Puzzles
Sym-a-pix and Fill-a-pix: solver and generator

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1. Program

The "Puzzle" program allows player to read, generate, and solve two types of puzzles: Sym-a-pix and Fill-a-pix, whilst providing solution for the puzzle.
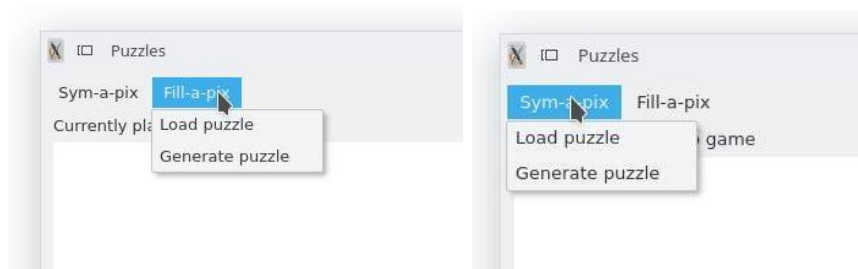

Figure 1: Sub-menus

The main program window (figure 2) has to menus:

- Sym-a-pix
- Fill-a-pix

Each has two submenus: *Load puzzle*, loading puzzle from JPG file, and *Generate puzzle*, generating puzzle using player specified parameters, see: figure 1.

There are also three buttons in the main window: *Solve*, showing solution to the puzzle, *Clear*, reseting current puzzle, and *Check*, checking current solution and providing information in case of error.

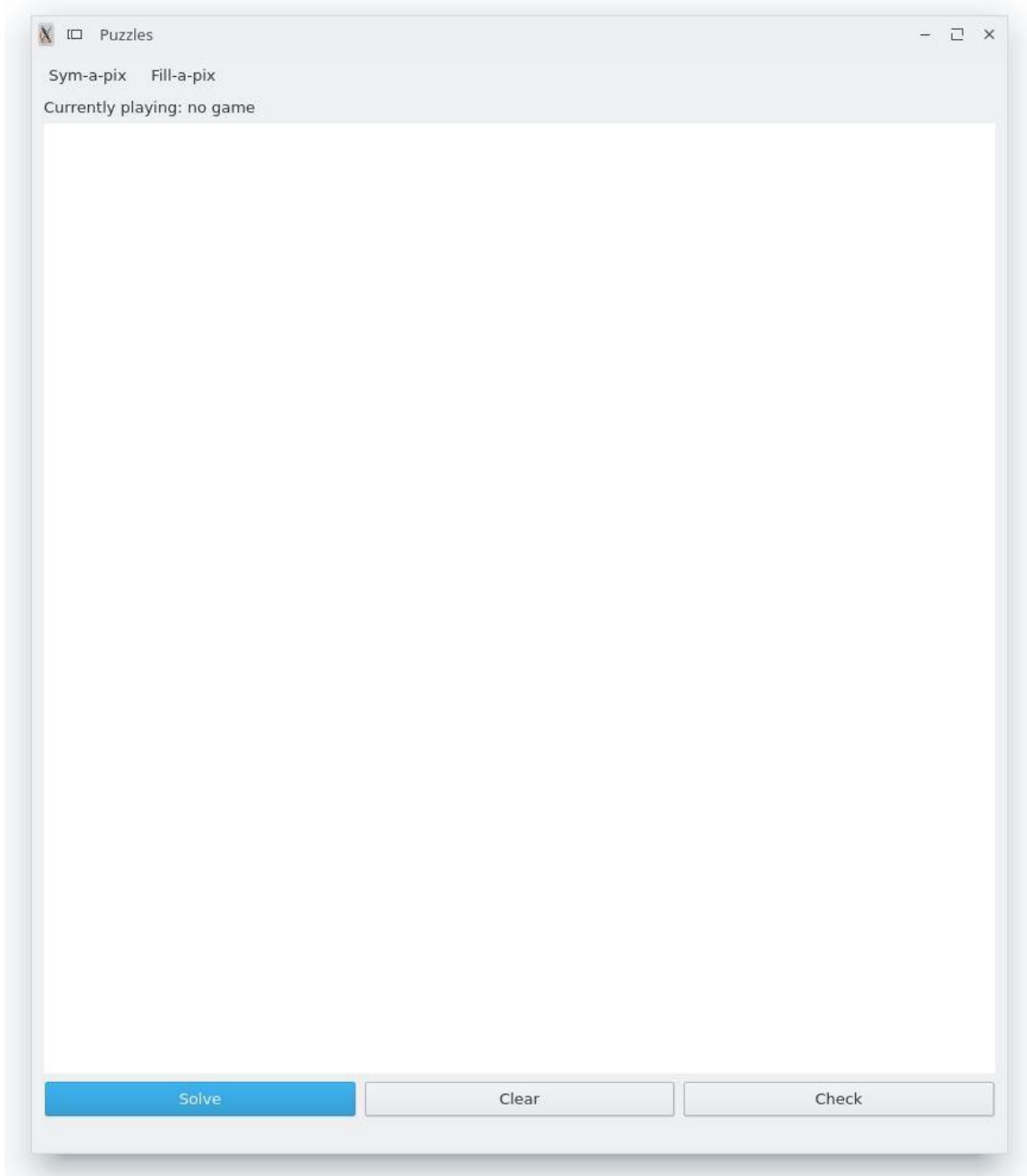Rules and details of both games are desribed below. Have fun!

