

REVERSI

Reversi Game External Documentation

Class : ICS 3UZ - Computer Science

Date: 11/05/12

Name : Jaden Chen



TABLE OF CONTENTS

Introduction/Loading Instructions.....	Page 3
Game Instructions.....	Page 4
Tutorial.....	Page 4-6
Sample input/output.....	Page 7-27

Introduction

Reversi is an interactive strategy board game which can be fun and challenging at the same time. Player's will face each other each with the goal of having more units of their own on the board. The player with wiser moves will most likely win the game.

The game tests a person's cognitive ability to predict an opponent's move and to make moves not just judging on their appearance, but their impact in the future. This can make the game very competitive but it can also be fun if the players choose to play it casually.

The game is perfect choice to use as a programming practice as it tests the programmer's ability to think of all possibilities in the board game and create codes that will accommodate them. In fact, the program became very large which often made it hard for me to debug.

This game is my choice for the major project. In my program, the rules and game mechanics are thoroughly explained in internal documentation as well as tutorial/user manual. The program itself is very thorough covering all possible end-game possibilities and following the game mechanics to perfection. Additional Features I have included AI player options, and board dimensions options. This lets the game be more flexible and enhance re-playability.

Please feel free to experiment. I can assure you, glitches are either non-existent or very hard to find.

Loading Instructions

To load the program, you have 2 choices:

1. Run Reversi.jar file which allows you to play the game without an IDE. However, this method often has errors related to command prompt/system settings and is not reliable.
2. If you have a Java IDE such as Eclipse, you may use the IDE and launch the program from within as this is a console program.

Game Instructions

As you enter the game, make sure you visit the tutorial if you do not know how to play the game.

Before pressing “Play game”, it is recommended to visit the options.

There are two options, an option for assigning AI/computer players and another option for assigning board size/dimensions.

The default settings have dimensions 8 by 8 and no AI/computer players.

Reversi Game Tutorial

Reversi is a board game where each player's aim is to have more pieces on the board.

Turns alternate and on each player's turn, the player can make a move by placing their pieces somewhere on the board.

Alternatively, they can pass (not recommended).

Please read on to find out more about the pass feature.

	1	2	3	4	5	6	7	8
1	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-
4	-	-	-	x	o	-	-	-
5	-	-	-	o	x	-	-	-
6	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-

This is the starting board for most games, each player will have 2 pieces diagonal to each other at the center of the board

[x] are pieces of player 1, [o] are pieces of player 2, [-] represent unused spaces

When a piece is placed, it'll convert [up, down, left, right, all diagonals directions] pieces to its own type if a specific condition is met.

The condition is that there must be a same-type piece in that certain direction.

So, if this condition is met, all enemy pieces in between the placed piece and the piece it is making a 'connection' with.

NOTE: This connection is broken if there is a blank space [-] in between the connection.

Example: In this situation, Player 1 (x) decides to place their piece on coordinates (5,3)

1	2	3	4	5	6	7	8
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	x	o	-	-
5	-	-	-	o	x	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-

1	2	3	4	5	6	7	8
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	x	o	-	-
5	-	-	x	x	x	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-

Here is the result of this move.

This can happen with all directions simultaneously as long as the above condition is met.

There are a few rules to the placing of these pieces on a player's turn:

Rule #1: the player piece must be placed on a blank space represented by [-] (cannot replace an already placed piece such as [x] or [o])

Rule #2: the player's move must perform an action (make a 'connection' with another piece) other than being placed on the board.

NOTE: Rule #2 will take some time to comprehend. Example: a unit cannot be placed in an area where its surrounding units are blank [-].

Remember, a blank space breaks/blocks potential connection.

ILLEGAL MOVES

	1	2	3	4	5	6	7	8
1	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-
3	-	-	x	-	-	-	-	-
4	-	-	-	x	o	-	-	-
5	-	-	x	x	x	-	-	-
6	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	o	-
8	-	-	-	-	-	-	-	-

Coordinates (7,7) and (3,3) are illegal in this scenario.

(7,7) cannot make any connections due to being surrounded by blank space, on top of the fact that even if it was not, its (up, down, left, right, diagonals) directions never reach the other two present [o] units.

