Ada and Jobs

As you might already know, Ada the Ladybug has a huge TODO-list. Sometimes she inserts a new job into her TODO-list and sometimes she is wondering whether there is a job (in her TODO-list), which she wants to do now. She doesn't require the whole job to be there, perhaps just a part of it.

Can you create a program which would serve her? That means it either inserts a new job into her TODO-list or answers whether there exists a word (in her TODO-list) which is a substring of given word.

Input

The first line of input containts **Q**, the number of queries.

The next **Q** lines contains a number $0 \le t \le 1$ and nonempty string **s**. If **t** is equal to **0** then it is inserion query, otherwise it is question query. **s** consists of lowercase characters only.

The sum of lengths of queries of both types doesn't exceed 10^6 (that means the total sum of lengths of strings will be at most $2*10^6$)

Output

For each query of type **1**, print either **YES**, if there is already a substring in the TODO-list and **NO** otherwise.

Example Input

```
12
0 cat
1 dogville
0 dog
1 dogville
1 gooutwithcat
1 gooutwithcrocodile
1 fancyconcatenation
0 crocodile
1 lacoste
1 gooutwithcrocodile
1 catalanreferendum
1 rocodile
```

Example Output

```
NO
YES
YES
NO
YES
NO
YES
YES
```

NO