Figure 2: Main window

2.   Sym-a-pix puzzle

The objective of game is to create blocks around dots, so each block has only one dot and block is the same after 180° rotation.

A game is loaded by choosing *Sym-a-pix→Load game* and is showed in program window (figure 3). Figure 4 presents start of solving the game. Walls are inserted by clicking on gray lines. When block is closed it's filled with dot inside, if there is any dot, game will let player make mistakes. Wall is removed by clicking on it or player can push *Clear* to remove all walls. Figure 4 shows game with mistake, but player did push *Check* button, and there is information about mistake in status bar. Index showed there corrensponds to the square below or to the right of mistake.

When player completes the game and solution is correct program prints 'SOLVED!' (figure 5). To show solution use *Solve* button.

Player can generate their own game with specified size using *Sym-a-pix→Generate puzzle*. All generated games are squared and can have size from 5×5 to 20×20 squares and up to 10 colors of dots. Each generated game provides its solution.
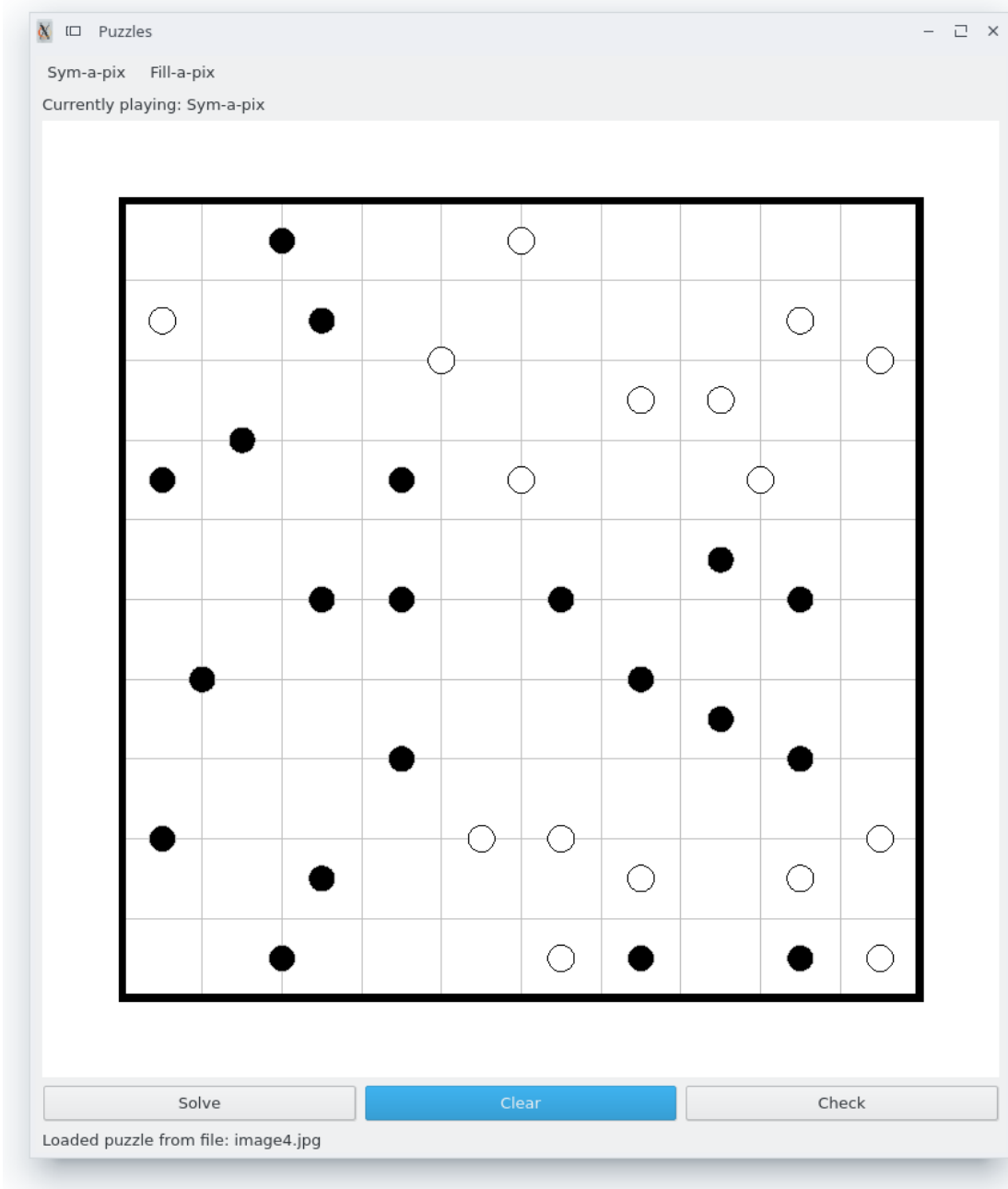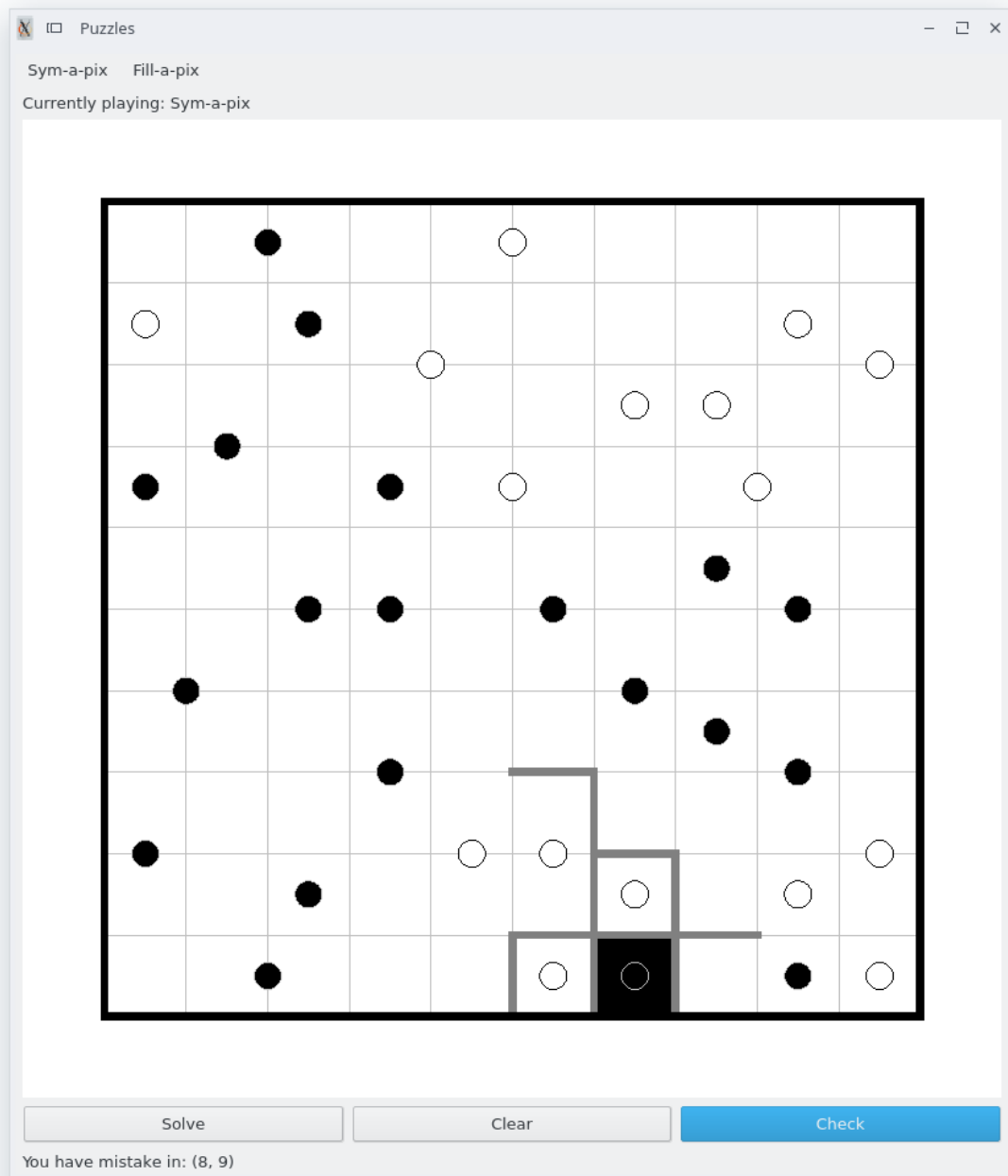
Figure 3: Sym-a-pix game

