A string of characters including only alphabets (lowercase letters) is provided as an input.

* The first task is to compute the frequency of each character appearing in the string. In the output, the characters have to be arranged in the same order as they appear in the input string.
* Then characters have to be rearranged, such that all the characters having a specific frequency, say xx, come together.

Let the frequency of a character, lying in between the two characters having same frequency xx, be yy. The steps to be followed for getting the desired arrangement are as follows:

* If y>xy>x, then shift the character at the end.
* If y<xy<x, then shift the character at the beginning.

**Input:**

* Line 1 contains the string of characters without spaces.
* Line 2 contains an integer N.
* Line 3 contains N integers separated by space, N1 N2 … NN. These are the specific frequency values whose corresponding characters should come together.

**Output:**

* Line 1 has characters and their frequency as computed originally. Each output value is separated using a space.
* Each of the following N lines contains the rearranged sequence of characters and their frequency for the given N specific frequencies. Each line in the output has output values separated using a space.

**Constraints:**

* Number of characters in the string ranges in between 1 and 1000.

**Sample Input:**

nomatterhowbusyyoumaythinkyouareyoumustfindtimeforreadingorsurrenderyourself

toselfchosenignorance

3

3 1 6

**Sample Output:**

n 8 o 11 m 4 a 5 t 6 e 10 r 10 h 3 w 1 b 1 u 7 s 6 y 6 i 5 k 1 f 4 d 3 g 2 l 2 c 2

k 1 b 1 w 1 n 8 o 11 m 4 a 5 t 6 e 10 r 10 h 3 d 3 g 2 l 2 c 2 u 7 s 6 y 6 i 5 f 4

k 1 b 1 w 1 n 8 o 11 m 4 a 5 t 6 e 10 r 10 h 3 d 3 g 2 l 2 c 2 u 7 s 6 y 6 i 5 f 4

c 2 l 2 g 2 d 3 h 3 k 1 b 1 w 1 n 8 o 11 m 4 a 5 t 6 s 6 y 6 i 5 f 4 e 10 r 10 u 7

**EXPLANATION:**

First line has characters and their frequency as computed using the given input string. The characters are arranged in the same order as per their appearance in the original string. Second line is obtained after rearranging characters appearing thrice together. Similarly, Third line is generated after placing characters that are coming only once together. The Third line output is similar to the Second line output as targeted characters (having frequency one) automatically comes in continuation during the previous rearrangement corresponding to frequency three. Lastly, the Fourth line presents the final character and frequency sequence after putting characters with frequency 6 together.