

# Tic Tac Toe Win

[0][0]	[0][1]	[0][2]
[1][0]	[1][1]	[1][2]
[2][0]	[2][1]	[2][2]

- The co-ordinates of the board are shown on the left.
- There are eight win conditions and one tie.
- Use the board array to calculate your win conditions.
- See the code below for more hints.

X X X			X
	X X X		X
		X X X	X
X		X	
X		X	X
X		X	X

This is how the first row is checked:

[0][0]	[0][1]	[0][2]
[1][0]	[1][1]	[1][2]
[2][0]	[2][1]	[2][2]

```
public void win() {
    //board [x][y] holds 'b' if empty; 'x' if X holds square, 'o' if O holds square
    char winner = 'n';
    if (board[0][0] == board[0][1] && board[0][0] == board[0][2] && board[0][0] != 'b')
        winner = board[0][0];
    else if (board[1][0] == board[1][1] && board[1][0] == board[1][2] && board[1][0] != 'b')
        winner = board[1][0];
    else if (board[2][0] == board[2][1] && board[2][0] == board[2][2] && board[2][0] != 'b')
        winner = board[2][0];
    else if (board[0][0] == board[1][0] && board[0][0] == board[2][0] && board[0][0] != 'b')
        winner = board[0][0];
    else if (board[0][1] == board[1][1] && board[0][1] == board[2][1] && board[0][1] != 'b')
        winner = board[0][1];
    else if (board[0][2] == board[1][2] && board[0][2] == board[2][2] && board[0][2] != 'b')
        winner = board[0][2];
    else if (board[0][0] == board[1][1] && board[1][1] == board[2][2] && board[1][1] != 'b')
        winner = board[1][1];
    else if (board[0][2] == board[1][1] && board[1][1] == board[2][0] && board[0][2] != 'b')
        winner = board[0][2];
    //cat's game
    else if (board[0][0] != 'b' && board[0][1] != 'b' && board[0][2] != 'b' &&
             board[1][0] != 'b' && board[1][1] != 'b' && board[1][2] != 'b' &&
             board[2][0] != 'b' && board[2][1] != 'b' && board[2][2] != 'b')
        winner = 't';

    if (winner == 'x') {
        JOptionPane.showMessageDialog (null, "X wins!", "X wins!", JOptionPane.INFORMATION_MESSAGE);
    } else if (winner == 'o') {
        JOptionPane.showMessageDialog (null, "O wins!", "O wins!", JOptionPane.INFORMATION_MESSAGE);
    } else if (winner == 't') {
        JOptionPane.showMessageDialog (null, "Cat's game!", "Cat's game!", JOptionPane.INFORMATION_MESSAGE);
    }
}
```

The method is called at the bottom of actionPerformed or in the updateBoard method, whichever you prefer.

Fill in the remaining Boolean expressions and the option panes.

```
public void win() {
    //board [x][y] holds 'b' if empty; 'x' if X holds square, 'o' if O holds square
    char winner = 'n';
    if (board[0][0] == board[0][1] && board[0][0] == board[0][2] && board[0][0] != 'b')
        winner = board[0][0];
    else if (board[1][0] == board[1][1] && board[ ][ ] == board[1][2] && board[1][0] != 'b')
        winner = board[1][0];
    else if (board[2][0] == board[2][1] && board[ ][ ] == board[2][2] && board[ ][ ] != 'b')
        winner = board[2][0];
    else if (board[0][0] == board[1][0] && board[ ][ ] == board[2][0] && board[ ][ ] != 'b')
        winner = board[0][0];
    else if (board[0][1] == board[1][1] && board[ ][ ] == board[2][1] && board[ ][ ] != 'b')
        winner = board[0][1];
    else if (board[0][2] == board[1][2] && board[ ][ ] == board[2][2] && board[ ][ ] != 'b')
        winner = board[0][2];
    else if (board[0][0] == board[1][1] && board[1][1] == board[ ][ ] && board[1][1] != 'b')
        winner = board[1][1];
    else if (board[0][2] == board[1][1] && board[1][1] == board[ ][ ] && board[0][2] != 'b')
        winner = board[0][2];
    //cat's game
    else if (board[ ][ ] != 'b' && board[ ][ ] != 'b' && board[ ][ ] != 'b' &&
        board[1][0] != 'b' && board[1][1] != 'b' && board[1][2] != 'b' &&
        board[ ][ ] != 'b' && board[ ][ ] != 'b' && board[ ][ ] != 'b')
        winner = 't';

    if (winner == 'x') {
        JOptionPane.showMessageDialog (null, "_____ ", "X wins!", JOptionPane.INFORMATION_MESSAGE);
    } else if (winner == 'o') {
        JOptionPane.showMessageDialog (null, "_____ ", "O wins!", JOptionPane.INFORMATION_MESSAGE);
    } else if (winner == 't') {
        JOptionPane.showMessageDialog (null, "_____ ", "Cat's game!", JOptionPane.INFORMATION_MESSAGE);
    }
}
```