

Problem 2. Largest Rectangle

Write a program to **find the largest rectangular area in a rectangular matrix** of strings. The area should hold equal cells at its **borders**. The area size is calculated by the classical formula **width * height**.

Input

The input comes as from the console. Each row of the matrix is on a **separate line**; **each cell is surrounded by commas (',') on both sides**. The input ends with the keyword **"END"**.

Output

The output should be printed on the console. **Border cells of the largest rectangle** should be enclosed in square brackets ([]). Each cell should be **padded 5 spaces to the right**.

Constraints

- The input will always contain data for a matrix with a rectangular form.
- The minimal size of the matrix will be 1 x 1. The maximum matrix size will be 20 x 20.
- Allowed working time: 0.2 seconds. Allowed memory: 16 MB.

Examples

Input	Output
,xx,a,a,a,a,a,a, ,a,a,z,z,a,php,a, ,a,a,x,x,a,a,a, ,xx,a,sql,a,a,js,a, ,xx,a,a,a,a,a,a, ,xx,a,z,z,a,php,w, END	xx [a] [a] [a] [a] [a] [a] a [a] z z a php [a] a [a] x x a a [a] xx [a] sql a a js [a] xx [a] [a] [a] [a] [a] [a] xx a z z a php w