CS154: PROJECT PROPOSAL

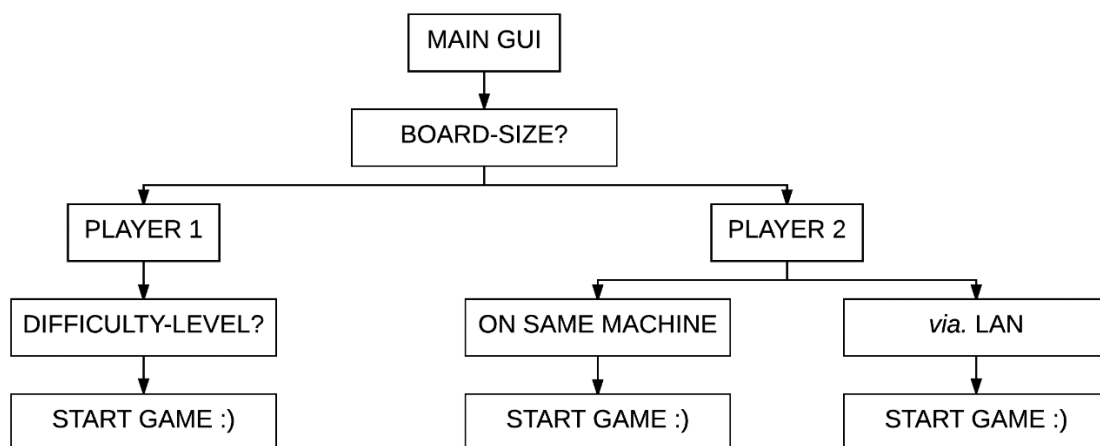*Satti Vamsi Krishna Reddy*
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We are interested in working out on two projects simultaneously *i.e.* a game called **_REVERSI_** *(aka.* **_OTHELLO_**) and another an application which is an **_IMAGE PROCESSING & EDITING_** software.
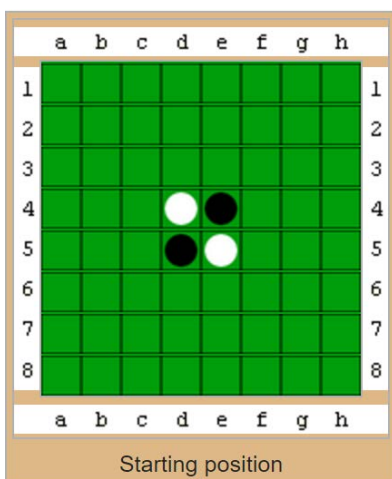
REVERSI

MODES OF GAME –

We plan to give options for board-size (against the standard rules, but still it makes the game more fun without disturbing the game rules). Also, a 1-player or 2-player version with the program making alternate moves in 1-player mode. In, 2-player mode, the two humans can either play on a single machine or play *via.* a LAN (by making one of them a local-host using `2htdp/universe`).

RULES AND GAMEPLAY –

The game begins with four disks placed in a square in the middle of the grid, two white and other two pieces dark, with same-colored disks on a diagonal with each other. The black makes the first move.

[PLEASE NOTE: The standard board-size for Reversi is 8×8. But this can be varied in our game *i.e.* *n*×*n* where *n* is any even number! Also we don't consider any time constraints unlike 30 minutes per player in the International Standard.]

Dark must place a piece on the board, in such a position that there exists at least one straight (horizontal, vertical, or diagonal) occupied line between the new piece and another dark piece, with one or more contiguous light pieces between them. In this situation, dark has the possible moves indicated by translucent pieces. After placing the piece, dark turns all light pieces lying on a straight line between the new

Where dark may play

After dark play

piece and any anchoring dark pieces into dark pieces. A valid move is one where at least one piece is converted into it's complement.

