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Solution 1.

```
l = list (map, input() . split()))
k = int (input())
l1 = [ ]
l2 = [ ]
l3 = [ ]
l4 = [ ]
l5 = [ ]
l6 = [ ]
(a,b) = l[-1]
for i in range (97, ord(a) +1):
    for J in range (len(l)):
        if l[J][0] == chr (i):
            l1. append (l[J][1])
    l2. append (l1)
    l1 = [ ]

    for i in range (len(l2)):
        for J in range (i+1, len(l2)):
            l3. append ((chr (i+97), chr (J+97
            if l2[i][2] in l2[J]:
                l3. append (l2[i][2])
```

```
l4.sort(key=len, reverse, = True)
    n = len(l4[0])
for i in l4:
    if len(i) == n:
        l5.append(i)
def max_fun (lst):
    a,b = lst[0]
    d = max(len(l2[ord(a)-97]))
    return (d- len(lst) +1)

l5.sort (key== max_fun)
for i in range (k):
    l6.append(l5[i][0])
print(l6)
```