Abalone

Pieces and Board: Abalone is played on a board with n (≥ 3) rows, m ($26 \geq m \geq 3$) columns and c captures ($n+m-3 \geq c \geq 1$) needed to win. For an arbitrary n,m, black occupies the lower left edges and right the upper-right resulting in $n+m-3$ pieces each. The NW and SE corners are empty. Your implementation must handle an arbitrary number of rows and columns. The default game has 4 rows by 4 columns with $c=2$.

To Move: The players, Black and White, take turns moving one their pieces one position in a row, column, or diagonal. This may result in other pieces moving as well.

To Push: When one player has numerical superiority in a line or diagonal, she may push the opponent's pieces down the line or diagonal. If the push results in one of the opponent's pieces going off the board, the player captures that piece.

To Win: The player who achieves c captures first wins. A player loses if she cannot make a move, and is 'trapped'.
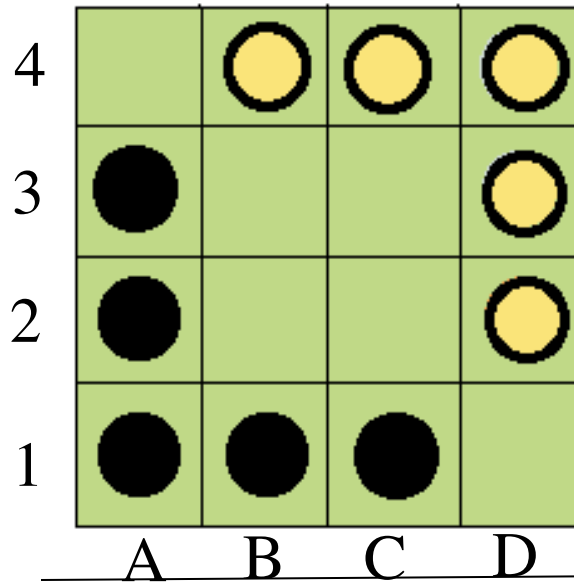
Position Representation: *(T row row row …)* T stores whose turn it is (`b` or `w`). Each *row* is in the form *ppp…* where *p* is "`b`" or "`w`", representing the corresponding piece on the board, or "`-`" if blank. E.g., here's the default board: `(b bbb- b--w b--w -www)`
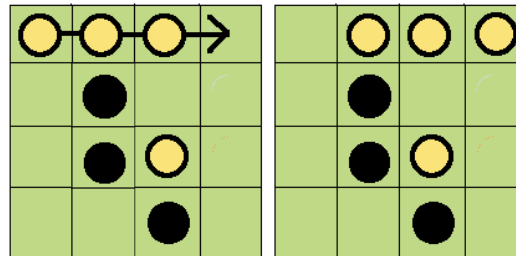
Compulsory Rule Changes:
Misere Rule: The player who achieves c captures first *loses*. A player *wins* if she cannot make a move, and is 'trapped'.
Freeze-piece: If an unmoved piece could be pushed by opponent on the following turn, the the piece is frozen and cannot move.
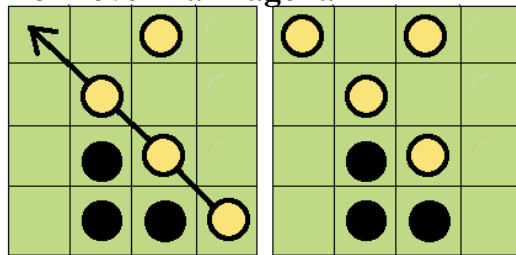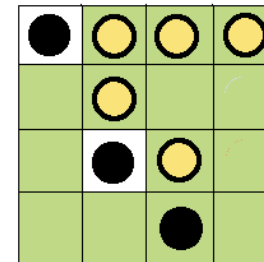
Default Board (4x4); 2 captures to win. Black to move.
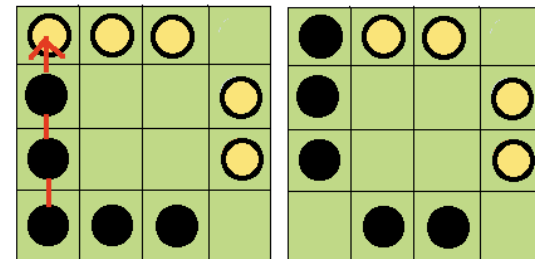

To Freeze Piece:

If it is black's turn, the two pieces highlighted in white (b2 and a4) are "frozen," and cannot move because they are in a position to be pushed by the white player.

To Move in a Row/Column

To Move in a Diagonal

To Push off the Board

To Push