**Half Palindromes**

**Overview**

Your task is to implement a program, which receives a set of lowercase english alphabet letters, and generates half-palindromes. A palindrom is a sequence of letters that reads the same backward or forward.

**Example palindromes**: **civic**, **radar**, **level**, **rotor**, **racecar**, **refer**, **madam**… They don’t need to be actual words in our scenario: **abba**, **donnod**, **noon**, **hannah**, **crazyyzarc**…

A **half-palindrom** is only the first half of the word – we only need the first half of the palindrome in order to generate the whole thing. That means that you don’t have to generate the second part of the palindrome.

**Example half-palindromes**: **ab**, **don**, **no**, **han**, **crazy**.

Your task is to generate all possible unique half palindromes, using a set of lowercase english alphabet letters, without using the same letter twice.

**NOTE**: The second part of the palindrome is not needed, only the first half. If you generate "**abc**", you   
**do NOT** generate "**cba**".

**Input**

* You will receive a single line of input, containing the set of letters, separated by a space.

**Output**

* You need to print on the Console, all of the possible **half-palindromes** in **alphabetical order**. Each half-palindrome should be printed on a **separate line**.

**Constraints**

* The given set of letters will consist **ONLY** of **lowercase english alphabet letters**.
* There will be **no repetitive letters** in the given set.
* All palindromes in this task will be even-lettered.

**Examples**

| **Input** | **Output** | **Comment** |
| --- | --- | --- |
| a b c | a b c  a c b  b a c | All possible unique palindromes, without repeating letters are:  **a b c**  **a c b**  **b a c**  **b c a**  **c a b**  **c b a**  However:  **"c b a**" is the other half of "**a b c**", so we skip it.  **"b c a**" is the other half of "**a c b**", so we skip it.  **"c a b**" is the other half of "**b a c**", so we skip it.  The result is:  **a b c**  **a c b**  **b a c** |
| z h y v x | h v x z y  h v y z x  h v z x y  h v z y x  h x v z y  h x y z v  h x z v y  h x z y v  h y v z x  h y x z v  h y z v x  h y z x v  h z v x y  h z v y x  h z x v y  h z x y v  h z y v x  h z y x v  v h y z x  v h z y x  v y h z x  v y z h x  v z h y x  v z y h x  y h v z x  y h x z v  y h z v x  y h z x v  y v h z x  y v z h x  y x h z v  y x z h v  y z h v x  y z h x v  y z v h x  y z x h v  z h v x y  z h v y x  z h x v y  z h x y v  z h y v x  z h y x v  z v h x y  z v h y x  z v x h y  z v x y h  z v y h x  z v y x h  z x h v y  z x h y v  z x v h y  z x v y h  z x y h v  z x y v h  z y h v x  z y h x v  z y v h x  z y v x h  z y x h v  z y x v h |  |