April Fools Day Contest 2013

A. Mysterious strings

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Input
The input contains a single integer a ($1 \le a \le 40$).

Output
Output a single string.

Sample test(s)

input
2
output
Adams

input
8
output
Van Buren

input
29
output
Harding

B. QR code

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Input

The input contains two integers a_1, a_2 $(0 \le a_i \le 32)$, separated by a single space.

Output

Output a single integer.

Sample test(s)

input
1 1
output
0

input
3 7
output
0

input
13 10
output
1

C. WTF?

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

```
HAI
I HAS A TUX
GIMMEH TUX
I HAS A FOO ITS 0
I HAS A BAR ITS 0
I HAS A BAZ ITS 0
I HAS A QUZ ITS 1
TUX IS NOW A NUMBR
IM IN YR LOOP NERFIN YR TUX TIL BOTH SAEM TUX AN 0
I HAS A PUR
GIMMEH PUR
PUR IS NOW A NUMBR
FOO R SUM OF FOO AN PUR
BAR R SUM OF BAR AN 1
BOTH SAEM BIGGR OF PRODUKT OF FOO AN QUZ AN PRODUKT OF BAR BAZ AN PRODUKT OF FOO AN QUZ
O RLY?
YA RLY
BAZ R FOO
QUZ R BAR
OIC
IM OUTTA YR LOOP
BAZ IS NOW A NUMBAR
VISIBLE SMOOSH QUOSHUNT OF BAZ QUZ
KTHXBYE
```

Input

The input contains between 1 and 10 lines, i-th line contains an integer number x_i $(0 \le x_i \le 9)$.

Output

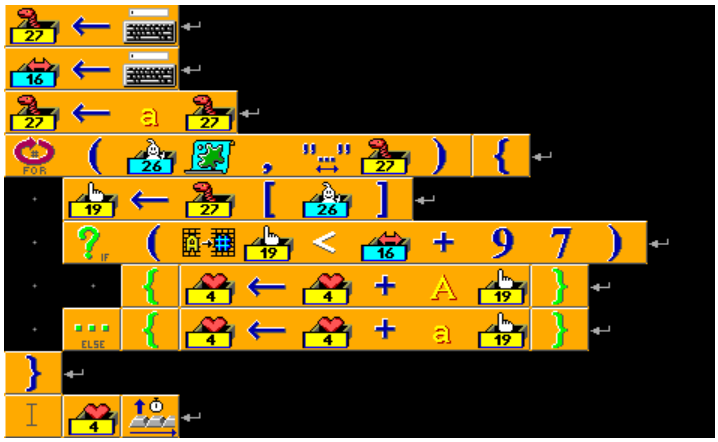
Output a single real number. The answer is considered to be correct if its absolute or relative error does not exceed 10^{-4}.

Sample test(s)

input
3 0 1 1
output
0.666667

D. Orange

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output



Input

The first line of the input is a string (between 1 and 50 characters long, inclusive). Each character will be a letter of English alphabet, lowercase or uppercase.

The second line of the input is an integer between 0 and 26, inclusive.

Output

Output the required string.

Sample test(s)

input
AprilFool 14
output
AprILFooL

E. HQ

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

The famous joke programming language HQ9+ has only 4 commands. In this problem we will explore its subset — a language called HQ...

Input

The only line of the input is a string between 1 and 10^6 characters long.

Output

Output "`Yes`" or "`No`".

Sample test(s)

input
HHHH
output
Yes

input
HQHQH
output
No

input
HHQHHQH
output
No

input
HHQQHHQQHH
output
Yes

Note

The rest of the problem statement was destroyed by a stray raccoon. We are terribly sorry for the inconvenience.

F. Greedy Petya

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Petya is an unexperienced programming contestant. Recently he has come across the following problem:

You are given a non-directed graph which consists of n nodes and m edges. Your task is to determine whether the graph contains a Hamiltonian path.

Petya wrote a quick bug-free code which he believes solves this problem. After that Petya decided to give this problem for April Fools Day contest. Unfortunately, Petya might have made a mistake, and it's quite possible that his algorithm is wrong. But this isn't a good excuse to leave the contest without submitting this problem, is it?

Input

The first line contains two integers n, m $(1 \le n \le 20; 0 \le m \le 400)$. Next m lines contain pairs of integers v_i, u_i $(1 \le v_i, u_i \le n)$.

Output

Follow the format of Petya's code output.

Sample test(s)

input

```
2 3
1 2
2 1
1 1
```

output

```
Yes
```

input

```
3 0
```

output

```
No
```

input

```
10 20
3 10
4 6
4 9
7 5
8 8
3 10
9 7
5 2
9 2
10 6
10 4
1 1
7 2
8 4
7 2
1 8
5 4
10 2
8 5
5 2
```

output

```
No
```