Vincent Siu
vsiu2
10/11/22
Asgn3

Final Design

#Start code for dreidel.c file
#This file includes the logics and rules for simulating a game of dreidel.
Include the header file, so functions from other c classes are known

Include the stdio header file

Set a global array of type char containing the names: Aharon, Batsheva, Chanah, David, Ephraim, Faige, Gamaliel, Hannah #Do not modify this array.

Set a boolean variable to determine whether or not eliminations are printed to false (0).

Declare a function that will change the elimination printing boolean to be true (1)
#this will only run if called from main.

#we will now spin the dreidel and return the result G,H,N, or S based on the outcome.
Modify the spin_dreidel function

Set a variable equal function call result of uint64_tmt_rand(void) quantity modulo 4 (variable should be of type unsigned int).

If the result is equal to 0, return ‘G’
Else if, the result is equal to 1, return ‘H’
Else if, the result is equal to 2, return ‘N’
Else return ‘S’

Modify the play_game method, which should accept the number of players, number of coins per player, and pointer for var num_rounds.
#set up our constants and arrays: empty pot, players starting with a specified amount of coins, and first round.

Set the num_rounds = 1

Set an int to track the number of coins in pot = 0.

Set an array for the number of coins; we will call it player_coin.

Set an integer to track the number of participating players. Set it equal to the total number of players as seen above.

Vincent Siu
vsiu2
10/11/22
Asgn3

While the condition is true, or 1
For each item in player_coin
While the current index != -1: # the statements inside will run if the player is NOT out of the game.
Spin the dreidel.
If the output of the spin_dreidel is equal to G:
Add all coins in the pot to the current index of the coins array.
Set pot = 0.
Else-if the output of the spin_dreidel is equal to H:
Add half of the coins in the pot to the current index of the coins array. This means current index += pot/2
Subtract half of the pot from the pot itself.
Else if the output of the spin_dreil is equal to S:
If the current player does not have 0 coins:
Subtract 1 coin from the current index
Add 1 coin to the pot
Else:
Set current index to -1
Subtract the number of participating players by 1
If enabled, print the player that lost, including which round that occurred.

If the number of participating players is equal to 1:
For each player's coins up to the number of total players,
if the number of coins is not equal to -1,
Return that number of the player who won and the number of rounds.
#iff there is only 1 remaining player left (only one non '-1' in the coin array) check who won and return the winner.
Increment num_rounds by 1.

Vincent Siu
vsiu2
10/11/22
Asgn3

#Start code for play_dreidel.c
#The goal of this file is to enable the dreidel game to be simulated by a client. This class will also parse the command options up to the client's preferences: number of players, number of coins, and seed number. It will lastly print the winner of the game.

Include the stdio library header file
Include the dreidel header file

#this class will parse the command options
Declare the alphabetical options for the game (-p, -c, -s, -v). P,c,ands will have options, so include colons at the end of each of these.

Declare the main function that will take arguments
#set the default arguments: players(4), coins(3), seed(613), printing eliminations(0).

Using a while loop, parse command arguments with the choices within the options variables as defined above.

If the option is p,

Specify the number of players

If the number of players specified is out of the range between 2-8, return -1 & end program with non-zero exit code.

If the option is c

Specify the number of coins.

If the number of coins specified is out of the range between 1-20, return -1 & end program with non zero exit code.

If the option is s,

Specify the seed

If the seed specified is above 10 digits or is less than 0, return -1 & end program with nonzero exit code.

If the option is v

Enable play_dreidel to print everytime someone gets eliminated. This means set printing eliminations to 1.

Initialize the seed number.

Set dreidel.c to have enabled printing of eliminated persons, if needed.

Vincent Siu
vsiu2
10/11/22
Asgn3

Call the play dreidel function from the dreidel.c class.

Print the results from the function called in this order: name of the winner, number of coins, and the number of rounds, and under what seed. Note that this part of code should translate the pointer of the array to the name of the string name of the winning person.