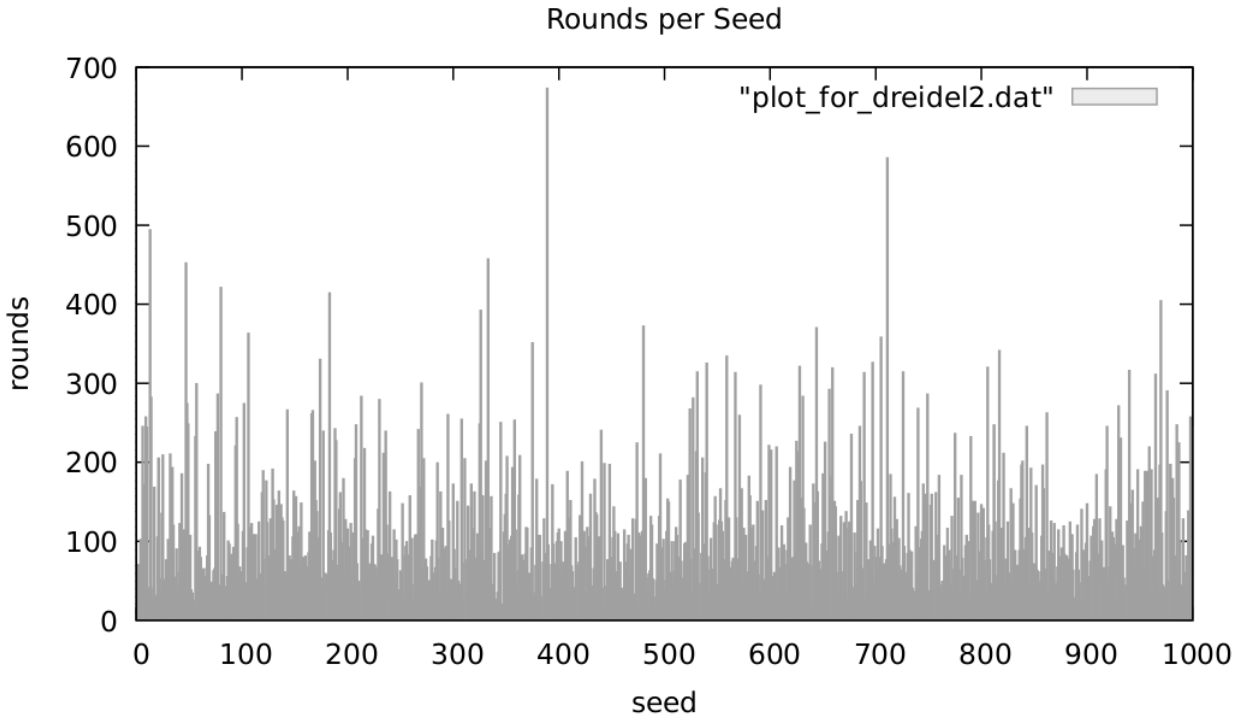
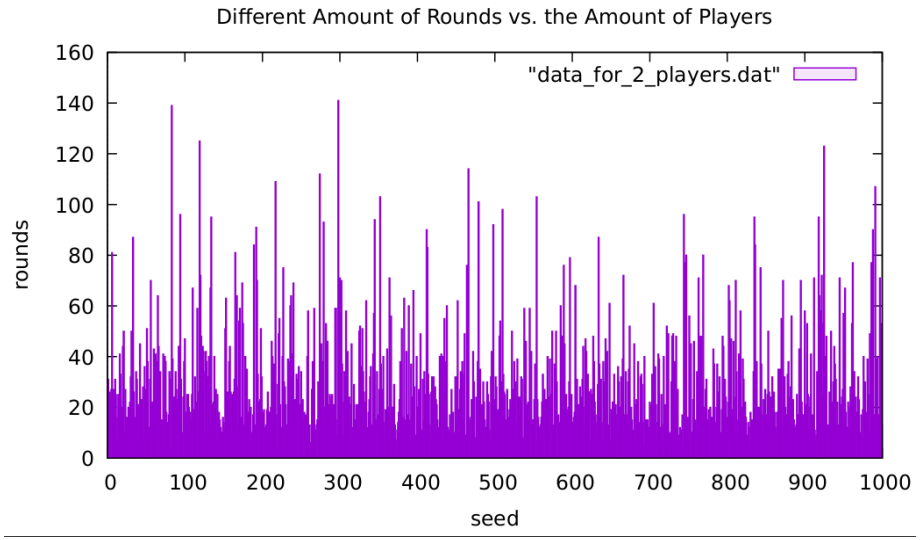
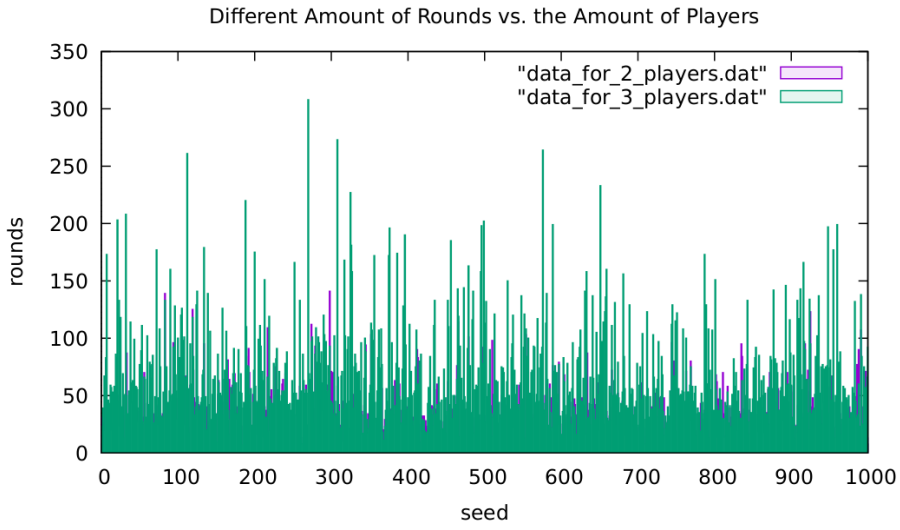
```
#!/bin/bash

for j in {1..1000}; do ./play-dreidel -s $j || source play-dreidel.c
echo $j; done
```