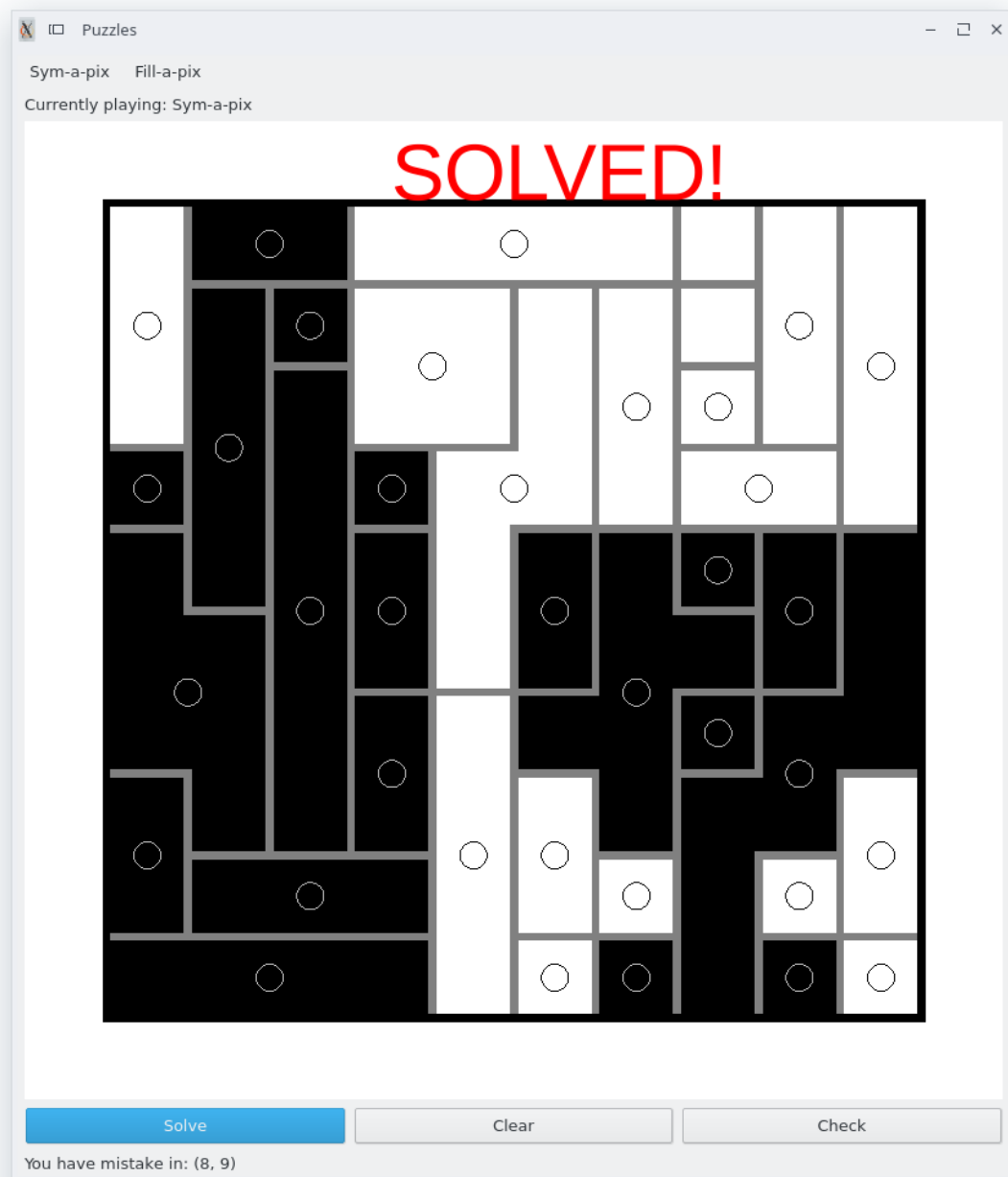Figure 4: Sym-a-pix game: partial solution with mistake

Figure 5: Sym-a-pix game: solved game

3. Fill-a-pix puzzle

The objective of Fill-a-pix game is to fill 3×3 neighbourhood of square with black squares corrensponing to number in this square.

