

2014 EYE OF THE BEHOLDER (PART 1)

Test Subject: I-65967423
Observation: FR-8/40
Beholder-6 observing

I-65967423 exhibits a fascination with toy blocks. Plenty of blocks have been made available to subject, each showing a letter from *A* to *Z*. In accordance with protocol, blocks showing the same letter are otherwise indistinguishable.

During observation period FR-8/40-1 subject selected some blocks and placed them in a row forming the word *ABBCA*. Subject then rearranged the row to form the palindrome *ABCBA*.

During each observation period FR-8/40-2 through FR-8/40-94, subject was permitted to select some blocks and place them in a row, before proceeding to rearrange them. On each occasion the first palindromic rearrangement alphabetically *after* the period's start word was created.

Conclusion: Unresolved. Additional observation required.

SAMPLE INPUT 1

ABBCA

SAMPLE OUTPUT 1

ABCBA

SAMPLE INPUT 2

NEVERNDDEEOORV

SAMPLE OUTPUT 2

NEVERODDOREVEN

Write a program that reads in a string *b* of *n* uppercase letters ($3 \leq n \leq 2^{16}$). You should output a single string, the first palindromic rearrangement of *b* that occurs alphabetically *after* *b*. The given input will always have a solution.