

CIS 525 Fall 2023 Project 2: Fifteen Puzzle

Due: 10/15/2023

Total Points: 120

Assignment

Write a web page that enables the user to play the game of 15. There is a 4-by-4 board (e.g. using an HTML table) for a total of 16 slots. One of the slots is empty. The other slots are occupied by 15 tiles, randomly numbered from 1 through 15. Any tile next to the currently empty slot can be moved into the currently empty slot by clicking on the tile.

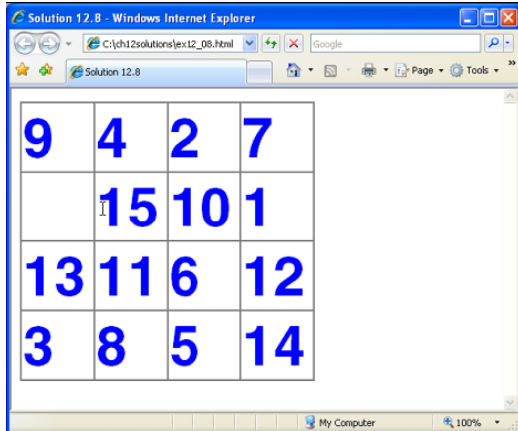
Requirements

1. Your program should create a board with the tiles out of order. The user's goal is to arrange the tiles in sequential order row by row. Using the DOM and the `click` event, write a script that allows the user to swap the positions of the open position and an adjacent tile. [*Hint*: The `click` event should be specified for each table cell.]
2. Your program should determine when the game is over, and then prompt the user to determine whether to play again. If so, scramble the numbers using the `Math.random` method. [*Hint*: learn how to shuffle a given array.]
3. Your program should allow a user quit the current game and start a new game (create a "New Game" button for it).
4. Your program should allow a user create a simple game with only one tile out of position so that a user can solve the puzzle with one move (create a "Simple Game" button for it).
5. Your program should count the number of moves a user has already made in the current game.
6. Your program should record the amount of time a user has already spent on the current game.
7. Your program must work in both Microsoft Edge and Google Chrome.

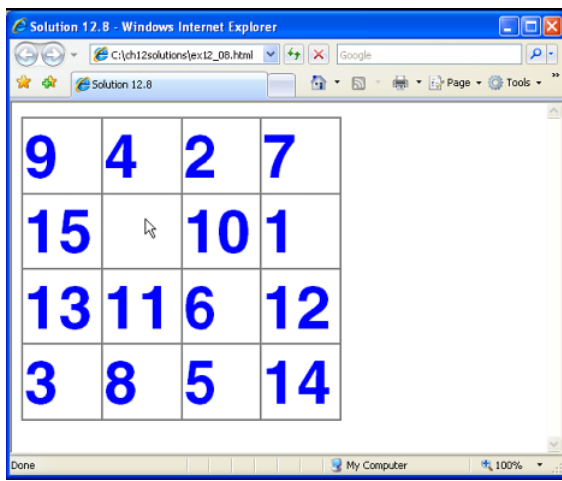
What to turn in:

1. Upload all your files as **a single ZIP file** to the canvas under the "P2" folder.
2. Please DO NOT post it on any public web site until one week after the deadline.

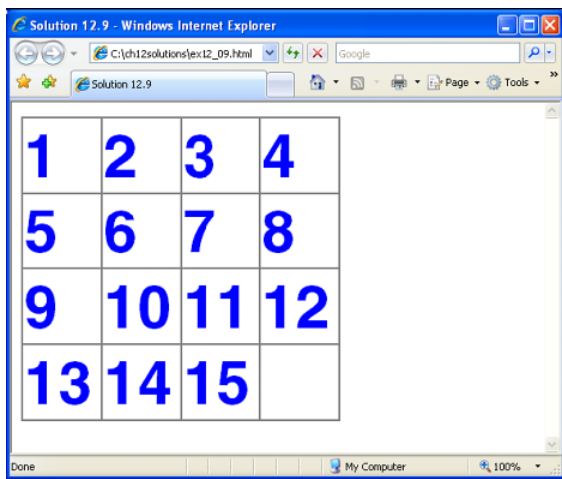
Sample GUI



An initial state



After the first move



The solved puzzle