Problem 4: Frames and Phrases
11 Points

Problem ID: `frame`

Rank: 2

Introduction

Sometimes you hear a phrase so good, you just want to frame it and hang it up in your room. With the power of computer programming, we can do that digitally!

Your task is to create a program that will take in a phrase and output the phrase inside a frame of asterisks.

Program Input

The first line of the input from STDIN will contain a positive integer `T` denoting the number of test cases that follow. Each test case will have the following input:

- A single line containing a phrase or word of length `n` characters.

Example Input:

```
4
Live Laugh Love
Bless This Mess
i have high blood pressure
A
```

Program Output

For each test case, your program should output the input phrase surrounded by a rectangular frame, with each word (counted by spaces) on a separate line. The frame must surround the text with no margins. The capitalization of the words must be conserved. Each test case output should be separated by a blank line.

Example Output:

```
*******
*Live *
*Laugh*
*Love *
*******

*******
*Bless*
*This *
*Mess *
*******

**********
*i        *
*have     *
*high     *
*blood    *
*pressure*
**********

***
*A*
***
```

Problem Constraints

T ≤ 100

0 < n ≤ 500

The input phrase may consist of multiple words.

The input phrase may have certain letters capitalized.

The input phrase may contain symbols or numbers.

Problem Author: Chris Liu

Contributor(s): Sunny Guan