Problem D
CheatCode Decoder I

Time limit: **3 seconds**
Memory limit: **1024 megabytes**

Problem Description

Morsa has recently been researching ways to cheat on his Discrete Mathematics exam. He asked you to design a method for him, and since you just learned binary from your Introduction to Computer Science course, you came up with the following idea:

He uses decimal codes 0, 1, 2 and 3 to represent A, B, C and D respectively. To transmit these decimal codes, he encodes them in binary as follows:

$A \rightarrow (0)_{10} \rightarrow (00)_2$
$B \rightarrow (1)_{10} \rightarrow (01)_2$
$C \rightarrow (2)_{10} \rightarrow (10)_2$
$D \rightarrow (3)_{10} \rightarrow (11)_2$

Morsa has already paid Jimmy, a genius in Discrete Mathematics, who can provide him with the correct answers during the exam in real time. To make the binary codes audible during the exam, Jimmy uses two distinct tapping sounds: A **low thump** made by hitting the desk with an eraser represents **0**. A **sharp click** made by tapping the desk with a pen represents **1**.

However, since Morsa did not pay attention in his Computer Science class, he does not really understand binary, so he has to rely on you to write a decoder for him. Now, now he only needs your help to complete the task to build this code decoder so that Morsa's perfect cheating plan can succeed!

Input Format

The input contains a single binary string of length len.

Output Format

Output a single line containing the decoded answer. No spaces are required between the letters.

Technical Specification

- $2 \leq len \leq 1,000$

- len must be even integer

Sample Input 1

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110001100011
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Sample Output 1

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DABCAD
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