Where light may play

After light play
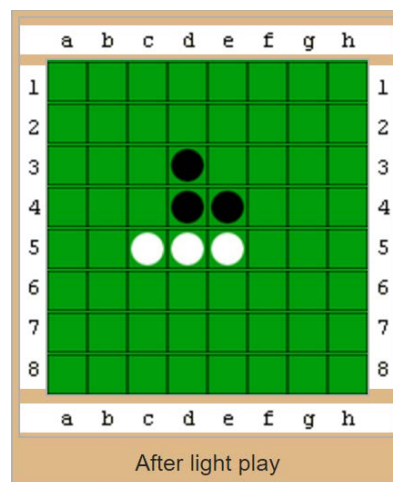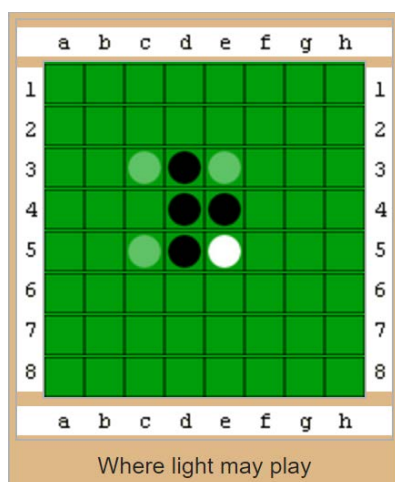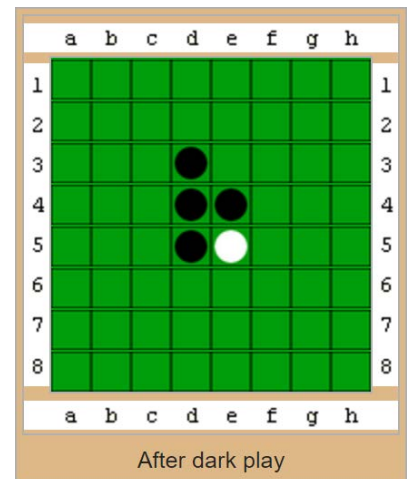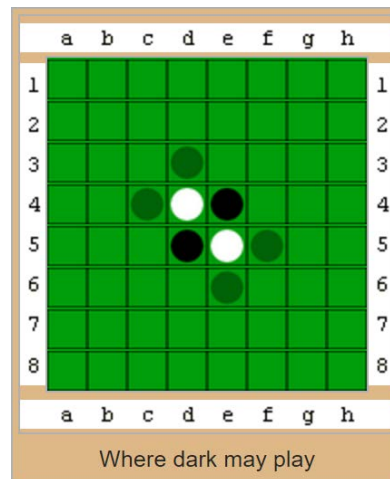
If dark decided to put a piece in the topmost location in the above figures (all choices are strategically equivalent at this time), one piece gets inverted, so that the board appears thus as aside. Now light plays. This player operates under the same rules, with the roles reversed: light lays down a light piece, causing a dark piece to become white.

Players take alternate turns. If one player can not make a valid move, play passes back to the other player. When neither player can move, the game ends. This occurs when the grid has filled up or when neither player can legally place a piece in any of the remaining squares. This means the game may end before the grid is completely filled. This possibility may occur because one player has no pieces remaining on the board in that player's color. In over-the-board play this is generally scored as if the board were full (64–0). The player with the most pieces on the board at the end of the game wins.

Reference for complete details - https://en.wikipedia.org/wiki/Reversi#Rules

ADDITIONAL LIBRARIES PLANNED TO BE USED –

`racket/gui/base` – For the user interface during the gameplay. Gives the user various options to select the mode of game like 1-player, 2-player *etc*.

`2htdp/universe` – For the main game control, where the frames are changed according to moves. Also, it can be used for create a Local Host *via.* LAN in 2-player mode.

`2htdp/image` – For the Graphical look of the game, various icons like black-disk, white-disk, board *etc.* and to define them as bitmaps in a separate file to be used in other *.rkt* source files.