CSE 259 - Logic in Computer Science

Recitation-8

Project 2: Chess - Part 3 (Task 2 and 3)

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Project-2: Task 3

Current code

```
/* ------------------------------------------------------------------ */
/* WRITE YOUR CODE FOR TASK-3 HERE */
/* MODIFY THE CODE SO THAT playerA AND playerB AUTO-COMPETE */
/* ------------------------------------------------------------------ */
play(Board) :-
    /* move playerA */
    /* get_command asks the user for the move to be made.
       modify this so that playerA moves on its own */
    get_command(Command),
    execute_command(Command, Board, NewBoard),

    /* move playerB */
    execute_command(playerB, NewBoard, NextNewBoard),
    play(NextNewBoard).
```

Project-2: Task 3

- There are 3 execute_command that are called from play()
- The first one is for inputs taken from user. The second one is for automated players. And the third one is for handling unexpected situations.

```
/* execute the move selected */
execute_command(Move, Board, NewBoard) :-
        parse_move(Move, From, To),
        move(Board, From, To, white, Piece),
        make_move(Board, From, To, NewBoard), !.

execute_command(Player, Board, NewBoard) :-
    respond_to(Player, Board, NewBoard), !.

execute_command(X, Board, _) :-     % Use to catch unexpected situations
    write('What?'),
    halt(0).
```

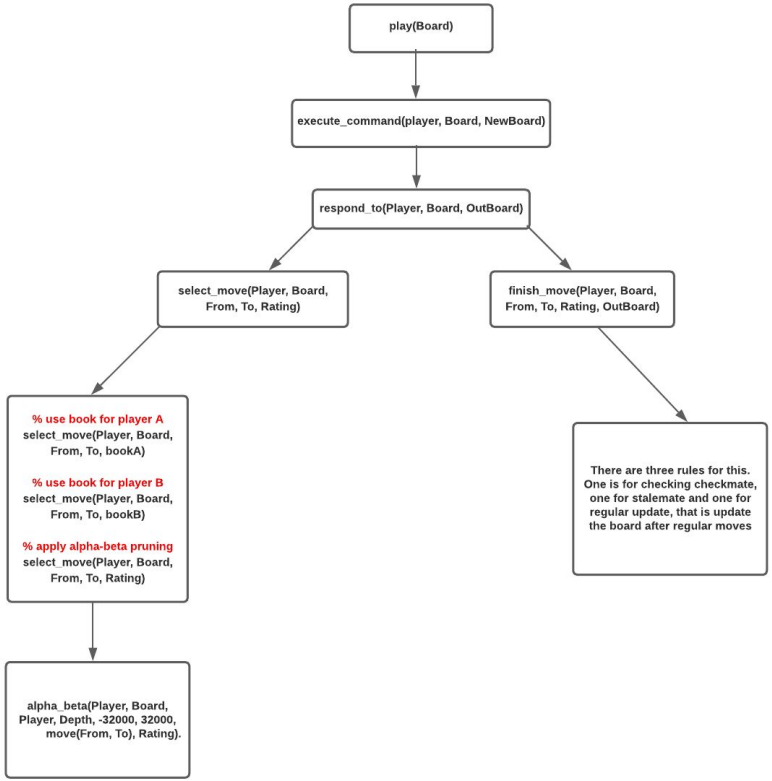
Project-2: Task 3

- Change like the following so that playerA plays on its own

```
/* ------------------------------------------------------------------------ */
/* WRITE YOUR CODE FOR TASK-3 HERE */
/* MODIFY THE CODE SO THAT playerA AND playerB AUTO-COMPETE */
/* ------------------------------------------------------------------------ */
play(Board) :-
    /* move playerA */
    /* get_command asks the user for the move to be made.
       modify this so that playerA moves on its own */
    execute_command(playerA, Board, NewBoard),

    /* move playerB */
    execute_command(playerB, NewBoard, NextNewBoard),
    play(NextNewBoard).
```

Project-2: Task 2



- Play called execute_command
- execute_command calls respond_to
- responde_to calls 2 rules
  - select_move: select a move
  - finish_move: finish moving the selected move
- select_move has 3 rules. One is for playerA. Start from select_move of playerB and start mimicking the code

Project-2: Task 2

- Look carefully - bookB in select_move appears 3 times. bookA appears 2 times. So, we start working from here

```
finish_move(Player, NewBoard, From, To, Rating, OutBoard) :-

select_move(Player, Board, From, To, bookA) :-    % Use book for playerA
  player(Player, white),
  bookA(Board, From, To), !.
select_move(Player, Board, From, To, bookB) :-    % Use book for playerB
    player(Player, black),
    bookB(Board, From, To), !.
select_move(Player, Board, From, To, Rating) :-    % time for ALPHA-BETA
    (player(Player, white) -> ply_depthA(Depth);ply_depthB(Depth)),
  alpha_beta(Player, Board, Player, Depth, -32000, 32000,
             move(From, To), Rating).
```

bookB Aa ab .* 3 of 3

```
-templates > Chess > chess_solution.pl
finish_move(Player, NewBoard, From, To, Rating, OutBoard) :-

select_move(Player, Board, From, To, bookA) :-    % Use book for playerA
  player(Player, white),
  bookA(Board, From, To), !.
```

bookA Aa ab .* 1 of 2