Separate the Numbers

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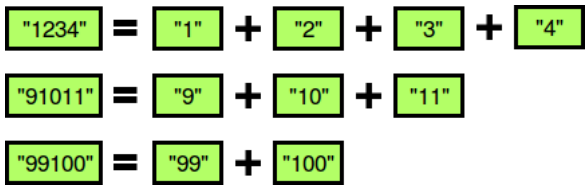
Problem Submissions Leaderboard Discussions

A numeric string, s, is *beautiful* if it can be split into a sequence of two or more positive integers, $a_1, a_2, \ldots, a_n$, satisfying the following conditions:

1. $a_i - a_{i-1} = 1$ for any $1 < i \leq n$ (i.e., each element in the sequence is 1 more than the previous element).
2. *No a_i contains a leading zero.* For example, we can split $s = 10203$ into the sequence $\{1, 02, 03\}$, but it is *not* beautiful because 02 and 03 have leading zeroes.
3. *The contents of the sequence cannot be rearranged.* For example, we can split $s = 312$ into the sequence $\{3, 1, 2\}$, but it is not beautiful because it breaks our first constraint (i.e., $1 - 3 \neq 1$).

The diagram below depicts some beautiful strings:



You must perform q queries, where each query consists of some string s. For each query, print whether or not the string is beautiful on a new line. If it's beautiful, print `YES x`, where x is the first number of the increasing sequence (if there are multiple such values of x, choose the smallest); otherwise, print `NO` instead.

Input Format

The first line contains an integer denoting q (the number of strings to evaluate).
Each of the q subsequent lines contains some string s for a query.

Constraints

- $1 \leq q \leq 10$
- $1 \leq |s| \leq 32$
- Each character in s is a decimal digit from 0 to 9 (inclusive).

Output Format

For each query, print its answer on a new line (i.e., either `YES x` where x is the smallest first number of the increasing sequence, or `NO`).

Sample Input 0

```
7
1234
91011
99100
101103
010203
13
1
```

Sample Output 0

```
YES 1
YES 9
YES 99
NO
NO
NO
NO
```

Explanation 0

The first three numbers are beautiful (see the diagram above). The remaining numbers are not beautiful:

- For $s = 101103$, all possible splits violate the first and/or second conditions.
- For $s = 010203$, it starts with a zero so all possible splits violate the second condition.
- For $s = 13$, the only possible split is $\{1, 3\}$, which violates the first condition.
- For $s = 1$, there are no possible splits because s only has one digit.