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//Packages imported
package tictacto;
import java.lang.reflect.Array;
import java.util.Scanner;

public class TicTacTo {

	//setting all of the moves and turns
	int o_win = 0;
	int x_win = 0;
	int[][] board = new int[3][3];
	final int BLANK = 0;
	final int X_MOVE = 1;
	final int O_MOVE = 2;
	final int O_TURN = 1;
	final int X_TURN = 0;
	int turn = X_TURN;

	Scanner scanner;
	String input = "";

	public TicTacTo() {
		//how the game runs and moves the pieces
		scanner = new Scanner(System.in);
		boolean stillplaying = true;
		while (stillplaying == true) {
			while (checkWin(X_MOVE) == false && checkWin(O_MOVE) == false &&
checkTie() == false) {
				printBoard();
				input = scanner.nextLine();
				if (input.length() != 2) {
					System.out.println("Enter a letter followed by a
number");
				}
				else if (input.charAt(0) != 'a' &&
						input.charAt(0) != 'b' &&
						input.charAt(0) != 'c') {
					System.out.println("Row must be an a, b, or c. ");
				}
				else if (input.charAt(1) != '1' &&
						input.charAt(1) != '2' &&
						input.charAt(1) != '3') {
					System.out.println("Column must be an 1, 2, or 3. ");
				}
				else {
					int row = input.charAt(0) - 'a';
					int column = input.charAt(1) - '1';
					if (board[row][column] == BLANK) {
						if (turn == X_TURN) {
							board[row][column] = X_MOVE;
							turn = O_TURN;
						}
						else {
							board[row][column] = O_MOVE;
							turn = X_TURN;
						}
					}
					else {
						System.out.println("There is a piece there!");
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                        }
                  }
            }
            //Checks wins and ties
            if (checkWin(X_MOVE) == true) {
                  x_win++;
                  printBoard();
                  System.out.println("X wins!");
                  System.out.println("Play Again? yes or no");
                  Scanner scanner1 = new Scanner(System.in);
                  String playagain = scanner1.nextLine();
                  if (playagain.equals("yes")) {
                        resetBoard();
                  }
                  else {
                        stillplaying = false;
                        System.out.println("X Win : " + String.valueOf(x_win)
+ "\t" + "O Win : " + String.valueOf(o_win));
                  }
            }
            else if (checkWin(O_MOVE) == true) {
                  o_win++;
                  printBoard();
                  System.out.println("O wins!");
                  System.out.println("Play Again? yes or no");
                  Scanner scanner1 = new Scanner(System.in);
                  String playagain = scanner1.nextLine();
                  if (playagain.equals("yes")) {
                        resetBoard();
                  }
                  else {
                        stillplaying = false;
                        System.out.println("X Win : " + String.valueOf(x_win)
+ "\t" + "O Win : " + String.valueOf(o_win));
                  }
            }
            else {
                  printBoard();
                  System.out.println("Tie!");
                  System.out.println("O wins!");
                  System.out.println("Play Again? yes or no");
                  Scanner scanner1 = new Scanner(System.in);
                  String playagain = scanner1.nextLine();
                  if (playagain.equals("yes")) {
                        resetBoard();
                  }
                  else {
                        stillplaying = false;
                        System.out.println("X Win : " + String.valueOf(x_win)
+ "\t" + "O Win : " + String.valueOf(o_win));
                  }
            }
      }
}

public static void main(String[] args) {
      new TicTacTo();
}
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	//resets the board
	public void resetBoard() {
		for (int row = 0; row < board.length; row++) {
			String output = (char)('a'+row) + "\t";
			for (int column = 0; column < board[0].length; column++) {
				if (board[row][column] == X_MOVE) {
					board[row][column] = BLANK;
				}
				else if (board[row][column] == O_MOVE) {
					board[row][column] = BLANK;
				}

			}
		}
	}

	//prints and sets the board
	public void printBoard() {
		System.out.println(" \t1\t2\t3");
		for (int row = 0; row < board.length; row++) {
			String output = (char)('a'+row) + "\t";
			for (int column = 0; column < board[0].length; column++) {
				if (board[row][column] == BLANK) {
					output += " \t";
				}
				else if (board[row][column] == X_MOVE) {
					output += "X\t";
				}
				else if (board[row][column] == O_MOVE) {
					output += "O\t";
				}
			}

			System.out.println(output);
		}
	}


	//wins conditions
	public boolean checkWin(int player) {
		if (board[0][0] == player && board[0][1] == player && board[0][2] ==
player) {
			return true;
		}
		if (board[1][0] == player && board[1][1] == player && board[1][2] ==
player) {
			return true;
		}
		if (board[2][0] == player && board[2][1] == player && board[2][2] ==
player) {
			return true;
		}
		if (board[0][0] == player && board[1][0] == player && board[2][0] ==
player) {
			return true;
		}
		if (board[0][1] == player && board[1][1] == player && board[2][1] ==
player) {
			return true;
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            }
            if (board[0][2] == player && board[1][2] == player && board[2][2] ==
player) {
                  return true;
            }
            if (board[0][0] == player && board[1][1] == player && board[2][2] ==
player) {
                  return true;
            }
            if (board[2][0] == player && board[1][1] == player && board[0][2] ==
player) {
                  return true;
            }
            return false;
      }

      //checks for tie
      public boolean checkTie() {
            for (int row = 0; row < board.length; row++) {
                  for (int column = 0; column < board.length; column++) {
                        if (board[row][column] == BLANK) {
                              return false;
                        }
                  }
            }
            return true;
      }
}
```