(3,3) does reach another x at (down, right) direction, but NO connection is made. A connection must involve opponent pieces in between friendly pieces.

Do you need to worry about this? No, the program will not let you make any illegal moves breaking the rules.

You will need to re-enter your move if this happens.

In addition, if no move can be made during one's turn, the program will automatically skip this turn at your leisure.

Conditions of winning:

1. Board is full, player with most points wins.
2. One player has no units/pieces left standing, their opponent wins.
3. No moves can be made by either player, player with most points win.

Sample Input & Output

Highlighted in green are user input and everything else is output.

Scenario 1 - 6 by 6 dimensions, Player vs. AI (Game ended normally)

Welcome to a game of Reversi/Othello.
Choose option 3 in the main menu if you do not know how to play the game.
Press any key to proceed to menu...

```
Main Menu
*****
1. Play Reversi
2. Options
3. How to play
4. Exit
```

```
2
What would you like to modify? (1)Board Dimensions (2)Set AI players
2
(1)Player vs Player (2)Player vs Ai (3)AI vs AI (4)AI vs Player
2
```

Press any key to return to menu...

```
Main Menu
*****
1. Play Reversi
2. Options
3. How to play
4. Exit
```

```
2
What would you like to modify? (1)Board Dimensions (2)Set AI players
1
Here you'll be able to change the reversi gamem board size to your liking.
Assign the length of the board: 6
Assign the width of the board: 6
Your board now has dimensions: 6 by 6
```

Press any key to return to menu...

```
Main Menu
*****
1. Play Reversi
2. Options
3. How to play
4. Exit
```

```
1
Player 1's turn (x)          Score - Player 1: 2 points (x), Player 2: 2 points (o)
```

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	x	o	-	-
4	-	-	o	x	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

(1)Make a move (2)Pass

1

Enter the row:4

Enter the column:2

Player 2's turn (o)

Score - Player 1: 4 points (x), Player 2: 1 points (o)

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	x	o	-	-
4	-	x	x	x	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (5,4)

Player 1's turn (x)

Score - Player 1: 3 points (x), Player 2: 3 points (o)

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	x	o	-	-
4	-	x	x	o	-	-
5	-	-	-	o	-	-
6	-	-	-	-	-	-

(1)Make a move (2)Pass

1

Enter the row:4

Enter the column:5

Player 2's turn (o)

Score - Player 1: 5 points (x), Player 2: 2 points (o)

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	x	o	-	-
4	-	x	x	x	x	-
5	-	-	-	o	-	-

6 - - - - -

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (3,2)

Player 1's turn (x)

Score - Player 1: 3 points (x), Player 2: 5 points (o)

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	o	o	o	-	-
4	-	x	o	x	x	-
5	-	-	-	o	-	-
6	-	-	-	-	-	-

(1)Make a move (2)Pass

1

Enter the row:2

Enter the column:4

Player 2's turn (o)

Score - Player 1: 6 points (x), Player 2: 3 points (o)

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	x	-	-
3	-	o	x	x	-	-
4	-	x	o	x	x	-
5	-	-	-	o	-	-
6	-	-	-	-	-	-

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (1,4)

Player 1's turn (x)

Score - Player 1: 3 points (x), Player 2: 7 points (o)

	1	2	3	4	5	6
1	-	-	-	o	-	-
2	-	-	-	o	-	-
3	-	o	x	o	-	-
4	-	x	o	o	x	-
5	-	-	-	o	-	-
6	-	-	-	-	-	-

(1)Make a move (2)Pass

1

Enter the row:2

Enter the column:3

Player 2's turn (o) Score - Player 1: 5 points (x), Player 2: 6 points (o)

```
  1 2 3 4 5 6
1 - - - o - -
2 - - x o - -
3 - o x x - -
4 - x o o x -
5 - - - o - -
6 - - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (4,1)

Player 1's turn (x) Score - Player 1: 4 points (x), Player 2: 8 points (o)

```
  1 2 3 4 5 6
1 - - - o - -
2 - - x o - -
3 - o x x - -
4 o o o o x -
5 - - - o - -
6 - - - - - -
```

(1)Make a move (2)Pass

1

Enter the row:6

Enter the column:4

Player 2's turn (o) Score - Player 1: 7 points (x), Player 2: 6 points (o)

