

Project Proposal – Group Project 3

Group Members: Kent Harmon, Marrilyn Keutcha, Andrew Alvarez

Project Summary:

- For the final project, I will develop a Christmas-themed Fifteen Puzzle titled “Santa’s Workshop Slide Puzzle.” This interactive game will use a festive visual theme inspired by Santa’s toy workshop, featuring holiday colors, custom tile graphics, and decorative UI elements. The goal of the game is for the player to rearrange numbered tiles (1–15) by sliding them into the empty space until the board is restored to correct numerical order. The project will be built using HTML and CSS for layout and presentation, and JavaScript for the sliding tile mechanics, move validation, tile shuffling, win detection, and dynamic board updates. PHP will be used on the backend to store and load basic gameplay data, such as completion time recordings or a simple leaderboard, and to meet the server-side/database requirements. No external libraries will be used unless approved; the puzzle logic and interface will be coded manually for full control and clarity.

Planned Theme & Assets

- Santa’s Workshop background (warm-lit wood, ornaments, or toy-factory aesthetic). Custom tile images (green/red tiles, peppermint borders, or small illustrated icons). Animated “empty tile” space (glow or gentle pulse). Snowflake transitions and festive typography.

Proposed Wireframe (UI Outline):



GridGame

Adaptive Gameplay Experience: New levels of grid dimensions: 6x6, 8x8, 10x10. In addition to a smart random shuffling for the grid numbers.

SANTA'S WORKSHOP

Here will also be the comprehensive moves tracking for the session. Here will also be the magic hint system which is limited.

