2048 Game Project Documentation

1. Project Overview

This 2048 Game is a web-based puzzle game developed using HTML, CSS, and vanilla JavaScript.

It mimics the classic 2048 game where the player combines matching tiles to reach the target value of 2048.

This version includes smooth animations, keyboard controls, a responsive layout, and a customizable grid size from 4x4 up to 8x8.

The goal is to demonstrate skills in JavaScript logic, DOM manipulation, game state management, and responsive UI design.

2. Key Features and Implementation

- Responsive Design: The game board dynamically adjusts based on screen size.

- Grid Scaling: Users can select grid sizes between 4x4 and 8x8 before starting the game.

- Tile Logic: Implements merging and movement of tiles using custom JavaScript logic.

- Score Tracking: Real-time score updates on every merge.

- Clean UI: Minimalistic design using modern CSS styling.

- Game Controls: Reset game or go back to home screen easily.

3. Project Structure

- index.html   : Main HTML file (entry point)

- style.css   : All styling and responsive layout logic

- script.js   : Contains game logic, tile rendering, and event handling

- assets/   : Folder for images or future extensions like sound

4. Game Rules

1. The game starts with two tiles (2 or 4) placed randomly on the grid.

2. Use Arrow keys (Up, Down, Left, Right) to slide tiles.

3. When two tiles with the same number collide, they merge into one with double the value.

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4. Every move spawns a new tile (2 or 4) in a random empty spot.

5. The game ends when no moves are left and the board is full.

6. The objective is to reach the 2048 tile (but you can continue to higher numbers).

5. Conclusion

This project demonstrates strong frontend development skills, focusing on JavaScript logic, event handling, and responsive UI/UX design.

It is a clean and efficient implementation suitable for showcasing in a portfolio or GitHub repository.