

# CSCI 3202: Project Intermediate Report

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Project: Mancala Simulation

## Current Progress:

- The Mancala game is fully implemented with all rules operational:
  - Board setup, distribution, and capture logic are functional
  - Player switching, win conditions, and stone sweeping work as expected
  - The `random_move_generator()` method ensures valid, non-empty pit selection for both players
  - The game runs correctly for 100 automated simulations of random vs. random players without runtime errors

## Testing and Results:

To test, we ran 100 random vs. random games and recorded the following results:

Metric	Player 1	Player 2
Games Won	51	40
Games Tied	9	9
Win %	51%	40%
Tie %	9%	9%
Avg. Moves to Win	43.13	43.13
Avg. Moves per Game	43.54	43.54

## First Move Advantage:

Based on our results in our simulation, player 1 won 51% of the games compared to 40% for player 2. This indicates a slight first-move advantage of about 11%, though additional runs would help verify statistical significance.

## Functionality Verification

- The program executes without errors for all 100 games
- The results vary slightly per run (as expected due to randomization)
- The logic was tested by printing board states and validating correct stone distribution