

The only 15 puzzle that can solve itself.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	

Version 1.0

November 1997

© Jerry Brons and Harry Broeders.

There are already a lot of 15 puzzles available (sometimes called slide puzzles). Our version is unique however. If you can't solve it our 15 puzzle *can solve itself!*

This DEMO version has the following limitations:

- You can't create your own puzzles from your own bit map files. There are only three build in pictures to play with.
- You can't change the number of pieces. In the licensed version you can select sizes from 3x3 up to 10x10.

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How to use this program.

Rules of the game.

When the game starts a picture is cut into a number (typically 16) of rectangular pieces (all of the same size). The piece on the bottom right is removed. The remaining pieces are randomly shuffled around. To solve the puzzle you have to recreate the original picture again by sliding pieces into the empty spot.

Mouse control.

If you click a piece surrounding the empty spot it will slide into the empty spot.

Keyboard control.

You can use the arrow keys to move the pieces immediately surrounding the empty spot.

Menu options.

File menu:

- **Classic puzzle of 15:** Open the classic puzzle of 15. This is the default puzzle when you start the program.
- **Europe puzzle 8x8:** Open a 8x8 shuffle puzzle.
- **Rate your mind pal:** A clever variant of Sam Loyds famous 14-15 puzzle.
- **Open...:** Open your favorite bit map file and transform it into a slide puzzle. *This option cant be used in this DEMO version. Order a licensed version!*
- **Exit:** Leave this program.

Options menu:

- **Resize to original bit map:** If you have changed the size of the window this option restores it to its original dimensions.
- **Set background color...:** This option lets you select a color for the empty spot.
- **Set number of pieces...:** This option lets you select the number of pieces. If you change the number of pieces the picture is reloaded and reshuffled. *This option cant be used in this DEMO version. Order a licensed version!*

Play menu:

- **Up, Down, Left and Right:** These menu options are equivalent to the equivalent keys. Using the keyboard or mouse to move the pieces is much more convenient than these menu options.
- **Preview solution:** If you select this option a separate window is opened showing the complete picture (the solution). If you select this option again the preview disappears.
- **Solve one step:** Bring the puzzle one step nearer to its solution. You can also press the SPACE bar to perform this action. *So pressing the SPACE bar continuously will eventually solve the puzzle!*
- **Shuffle:** Shuffle the pieces around in random order so you can start over.

Help menu:

The options within this menu speak for themselves.

The history of the puzzle of 15.

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It is not clear when the first slide puzzle was invented or made. But it is a well known fact that in 1870 Sam Loyd, America's greatest puzzle-expert, "drove the whole world crazy" (in his own words) with his newly "discovered" 14-15 puzzle. This was a variation on the "Puzzle of 15" which was made and sold by the Embossing Company from New York about 10 years earlier. This puzzle consisted of 15 numbered square pieces that could be slided around in a square box that was big enough to contain 16 pieces. The pieces should be placed at random in the box and you should sort the pieces in ascending order without taking the pieces out of the box (so the only thing that is allowed is to slide the pieces). Not every randomly placed pattern of pieces can be sorted by just shuffling and Sam Loyd cleverly made use of this fact.

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It was not surprising that Sam drove the whole world crazy by his variation of the puzzle of 15. The problem that he formulated was impossible to solve. When you bought Sam's 14-15 puzzle the empty square was positioned bottom right. The pieces were numbered in order from left to right and from top to bottom; only the pieces numbered 14 and 15 were reversed. You should re-order the pieces so all the pieces are in the correct position and the empty place should be positioned bottom right again. For the correct solution a prize of 1000 dollar was offered but Sam kept that money in his pocket. A slide puzzle with square pieces can only be solved when the number of exchanges necessary to solve the puzzle is even. The 14-15 puzzle attracted a world wide attention that can only be compared with the Rubik's Cube that conquered the world 100 years later.

Since the famous Sam Loyd's slide puzzle thousands of different slide puzzles are made. Most of them formed a picture when correctly solved. A slide puzzle with the companies logo was used by a lot of companies as a small gift for their relations.

R	A	T	E
Y	O	U	R
M	I	N	D
P	L	A	

A clever variation of the 14-15 puzzle is the so called "Rate your mind pal" puzzle that is shown beside. This puzzle seems impossible to solve at first sight, certainly for someone who is familiar with the 14-15 puzzle. This puzzle can be solved however. Think hard ... and when you do not find the answer [ask us for a hint.](#)

The history of our program.

This slide puzzle is able to solve itself. The algorithm is developed and programmed by Jerry Brons in June 1997 as a project assignment for the programming and software engineering course that is part of Jerry's education to electrotechnical engineer at the Rijswijk Institute of Technologies. Jerry did this project with two other students Menno Andriessse and Jim-Roy Grippeling. This project required 20 hours of work for each of them.

This project assignment was formulated a year earlier by Sidney Huiskamp, Saskia Kriek, Jacob Jan van der Steur and Friso de Wolf. They created a graphical Windows 3.1 version that was not able to solve itself and was not very stable. (But what can you do in only 20 hours each?)

Jerry, Menno and Jim-Roy started out with an non graphical DOS version that was able to solve itself. They tried to integrate their program with the Windows 3.1 program that was developed a year earlier. It worked but was not very stable. (But what can you do in only 20 hours each?)

The course leader Harry Broeders developed in a free weekend in October 1997 a completely new graphical Windows 3.1 slide puzzle and used Jerry's algorithm to let the puzzle solve itself.

Jerry who was working (as part of his education) with Harry on a programming project for the NATO NC3A at that time liked the program and they decided to place it on the web. The map of Europe we used in the slide puzzle is a result of Jerry's NATO NC3A project. Each color represents a different height. Harry spent most of his autumn holidays finishing the program and writing these help pages.

Order a licensed version of our 15 puzzle.

When should you order?

- If you want to create your own slide puzzles from your own favorite bit map files.
- If you have enjoyed playing with the demo version and want to play some more.
- If you want to play with slide puzzles with more than 15 pieces. In the licensed version you can select sizes from 3x3 up to 10x10 pieces.

How can you order?

- Send us a 10 dollar note (United States Dollars) or the equivalent amount in your own currency (only notes please). We will e-mail a licensed version to you, so do not forget to mention your e-mail address. Our address is:
Harry Broeders
Mariniersweg 24
3255 VG Oude-Tonge
The Netherlands
- You can also transfer the money directly to our bank account:
J.Z.M. Broeders
140996044
RABO Bank Oude-Tonge
The Netherlands
- If you want to send a check or money order add another 5 dollar because we have to pay our bank to cash a foreign check.
- If you want to receive a floppy disk add another 5 dollar for shipping costs.

Send us e-mail.

You can send us e-mail at: notime@dsv.nl (Jerry Brons) or bd@thrijswijk.nl (Harry Broeders).

