

CSE 13S Assignment 3 - I Have a Little Dreidel  
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- General idea
  - Create a program that simulates playing the dreidel game given an amount of players, starting coins, and random seed.
- Pseudocode
  - Create global variable for array that has names of all possible players
  - Define input options for getopt()
  - play\_dreidel
    - Use get opt and create cases for players, coins, and seed
    - Check if user input is within minimum requirements to play the game
      - Check if arguments are not null and if they are within the bounds of the game requirements
      - If invalid use non-zero exit code
    - Switch case for -v that sets global variable display to 1 (originally set to zero)
    - Store user input values in their own variable
      - Convert optarg to an integer
    - Set random seed by calling function in mtrand.c
    - Call play\_game from dreidel.c using three parameters stored in variables
    - Print results with name of winner, players, coins, rounds, seed
  - spin-dreidel
    - Create an array that has corresponds to the sides on a dreidel
      - Create a random number using mtrand.c
      - Mod random number by 4
      - Results correlate to G, H, N, and S
      - Create switch cases that return the correct character
  - play\_game
    - Create variables for coins, players, players left, letter from dreidel, rounds, winner, pot, and amount to be subtracted from the pot
    - Create arrays for amount of coins that each player has and for keeping track of whether or not a player is out of the game (fill with 1s to start)
    - Create a while loop with condition that players\_left is greater than 1
      - Create a for loop that loops as many times as there are players in the game
        - Check if player is still in the game by checking if according index of array is equal to 1
        - Get letter from spin\_dreidel
        - Create switch cases for each letter

- G - Add pot to player's coins in array and set pot to 0
  - H - Set subtraction variable equal to  $\text{pot}/2$ , add sub to player coins, and subtract sub from pot
  - N - Do nothing
  - S - Check if the player has coins, if not, set the player standing to 0, and decrement players left by 1. If players left are equal to 1, calculate the winner by iterating over standing array and return index of element equal to 1. Otherwise subtract 1 from player coins and add 1 to pot.
- Increment rounds by 1
- Return winner
- dreidel.h
  - Define spin\_dreidel and play\_game functions
  - Define external variables for rounds and display