Project Overview: Taki Card Game Implementation

Project Description

This project implements a console-based version of the popular Taki card game. The game supports multiple players, who compete to be the first to get rid of all their cards by playing matching colors or numbers. Special cards, such as Taki, Plus, and Change Color, introduce strategic elements to the game. The game is built with a focus on dynamic memory management, random card generation, and real-time player interaction.

Key Components

1. Player Management

Functions: getplayersdata, game, changedirection

Description: Manages player data, including initializing players, handling player turns, and changing the direction of the game based on the special card played. Players are stored in dynamically allocated arrays, and their hands are managed with proper memory allocation and reallocation when necessary.

2. Card Management

Functions: getrandomcard, printcard, ALLOCcardsarray

Description: Handles the creation and management of the cards used in the game. Each card is represented by a color and a number, with special functions to generate random cards and print them with ANSI color codes for a better visual experience in the console.

3. Game Flow

Functions: game, checkifthecardisvalid, getcardfromdeck

Description: Controls the main loop of the game, ensuring that each player takes their turn and that the game rules are enforced. Includes logic for validating card plays, handling special cards, and determining when the game ends.

4. Statistics Tracking

Functions: printstatistc, sort

Description: Tracks the frequency of card plays throughout the game. After the game ends, statistics are sorted and printed, providing insights into the game's progression and player strategies.

Features

- Multiplayer Support: Allows multiple players to compete in the same game session, with dynamic turn management.
- Special Cards: Implements special cards like Taki, Change Color, and Plus, adding depth to the gameplay.
- Dynamic Memory Management: Efficient memory allocation and reallocation for player hands and card management.
- Game Statistics: Tracks and displays the frequency of card plays, providing a detailed summary after the game ends.

Technologies Used

- Programming Language: C
- Libraries: Standard C Libraries (e.g., <stdio.h>, <stdlib.h>, <string.h>)
- Graphics: Console-based rendering using ANSI color codes