Assignment 3 Design Doc

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Details:

Creating a centuries-old game of chance with a four-sided top known as a dreidel

Implements:

- A spin_dreidel() function returns one of the four letters N, G, H, or S.
- A play_game (int n_players, int coins_per_player, int * n_rounds) functions to play a single game of dreidel and gets back a number corresponding to the player who won.

Pseudocode:

Spin_dreidel(void)

1. Create char variables for G, H, N,S
2. Create uint64 random num and mod it by 4, because you always wanna end up with 0,1,2,3
3. Create if statements to check if the corresponding number is equal to the random number
4. Return the letter according to the corresponding number
    a. G =0, H =1, etc

Play_game (int n_players, int coins_per_player, int * n_rounds)

1. Create an array of players with the number of players
2. Have a variable to keep count of eliminated players
3. Create a variable for the pot, to keep track of the coins in the pot
4. Create a for loop to fill up the array with the number of coins per player

5. Create a while loop to run as the game goes
    a. Create a variable turn, when u spin the dreidel
    b. Create a for loop that runs rounds
        i. If the turn is G gives the player the pot, then empty the pot
        ii. If the turn is H, then give the player half the pot and subtract half the pot from the pot
        iii. If the turn is S then the player gives one coin to the pot
            1. If a player has 0 coins and lands on S they get eliminated
        iv. Check for the remaining player and go through the players to see who has the most coins and return that index
    c. Keep count of rounds += 1

Files:

1. Dreidel.c: This file contains the function spin_dreidel() and play_game()
2. Play-dreidel.c: This file will call my functions from dreidel.c
3. Dreidel.h : This file contains definitions for functions defined in dreidel.c and used by other code
4. Makefile: This file will allow the grader to type make to compile your program.
5. README.md: This file will describe how to build and run my program and list the command-line options it accepts and what they do.
6. DESIGN.pdf: Describe the purpose of your program and communicate the overall design of the program with enough detail
7. WRITEUP.pdf: Discussion of the results of my tests.

8. Mtrand.h: Provided in asgn3-files.tgz.

9. Mtrand.c: Provided in asgn3-files.tgz.