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% MATLAB Final
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% EGR 101-01
% Due: 4/18/23

clear; clc; close all;

board = generate_board(); %exactly what it sounds like

% ask for a difficulty level with half-hearted input handling
difficulty_level = "";
while all(difficulty_level ~= ["d" "b"])
    difficulty_level = lower(input("Who would you like to play against?\n\nA [d]ummy ↵
computer          [d]\nA slightly [b]etter computer    [b]\n... ", "s"));
end

switch difficulty_level
    case "d"
        difficulty_level = "dummy";
    case "b"
        difficulty_level = "novice";
end

% same thing but for player characters
player_char = "";
while all(player_char ~= ["x" "o"])
    player_char = lower(input("\n\nChoose your token\n\n[x]\n[o]\n... ", "s"));
end

% Hey so I thought it would be funny if I referred to player 1 as Mas"one"
% and player 2 as "Two"lia and I made this decision really early on so
% the code will call you a silly name from now on
%
% if it ain't broke, don't fix it

turn = 1; %use this to alternate whose turn it is
while any(board == 0, "all") %while the board ain't filled up yet
    % player with x token goes first, house rules

    % I hate the way I did this if-ladder but idrc
    if mod(turn, 2) == 1 % if it's player 1's turn
        if player_char == "x" % if YOU'RE player 1
            func = "place_player_token(board, 1)";
        else % if you ain't
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        func = difficulty_level+"_behavior(board, 'Masone')"; %eval() let's me
mess with the physical names of the functions I wanna call before I call them. Cool!
    end
    else % if it's player 2's turn
        if player_char == "o" % if YOU'RE player 2
            func = "place_player_token(board, 2)";
        else % if you ain't
            func = difficulty_level+"_behavior(board, 'Twolia')"; %eval() let's me
mess with the physical names of the functions I wanna call before I call them. Cool!
        end
    end

    board = eval(func); %change the board accordingly

    % win is 1 if the game's been won, 0 if it's still ongoing
    % winner is the silly name of who won, if they won
    [win, winner] = detect_win(board);

    % duh
    if win
        break
    end

    turn = turn + 1;
end

% pretty much "if the guy who won matches your token, you won"
switch winner
    case "Masone"
        if player_char == "x"
            outcome = "Hooray!";
        else
            outcome = "I'm very disappointed in you... :(";
        end
    case "Twolia"
        if player_char == "o"
            outcome = "Hooray!";
        else
            outcome = "I'm very disappointed in you... :(";
        end
    otherwise
        outcome = "A tie!";
end

disp(gridnum2boardchar(board))
disp(outcome)

```