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Separate the Numbers

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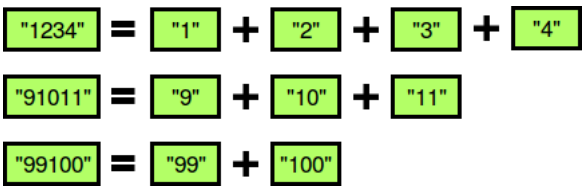
A numeric string, s, is *beautiful* if it can be split into a sequence of two or more positive integers, $a_1, a_2, \ldots, a_n$, satisfying the following conditions:

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.

Current Buffer (saved locally, editable) Python 3

```python
#!/bin/python3

import sys
from functools import reduce

def is_beauty(num, s, s_len):
    bs = ''
    for m in range(num, num + s_len):
        bs = bs + str(m)

        if bs == s:
            return True

        if len(bs) > len(s):
            return False

    return False


q = int(input().strip())
for a0 in range(q):
    s = input().strip()
    # your code goes here

    s_len = len(s)
    found = False
    for n in range(1, int(s_len / 2) + 1):
        num = int(s[0:n])
        # print('{}---{}'.format(n, num))
        # x1 = [m for m in range(num, num + s_len)]
        # beauti_s = reduce(lambda x, y: str(x) + str(y), x1)

        if is_beauty(num, s, s_len) == True:
            print('YES {}'.format(num))
            found = True
            break

    if found == False:
        print('NO')
```

Line: 39 Col: 20

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Congrats, you solved this challenge!

Challenge your friends:

✔ Test Case #0	✔ Test Case #1	✔ Test Case #2
✔ Test Case #3	✔ Test Case #4	✔ Test Case #5
✔ Test Case #6	✔ Test Case #7	✔ Test Case #8
✔ Test Case #9	✔ Test Case #10	✔ Test Case #11
✔ Test Case #12	✔ Test Case #13	✔ Test Case #14
✔ Test Case #15	✔ Test Case #16	✔ Test Case #17
✔ Test Case #18	✔ Test Case #19	✔ Test Case #20

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