Comparison

Input file:	`standard input`
Output file:	`standard output`
Time limit:	4 seconds
Memory limit:	256 megabytes

Given a string S. Print the **smallest** string that can be obtained by doing the following operations on the original string **only**:

- **Split** the string into two **non empty** consecutive strings (for example if you split the string into X and Y so $S = X + Y$).
- **Sort** every one of the separated strings.
- **Re-concatenate** the two stings into one string.

Note: If you couldn't split the string print the **original** string.

Input

Only one line contains a string S ($1 \leq |S| \leq 10^4$) where |S| is the length of the string and it consists of **lowercase** English letters.

Output

Print the smallest string that can be obtained.

Example

standard input	standard output
acmicpc	acccimp

Note

All possible strings that can be obtained :

- a + cmicpc : after sorting each part > a + cccimp = acccimp
- ac + micpc : after sorting each part > ac + ccimp = acccimp
- acm + icpc : after sorting each part > acm + ccip = acmccip
- acmi + cpc : after sorting each part > acim + ccp = acimccp
- acmic + pc : after sorting each part > accim + cp = accimcp
- acmicp + c : after sorting each part > accimp + c = accimpc

So the smallest one is "acccimp".