# Problem 1 – Group Permutations

You will be given a series of capital Latin letters (as a string). **Generate all their permutations**, so that **the same letters stay together**. For example, if you’re given the string ABA, the two A’s should stay together, so the permutations you can generate are: AAB and BAA.

The letters will be given as a string on a single line. Print each permutation on a new line on the console. **The line order is not important.**

### Input

* The input data should be read from the console.
* It will consist of exactly one line – the string containing the letters to permute.
* The input data will always be valid and in the format described. There is no need to check it explicitly.

### Output

* The output should be printed on the console.
* Print each permutation on a separate line. The line order is not important.

### Constraints

* The input string will contain only capital Latin letters [A … Z].
* The input string will contain between 1 and 20 letters.
* Allowed working time for your program: 0.15 seconds. Allowed memory: 16 MB.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| ABC | ABC  ACB  BAC  BCA  CBA  CAB |
| BCABACB | BBBCCAA  BBBAACC  CCBBBAA  CCAABBB  AACCBBB  AABBBCC |
| SSDVLKG | SSDVLKG  SSDVLGK  SSDVKLG  SSDVKGL  …  GSSDVLK |