Software Development Specification: Matching Game in WinForms

Overview

This document outlines the specifications for developing a WinForms-based matching game application using C#. The game will be designed for two players who take turns revealing and matching cards.

Project Scope

The scope of this project includes designing and implementing a simple two-player matching game application in C# using the WinForms framework. The game will emphasize logic and user interaction without incorporating graphics, animations, or sound effects.

Requirements

Functional Requirements

1. **User Interface**
   - Design a user-friendly interface using WinForms.
   - Include necessary controls such as buttons (representing cards), labels, and a start button.
   - Provide visual feedback for player actions (e.g., revealing cards, displaying messages).

2. **Game Logic**
   - Implement game logic for a two-player matching game.
   - Initialize the game with 2 sets of 10 cards, each represented by a button.
   - Ensure each button reveals a card when clicked.
   - Allow players to take turns revealing two cards.
   - If the revealed cards do not match, hide the cards and switch to the next player's turn.
   - If the revealed cards match, increase the player's score by 1, keep the cards revealed, and allow the player to take another turn.

- End the game when all matches are found.

3. **Game Flow**
    - At the beginning and end of the game, disable all card buttons.
    - Display a message prompting players to click "Start" to begin the game.
    - Provide messages during the game indicating when matches are found, whose turn it is, and who wins the game.

User Interface Components

4. **Buttons**
    - 20 buttons representing the cards, arranged in a grid.
    - A "Start" button to initialize and start the game.
5. **Labels**
    - Display messages such as "Click Start to Play," player scores, and game status updates.

Messages

- Before the game starts: "Click Start to Play."
- During the game: Messages indicating matches, whose turn it is, and when the game ends.
- End of the game: Display the winner or if it's a tie.