Longest Common Subsequence

Wersja polska English version

For a given two words **x** = $x1x2...x_n$ and **y** = $y1y2...y_m$ find the longest common subsequence, i.e. **z** = $z1z2...z_k$ such that every two consecutive elements of **z** are equal to some two elements of **x**: x_a, x_b, and **y**: y_c, y_d where $a < b$ and $c < d$. Assume, that elements of words are letters 'a' - 'z' and $m,n <= 1000$.

Input

N [the number of series <= 1000]
n **x**
m **y**
...

Output

case 1 Y [or N when no answer to this case]
d [the length of the lcs]
z_j *p q* [position of z_j in **x** and in **y**, respectively]
...

Text grouped in [ ] does not appear in the input and output file.

Example

Input:
3
5 ddacc
3 cac
7 cbbccbc
4 aaca
4 cbeb
5 fdceb

Output:
case 1 Y
2
a 3 2
c 4 3
case 2 N
case 3 Y
3
c 1 3
e 3 4
b 4 5

Score
2