Deep Green Reversi Help

Contents:

Game Notation

Official game notation follows a row/column scheme. Notice the row and column guide markers on the game board.

	A	B	C	D	E	F	G	H
1	**A1**	**B1**	**C1**	**D1**	**E1**	**F1**	**G1**	**H1**
2	**A2**	**B2**	**C2**	**D2**	**E2**	**F2**	**G2**	**H2**
3	**A3**	**B3**	**C3**	**D3**	**E3**	**F3**	**G3**	**H3**
4	**A4**	**B4**	**C4**	**D4**	**E4**	**F4**	**G4**	**H4**
5	**A5**	**B5**	**C5**	**D5**	**E5**	**F5**	**G5**	**H5**
6	**A6**	**B6**	**C6**	**D6**	**E6**	**F6**	**G6**	**H6**
7	**A7**	**B7**	**C7**	**D7**	**E7**	**F7**	**G7**	**H7**
8	**A8**	**B8**	**C8**	**D8**	**E8**	**F8**	**G8**	**H8**

For example, moving to the upper left corner would be denoted A1.

A game can now be described as row column pairs representing one BLACK and one WHITE move. A pass can be represented by a "P" It could look like this:

```
 1: D3,C5
 2: F6,F5
 3: F4,G5
...
25: A8,P
...

...
```

Strategy

The algorithms play very differently from each other. The first algorithm uses an edge/corner strategy. It will try to grab the edges and corners in an attempt to control the board. The last algorithm is more sophisticated. It tries to maximize the number of empty spaces adjacent to your pieces and also tries to force you into making an edge pattern that will cause you to give up a corner. The remaining algorithm is a combination of the other two.

Important concepts to remember are:

Mobility - The number of moves available to you at a given time. The more options that you have the better the chance of making a good move. Try to minimize your opponents Mobility.

Potential Mobility - The number of empty spaces adjacent to your opponents pieces. The higher your potential mobility the greater your chance of having a good move in an upcoming turn. Try not to let your opponent have a high potential mobility.

Edge fights - Certain edge patterns will allow you to take a corner or allow your opponent to take a corner. Usually it is good to keep an even number of empty spaces between any two of your positions and an odd number of empty spaces between your position and your opponent's position.

Corner move - In general corners are the ultimate strategic position that can allow you to control every position adjacent to it. Once you take a corner its yours until the end.

Moving diagonally adjacent to a corner - Generally considered risky because it can cause you to lose the corner.

Mastering these concepts will help you to become a formidable opponent. The most common strategy is to maximize your mobility and potential mobility while minimizing your opponents mobility and potential mobility. By doing this you will have the opportunity to force your opponent into making a bad move which will allow you to take a corner. Once you have a corner you can usually force your opponent into more bad moves. Remember that the score has little meaning until the final moves of the game. It is very common to have a large number of positions in your color only to lose in the final few moves.

User Interface

 - Clears the board and starts a new game. If you accidentally press this and want to get your previous game back, you can choose load last game.

 - Watch an instant replay of the game after it is over. At the end of the game this button will become enabled. If you press it, you will watch the game from the beginning with a one second pause between moves.

 - Make the computer make a move. This can also be used to make the computer move first or help you out if your are stumped.

 - Take a move back. This will move the game back to the previous state before the last move was made.

 - Force the computer to abort what it is doing and take its best move imediately. This button is only enabled while the computer is calculating a new move.

 - Display Game Analysis dialog which will show the the current state of the game in the form of a game graph and game notation. While this dialog is displayed, the gameboard is disabled because the Game Analysis dialog can control the state of the game see (Game Analysis Display)

 - Load a game. You can choose 5 previous games or the last game that was played. "Last Game" played is a sort of safety measure in case you quit by mistake or your boss came by and you had to quit real quickly :) .

 - Save a game. You can save a game in one of the five bins.

 - You can adjust the level of difficulty in two ways. You can change the search depth. The search depth is the number of moves that the computer can look ahead. Also, you can select different algorithms which have different playing styles. (See Level of Difficulty)

 - Computer opponent selected (Computer opponent mode). You will play against the currently selected algorithm. This is the default.

 - Human opponent selected (Local two player mode). You will play against a second person while the computer keeps score.

 - Net opponent selected. You will play against someone over an Internet/network connection. (See Net Play)

 - Toggle Purple X (suggested move) on or off. When you press the right mouse button the computer will make a quick suggestion for a move. This is not always the best move, but it is a quick suggestion of what might be a good move.

 - Resize the game board. You have three choices of size. The game board will be automatically centered on your monitor. When you quit, this size is saved for the next time.

