

Lab 6 Assignment

In this assignment, you need to implement the tic-tac-toe game with GUI in java.

- The game should have a 3 x 3 grid, some buttons and textual output in the frame.
- Remember, that you have already implemented the logic for the game in the first assignment and you should reuse that in this as well.
- The motive of this assignment is to get you familiarized with GUI in java.
- Having said that, you should avoid the design mistakes that you did in 1st assignment.
- You should ideally make a single Tic_Tac_Toe game class and make an inner class for the grid.

Specific Requirements:

1. The game should have a start screen with the name of the game, a button with the text “Start Game” on it and a button with text “Exit” that closes the window and stops the execution of the program.



2. Once the user presses “Start Game” button, you should get the user to a new screen in the same Frame as:

The screenshot shows a game interface with a light beige background. On the left side, there are four blue buttons stacked vertically: "User 1 vs User 2", "User vs CPU", "CPU vs AI Bot", and "User vs AI Bot". Below these is a single blue button labeled "Exit". To the right of the buttons is a 3x3 grid of white squares with black borders. Below the grid is a white rectangular box with a black border, containing the text "Output Box for showing turns and result's".

3. The 3 x 3 grid should be clickable. You can safely assume that there is 50/50 chance that any user (CPU/AI Bot) can start first and the first user starts with X.
4. If the user presses 1st, 2nd or 4th button, a pop up box should appear asking for user's name. Here, I am showing for 1st button, similarly a box should appear asking for single user's name on pressing 2nd and 4th button.

The screenshot shows a name input pop-up box with a light beige background. It contains two labels, "User 1" and "User 2", each followed by a white rectangular input field with a black border. Below the input fields is a blue button labeled "Ok".

5. When one of the 4 options is getting executed, the change on that button should be clearly visible.

6. You should keep checks in the 4th point when a user tries to input empty string. You should not accept it and should display a message in the pop-up box itself.
7. For the 3rd option, CPU vs AI Bot, the output on the grid should be delayed by 1 second.
8. On every turn, output in the output box should be like:

<User1>'s turn or <User2>'s turn or CPU's turn or AI Bot's turn according to whoever's turn it is.
9. The result should be displayed in the output box as:

<User1> wins or <User2> wins or CPU wins or AI Bot wins

It's a Tie !
10. After someone wins a game, the corresponding row, column or diagonal X's or O's in the grid should change color or show some effect.
11. After the end of one game, you can either use another pop up box for starting a new game or start it from the left menu itself.
12. The "Exit" button should close the window and stop the program.

The layout I have given here is just for reference and can be different for you. Be creative keeping in mind all the functionalities given above.