General Game Playing

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Exercise 2.1

Encode the following concepts as valid gdl rules:

- the initial setup of an 8x8 checkers board

- an action that moves one of the pieces one row diagonally forward (This includes the precondition and the effects of the action.)

- a successor relation for numbers from 0 to 12

- a 'smaller than' relation over above numbers

- counting the number of pieces of each color on the board

- the game ends if one of the two players lost all his pieces or after 60 steps

- the player with more pieces on the board wins

Exercise 2.2

Decrypt the scrambled game descriptions from the course web page by analyzing the rules and replacing the nonsensical relation symbols, function symbols, atoms, and variable names with meaningful ones.

- Do you know the name of the game? If not, try to explain the rules as simple as possible.

- How did you recognize the meaning of the rules?

Exercise 2.3

Encode your game from exercise 1.5 in GDL. Make sure that your description abides by the GDL specification and that the game is playable (there is a legal move for each player in every reachable, non-terminal state) and (weakly) winnable for each player (for each player there is at least one sequence of joint moves such that the player wins). Try your game description with the GameController and a player of your choice to see if it works. Hint: GameController will output parsing errors on the terminal.

Send me an email by Thursday, Nov 13th 2007 with your game description and for each player a sequence of joint moves such that the player wins.