String Generation

Given a string $\mathcal{S}_1$ of length $\mathcal{L}_1$ consisting of Latin uppercase alphabets only and a string $\mathcal{S}_2$ of length $\mathcal{L}_2$ consisting of characters T and F only.

Generate a lexicographically smallest string $\mathcal{S}$ of length ($\mathcal{L}_1 + \mathcal{L}_2 - 1$) such that a substring of length $\mathcal{L}_2$ in string $\mathcal{S}$ starting at index i ($0 \leq i < \mathcal{L}_2$) is equal to $\mathcal{S}_1$ if and only if the i-th element of $\mathcal{S}_2$ is T (without quotes) else not.

If no such string can be generated, print "-1" (without quotes).

Notes

A string *a* is lexicographically smaller than a string *b* if and only if one of the following holds:

- *a* is a prefix of *b*, but $a \neq b$.
- In the first position where *a* and *b* differ, the string *a* has a letter that appears earlier in the alphabet than the corresponding letter in *b*.

Find the lexicographically smallest string $\mathcal{S}$ which satisfies the given condition.

Function description

Complete the solve function. This function takes the following 2 parameters and returns the answer.

- $\mathcal{S}_1$: Represents a string $\mathcal{S}_1$
- $\mathcal{S}_2$: Represents a string $\mathcal{S}_2$

Input format for custom testing

Note: Use this input format if you are testing against custom input or writing code in a language where we don't provide boilerplate code.

- The first line contains $\mathcal{T}$, which represents the number of test cases.
- For each test case:
  - The first line contains a string $\mathcal{S}_1$.
  - The second line contains a string $\mathcal{S}_2$.

Output format

For each test case, print a string $\mathcal{S}$ in a new line or -1 if not possible.

Constraints

- $1 \leq \mathcal{T} \leq 10^2$
- $1 \leq |\mathcal{S}_1| \leq 10^3$
- $1 \leq |\mathcal{S}_2| \leq 10^3$

Sample input 1:

1
ABCA
TFFF

Sample output 1:

ABCAAAA

Sample input 2:

2
ABC
TTT
ABA
TTF

Sample output 2:

-1
-1

Note:

Your code must be able to print the sample output from the provided sample input. However, your code is run against multiple hidden test cases. Therefore, your code must pass these hidden test cases to solve the problem statement.

Limits:

- Time Limit: 1.0 sec(s) for each input file
- Memory Limit: 256 MB
- Source Limit: 1024 KB

Scoring

Score is assigned if any test case passes

Allowed Languages

Bash, C, C++14, C++17, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java 8, Java 14, JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, Racket, Ruby, Rust, Scala, Swift, TypeScript, Visual Basic