

2048 Game - User Documentation

Overview

The 2048 game is a single-player sliding block puzzle game where the objective is to combine numbered tiles on a grid to create a tile with the value 2048.

This documentation provides an overview of the game mechanics, instructions on how to play, and details about the features and customization options available in this implementation.

Features

1. Normal Game Mode
2. Customizable Game Mode
3. Game Controls
4. Score Tracking
5. Undo Feature
6. Game Over and Win Conditions
7. Main Menu and Exit Options

Normal Game Mode

In the Normal Game Mode, the game starts with a 4x4 grid and the objective is to reach a tile with the value 2048. This is the standard mode of the game.

Customizable Game Mode

The Customizable Game Mode allows players to configure the game according to their preferences. Players can set the grid size (between 3x3 and 10x10) and the target tile value. This mode offers flexibility and additional challenges for experienced players.

Game Controls

- Arrow Keys: Use the arrow keys (Up, Down, Left, Right) to slide the tiles in the respective direction. When two tiles with the same number collide, they merge into one tile with their combined value.
- Reset Button: Click this button to restart the game.
- Undo Button: Click this button to undo the last move. This feature allows for strategic corrections.
- Main Menu Button: Click this button to return to the main menu.
- Exit Game Button: Click this button to exit the game.

Score Tracking

The game keeps track of the current score and the best score. The current score increases as tiles are merged, and the best score is saved between sessions.

Undo Feature

The Undo feature allows players to revert the board to its state before the last move. This can be used to correct mistakes or try different strategies.

Game Over and Win Conditions

- Game Over: The game is over when there are no more valid moves left (i.e., no empty spaces and no adjacent tiles with the same value).
- Win Condition: The game is won when a tile with the target value is created. In the Normal Game Mode, this target value is 2048. In the Customizable Game Mode, the target value is user-defined.

Main Menu and Exit Options

- Main Menu: Accessible from the Welcome screen, the main menu provides options to start a Normal Game, start a Customizable Game, or exit the game.
- Exit: Players can exit the game at any time using the Exit Game button on the game screen or the Exit button on the Welcome screen.

How to Play

1. Starting the Game: Launch the application. You will be presented with the Welcome screen.
2. Selecting Game Mode:
 - For a standard game, click 'Normal Game'.
 - For a customized game, click 'Customizable Game', enter the desired grid size and target value, and click 'Start Game'.
3. Playing the Game:
 - Use the arrow keys to slide the tiles. Try to combine tiles to reach the target value.
 - Keep track of your score and try to beat your best score.
 - If you make a mistake, use the Undo button to revert your last move.
 - The game ends when you create a tile with the target value or when no more moves are possible.
4. Restarting or Exiting:

- Use the Reset button to restart the current game.
- Use the Main Menu button to return to the Welcome screen.
- Use the Exit Game button to close the application.

Customization Options

In the Customizable Game Mode, players can configure the following settings:

- Grid Size: Choose a grid size between 3x3 and 10x10.
- Target Value: Set the target tile value to any positive integer, creating custom challenges.

User Interface

The user interface consists of the following components:

1. Game Grid: The main playing area where tiles are displayed.
2. Score Display: Shows the current score and the best score.
3. Control Buttons: Includes Reset, Undo, Main Menu, and Exit Game buttons for easy game management.