

SYSC 2004 Object-Oriented Software Development

Assignment #5

In this assignment, you are to take the *tictactoe* project and class `TicTacToe` used in lab #10 and rewrite it to use a GUI to represent the tic tac toe board. You may call your project whatever you like and you may have as many java classes as you like. (It can be done with just one!)

The code in the given `TicTacToe` class was written to make the conversion to the GUI style fairly straight forward. You can reuse all the constants and fields, except that the `board` field now needs to have a different type, and you will need to add a few other fields.

It's recommended that you use a 3x3 Grid Layout made up of `JButtons` for the tic-tac-toe board. When a button is selected, the players "mark" (either "X" or "O", depending on whose turn it is) appears in the button and the button can no longer be selected. After the game ends, no buttons may be selected. However, if you prefer another approach, that's fine, as long as your game works.

Now add a label field (e.g. at the bottom of your frame) to indicate the current state of the game (e.g. game in progress and X's turn; game in progress and O's turn; game over tie; game over X wins; game over O wins) in a label field. Of course, the label must change so that it is always current (i.e. reflects the current state of the game).

Now add a "Game" menu, with two choices: New (or ctrl-N) to start a new game (whether the current game is over or not), and Quit (or ctrl-Q) to quit.

Feel free to experiment further with GUIs. Possible extensions include adding a component that displays the number of games that X has won, the number that O has won, and the number of ties. You can also add additional menu items (e.g. change the game so that "O" goes first, etc.), or you could implement this functionality another way. You can even change what is displayed on the buttons from just text "X" and "O" to fancy graphic "X" and "O" (by providing jpg files). Or whatever else you can think of to make the game look better! These extensions are not required for full marks, but may earn bonus marks.

So that you can also include sounds, if desired, .wav has been added to the list of files accepted.

Submission

To submit this assignment, you will submit the bluej file plus all the java, jpg, and wav files in your project using the SYSC 2004 submit program for Assignment #5. The submit program expects you to select a directory from which it will automatically pick the .bluej file, all .java files and any .jpg/.jpeg files (if applicable), plus any .wav files (if applicable), so just select your project directory. (Test this ahead of time to ensure that it does what you expect!) **Note that if**

you have any other file extensions other than bluej, java, jpg, jpeg, or wav (e.g. png, etc.), those files will not be uploaded, unless you contact me well in advance of the due date to have them added to the file types accepted. Late submissions will **not be accepted by the submit program or the instructors!**
