

## Dialogue between two pentomino puzzle solvers

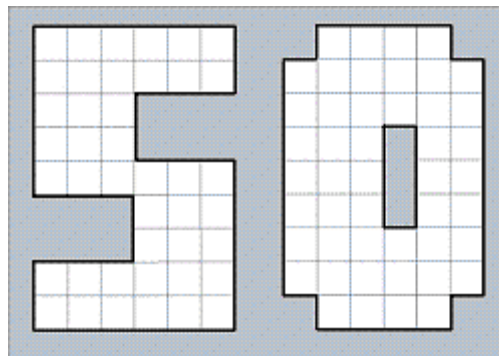
### 1. The two puzzle solvers introduce themselves.

P: My name is Peet. I love solving pentomino puzzles. The only tools I use are paper, pencil and rubber.

J: My name is Jeek. I love writing computer programs in general, and puzzle solving programs in particular. One of the programs I have written is a tool for finding perfect-fit-solutions of objects (such as polyominoes) in a predefined field.

### 2. P and J start a dialogue.

P: Hi Jeek. Recently I saw a polyomino puzzle presented by Kate Jones as part of an anniversary contest.



Fit all the polyominoes from 1 through 5 into the grid within the number 50, so that no two of the tetrominoes, trominoes, the domino and monomino touch each other, not even at the corners.

P: I propose that we both solve the puzzle. I do it my way, you do it your way.

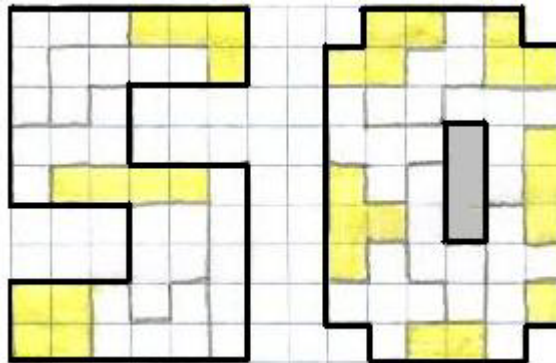
J: That is a good idea. Basically it is not too complicated for my computer program. However, the extra restriction that polyominoes 1 through 4 are not allowed to touch each other is not supported. An extension to handle this extra condition is required.

P: I propose we meet again next week. Hopefully you can show a computer solution then. My task is to find a solution by hand.

J. OK. I am going to implement the extension. See you next week.

3. P and J meet again one week later.

P: This is my solution. Six pentominoes and three tetrominoes in the "5".  
All other polyominoes in the "0".



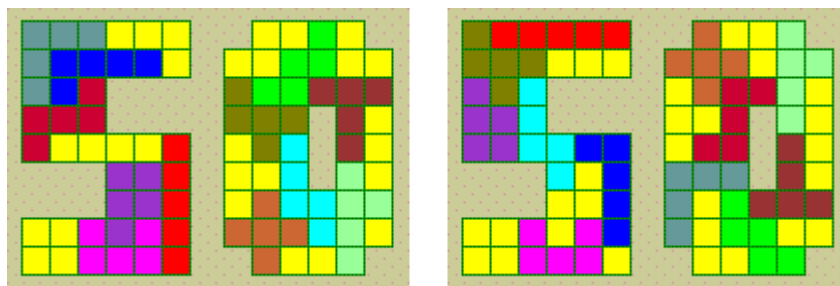
J: This is my solution.

The pentominoes are represented by F I L N P T U V W X Y Z  
The tetrominoes are represented by i l o t z  
The trominoes are represented by 3  
The domino is represented by 2  
The monomino is represented by 1

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* * * * * * * * * * * * * * *
* F I I I I I * * X 3 3 Y * *
* F F F 3 3 3 * X X X 3 Y Y *
* P F N * * * * t X Z Z Y i *
* P P N * * * * t t Z * Y i *
* P P N N L L * t Z Z * T i *
* * * * N z L * V V V * T i *
* * * * z z L * V l W T T T *
* o o U z U L * V l W W 2 2 *
* o o U U U l * * l l W W * *
* * * * * * * * * * * * * * *
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As a matter of fact, this is the first solution from a long list.

P: Let's send in these two solutions for the anniversary contest.



J: Do you think that one might guess which solution is found by a human and which solution is found by a computer?

P: I think so. Your fitting program must operate according to a fixed plan. For instance from left to right and from top to bottom. And probably the pentominoes are fitted in alphabetical order. Note that the solution on the right side starts with F and I which are the first two pentominoes in alphabetical order. So, this is a good candidate for the computer solution.\