 - Toggles sound on or off.

 - Exit the program. Also, saves the current state in the "Last Game" bin of the saved games and saves size/position of the game board.

Animation - Annimated chip flipping can be toggled on/off in the Options Menu.

Keyboard Control

If you do not wish to use a mouse, you can use the keyboard instead.

Up,Down,Left,Right arrow keys - perform row column navigation.

Enter - places your piece at the currently selected position.

Space Bar - Shows legal moves.

Insert - Computer makes a move.

Delete - Takes back a move.

Ctrl L - Load a game.

Ctrl S - Save a Game.

Ctrl D - Set the level of difficulty.

Ctrl N or End - New Game.

Ctrl C - forces the computer to abort the current move that is being calculated.

Ctrl R - Performs an instant replay at the end of a game.

Ctrl B - Changes teh board size to one of 3 sizes.

Ctrl P - Selects PC opponent.

Ctrl H - Selects human opponent.

Ctrl I - Selects Internet/network opponent.

Ctrl X - Toggles Purple X on/off.

Ctrl Alt S - Toggles sound on/off.

Ctrl T - Displays about screen.

Ctrl M - Toggles the position markers on/off.

Ctrl A - Toggles the game peice animation on/off

Alt O - Provides a menu which performs the same functions as the speed buttons.

Alt H - Shows the help menu.

Any button text which has one of its text letters underlined can be controlled with the Alt key.

Game Rules

- Each player takes turns placing pieces on the board.

- Pieces may be captured vertically, horizontally, or diagonally.

- A move may only be placed in an open space that causes opponent pieces to be trapped between any two of yours.

- Once a move is made, the captured pieces are flipped and become yours.

- If a player has no legal move, he or she must pass.

- The winner is the player with the most pieces when there are no legal moves available for either player.

Example:

If you start a new game and press the right mouse button, you will see Figure 1 below. The blue X's show the legal moves.

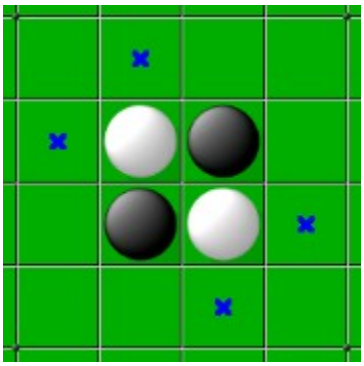

Figure 1

If you place a game piece on the top X, you will see Figure 2 below. Notice that a white piece was changed to black because it was in between a black piece that was already there and the newly placed black piece.

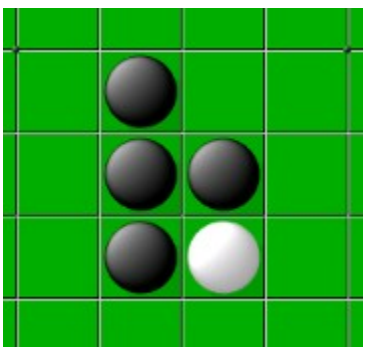

Figure 2

One more example that flips game pieces in more than one direction. If White places a game piece in the lower right corner you will see that the game pieces are flipped diagonally as well as vertically and horizontally as shown in Figure 4.

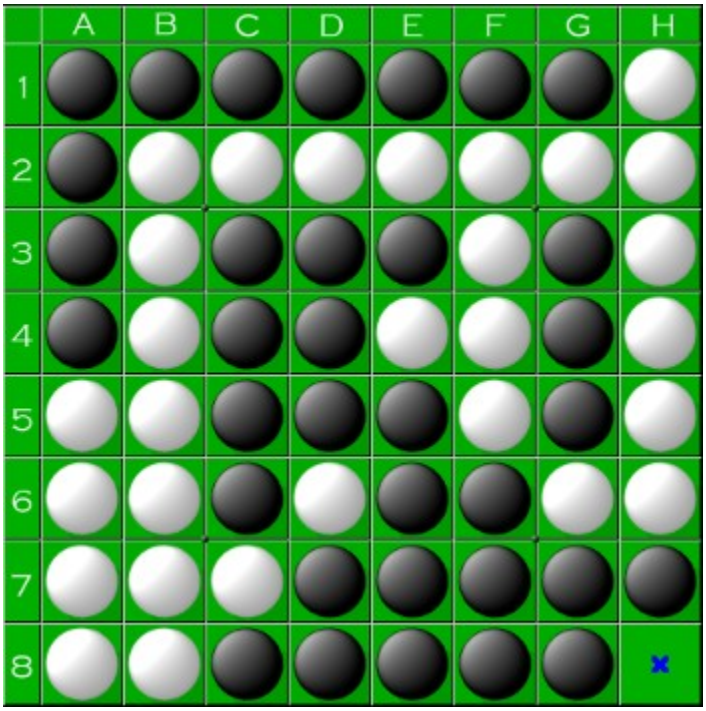

Figure 3 (white can place a game piece in the corner)