```
  1 2 3 4 5 6
1 - - - o - -
2 - - x o - -
3 - o x x - -
4 o o o x x -
5 - - - x - -
6 - - - x - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (4,6)

Player 1's turn (x) Score - Player 1: 5 points (x), Player 2: 9 points (o)

```
  1 2 3 4 5 6
1 - - - o - -
2 - - x o - -
```

```

3 - o x x - -
4 o o o o o o
5 - - - x - -
6 - - - x - -

```

(1)Make a move (2)Pass

1

Enter the row:5

Enter the column:2

Player 2's turn (o)

Score - Player 1: 7 points (x), Player 2: 8 points (o)

```

  1 2 3 4 5 6
1 - - - o - -
2 - - x o - -
3 - o x x - -
4 o o x o o o
5 - x - x - -
6 - - - x - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (3,5)

Player 1's turn (x)

Score - Player 1: 5 points (x), Player 2: 11 points (o)

```

  1 2 3 4 5 6
1 - - - o - -
2 - - x o - -
3 - o o o o -
4 o o x o o o
5 - x - x - -
6 - - - x - -

```

(1)Make a move (2)Pass

2

Player 1 has chosen to pass their turn.

Player 2's turn (o)

Score - Player 1: 5 points (x), Player 2: 11 points (o)

```

  1 2 3 4 5 6
1 - - - o - -
2 - - x o - -
3 - o o o o -
4 o o x o o o
5 - x - x - -
6 - - - x - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (2,2)

Player 1's turn (x) Score - Player 1: 4 points (x), Player 2: 13 points (o)

	1	2	3	4	5	6
1	-	-	-	o	-	-
2	-	o	o	o	-	-
3	-	o	o	o	o	-
4	o	o	x	o	o	o
5	-	x	-	x	-	-
6	-	-	-	x	-	-

(1)Make a move (2)Pass

1

Enter the row:1

Enter the column:2

Player 2's turn (o) Score - Player 1: 8 points (x), Player 2: 10 points (o)

	1	2	3	4	5	6
1	-	x	-	o	-	-
2	-	x	o	o	-	-
3	-	x	o	o	o	-
4	o	x	x	o	o	o
5	-	x	-	x	-	-
6	-	-	-	x	-	-

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (6,3)

Player 1's turn (x) Score - Player 1: 6 points (x), Player 2: 13 points (o)

	1	2	3	4	5	6
1	-	x	-	o	-	-
2	-	x	o	o	-	-
3	-	x	o	o	o	-
4	o	x	x	o	o	o
5	-	o	-	o	-	-
6	-	-	o	x	-	-

(1)Make a move (2)Pass

1

Enter the row:3

Enter the column:6

Player 2's turn (o) Score - Player 1: 10 points (x), Player 2: 10 points (o)

	1	2	3	4	5	6
1	-	x	-	o	-	-
2	-	x	o	o	-	-
3	-	x	x	x	x	x
4	o	x	x	o	o	o
5	-	o	-	o	-	-
6	-	-	o	x	-	-

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (5,1)

Player 1's turn (x)

Score - Player 1: 8 points (x), Player 2: 13 points (o)

	1	2	3	4	5	6
1	-	x	-	o	-	-
2	-	x	o	o	-	-
3	-	x	o	x	x	x
4	o	o	x	o	o	o
5	o	o	-	o	-	-
6	-	-	o	x	-	-

(1)Make a move (2)Pass

1

Enter the row:1

Enter the column:3

Player 2's turn (o)
(o)

Score - Player 1: 12 points (x), Player 2: 10 points

	1	2	3	4	5	6
1	-	x	x	o	-	-
2	-	x	x	x	-	-
3	-	x	x	x	x	x
4	o	o	x	o	o	o
5	o	o	-	o	-	-
6	-	-	o	x	-	-

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (1,5)

Player 1's turn (x)
(o)

Score - Player 1: 10 points (x), Player 2: 13 points

	1	2	3	4	5	6
1	-	x	x	o	o	-
2	-	x	x	o	-	-
3	-	x	o	x	x	x

```

4 o o x o o o
5 o o - o - -
6 - - o x - -

