

19 Pattern recognition

12 points



Introduction

Pattern recognition is a popular branch of Artificial Intelligence and is defined as the process of classifying input data into objects or classes based on key features. It has applications in computer vision like face detection and stop sign detection in autonomous car driving.

In its basic form a pattern recognition system consists of three stages:

1. A set of sensors gather the observations to be classified or described.
2. A feature extraction mechanism computes numeric or symbolic information from the observations.
3. A classification or description scheme classifies the observations relying on the extracted features in the previous stage.

Here is a proposal to do the first steps in pattern recognition. Can you develop a program to just classify the input received as a series of lines received as one of these polygons: square, rectangle or triangle?

Input

The input will be a series of lines with any ASCII characters drawing a polygon form, that can only be a square, a rectangle or a triangle.

Output

Print out the sentence "I see a X" where X will be the polygon recognized, that is square, rectangle or triangle.

Example 1

Input

```
###  
# #  
###
```

Output

I see a square

Example 2

Input

```
*****  
*   *  
*****
```

Output

I see a rectangle

Example 3

Input

```
#
```

Output

I see a square

Example 4

Input

```
$  
$$  
$ $  
$ $  
$$$$$
```

Output

I see a triangle