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Project Intermediate Report CSCI 3022

So far in the project we have fully implemented the Mancala game as well as a RandomPlayer object that stores useful statistical information for the player such as win percentage. In our main file, we have a game loop that plays 100 games and displays information at the end of each game such as each player's win rate, loss rate, tie rate, and the number of turns for each game.

With these statistics and with the random seed of 109, we simulated 100 games and got the following metrics without error.

Player 1 won about 30% of the time whereas Player 2 won about 67% of the time. The players tied about 3% of the time.

On average, the games lasted around 61 turns with the seed of 109.

When using other seeds based on the time in nanoseconds, the number of turns tends to stay in the 60s, and the player that goes last tends to win the majority of the time with win percentages around 70%.

Because of this, when it comes to making random moves there is a very convincing advantage not for the player that moves first but for the player that moves last. Once we implement an AI that makes educated moves instead of random ones, then we can see whether this advantage for the second player still remains or whether the first player can seize an advantage with optimal play.