

Numerical Palindromes (300 points)

Introduction

You've been asked to write a program to find the largest possible numerical palindrome that can be made from an input number. A numeric palindrome is defined as a number the reads the same both forwards and backwards. For example, 131 is a numerical palindrome.

Given a positive whole number as input, you'll need to determine the largest (in terms of numeric value) numerical palindrome that can be made from the digits present in this number.

Input Specifications

The first (and only) line will be a positive integer, with up to 15 digits.

Output Specifications

Print out the largest numerical palindrome that can be made from rearranging the digits in the input number. Largest refers to the greatest absolute value.

Sample Input/Output

Input

8989

Output

9889

Explanation

The given digits can create six possible palindromes: 8, 9, 898, 989, 8998, 9889. Of these palindromes, 9889 is the largest.

Input

123

Output

3

Explanation

The given digits can only create single-digit palindromes, as there are no repeat characters. The largest of these is 3.