

DMOPC '14 Contest 4 P1 - New Key

Time limit: 1.0s **Memory limit:** 64M

PRIORITY ONE TRANSMISSION

- Union of Ecraxus

From: Agent Lore, Ecraxian Naval Intelligence, Section 2

Subject: New Key

Rumours are coming in from far sections of space that state the Hoyd aliens have deciphered our current system of coding for secret messages. Though this has not yet been confirmed, we have decided to play it safe and implement a new system.

In this new system, a letter is represented by something other than itself. Numbers $\{0-9\}$ represent letters $\{A-J\}$ (in order), letters $\{A-J\}$ represent the letters from $\{K-T\}$, while the letters $\{K-P\}$ represent the letters $\{U-Z\}$.

To make it more difficult to decipher, **in the decryption procedure**, each character must then be shifted one to the left for the message to make sense. To decrypt $\{4\}$ to $\{D\}$, $\{4\}$ is changed to $\{E\}$, and then $\{E\}$ is shifted to $\{D\}$.

Important: when decrypting, the input $\{0\}$ (encrypted) becomes $\{9\}$ (decrypted). It was shifted one to the left from $\{A\}$.

We need you to make a key for this new code so that our agents will be able to communicate with one another.

Input Specification

The only line of input will contain the encrypted message. It will have a length of up to 50 characters and will contain only digits $\{0-9\}$ and letters $\{A-P\}$, uppercase only.

Output Specification

The only line of input should contain the decrypted message.

Sample Input

```
4DFG3
```

Sample Output

```
DMOPC
```

Explanation for Sample Output

The first character, **4** (0,1,2,3,4,5,6,7,8,9) becomes **E** (A,B,C,D,E,F,G,H,I,J). It is then shifted to the left by one to obtain **D**, the decrypted character.