```

(1)Make a move (2)Pass

1

Enter the row:6

Enter the column:2

Player 2's turn (o) Score - Player 1: 14 points (x), Player 2: 10 points
(o)

```

  1 2 3 4 5 6
1 - x x o o -
2 - x x o - -
3 - x o x x x
4 o x x o o o
5 o x - o - -
6 - x x x - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (5,3)

Player 1's turn (x) Score - Player 1: 12 points (x), Player 2: 13 points
(o)

```

  1 2 3 4 5 6
1 - x x o o -
2 - x x o - -
3 - x o x x x
4 o x o o o o
5 o o o o - -
6 - x x x - -

```

(1)Make a move (2)Pass

1

Enter the row:1

Enter the column:6

Player 2's turn (o) Score - Player 1: 15 points (x), Player 2: 11 points
(o)

```

  1 2 3 4 5 6
1 - x x x x x
2 - x x o - -
3 - x o x x x
4 o x o o o o
5 o o o o - -
6 - x x x - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (1,1)

Player 1's turn (x) Score - Player 1: 14 points (x), Player 2: 13 points (o)

```

  1 2 3 4 5 6
1 o x x x x x
2 - o x o - -
3 - x o x x x
4 o x o o o o
5 o o o o - -
6 - x x x - -
```

(1)Make a move (2)Pass

1

Enter the row:6

Enter the column:1

Player 2's turn (o) Score - Player 1: 17 points (x), Player 2: 11 points (o)

```

  1 2 3 4 5 6
1 o x x x x x
2 - o x o - -
3 - x o x x x
4 o x x o o o
5 o x o o - -
6 x x x x - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (2,5)

Player 1's turn (x) Score - Player 1: 16 points (x), Player 2: 13 points (o)

```

  1 2 3 4 5 6
1 o x x x x x
2 - o x o o -
3 - x o x o x
4 o x x o o o
5 o x o o - -
6 x x x x - -
```

(1)Make a move (2)Pass

1

Enter the row:2
Enter the column:1

Player 2's turn (o) Score - Player 1: 18 points (x), Player 2: 12 points (o)

	1	2	3	4	5	6
1	o	x	x	x	x	x
2	x	x	x	o	o	-
3	-	x	o	x	o	x
4	o	x	x	o	o	o
5	o	x	o	o	-	-
6	x	x	x	x	-	-

(AI player turn) Press any NUMBER to continue to the next turn...

1
Player 2 has placed a piece on coordinates (2,6)

Player 1's turn (x) Score - Player 1: 17 points (x), Player 2: 14 points (o)

	1	2	3	4	5	6
1	o	x	x	x	x	x
2	x	x	x	o	o	o
3	-	x	o	x	o	o
4	o	x	x	o	o	o
5	o	x	o	o	-	-
6	x	x	x	x	-	-

(1)Make a move (2)Pass

1
Enter the row:5
Enter the column:5

Player 2's turn (o) Score - Player 1: 25 points (x), Player 2: 7 points (o)

	1	2	3	4	5	6
1	o	x	x	x	x	x
2	x	x	x	o	x	o
3	-	x	x	x	x	o
4	o	x	x	x	x	o
5	o	x	x	x	x	-
6	x	x	x	x	-	-

(AI player turn) Press any NUMBER to continue to the next turn...

1
Player 2 has placed a piece on coordinates (5,6)

Player 1's turn (x)
(o)

Score - Player 1: 21 points (x), Player 2: 12 points

```
  1 2 3 4 5 6
1 o x x x x x
2 x x x o x o
3 - x x x x o
4 o x x x x o
5 o o o o o o
6 x x x x - -
```

(1)Make a move (2)Pass

1

Enter the row:6

Enter the column:5

Player 2's turn (o)
(o)

Score - Player 1: 24 points (x), Player 2: 10 points

```
  1 2 3 4 5 6
1 o x x x x x
2 x x x o x o
3 - x x x x o
4 o x x x x o
5 o o o x x o
6 x x x x x -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (3,1)

Player 1's turn (x)
(o)

Score - Player 1: 18 points (x), Player 2: 17 points

```
  1 2 3 4 5 6
1 o x x x x x
2 o x x o x o
3 o o o o o o
4 o o x x x o
5 o o o x x o
6 x x x x x -
```

(1)Make a move (2)Pass

1

Enter the row:6

Enter the column:6

```
  1 2 3 4 5 6
1 o x x x x x
2 o x x o x x
```

```
3 o o o o o x
4 o o x x x x
5 o o o x x x
6 x x x x x x
```

Final score - Player 1: 23 points, Player 2: 13 points

Congratulations Player 1. You are the winner! Better luck next time Player 2 :(

Press any key to return to menu...

