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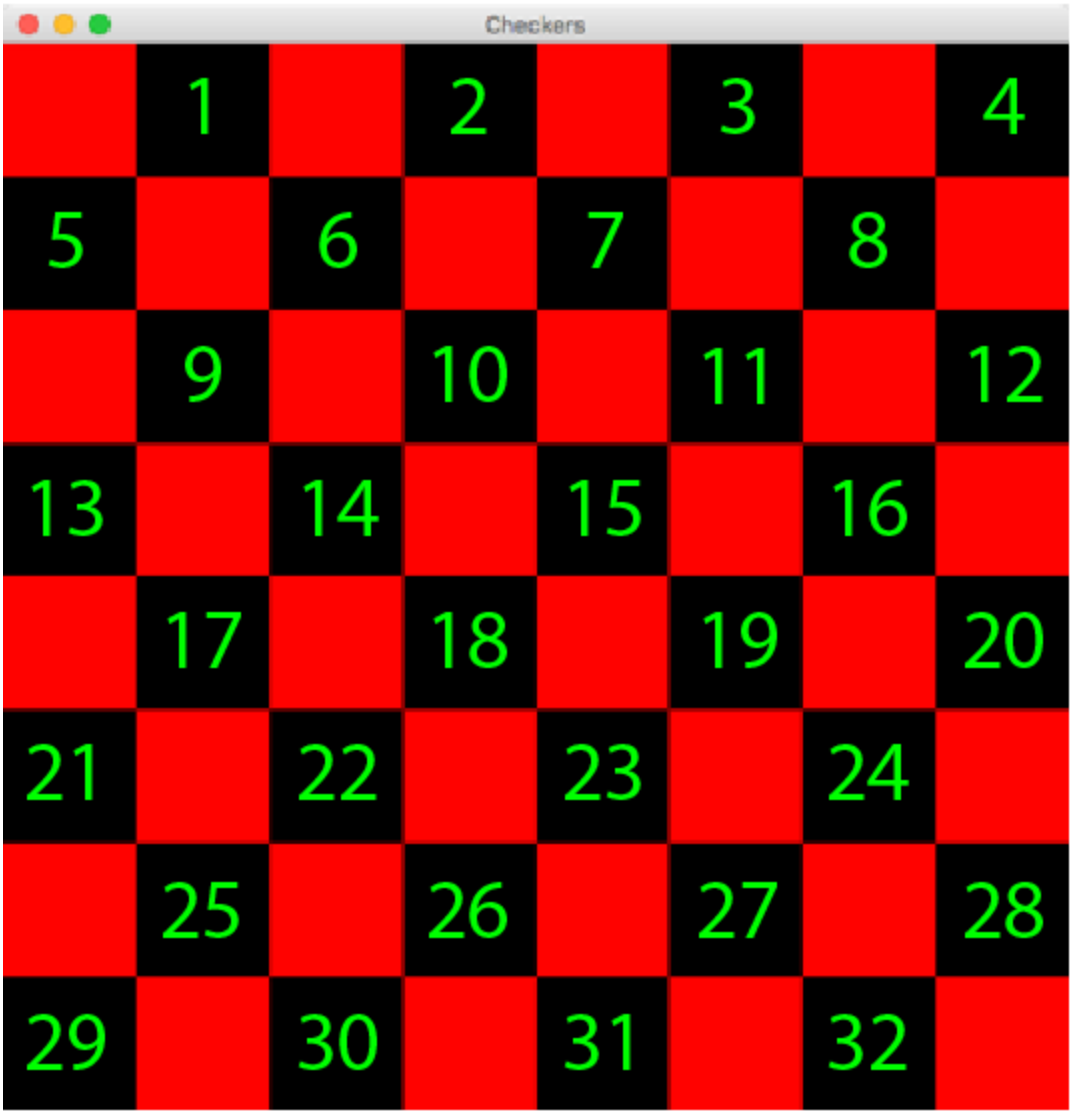
CS 4330
Checkers Game Data Model Concept

Dark Player



Light Player

Data Fields:
Player: name, color, numOfPieces
Board: array[8][8]
Piece: 1 for king, 0 for other

Methods:
Jump(currentPosition, newPosition): this method will be called after the move is determined legal. It will decrement the other player's numOfPieces and remove the piece that was captured from the board.

King(piece): Will be called when a dark piece is on position index 29-32 or when a light piece is on position index 1-4. Piece enum will change from 0 to 1.

Move(currentPosition, newPosition): after checking if move is legal, the piece will move to the new position and the board will be adjusted to reflect this.

Collecting names:
The names will be inputted by the users when the game is created. Players will select whether they want human vs human, human vs AI, or AI vs AI. AI players will be named "Computer1" or "Computer2". Names will be displayed on bottom of the board for light colored pieces and on the top for dark colored pieces.

Who moves first:
The dark pieces will always move first. In human vs human or AI vs AI games, the dark pieces will be assigned to player 1. In human vs AI games, the human will be assigned the dark pieces.

Determining if moves are legal:
To determine if a move is legal, the program will first check to make sure the piece is moving to a position whose location is marked with an integer greater than 0 and the position index is 4 or 5 integers greater than the original position index if dark piece or 4 to 5 integers less than the original position if light piece. If piece is a king, it can move either forward or backwards. Next it will check if there is a piece occupying the space it is to be moved to. If the space is open, the piece will move to the new location. If the piece is attempting to jump another, the position must be 7 or 9 integers greater or less than, depending on the color of the piece, than the original position index. The program will then make sure the piece that is being captured is a different color than the one being moved. Repeat jumping checks if the player is trying to capture multiple pieces.

Determine winner or loser:
If a player no longer has any remaining pieces, the player will be declared the loser and the other will be declared the winner. If a player cannot move or forfeits, the other player will win.