

Due 11:59 p.m., 4/29/14

This project can be completed as a team. The total number of points earned for the project will be divided among all team members. Only one team member needs to turn in the code.

All work should be turned into CSNet by the deadline. **In addition, please turn in a hardcopy to the TA's mailbox within one day of submission.** For programs, you need to turn in only the source code (not object or executable code). Your code will be tested using g++; you are welcome to develop in Visual Studio, but please make sure your code also runs in g++.

Create a text file, README, in which you:

- 0) Clearly state all team members who worked on the project.
- 1) State the Aggie Honor statement, or else explain why you cannot do so.
- 2) List any resources used, outside the textbook and discussions with the Instructor, TA, or Peer Teacher
- 3) List any known problems with the assignments you are turning in. For example, if you know your code does not run correctly, state that. This does not need to be a long explanation.

You are to create a board game to allow a version of Tic-Tac-Toe to be played. The rules of the game are as follows (I assume everyone knows how to play tic-tac-toe – if not, look it up):

- The board consists of a 3x3 grid of 3x3 boards.
  - You might look at the whole thing as a 9x9 grid, but you should consider this as 9 distinct boards.
- Assume the spaces on a board are numbered 1 to 9, and assume the grid of boards also is numbered from 1 to 9:

1	2	3
4	5	6
7	8	9

- X will go first, in any position on any of the boards.
- THIS IS THE KEY RULE: Other than the first move, a player must move on one particular board. That board is the one corresponding to the position on the board that the previous player chose.
  - For example, assume that the first player puts an X in the middle square (square 5) of the middle board (board 5). Then, the second player must put an O into one of the other squares of board 5. Let's say that he chooses to put it in the upper right (square 3). Then, the first player must play in some position on board 3. Say that the first player puts his X in the middle of board 3 (square 5). Then, player 2 places his O into one of the remaining squares of board 5.
- The game is won when one player gets a tic-tac-toe on any one of the boards.
- If there is ever a point at which a player can no longer move (i.e. the boards filled up), then the game is a tie.

You are to write a program that allows people to play this version of tic-tac-toe. The overall project is open-ended: you can make it as basic or as fancy as you want. You will receive points based on the quality of your overall game. You will probably want to include a nice graphical interface to display the board and get input, ensure correct gameplay by allowing only valid moves, and checking for winning conditions. The game can be made more advanced in several ways, including the quality of the graphical interface, the "intelligence" built in (e.g. try to come up with a simple AI opponent), the way the code is organized, etc.

Your grade will be somewhat subjective, with the maximum number of points being 300. Here is how those 300 points can be earned:

Gameplay: 100 points (correctness and game play options fully implemented)

Interface: 150 points (quality, ease of use, etc.)

Coding: 50 points (good structure to code, efficient programming, good comments in code, tests of code, etc.)