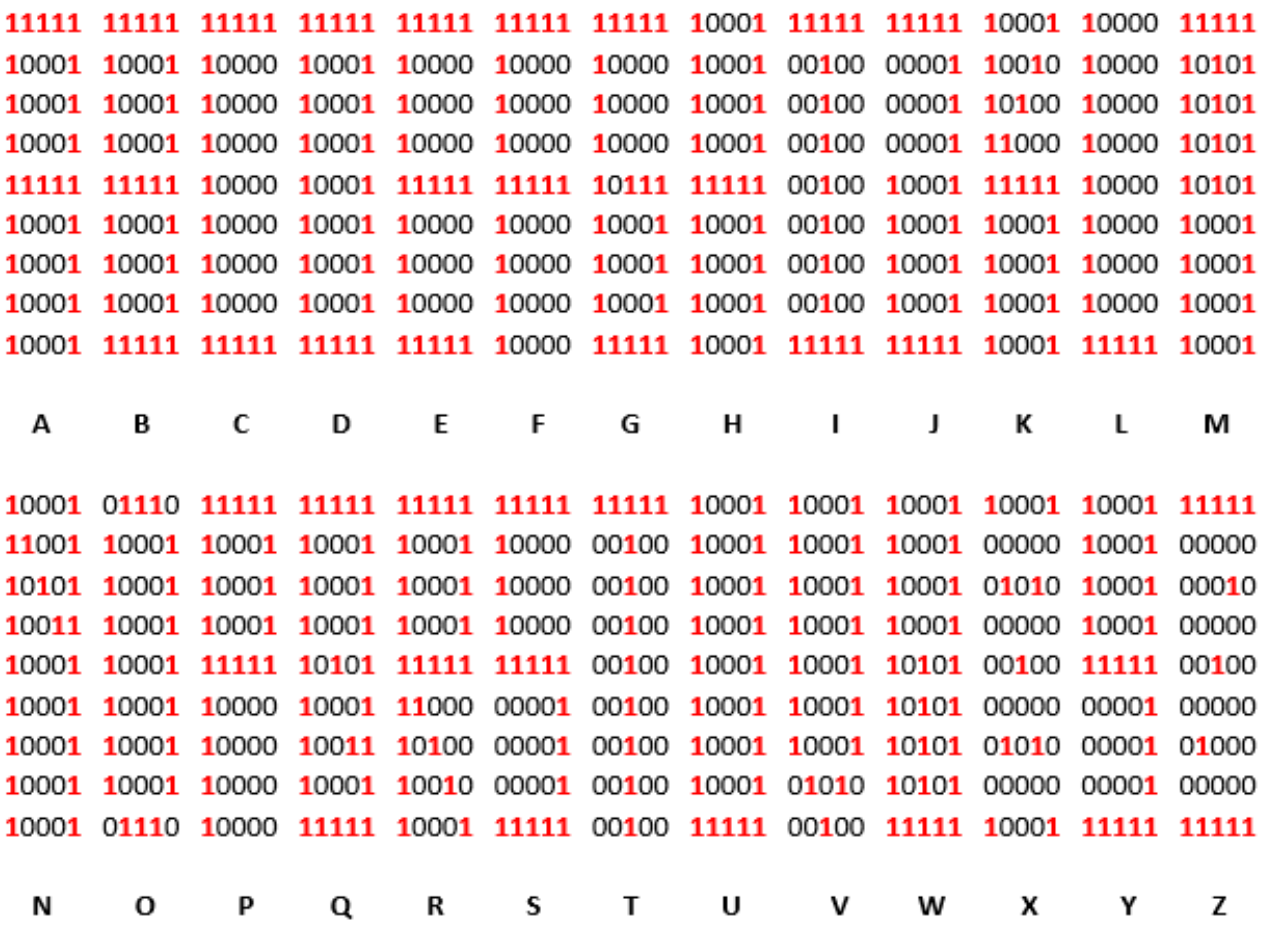
14 Segment Display

Problem Description

A 14-segment display is a creative innovation in the field of electronics. A 14-segment display circuit can display all alphabets from A to Z (all in caps). Each alphabet is represented as a grid of 9 X 5. 0 (Zero) on the grid denotes that the LED at that place in the grid is turned OFF, whereas 1 denotes that the LED at that place in the grid is turned ON. The alphabets given as input may be padded with spaces between them i.e., the input grid is always of size 9 X Z where 9 is the number of rows and Z is the number of columns. Here Z is the total number of columns used to represent alphabets and the padding between the alphabets.

Padding between alphabets is done using zeros (0). The padding between two alphabets on the grid can have random width.

All the alphabets on 14-segment display are represented as follows:



Given the grid, determine what alphabets are displayed by the grid.

Constraints

Each alphabet is displayed by a 9 X 5 grid

1 <= Number of alphabets <= 10000

Input

Input consists of 9 lines where each line contains a binary string (consisting of 0 and 1) of equal breadth.

Output

Print alphabets displayed on the 14-segment display.

Time Limit (secs)

1

Examples

Example 1

Input

11111000011111011111

00100000010000010000

00100000010000010000

00100000010000010000

00100000010000011111

00100000010000000001

00100000010000000001

00100000010000000001

00100000011111011111

Output

TCS

Explanation

Here, the first 9 X 5 grid represents the alphabet 'T' and then we have a padding of width 5 (00000). Then the next 9 X 5 grid represents the alphabet 'C' and then we have padding of width 1 (0) and the next 9 X 5 grid represents the alphabet 'S'.

Example 2

Input

11111000011111000111110011111000010001

10000000010001000100010000000000000000

10000000010001000100010000010000000001010

10000000010001000100010000000000000000

11111000011111000111110000100000000100

00001000001000100011000000000000000000

00001000001000100010100000100000000001010

00001000001000100010010000000000000000

11111000010001000100010011111000010001

Output

SARZX

Explanation

Here, the first 9 X 5 grid represents the alphabet S and there is a padding of width 5 (00000) and the next 9 X 5 grid represents the alphabet 'A' and then we have a padding of width 3 (000) and so on.

There are 5 alphabets in this grid which are SARZX.