Team 97 - Checkers AI

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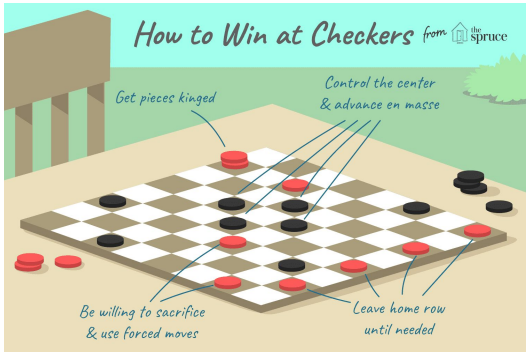
Project Description

Checkers AI is an artificial intelligent program that will choose the best moves that results in high reward most of the time. This program utilizes the minimax algorithm which is an algorithm used commonly in decision making. It will compute the most optimal move for the player to help maximize it's chances of winning the game.

Background



When you are playing checkers, what parameters do you focus on when you are making a move? Can you make a king? Can you capture multiple pieces? What exactly is the best move you can make? Well our algorithm solves this problem. We have created Checkers AI which utilizes the minimax algorithm with alpha beta pruning to figure out the best move.

How to play checker:
You can only move pieces on the black squares or diagonal from one another.

When the piece reaches the other side of the board, it becomes a king.

The player win when the opponent has no move left.

Implementation

We first created the board environment and created the state of the board and piece objects in their starting position. Next, we used the minimax algorithm with alpha beta pruning which utilizes our heuristic algorithm to evaluate each move and determine which move is the best for the current player. Our heuristic algorithm evaluates the board by overseeing the amount of captures a piece can have, if the piece can be captured, if the piece can create a king, and/or calculating the number of move the current player has.