1006 - Ciphering programs

Description

Enrique and Tomás are two good friends whose greatest entertainment is programming. As all good programmers, they challenge each other frequently, the challenges consisting mostly in solving online judge problems in as little time as possible. Enrique has observed that one of the motives that competition between them has become more even is the sharing of solutions between the two. This allows each programmer to know the tricks of the other. Enrique has decided to hide his solutions from Tomás and everyone else, but he has an inconvenience to guarantee it: He shares a workstation with Tomás. Wanting to avoid accidental access to his code he decides to encrypt everything in his programs. In order to do so he implements the following algorithm: Change every letter in the code for its successor in the English alphabet (respecting its case). If the letter in question is **z**, then its successor is assumed to be **a**. Then the algorithm rewrites each line as described as follows: first, the symbol in the centre of the text is written (if characters goes from positions **1 to n**, then the first character in being written is the character in position **(1+n)/2**). Following the same strategy, the algorithm encodes the left half of the string, then the right and last half. Thus, the Pascal program:

```
program p1000(Input,Output);
var
    a,b:Integer;
begin
    Readln(a,b);
    Writeln(a+b);
end.
```

will be:

```
(npqsshb1 q000PqJouv,vuvq)u;
bws
:     ,bcfoJufhs;
hcfjo
e    fSbbom(c,);
f    sXjubom(c+);
ofe.
```

Enrique took a while programming the encoder, and now wants to ask you to help him revert the encryptions.

Input specification

The input consists of one program, encoded as per the strategy suggested by Enrique.
No line in this program contains more than 20000 characters.

Output specification

The output consists of Enrique's program decoded. This result will be exactly the same to the program originally described.

Sample input

```
(npqsshb1 q000PqJouv,vuvq)u;
bws
:      ,bcfoJufhs;
hcfjo
e     fSbbom(c,);
f     sXjubom(c+);
ofe.
```

Sample output

```
program p1000(Input,Output);
var
    a,b:Integer;
begin
    Readln(a,b);
    Writeln(a+b);
end.
```

Hint(s)

Source	Copa Pascal UCI 2010
Added by	**ejaltuna**
Addition date	2011-10-13 17:44:55.0
Time limit (ms)	1000
Test limit (ms)	1000
Memory limit (kb)	131072
Output limit (mb)	64
Size limit (bytes)	100000

Enabled languages

C C# C++ Java Pascal Perl PHP
Python Ruby Text