

Problem J. Spoonerisms

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

A *spoonerism* (named after William Archibald Spooner, an Oxford pastor who had a habit of inadvertently inventing more of them) is a pair of words that you can change into another pair by swapping their beginnings, for example a “**blushing crow**” becomes a “**crushing blow**”.

Given a list of words, find a spoonerism among them. Formally: find a pair (A, B) of words from the list which can be split into $A = pq$ and $B = rs$ in such a manner that the words $C = rq$ and $D = ps$ are also on the list. We allow only true spoonerisms, that is, those with $p \neq r$, $s \neq q$ and p, q, r, s nonempty.

Input

The first line of input contains the number of test cases z . The descriptions of the test cases follow.

The first line of each test case contains the length of the list n ($1 \leq n \leq 500\,000$). Each of the following n lines contains a single word composed of small English letters. The total length of words in all test cases does not exceed 500 000.

Output

For each test case, if no spoonerism can be found, output “NO” on a single line. If there is a spoonerism, output a line containing “YES”, followed by a line containing words A and B , and another one containing C and D . If there are multiple solutions, output any one of them. You may also safely switch the word order in any line.

Example

standard input	standard output
1 9 blunder blushing crow cry crushing blow black back clap	YES blushing crow crushing blow