11.05.2025

CMPE 140 Final Project

You are not allowed to take a peek at any solutions, including online resources, and you are not allowed to share your answers with anyone, including your classmates. You are allowed to program together as a group. You are only allowed to use your lecture notes and the textbook. Failure to follow these rules will result in getting only 1 point for the project.

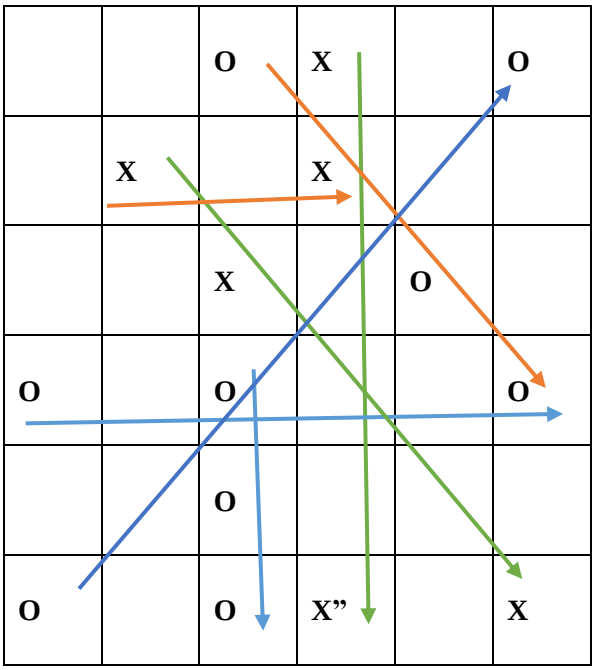
In this project, we will simulate a 2-dimensional n*n (5<=n <=100) field. n will be received from the user as input and must be in the range 5<=n <=100. You are expected to put beans (one is called 'X' and the other 'O') of two players on the field and check if any tic-tac-toe is found. More details are given below:

Firstly, create an n*n matrix of integers and then get the coordinates (i1,j1) of the player 'X'. Put it in coordinates (i1,j1). Then ask for the coordinates (i2,j2) of the player 'O'.

Termination: This procedure will repeat until one of the players wins or each player has moved 10 times and no one could make a tic-tac-toe.

Note: When a player enters a coordinate (i,j), if the bean can be placed in the received coordinates, put it there, otherwise, ask for another coordinate.

Note: A tic-tac-toe happens when three 'X' or three 'O' beans of a player are placed in the same horizontal, vertical or diagonal line. They can be far from each other but still on the same line, however, there should not exist any bean of the opponent player between these beans to make a tic-tac-toe. For example there exist some Tic-tac-toe's for each player (blue for O and green for X) in the following board but others (orange color) are not called a tic-tac-toe. Note that the following board (several tic-tac-toe's) cannot happen at the same time in the game as the game will finish when one player makes the first tic-tac-toe. As seen, if there exist an 'O' between 'X'a or viceversa, this cannot be called a tic-tac-toe.



Important notes:

- Groups can be composed of one or two students.
- The list of eligible students to present the final Project will be announced after grading the second midterm.
- Attending students to final are responsible for all the topics taught from the beginning of the semester (except flowcharts).
- If a student is satisfied of his/her grade, can avoid the final Project.
- I attending student cannot answer any question during the final Project, his/her grade may decrease for one level, e.g., CC-> DC.
- Those students that think their average is higher tahn 60, can start implementing this Project.
- **The date for project presentation is 21 May 2025 – Wednesday, before noon in D104.**

Submission Instructions

- Create a zip file named FinalProject_name_surname.zip e.g. FinalProject_Mehmet_Erdoğan.zip that contains your source code file(s) .
- Upload the zip file to the Learn system.
- At the presentation day, you will run your code on your computer and each group member will answer the jury questions.

Good luck,

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