

Q).You are given a string *s*. Consider performing the following operation until *s* becomes empty: For every alphabet character from 'a' to 'z', remove the first occurrence of that character in *s* (if it exists). For example, let initially *s* = "aabcbbca". We do the following operations: Remove the underlined characters *s* = "aabcbbca". The resulting string is *s* = "abbca". Remove the underlined characters *s* = "abbca". The resulting string is *s* = "ba". Remove the underlined characters *s* = "ba". The resulting string is *s* = "". Return the value of the string *s* right before applying the last operation. In the example above, answer is "ba".

Program:

```
def lastBeforeEmpty(s):
    s = list(s)
    last_non_empty = []
    while s:
        last_non_empty = s[:]
        for char in 'abcdefghijklmnopqrstuvwxyz':
            if char in s:
                s.remove(char)
    return ''.join(last_non_empty)
s = "aabcbbca"
result = lastBeforeEmpty(s)
print(result)
```

Output:

```
C:\Users\srika\Desktop\CSA0863\pythonProject\.venv\Scripts\python.exe C:\Users\srika\Desktop\CSA0863\pythonProject\problem.py
ba
Process finished with exit code 0
```

Time complexity: $O(n)$