

Introduction:

The Matching Game, commonly known as *Pikachu Puzzle Game*, is a classic tile-matching puzzle game. The game consists of a grid filled with tiles, each displaying an image. The objective is to find and match pairs of identical tiles that can be connected within a specific path constraint. A successful match removes the paired tiles from the board, and the game ends when all pairs have been cleared.

In this project, we aim to develop a simplified version of the Matching Game by replacing the Pokémon images with letters. This modification maintains the core gameplay mechanics while introducing a new visual and cognitive challenge for players.

// (Chèn ảnh vào đây)

Game play:

The Matching Game offers an engaging and strategic gameplay experience where players must think quickly and plan their moves efficiently. The game starts with a grid filled with pairs of identical figures, and the player's goal is to clear the board by matching them using specific connection patterns.

Players control the cursor using arrow keys to navigate the board, highlighting two figures they believe form a valid pair. Pressing Enter attempts to match them, and if the connection is valid, the pair disappears, awarding points based on the complexity of the pattern. However, incorrect matches result in a penalty, adding an element of risk and decision-making.

As players progress, the increasing difficulty and time pressure create a more intense and immersive experience. The game offers three difficulty levels (Easy, Normal, and Difficult) each adjusting the board size and available time. Additionally, players can use hints to receive move suggestions, but this comes at the cost of points, adding a layer of strategic resource management.

The thrill of racing against time, making quick decisions, and optimizing every move keeps players engaged. A leaderboard system encourages competition, motivating players to improve their scores and refine their strategies. The game concludes when all pairs are matched, time runs out, or the player has no remaining moves, leading to either a victory or game-over screen. With the option to retry and improve performance, The Matching Game provides a fun and challenging experience that rewards skill, strategy, and quick thinking.

Background:

We integrate an ASCII-based background to enhance the visual experience. The background is designed using characters and symbols, which are stored in text files corresponding to different difficulty levels.

When the game starts, the background is loaded from a predefined file (easy.txt, normal.txt, or difficult.txt), depending on the selected mode. The background remains hidden behind the game board and becomes visible as matching pairs disappear. This dynamic rendering creates a visually appealing effect, revealing the underlying design progressively as players clear the board.

// (chèn ảnh vào đây)

Leaderboard:

The Leaderboard System in the game is responsible for storing and ranking players based on their performance. The readLeaderBoard() function reads data from the "rank.txt" file, sorts the players based on their scores (higher scores are prioritized), and gives preference to the "DIFFICULT" mode in case of ties.

The leaderboard is then displayed with columns: STT (No.), Name, ID, Class, Mode, and Score. If there are more than 8 players, only the top 8 are shown.

After a game session, the player's results are recorded using the writeLeaderBoard() function. If the player already exists in the leaderboard, their score is updated only if the new score is higher. Otherwise, their information is appended to the file. This mechanism ensures that the leaderboard always reflects the best achievements of each player, encouraging competition and skill improvement.

// (Chèn ảnh vào đây)

Rule of the game:

The Matching Game challenges players to match pairs of identical figures on a grid by connecting them with specific patterns (I, L, Z, U).

Players navigate the board using arrow keys to select cells, pressing Enter to match pairs. A legal match removes the pair, earning points (I: +1, L: +2, Z: +3, U: +4), while incorrect matches deduct 2 points.

The game offers three difficulty levels (Easy, Normal, Difficult) with varying board sizes and time limits (90s, 150s, 180s). Additional features include move suggestions (costing 2 points, limited to 3 uses), a leaderboard, and a help screen.

The game ends when all pairs are matched or time/lives run out, displaying a win/loss screen with the option to continue or replay.

Exit:

The Matching Game provides players with a convenient exit option to end their session at any point. Players can exit the game during gameplay by pressing the ESC key, which immediately terminates the current session and returns them to the main menu. Additionally, after completing a game (win or lose), players are presented with the option to exit to the main menu instead of continuing or replaying, ensuring flexibility and control over their gaming experience. This feature allows seamless navigation and preserves progress on the leaderboard if applicable.