A game is loaded by choosing *Fill-a-pix→Load game* and is showed in program window (figure 6). Figure 7 presents start of solving the game. A player chooses squares by clicking on them. First click will make square black, next gray (as in player is sure this is not black square), next white, and so on. Figure 7 shows game with mistake, but player did push *Check* button, and there is information about mistake in status bar. Index represents one of squares with mistakes.

When player completes the game and solution is correct program prints 'SOLVED!' (figure 8). To show solution use *Solve* button.

Player can generate their own game with specified size using *Fill-a-pix→Generate puzzle*. All generated games are squared and can have size from 5×5 to 20×20 squares. Each generated game provides its solution.
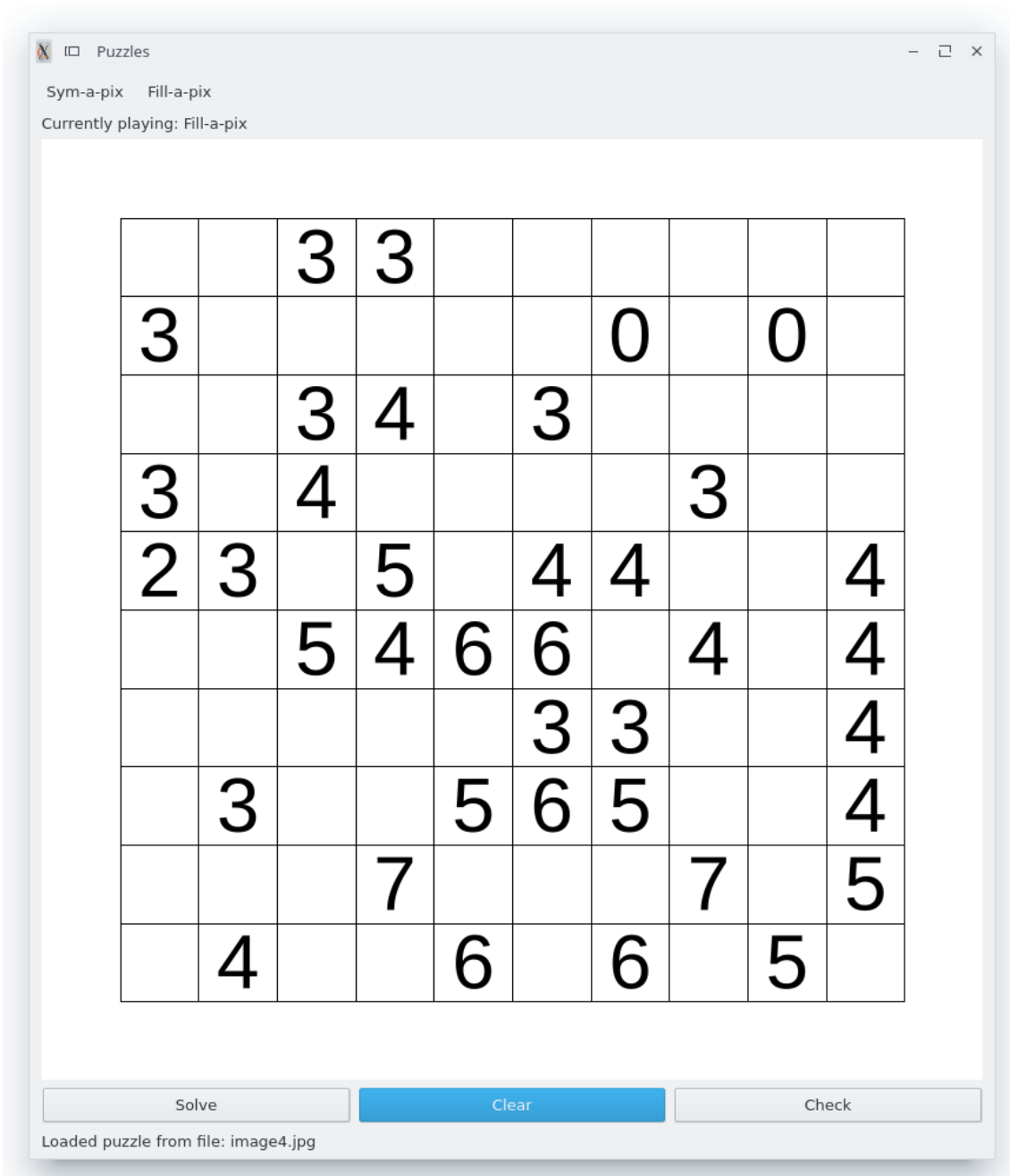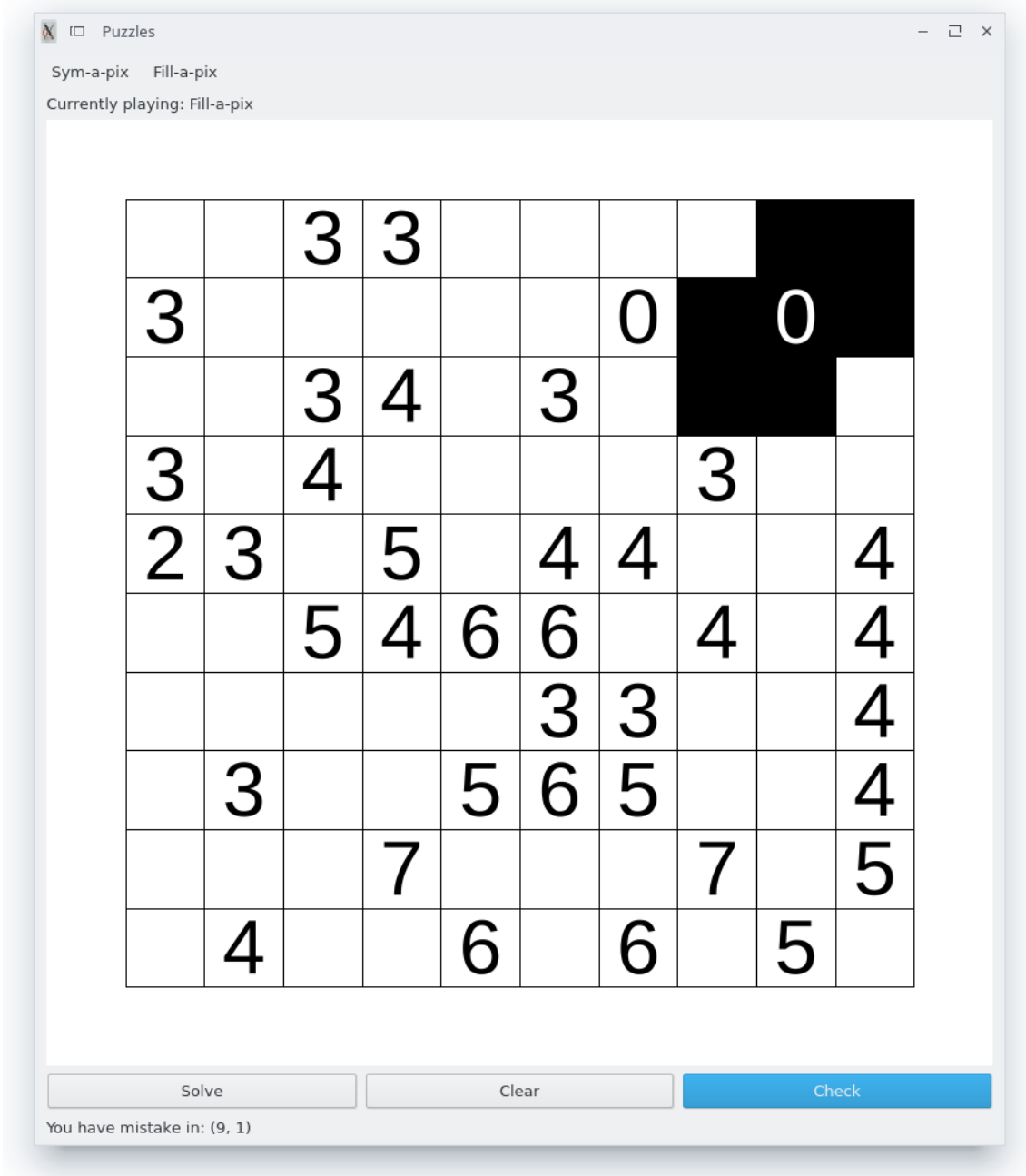
Figure 6: Fill-a-pix game

Figure 7: Fill-a-pix game: partial solution with mistake

Figure 8: Fill-a-pix game: solved game