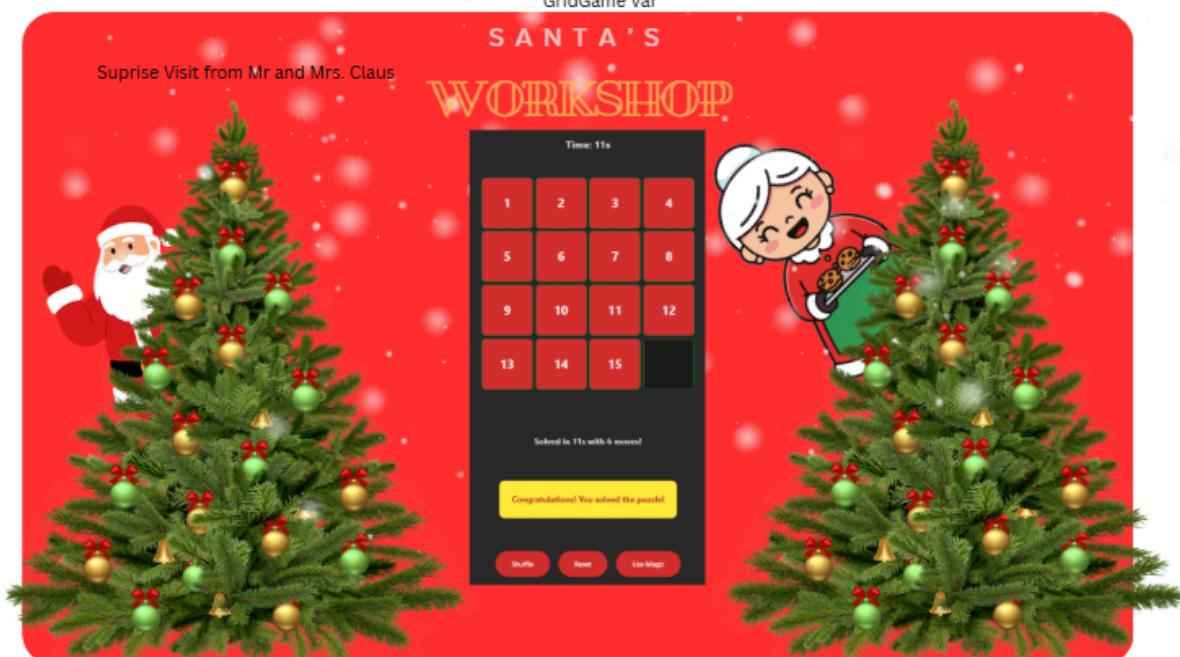
Time: 0s

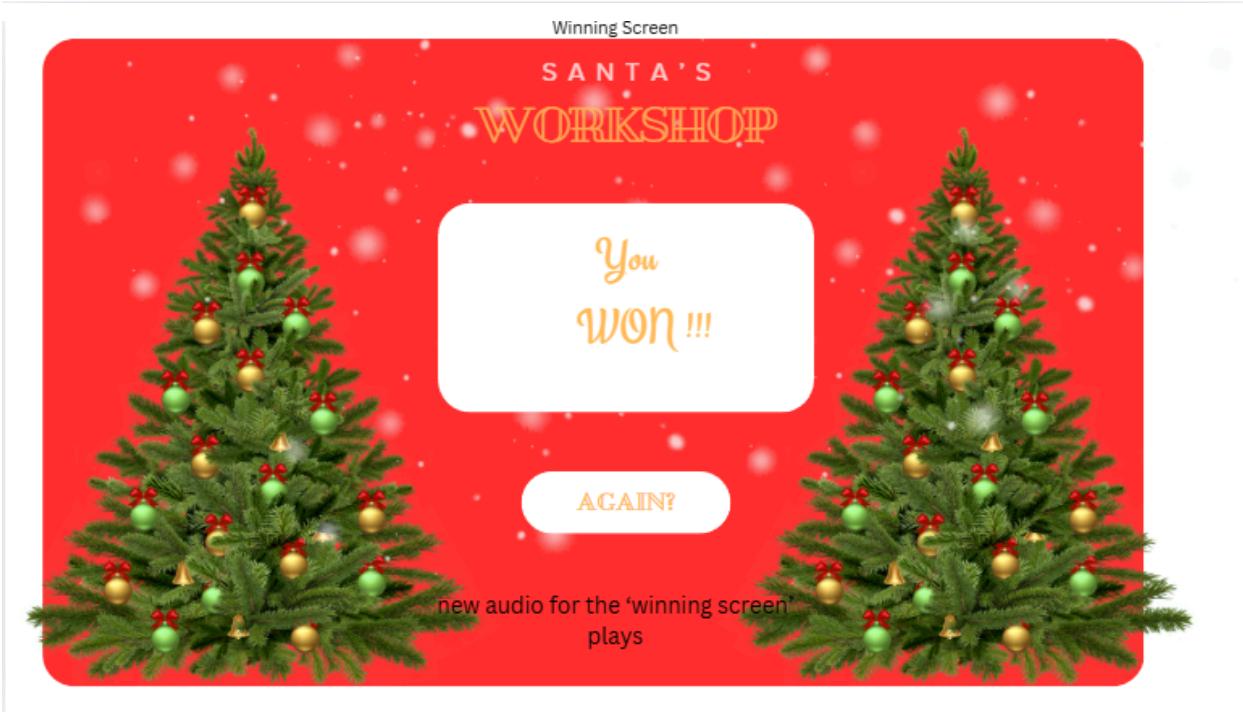
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	

Moves: 0 | Time: 0s

Shuffle Reset Use Magic

new Audio plays when homepage is loaded, signalling a match





Functionality:

- Santa Workshop will have a lot of functionality. There will be a winning screen, a magic button for hints, and badges will give power-ups for the next games. Then there is a player score board that will be our Santa's list. The grid will have a shuffle and reset button. The reset restarts the game, and the shuffle will have smart software to change the difficulty of the shuffle by randomness. And the levels will be based on this random difficulty and grid dimensions. As the player progresses through the levels, there will be a background story playing between Miss Claus and Santa. So there is a total of 4 levels of 4x4, 6x6, 8x8, and 10x10. With increased difficulty. For the scoreboard, when the user finishes a game, their score is stored initially. stored scores are checked with newly entered ones on page reload to see if the leaderboard must be updated.

Transformations

- Implementation Details: Enlarge the play button when hovered over. All the buttons below and the cells for the numbers will enlarge when hovered over.

Animations Implementation Details:

- Santa and Miss Claus pop up behind the trees with appearing dialogue boxes, and trees either light up or don't (two similar images swapped out, one with lights off, and one with lights on with a dark background if past sunset(7:30). Then, sunset to sunrise, the tree lights are off, and the background is red with snowflakes falling. The badges will appear from under the tree like a gift being presented. And they will be of later use as power-ups in other games, like a time freeze.

User Experience:

- The UI will emphasize clarity, warmth, and holiday spirit. Large, readable tiles will ensure the puzzle is intuitive to play, even for first-time users. The workshop theme will be consistent across screens, reinforcing visual unity. The interface is designed to feel cozy and festive, with balanced spacing, centered layouts, and clear action buttons. Players will receive feedback through animation cues, timers, and move counters. After solving the puzzle, the win screen provides a satisfying conclusion with fun holiday visuals and performance details. Overall, the design prioritizes usability while capturing a cheerful, Christmas workshop atmosphere

Statement:

We, the undersigned members of the group, acknowledge that we understand the conditions outlined in this proposal. We are committed to actively participating in the implementation of the group project from start to finish. We understand that individual grades may vary based on our contributions and performance, and we agree to present an important phase of the work collectively.

Signed proposal:

Name: Marilyn Keutcha

Name: Kent Harmon

Name: Andrew Alvarez