# Crossfire: A Game of Strategy

To play:

1. Download CrossFire repository and unzip file.
2. The repository will appear as CrossFire-master at the location it is downloaded.
3. In a shell, change directory into CrossFire-master.
4. To compile use the command: javac -d bin src/boardGame/*.java
5. Change directory into the bin folder.
6. Run the program with the command: java boardGame/CrossFire

The goal is to get four pieces in a row, vertically or horizontally. Have fun! It's tougher than it looks.
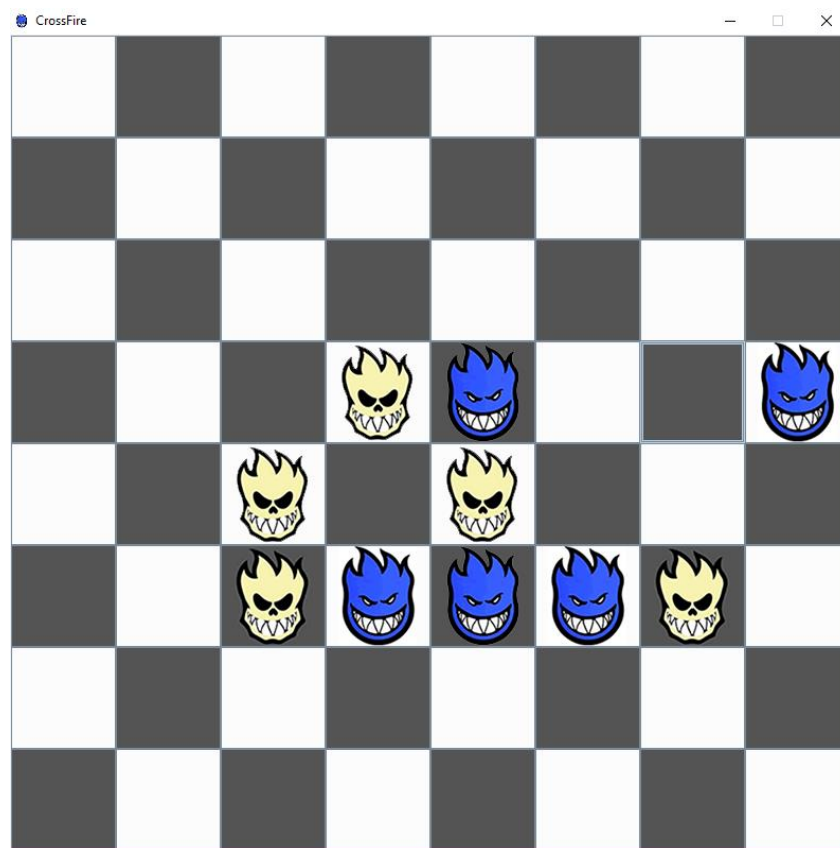
About CrossFire's Development:

This game took about three months to write and is roughly 8,000 lines of code. It uses a very robust fitness function to create a set of promising moves, then uses a multithreaded beam search, applying the Minimax search algorithm, to evaluate that set returning the best move. The helper classes VerticalMirrorSymmetry, HorizontalMirrorSymmetry and Transpose exploit the natural symmetry of the game. These classes take fitness function source code from class GameLogic as input and output modified source code. For example, calling VerticalMirrorSymmetry on source code for column 1 produces source code for column 8. This method helped to cut down on programming errors and development time. Currently I'm converting this PC game to become an Android game, one which will have multiple levels of AI opponents, and will allow users to play each other over a network.