Scenario 2 – 2 by 5 dimensions, AI vs. AI (Game ended because no moves could be made by either players)

Welcome to a game of Reversi/Othello.

Choose option 3 in the main menu if you do not know how to play the game.

Press any key to proceed to menu...

Main Menu

1. Play Reversi
2. Options
3. How to play
4. Exit

2

What would you like to modify? (1)Board Dimensions (2)Set AI players

2

(1)Player vs Player (2)Player vs Ai (3)AI vs AI (4)AI vs Player

3

Press any key to return to menu...

Main Menu

1. Play Reversi
2. Options
3. How to play
4. Exit

2

What would you like to modify? (1)Board Dimensions (2)Set AI players

1

Here you'll be able to change the reversi gamem board size to your liking.

Assign the length of the board: 2

Assign the width of the board: 5

Your board now has dimensions: 2 by 5

Press any key to return to menu...

Main Menu

1. Play Reversi
2. Options
3. How to play
4. Exit

1

Player 1's turn (x) Score - Player 1: 2 points (x), Player 2: 2 points (o)

```
  1 2
1 - -
2 x o
3 o x
4 - -
5 - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (4,1)

Player 2's turn (o) Score - Player 1: 4 points (x), Player 2: 1 points (o)

```
  1 2
1 - -
2 x o
3 x x
4 x -
5 - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (4,2)

Player 1's turn (x) Score - Player 1: 3 points (x), Player 2: 3 points (o)

```
  1 2
1 - -
2 x o
3 x o
4 x o
5 - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Auto-Pass. This turn has been skipped due to the fact that this player cannot make any moves in this turn.

Press any key to continue...

```

    1 2
1 - -
2 x o
3 x o
4 x o
5 - -

```

Final score - Player 1: 3 points, Player 2: 3 points

It's a tie! Congratulations to both players!

Press any key to return to menu...

Scenario 3 – 5 by 5, AI vs. AI (Example of auto-pass feature, highlighted in red)

Main Menu

1. Play Reversi
2. Options
3. How to play
4. Exit

1

Player 1's turn (x) Score - Player 1: 2 points (x), Player 2: 2 points (o)

```

    1 2 3 4 5
1 - - - - -
2 - x o - -
3 - o x - -
4 - - - - -
5 - - - - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (2,4)

Player 2's turn (o) Score - Player 1: 4 points (x), Player 2: 1 points (o)

```

    1 2 3 4 5
1 - - - - -
2 - x x x -
3 - o x - -
4 - - - - -
5 - - - - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (1,2)

Player 1's turn (x) Score - Player 1: 3 points (x), Player 2: 3 points (o)

```
  1 2 3 4 5
1 - o - - -
2 - o x x -
3 - o x - -
4 - - - - -
5 - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (2,1)

Player 2's turn (o) Score - Player 1: 5 points (x), Player 2: 2 points (o)

```
  1 2 3 4 5
1 - o - - -
2 x x x x -
3 - o x - -
4 - - - - -
5 - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (1,4)

Player 1's turn (x) Score - Player 1: 4 points (x), Player 2: 4 points (o)

```
  1 2 3 4 5
1 - o - o -
2 x x o x -
3 - o x - -
4 - - - - -
5 - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

1Player 1 has placed a piece on coordinates (4,3)

Player 2's turn (o) Score - Player 1: 6 points (x), Player 2: 3 points (o)

```
  1 2 3 4 5
1 - o - o -
2 x x o x -
3 - x x - -
4 - - x - -
5 - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (4,2)

Player 1's turn (x) Score - Player 1: 4 points (x), Player 2: 6 points (o)

```
  1 2 3 4 5
1 - o - o -
2 x o o x -
3 - o x - -
4 - o x - -
5 - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (1,1)

