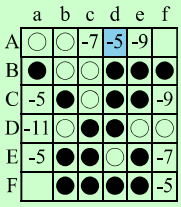
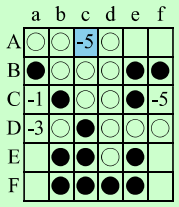
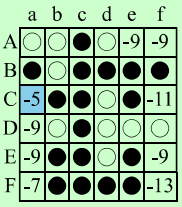
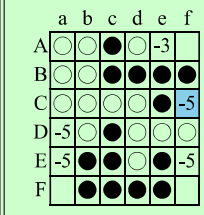
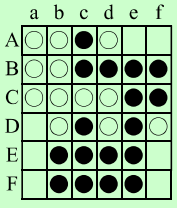
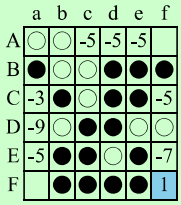
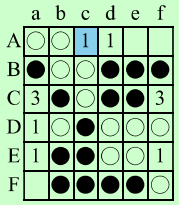
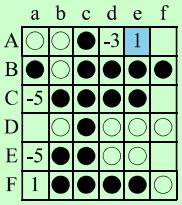
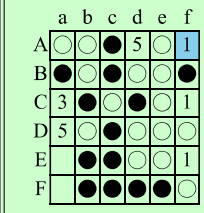
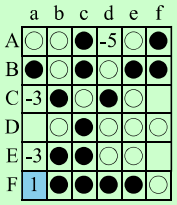
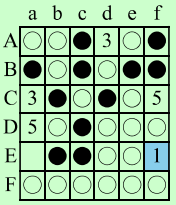
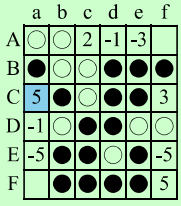
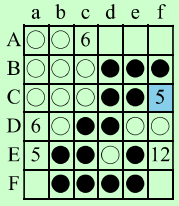
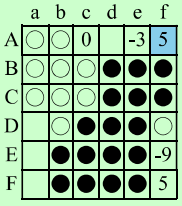
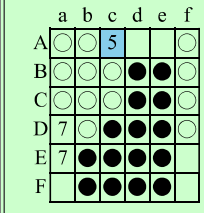
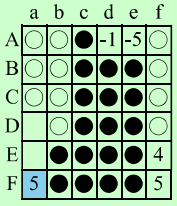
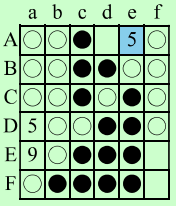
Othello, Part IV-2: Minimax search (output scores of each valid move)

function minimaxSearch(gameboard, the player's color, depth);
Output: the best move for this player by minimax search to the specified depth

In the following example,
Plyaer 2 is making the next move in the gameboard OO++++XOOXXX+XOXX++OXXOO+XXOX++XXXX+.
You can see that the best move is different when setting different cut-off depths.
When search to the 4th depth, the best move is Ad.
When search to the 6th depth, the best move is Ee.
When search to the 8th depth, the best move is Ca.

Detailed information is provided here,
where grids with blue background is the best moves),
and numbers in empty grids are heuristic scores.

Cut-off Depth	Depth 0, Max node	Depth 1, Min node	Depth 2, Max node	Depth 3, Min node	Depth 4, Cutoff / Max node	Depth 5, Min node
4					 score = 12 - 17 = -5	
6						
8						

範例 Examples:	
Input	Meaning
6 OO++++XOOXXX+XOXX++OXXOO+XXOX++XXXX+ 2 4 OO++++XOOXXX+XOXX++OXXOO+XXOX++XXXX+ 2 6 OO++++XOOXXX+XOXX++OXXOO+XXOX++XXXX+ 2 8 ++++XOX+X+X+OOOOX+XOOOXOXOOOOXXO++++ 1 4 ++++XOX+X+X+OOOOX+XOOOXOXOOOOXXO++++ 1 6 ++++XOX+X+X+OOOOX+XOOOXOXOOOOXXO++++ 1 8	Number of test data gameboard of test data #1 player's color of test data #1 depth of test data #1 gameboard of test data #2 player's color of test data #2 depth of test data #3 test data #3 test data #3 test data #3
Output	Meaning
Ac -7 Ad -5 Ae -9 Ca -5 Cf -9 Da -11 Ea -5	score of valid move of test data #1 score of valid move of test data #1 . . . . .

Ef -7	.
Ff -5	.
[Ad]	best next move of test data #1
Ac -5	score of valid move of test data #2
Ad -5	score of valid move of test data #2
Ae -5	.
Ca -3	.
Cf -5	.
Da -9	.
Ea -5	.
Ef -7	.
Ff 1	.
[Ff]	best next move of test data #2
Ac 2	score of valid move of test data #3
Ad -1	score of valid move of test data #3
Ae -3	.
Ca 5	.
Cf 3	.
Da -1	.
Ea -5	.
Ef -5	.
Ff 5	.
[Ca]	best next move of test data #3
Bd -4	score of valid move of test data #4
Cf 0	score of valid move of test data #4
Fc 2	.
Fe 0	.
[Fc]	best next move of test data #4
Bd -2	score of valid move of test data #5
Cf 0	score of valid move of test data #5
Fc 0	.
Fe -4	.
[Cf]	best next move of test data #5
Bd -4	score of valid move of test data #6
Cf -4	score of valid move of test data #6
Fc -4	.
Fe -6	.
[Bd]	best next move of test data #6