

GG250 Lab 13

The First Annual GG TicTacToe Competition

Tictactoe is a simple game to play, but if you were to program a computer so that you could play against it, how would you do it? You are about to find out. On our website there three functions that you need to download:

tictactoe.m The main game module with several subfunctions
tictactoe_game_status.m Checks if game is over and if there is a winner. Used by **tictactoe.m** but may be used by your code as you try to determine successful moves.
tictactoe_test.m Simulates lots of games and compile statistics

The game comes with two built-in players called 'user' and 'monkey'. Player 'user' will let a user select the next move using the mouse to click in the desired slot. Player 'monkey' will randomly make its choice from the available slots on the board. Your task is to write a function called **name_move.m** (use your own name as usual) and by following the precise interface specifications below you can use your player with the tictactoe game. The function definition is

```
function [row, col] = name_move (board, mover)  
% NAME_MOVE The strategic tictactoe moves of name  
% [row, col] = name_move (board, mover)  
%  
% This function will select your next move in the tic-tac-toe game.  
% You must return the row, col of your move; this must be an empty slot.  
%  
% Input: board is a 3 by 3 matrix that contains the status of the game.  
% unused slots are 0, whereas slots already occupied are either -1 or +1  
% mover is the player number and is either -1 (player 1) or +1 (player 2)  
% Output: row, col is the row and column position in the board where you want  
% to place your next move, both in the 1-3 range.
```

During the first session (Dec 2) we will be trying to come up with workable strategies for playing the game and discuss how to implement our players. On the day of the competition (Dec 9) we will spend the first 45 minutes doing fine-tuning after which everybody must have a working function (no syntax errors accepted or out-of-bound values returned, etc.). We will then play a tic-tac-toe tournament. Before the start of the tournament you will email your lab submission to us. There can be no late entries! Your email must contain two attachments:

name_move.m This is your Matlab tictactoe mover function. It must have sufficient comments to document what the various code snippets try to do.

GG250_Lab13_name.doc. This is a Word file in which you describe your strategy that you tried to implement in the Matlab function. This is not pseudo-code but your clear description of how you chose to address the problem.

Grading will be based on how well the function addresses the specifications (20%), the sophistication of your strategy (20%) the completeness of the comments (20%), the thoroughness of the word description (20%), and how well your functions scores in 1000 games against the reckless but strategy-poor monkey (20%).