Player 2's turn (o) Score - Player 1: 6 points (x), Player 2: 5 points (o)

```
  1 2 3 4 5
1 x o - o -
2 x x o x -
3 - o x - -
4 - o x - -
5 - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (1,5)

Player 1's turn (x) Score - Player 1: 4 points (x), Player 2: 8 points (o)

```
  1 2 3 4 5
1 x o - o o
2 x x o o -
3 - o o - -
4 - o x - -
5 - - - - -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (4,1)

Player 2's turn (o) Score - Player 1: 6 points (x), Player 2: 7 points (o)

```
  1 2 3 4 5
```

```

1 x o - o o
2 x x o o -
3 - o o - -
4 x x x - -
5 - - - - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1
Player 2 has placed a piece on coordinates (5,2)

Player 1's turn (x) Score - Player 1: 5 points (x), Player 2: 9 points (o)

```

  1 2 3 4 5
1 x o - o o
2 x x o o -
3 - o o - -
4 x o x - -
5 - o - - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1
Player 1 has placed a piece on coordinates (4,4)

Player 2's turn (o) Score - Player 1: 7 points (x), Player 2: 8 points (o)

```

  1 2 3 4 5
1 x o - o o
2 x x o o -
3 - o x - -
4 x o x x -
5 - o - - -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1
Player 2 has placed a piece on coordinates (5,4)

Player 1's turn (x) Score - Player 1: 6 points (x), Player 2: 10 points (o)

```

  1 2 3 4 5
1 x o - o o
2 x x o o -
3 - o x - -
4 x o o x -
5 - o - o -

```

(AI player turn) Press any NUMBER to continue to the next turn...

1
Player 1 has placed a piece on coordinates (1,3)

Player 2's turn (o) Score - Player 1: 9 points (x), Player 2: 8 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x o -
3 - o x - -
4 x o o x -
5 - o - o -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (3,4)

Player 1's turn (x) Score - Player 1: 7 points (x), Player 2: 11 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x o -
3 - o o o -
4 x o o o -
5 - o - o -
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (5,5)

Player 2's turn (o) Score - Player 1: 10 points (x), Player 2: 9 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x o -
3 - o x o -
4 x o o x -
5 - o - o x
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (4,5)

Player 1's turn (x) Score - Player 1: 9 points (x), Player 2: 11 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x o -
3 - o x o -
4 x o o o o
```


5 - o - o x

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (3,5)

Player 2's turn (o) Score - Player 1: 13 points (x), Player 2: 8 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x x -
3 - o x x x
4 x o o o x
5 - o - o x
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 2 has placed a piece on coordinates (2,5)

Player 1's turn (x) Score - Player 1: 12 points (x), Player 2: 10 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x x o
3 - o x o x
4 x o o o x
5 - o - o x
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (3,1)

Player 2's turn (o) Score - Player 1: 14 points (x), Player 2: 9 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x x o
3 x x x o x
4 x o o o x
5 - o - o x
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Auto-Pass. This turn has been skipped due to the fact that this player cannot make any moves in this turn.

Press any key to continue...

1

Player 1's turn (x) Score - Player 1: 14 points (x), Player 2: 9 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x x o
3 x x x o x
4 x o o o x
5 - o - o x
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (5,1)

Player 2's turn (o) Score - Player 1: 16 points (x), Player 2: 8 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x x o
3 x x x o x
4 x x o o x
5 x o - o x
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Auto-Pass. This turn has been skipped due to the fact that this player cannot make any moves in this turn.

Press any key to continue...

1

Player 1's turn (x) Score - Player 1: 16 points (x), Player 2: 8 points (o)

```
  1 2 3 4 5
1 x x x o o
2 x x x x o
3 x x x o x
4 x x o o x
5 x o - o x
```

(AI player turn) Press any NUMBER to continue to the next turn...

1

Player 1 has placed a piece on coordinates (5,3)

```
  1 2 3 4 5
1 x x x o o
2 x x x x o
3 x x x o x
4 x x x x x
5 x x x x x
```

Final score - Player 1: 21 points, Player 2: 4 points

Congratulations Player 1. You are the winner! Better luck next time Player 2 :(

Press any key to return to menu...

1