

All Palindromic Permutations

1. You are given a string of length n .
2. You have to print all the palindromic permutations of the given string.
3. If no palindromic permutation exists for the given string, print "-1".

Note -> Check out the question video and write the recursive code as it is intended without changing signature. The judge can't force you but intends you to teach a concept.

$1 \leq \text{length of string} \leq 15$

aaabb

ababa

baaab

```
import collections

def palindromicPermutation(string):
    fmap = collections.Counter(string)
    odd = ''
    oddNum = 0
    length = 0
    for key, val in fmap.items():
        if val % 2 != 0:
            odd = key
            oddNum += 1
        fmap[key] = val // 2
        length += val // 2

    if oddNum > 1:
        return -1
    helper(1, length, fmap, odd, '')
    return

def helper(idx, length, fmap, odd, ssf):
    if idx > length:
        right = ssf[::-1]
        if odd != '':
            print(ssf + odd + right)
        else:
```

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        print(ssf + right)
    return

for key in fmap:
    if fmap[key] > 0:
        fmap[key] = fmap[key] - 1
        helper(idx + 1, length, fmap, odd, ssf + key)
        fmap[key] = fmap[key] + 1

string = 'aabbcc'

palindromicPermutation(string)
```