

## System test cases:

CASE TEST ID	TEST DESCRIPTION	TEST CASE	TEST STEPS	EXPECTED RESPONSE	RESPONSE	STATUS
Undo last move	The player might need to undo his current and previous moves.	View the game window; select “Back” from the available buttons.	Click on the button.	The last piece moved goes back to its previous position.	The final puzzle square relocated returns to its former location. The counter decreases by one unit.	PASS
Show next best move	If the player is stuck in the game, he can use this button to ask for help in order to bring him closer to the solution.	View the game window; select “Best Move” from the available buttons.	Click on the button.	The program decides whether it can directly move the necessary piece or go back a step and performs the action.	If moves have already been made by the player, the last piece moved goes back to its previous position. If there were no moves made (or only moves by clicking the “Best Move” button), the program shows the actual next best move.	PASS

CASE TEST ID	TEST DESCRIPTION	TEST CASE	TEST STEPS	EXPECTED RESPONSE	RESPONSE	STATUS
<b>Quit Game</b>	Button that allows player to interrupt the program.	View the game window; select "Quit" from the available buttons.	Click on the button.	The program shows an alert window asking the player if they're sure about quitting, if they want to save the current game state or if they want to return to the game (cancel).	If there were no moves made or the game is already saved, an alert box opens asking the player if they want to quit or go back to the game. Otherwise a different alert box pops up asking to choose an option between saving the current game (and naming it), not saving it or going back.	PASS
<b>Reset puzzle</b>	If the player wants to restart the game he can go back with the same initial configuration .	View the game window; select "Reset" from the available buttons.	Click on the button.	The program resets the puzzle and sets to 0 the moves' counter.	The program reboots the puzzle and resets the counter for moves to zero.	PASS
<b>Save current state</b>	Button that allows player to save the moves up until the current puzzle state.	View the game window; select "Save" from the available buttons.	Click on the button.	A window opens where the player has to give a name to the current match.	An alert box opens asking the player to give a name to their match and saving it, or cancel the alert box.	PASS

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<b>Open saved state</b>	If there is an already saved game, the player can open and load it into the puzzle to continue playing.	View the game window; select "Load Game" from the available buttons.	Click on the button.	A window appears with all the presaved matches from which the player can choose one to open. The game opens with the pieces in the saved position and the counter set to the number of moves that were made.	An alert box pops up asking the player to Load/ Delete a match they've already saved or cancelling the alert box.	PASS
<b>Move puzzle pieces</b>	There are three ways to move the pieces. The player might want to use the 4 buttons representing the 4 keyboard arrows, the mouse or the 4 keyboard arrows directly to move the selected piece in correspondence with the desired direction.	View the game window; select the chosen piece by clicking on it; shifting it in one of the empty adjacent cells by clicking the four buttons from the window, swiping the mouse in the desired direction or using the four keyboard arrows.	<ol style="list-style-type: none"> <li>1. Click on the piece.</li> <li>2. Use buttons/ mouse/ keyboard to move it.</li> </ol>	The piece moves by one adjacent cell in correspondence with the selected arrow.	The game piece shifts to a neighboring cell based on the arrow selected, advancing by a single unit. The counter increases by one unit.	PASS

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<b>Choose start configuration</b>	When (re)starting the game, the player can choose one of the three available configurations.	When the window opens, the user has the possibility to choose a preset configuration.	1. Open the game. 2. Choose a configuration by clicking the "Load" button next to them.	The pieces on the board are arranged according to the chosen configuration. The counter is set to 0.	The selected configuration determines the arrangement of the pieces on the board, while the counter is zero.	PASS
<b>Win game</b>	The player might try to win the game, by bringing the 2x2 red square at the red line at the bottom of the board.	The player successfully finishes the game and emerges as the winner	Move the pieces one by one until making the 2x2 red square touch the red line at the bottom.	An alert box opens that informs the player about winning.	An alert box pops up informing the player that they have won with the possibility to reset the game.	PASS