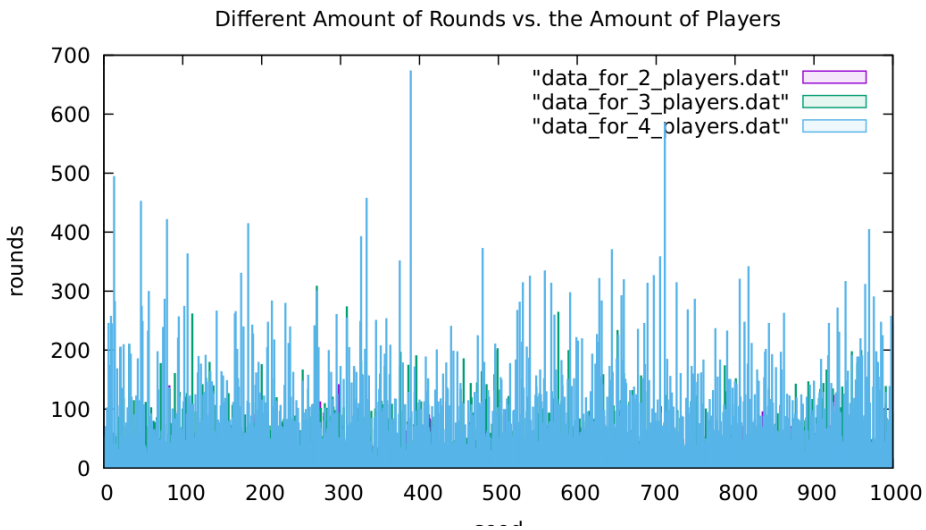


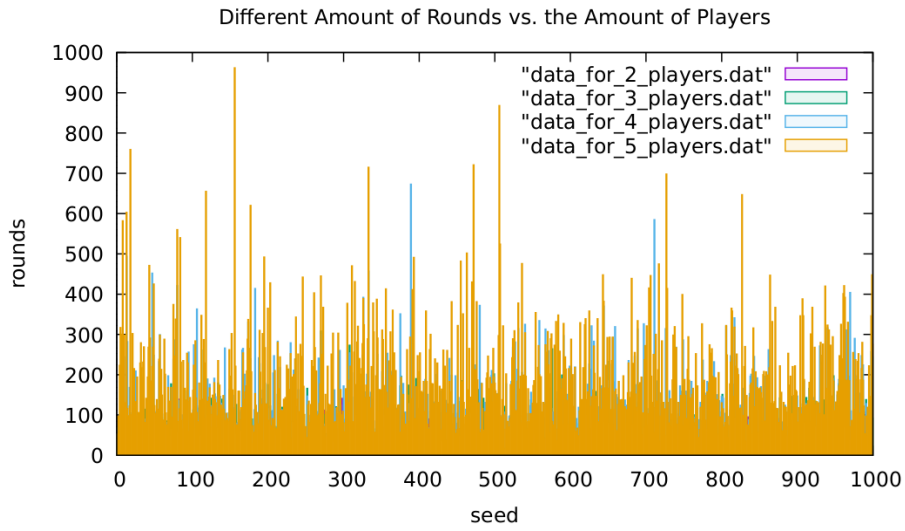
I tested a game of dreidel with 6 players and 4 coins using seeds ranging from 1 to 1000. The longest game was 673 rounds, and the shortest was 13 rounds. The average for this particular type of game was around 104 rounds. I had to learn more `bash` commands in order to get my values organized and usable. I was also able to get that the median was 81, and the mode was 60.

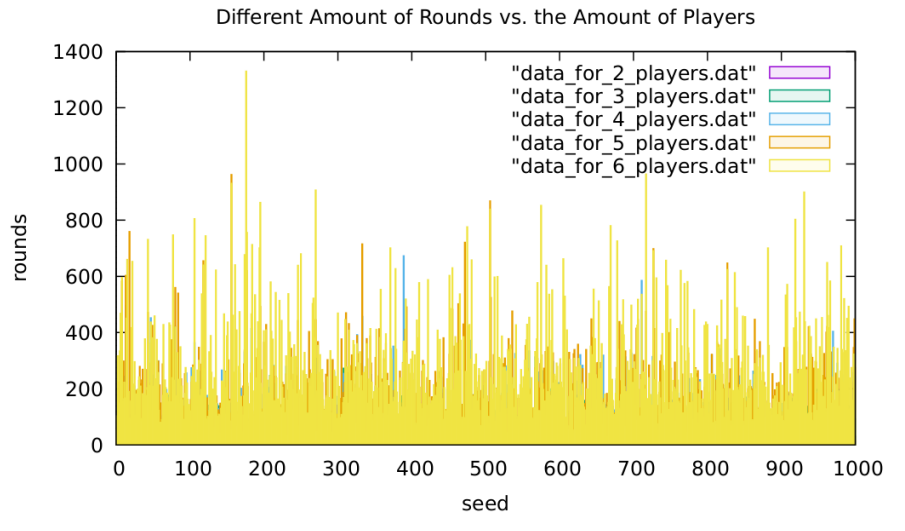
If there are more players, the game lasts more and has more rounds with each player added. This obviously would mean that 8 players would have the most rounds being played. To get these results, I separated the seeds and the amount of rounds it took each time for the results. Then I graphed each one, with each one being added on top of each other to show the progression. With each graph, it shows the amount of rounds in correspondence with the seed, while understanding how many players were in the game for each color. I used `bash` to create these graphs and to get the data. I only tested seeds from 1 to 1000.