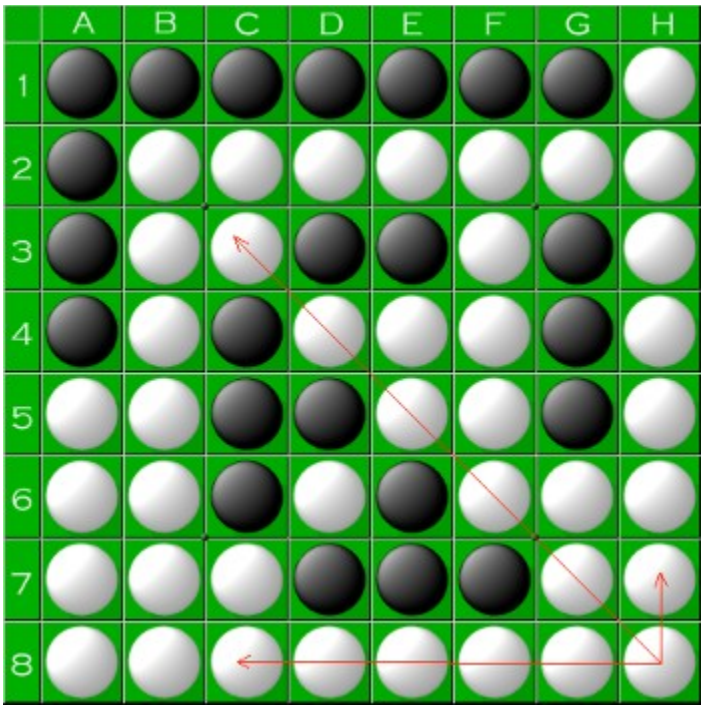

Figure 4 (diagonal, horizontal and vertical directions are flipped) All black game pieces that are in between the newly placed white game piece and a preexisting white piece are flipped.

 **Game Analysis Display**

You can visually view the game on the game graph and use the slider bar to back track to critical points of the game. This way you can perform analysis and learn new strategies. The game is also displayed as official notation that can be copied to the clipboard or printed out.

Accept Paste
You can load a game by typing or pasting text in the form described in notation. When you press the [Accept Paste] button, the moves will be executed one by one until the end of the list. To see how it works simply modify the notation at the end of a game by adding something like a space at the end of a line. This will enable the [Accept Paste] button without changing any of the notation. Then press [Accept Paste] and see what happens. If an illegal move is attempted you will recieve a message stating the process has been aborted because of this.

Print
You can print the game notation by pressing the [Print] button.

You can save the game notation to a text file by selecting the text with the mouse and pressing [CTRL-C] and then pasting into notepad. Notepad can then save the text to a file. You don't really need to save it as a text file because the game notation can be retrieved from saved games by simply loading the game.

Uninstall

To uninstall, you can simple select the uninstall program in the same group where you launch the game from or you can uninstall through the Windows control panel Add/Remove utlity.

Level of Difficulty

Increasing the search depth will cause the computer to take longer to calculate a move, since it is processing more moves. Since there are usually about 10 moves avaiable at any one time, it will take about 10 times longer to calculate a move every increase in the search depth. The second way to adjust the difficulty is to select a different algorithm. The first algorithm is a greedy edge/corner algorithm. It will attempt to grab edges and corners above all else. The second algorithm is similar to the first one except that it factors in edge patterns. It knows good patterns and bad patterns, so it will try to force you to make a bad pattern that causes you to give up a corner. The last algorithm uses the same edge patterns however it also factors in mobility. (See Strategy)

Net Play

Net game play requires you to have an internet/network connection, an opponent who has an internet/network connection. and who has this same program installed on their PC.

Step 1. Decide who is going to be the server and who is going to be the client. It makes no difference once the connection is made other than the client needs to know what the IP address of the server is when connecting.

Step 2. The server must be ready before the client tries to connect, so the server PC must be connected to the Internet/network and waiting for the client connection. Once the server is connected, the IP address will be displayed. This IP address is what the client needs to have in order to connect. Since the IP address can change every time you log into a dial up ISP, you may need to have an ICQ or IM session to coordinate this.

Step 3. The client enters the IP address of the server and connects to the server.

Step 4. Play Reversi.