1 The Rules of the Game

1.1 Players
Go is a two player game. One player plays black, and the other plays white.

1.2 Board
A standard game of Go is played on a 19 by 19 grid. Smaller boards are
commonly used when a shorter game is desired.

1.3 Objective
The goal of the game is to have the most points. Points are earned by
surrounding territory and capturing your opponent’s stones.

1.4 Gameplay
At the start of the game the board is empty.
Black and white alternate turns, with black moving first.
On their turn, a player may place a stone of their color on any empty
intersection on the board. They may also pass their turn.
A connected group of a single color of stones is captured if there are no
empty intersections adjacent to it. When a group of stones is captured, they
are taken off the board and placed in the pile the capturing player’s prisoners.
A player is not allowed to place a stone someplace if it would result in a
board position that occurred previously in the game. A player is not allowed
to place a stone someplace that would leave a connected group of their own stones with no empty intersections adjacent to it unless that move would first capture at least one stone of their opponent’s.

The game ends when one player forfeits or both players pass consecutively. If both players pass, then the players count their scores, and the player with the highest score wins.

1.5 Scoring

A player’s score equals the size of their territory plus the number of prisoners they have.

Territory is measured by the number of empty intersections surrounded by stones of your color.

It is typical for white to have a 6.5 point handicap, called a komi, to compensate for black’s advantage of taking the first turn.

2 Implementation

I intend to represent the board in the command line in ASCII, with columns and rows labeled with letters and numbers respectively. Players will take turns submitting moves by typing the letter and number of the point they would like to play in, ”pass”, or ”resign”. If the move they choose is invalid, the game will inform them of this and ask them to try again. Otherwise, the game will print out the new board position and prompt the other player for their turn. If both players pass consecutively, the game will enter scoring mode. In scoring mode, players can mark dead stones (stones that are still on the board but could not avoid capture if the position were played out) by naming the position of a stone in a dead group. Once the life and death of the stones on the board is agreed upon, the game will calculate the score and declare a winner.