 20 + 3 + 8 = 53
ccccc	3+3+3+3+3=15
aaa	1 + 1 + 1 = 3
ZZZZ	26 + 26 + 26 + 26 = 104

• A *uniform string* consists of a single character repeated zero or more times. For example, ccc and a are uniform strings, but bcb and cd are not.

Given a string, s, let U be the set of weights for all possible uniform contiguous substrings of string s. You have to answer n queries, where each query i consists of a single integer, x[i]. For each query, print v0 on a new line if v1 v2 otherwise, print v3 instead.

**Note:** The  $\in$  symbol denotes that  $x_i$  is an element of set U.

### **Input Format**

The first line contains a string s, the original string.

The second line contains an integer n, the number of queries.

Each of the next n lines contains an integer x[i], the weight of a uniform subtring of s that may or may not exist.

### **Constraints**

• 
$$1 \le |s|, n \le 10^5$$

• 
$$1 \le x[i] \le 10^7$$

• s will only contain lowercase English letters, ascii[a-z].

### **Output Format**

Print n lines. For each query, print varphi on a new line if varphi varphi Otherwise, print varphi No.

### Sample Input 0

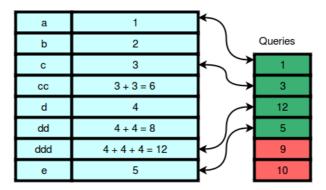
```
abccddde
6
1
3
12
5
9
```

### Sample Output 0

```
Yes
Yes
Yes
Yes
Yes
No
No
```

# **Explanation 0**

The weights of every possible *uniform substring* in the string abccddde are shown below:

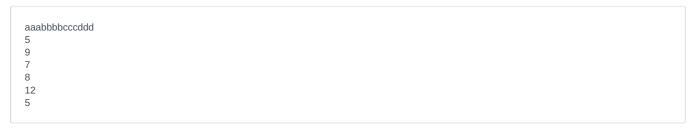


We print  $\underline{\mathsf{Yes}}$  on the first four lines because the first four queries match weights of uniform substrings of s. We print  $\underline{\mathsf{No}}$  for the last two queries because there are no uniform substrings in s that have those weights.

Note that while  $\frac{de}{ds}$  is a substring of s that would have a weight of s, it is not a uniform substring.

Note that we are only dealing with contiguous substrings. So ccc is not a substring of the string ccxxc.

### Sample Input 1



## Sample Output 1

Yes			
Yes No Yes Yes No			
Yes			
Yes			
No			