MCS Project Part 1: Reversi

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1 DESIGN DECISIONS

The last predicate is used for verification, the others for the game itself. (Just to mention, the shown uncheckered boards uses a different coordinate system, than the actual theory.)

- **inDirection(pos1,pos2,dir)**: is true if and only if position *pos2* is in the given direction *dir* relative to position *pos1*. (For example inDirection(pos(1,1),pos(1,2),L), second given position is left relative to first given position.
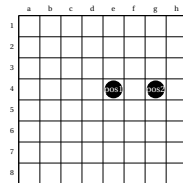

Figure 1.1: Example right direction

- **between(pos1,pos2,pos3)**: is true if and only if position *pos2* and position *pos3* are on the same horizontal, vertical or diagonal line on the board. And position *pos1* is in between *pos2* and *pos3* on that line.
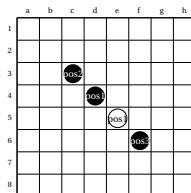

Figure 1.2: Between *pos2* and *pos3*

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- **discsTrapped(t,pos1,pos2,pos3,col)**: Same as `between` predicate but with added constrains, that all positions in between position *pos2* and position *pos3* are occupied by a disc the same color *col* as disk at position *pos1* at time *t*.
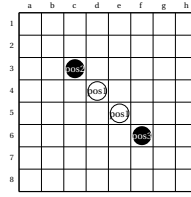

Figure 1.3: Discs Trapped between *pos2* and *pos3*

- **passes(t,col)**: is true if and only if at time *t* there exist no valid move for the player whose turn it is, with player_color *col*.
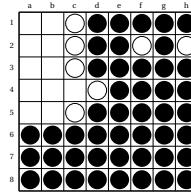

Figure 1.4: Example, white passes

- **connected(pos1,pos2,t)**: This is for verification3. At time *t*, disc on position *pos1* and disc on position *pos2* on the board are reachable, using horizontal, vertical or diagonal steps, from any other disc on the board using only positions occupied by discs.
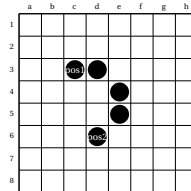

Figure 1.5: Example, *pos1* and *pos2* are connected

2 TIME SPENT ON THE PROJECT

I spent quite a lot more than 15 hours on the project. A rough estimate of the total time I spent on the project itself would be 25 hours. The main problem for spending this amount of time on the project is my experience in IDP (or in general in Logic). This in combination with the somewhat limited documentation on the IDP system and the difficult debug procedure meant that the project advancement was cumbersome. And I did ask a lot of questions to people around me on how to interpret things in the assignment and on how to overcome certain problems.