# Reversi Testing Report

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04/11/16

## Contents

# 1 Game Rules

- The board is a two-dimensional board that is at least 2 by 2.
- The center four squares on the board alternate between white and black pieces
- A piece can be played on any open square that 'captures' an enemy piece.
  - Capturing is when a series of enemy pieces are encapsulated between an ally piece and the piece being played.
- More than one series of enemy pieces can be captured with one play
- If a player does not have any moves, their turn is passed.
- The game ends when neither player has any more moves that can be made.
- The winner is whoever has the most pieces on the board.
- Blank squares left over at the end of the game are counted towards the winner's score.

The goal of this testing report is to provide insight on how to test these game mechanics.

# 2 Constructors

## 2.1 No parameters

`Reversi()`

This should launch a game with an 8x8 game board.

- White pieces should be occupying squares (4, 4) and (5, 5)
- Black pieces should be occupying squares (4, 5) and (5, 4)

## 2.2 One parameters

`Reversi(n)`

This should launch a game with an n by n game board. This game assumes the parameter will be greater than 1.

- White pieces should be occupying squares (n / 2 - 1, n / 2 - 1) and (n / 2, n / 2).
- Black pieces should be occupying squares (n / 2 - 1, n / 2) and (n / 2, n / 2 - 1).

### 2.3 Two parameters

`Reversi(n1, n2)`

This should launch a game with an n1 by n2 game board. This game assumes the parameter will be greater than 1.

- White pieces should be occupying squares (n1 / 2 - 1, n2 / 2) and (n1 / 2, n2 / 2 - 1).
- Black pieces should be occupying squares (n1 / 2 - 1, n2 / 2 - 1) and (n1 / 2, n2 / 2).

### 2.4 No arguments

This should behave identically to the constructor with no parameters

### 2.5 One argument

If the one argument is an integer, that argument is put through the single parameter constructor.

If the one argument is not an integer, a message will pop up requesting a different arguments.

### 2.6 Two arguments

If the two arguments are both integers, that argument is put through the two parameter constructor.

If either of the two arguments are not integers, a message will pop up requesting different arguments.

### 2.7 Three or more arguments

A message will pop up requesting different arguments.

## 3 Playing the game

### 3.1 Legal plays

For a play to be legal, it must be:

1. On a square that is currently blank
2. Be surrounded by at least one enemy square
3. An ally square must be at the end of a series of enemy squares in any given direction, with the play in question being at the origin.

### 3.2 Non-blank squares

Attempting to play a piece on a square that already has a piece on it should do nothing.

Testing this should cover:

- Attempting to play a piece on an ally piece
- Attempting to play a piece on an enemy piece

Test when it is black's turn and white's turn.

### 3.3 Not surrounding enemy squares

Attempting to play a piece where there are no surrounding enemies should do nothing.

Testing this should cover:

- Attempting to paly a piece where there are no surrounding enemies

### 3.4 Surrounding enemy squares

Attempting to play a piece where there are surrounding enemies, but the series does not have an ally piece enclosing the series should do nothing.

Attempting to play a piece where there are surrounding enemies and the series has an ally piece enclosing the series should flip all enemy pieces in the series.

Testing this should cover:

- A series of enemy squares that is enclosed by a blank square
- A series of enemy squares that extends to the border of the board
- A series of enemy squares that is enclosed by an ally square

Test when it is black's turn and white's turn.

### 3.5 Multiple captured series

All enemy pieces enclosed by an ally piece should be flipped. This should work when there are multiple series of enemy pieces being captured.

Testing this should cover:

- Multiple series of enemies being captured by a play

### 3.6 No available plays

When there are no available plays, a player's turn is skipped. A message should appear to inform the player their turn has been skipped.

Testing this should cover:

- A situation in which the player's turn must be skipped

Test when it is black's turn and white's turn

### 3.7 Game conclusion

When neither player has a play to be made, the game is concluded. Both players' scores are tallied and displayed with an option to play the game again or quit.

Testing this should cover:

- Checking if the tallied scores accurately represents the outcome of the game.
- Check if the play game button launches a new game
- Check if the quit button closes the game