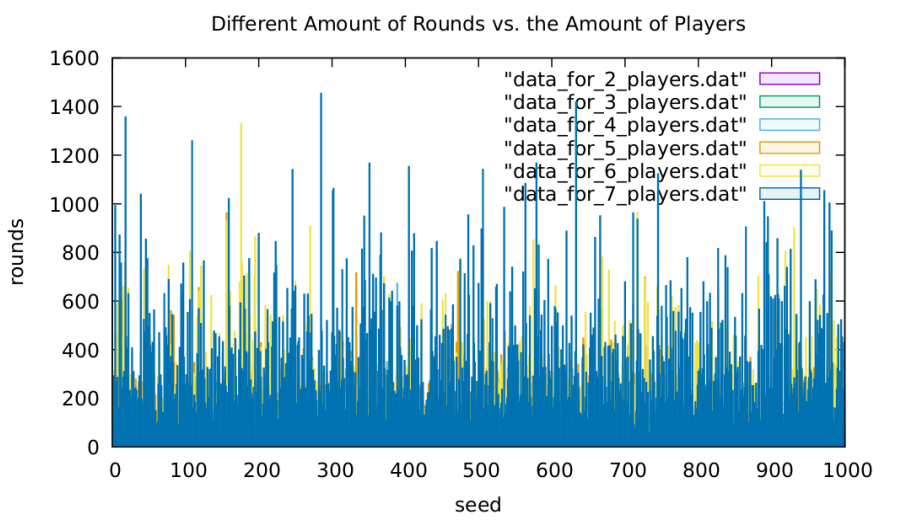


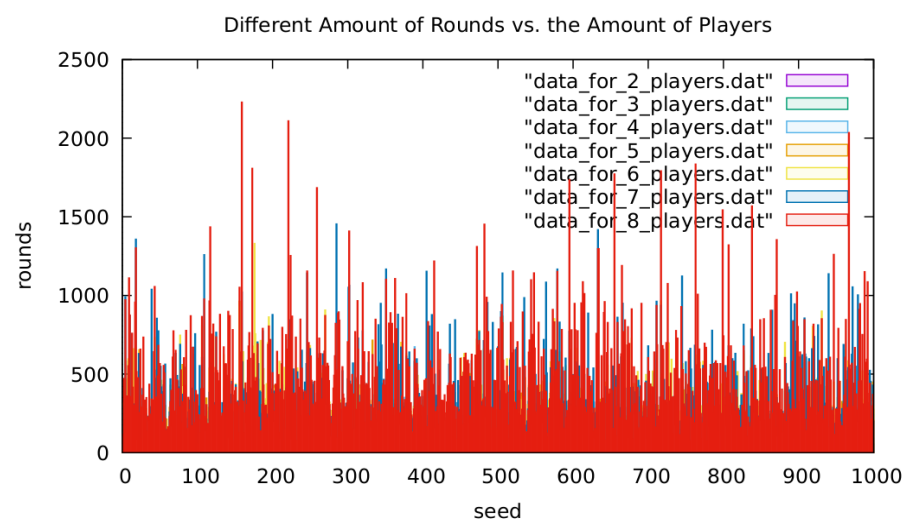


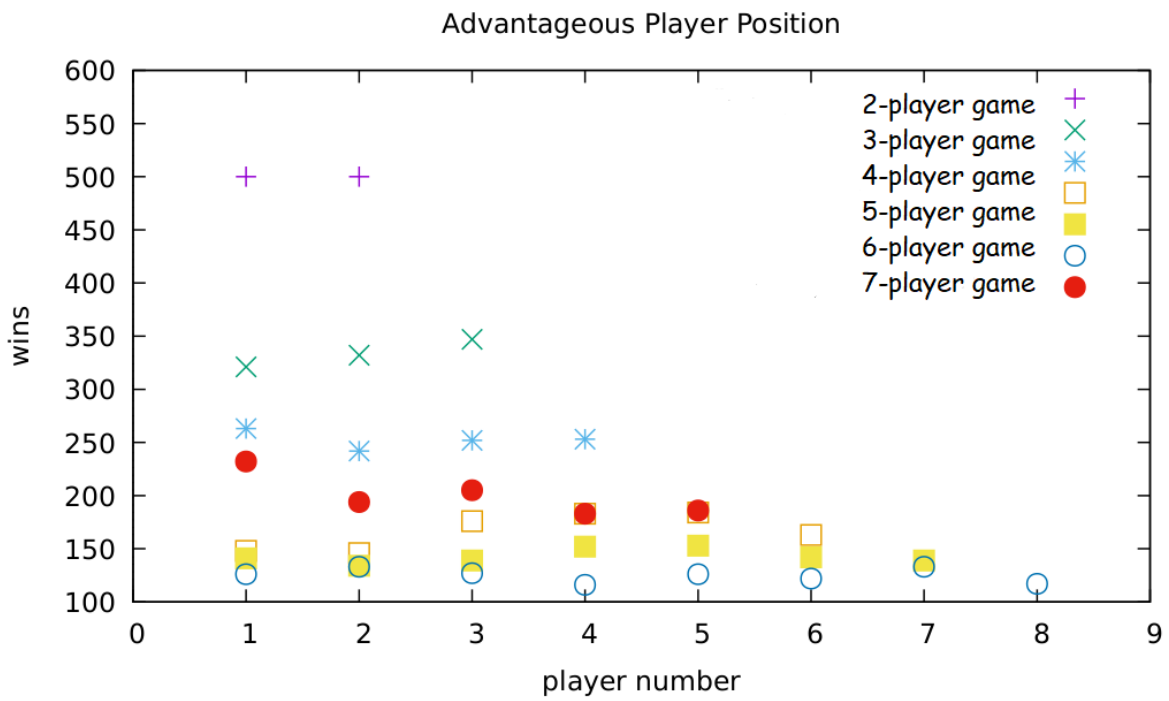



Different Amount of Rounds vs. the Amount of Players
rounds
seed
"data_for_2_players.dat"
"data_for_3_players.dat"
"data_for_4_players.dat"
"data_for_5_players.dat"


Different Amount of Rounds vs. the Amount of Players
rounds
seed
"data_for_2_players.dat"
"data_for_3_players.dat"
"data_for_4_players.dat"
"data_for_5_players.dat"
"data_for_6_players.dat"


Different Amount of Rounds vs. the Amount of Players
rounds
seed
"data_for_2_players.dat"
"data_for_3_players.dat"
"data_for_4_players.dat"
"data_for_5_players.dat"
"data_for_6_players.dat"
"data_for_7_players.dat"


Different Amount of Rounds vs. the Amount of Players
rounds
seed
"data_for_2_players.dat"
"data_for_3_players.dat"
"data_for_4_players.dat"
"data_for_5_players.dat"
"data_for_6_players.dat"
"data_for_7_players.dat"
"data_for_8_players.dat"



Looking at the data, it seems a bit inconclusive and random. In fact, the data was in fact a bit random and almost the same amount of wins for each player throughout the game. In the 2-player game, both player 1 and player 2 had 500 wins exactly. That's very unexpected. I think that player wins are almost equally distributed each time and that there's really no advantageous or disadvantageous position because it's all "random."

Resources that I used:
TAs and tutors helped me understand many new commands that I used in my program.

Online, I learned how to use `source`.
https://linuxize.com/post/bash-source-command/

As well as learning how to use `column` to organize my data for plotting.
https://man7.org/linux/man-pages/man1/column.1.html