

You have been given a string 'S' which only consists of lowercase English-Alphabet letters. Your task is to find the shortest (minimum length) substring from 'S' which contains all the characters of 'S' at least once.

Note:

If there are more than one substring with the shortest length, then find one which appears earlier in the string 'S' i.e. substring whose starting index is lowest.

For Example:

If the given string 'S' = "abcba", then the possible substrings having all the characters of 'S' at least once and of minimum length are "abc" and "cba".

As "abc" starts with a lower index (i.e. 0, "cba" starts with index 2), we will return the string "abc" as our shortest substring that contains all characters of 'S'.

Input Format :

The first line of input contains an integer 'T' which denotes the number of test cases or queries to be run. Then each test case follows.

The first and the only line of each test case contains a single string 'S'.

Output Format :

For each test case, print a single line containing a string i.e. the shortest substring of 'S' which contains all the characters of 'S' at least once.

Note:

You don't need to print the output, it has already been taken care of. Just implement the given function.

Constraints:

```
1 <= T <= 10 ^ 2
1 <= N <= 5 * (10 ^ 3)
S[i] = [a - z]
```

Where 'T' denotes the number of test cases and 'N' is the length of the given string 'S'.

The given string 'S' consists of only English lowercase alphabets.

Time Limit: 1 sec

Sample Input 1:

```
2
aabcabb
abcdcda
```

Sample Output 1:

```
abc
abcd
```

Explanation For Sample Output 1:

Test Case 1 :

Some of the possible substrings are "aabcabb", "aabc", "abcab", "abc" having all the different characters of 'S' at least once. Out of all these substrings, we will have "abc", "bca" and "cab" with the shortest length.

As "abc" appears earliest in the string, we will return "abc" in the output.

Test Case 2 :

Some of the possible substrings are "abcd", "bcdcd" having all the different characters of string 'S' at least once. "abcd" is the only substring with the shortest length.

Sample Input 2:

```
2
cddeyys
bbbb
```

Sample Output 2:

```
cddeyys
b
```