Board Games Built From Squares

I spend way too much time playing simple board games like Checkers, Reversi, and Connect Four, with deplorable win/lose/draw stats.

I am unemployed at this writing and would like to spend some of my time learning a managed programming language.

To marry these two situations, I plan to write two applications improve my win/lose/draw stats. The games will be board games consisting of squares with two players of various board dimensions.

Along the way, I will demonstrate use of requirement gathering and documentation, test-driven development, object orientated design and development, UML, website development, and use of large datasets.

The purpose of this project is to learn a new language, not to practice precise game theory. In fact, I have not studied any game theory and plan to compare my methods with current practice at the conclusion of this project.

The board game analyzer application will build game graphs of various games and board dimensions.

The board game playback machine will allow the user to execute moves from both players and use these game graphs to give hints on the best prospect (win, lose, or draw) for each available move for every possible board situation.

I see three major obstacles to this end, processing speed, memory, and large data sets. I have a spare machine leftover from my last contract which can run for weeks undisturbed and there are several databases out there that claim to handle large data sets with ease. Given the goal of solving complete games I anticipate that I will have to settle for smaller board sizes since the larger boards will likely require more resources than I have available.

Some games may offer a single modifiable parameter like the number of squares in a row.

The desired result is a game graph and an application that uses that game graph to predict the outcome of every possible move for every possible board situation. This application will offer hints as to the best move. If I can build a complete data set for a full size board for Connect Four or Checkers and use it to play the game I will consider this venture a success. Verification of the game graph and its predictions with other efforts will also constitute success.