D. Tanya and Password

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

While dad was at work, a little girl Tanya decided to play with dad's password to his secret database. Dad's password is a string consisting of $n + 2$ characters. She has written all the possible n three-letter continuous substrings of the password on pieces of paper, one for each piece of paper, and threw the password out. Each three-letter substring was written the number of times it occurred in the password. Thus, Tanya ended up with n pieces of paper.

Then Tanya realized that dad will be upset to learn about her game and decided to restore the password or at least any string corresponding to the final set of three-letter strings. You have to help her in this difficult task. We know that dad's password consisted of lowercase and uppercase letters of the Latin alphabet and digits. Uppercase and lowercase letters of the Latin alphabet are considered distinct.

Input

The first line contains integer n ($1 \le n \le 2 \cdot 10^5$), the number of three-letter substrings Tanya got.

Next n lines contain three letters each, forming the substring of dad's password. Each character in the input is a lowercase or uppercase Latin letter or a digit.

Output

If Tanya made a mistake somewhere during the game and the strings that correspond to the given set of substrings don't exist, print "NO".

If it is possible to restore the string that corresponds to given set of substrings, print "YES", and then print any suitable password option.

Examples

input Copy

```
5
aca
aba
aba
cab
bac
```

output Copy

```
YES
abacaba
```

input Copy

```
4
abc
bCb
cb1
b13
```

output Copy

```
NO
```

input Copy

```
7
aaa
aaa
aaa
aaa
aaa
aaa
aaa
```

output Copy

```
YES
aaaaaaaaa
```