import javax.swing.JButton;

import javax.swing.JFrame;

import javax.swing.JOptionPane;

import javax.swing.JTextField;

public class TicTacToeGUI extends javax.swing.JFrame {

private int[] board; // Array to store the current state of the game

private boolean xTurn; // Indicates whether it's X's turn or not

public TicTacToeGUI() {

initComponents();

initializeBoard();

}

private void initializeBoard() {

board = new int[9];

xTurn = true;

}

private void checkBoard() {

// Define winning combinations

int[][] winningCombinations = {

{0, 1, 2}, {3, 4, 5}, {6, 7, 8}, // Rows

{0, 3, 6}, {1, 4, 7}, {2, 5, 8}, // Columns

{0, 4, 8}, {2, 4, 6} // Diagonals

};

// Check for winning combinations

for (int[] combination : winningCombinations) {

int pos1 = combination[0];

int pos2 = combination[1];

int pos3 = combination[2];

if (board[pos1] != 0 && board[pos1] == board[pos2] && board[pos2] == board[pos3]) {

String winner = (board[pos1] == 1) ? "X" : "O";

JOptionPane.showMessageDialog(this, winner + " wins!");

clearBoard();

return;

}

}

// Check for a tie

boolean isTie = true;

for (int i = 0; i < board.length; i++) {

if (board[i] == 0) {

isTie = false;

break;

}

}

if (isTie) {

JOptionPane.showMessageDialog(this, "It's a tie!");

clearBoard();

}

}

private void clearBoard() {

for (int i = 0; i < board.length; i++) {

board[i] = 0;

JTextField textField = getFieldByIndex(i);

textField.setText("");

}

}

private JTextField getFieldByIndex(int index) {

switch (index) {

case 0: return jTextField1;

case 1: return jTextField2;

case 2: return jTextField3;

case 3: return jTextField4;

case 4: return jTextField5;

case 5: return jTextField6;

case 6: return jTextField7;

case 7: return jTextField8;

case 8: return jTextField9;

default: return null;

}

}

private void makeMove(int position) {

JTextField textField = getFieldByIndex(position);

if (textField.getText().isEmpty()) {

int value = xTurn ? 1 : 2;

board[position] = value;

textField.setText(xTurn ? "X" : "O");

xTurn = !xTurn;

checkBoard();

}

}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {

makeMove(0);

}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {

makeMove(1);

}

// ... Similarly, define actionPerformed() methods for jButton3 to jButton9

private void initComponents() {

// Initialize GUI components using NetBeans GUI Builder

jButton1 = new JButton();

jButton2 = new JButton();

jButton3 = new JButton();

jButton4 = new JButton();

jButton5 = new JButton();

jButton6 = new JButton();

jButton7 = new JButton();

jButton8 = new JButton();

jButton9 = new JButton();

jTextField1 = new JTextField();

jTextField2 = new JTextField();

jTextField3 = new JTextField();

jTextField4 = new JTextField();

jTextField5 = new JTextField();

jTextField6 = new JTextField();

jTextField7 = new JTextField();

jTextField8 = new JTextField();

jTextField9 = new JTextField();

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

jButton1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton1ActionPerformed(evt);

}

});

// ... Similarly, define addActionListener() methods for jButton2 to jButton9

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());

getContentPane().setLayout(layout);

layout.setHorizontalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jTextField2, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jTextField3, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGroup(layout.createSequentialGroup()

.addComponent(jTextField4, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jTextField5, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jTextField6, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGroup(layout.createSequentialGroup()

.addComponent(jTextField7, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jTextField8, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jTextField9, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jButton1, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton2, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton3, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton4, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton5, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton6, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton7, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton8, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton9, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addContainerGap(15, Short.MAX\_VALUE))

);

layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jTextField2, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jTextField3, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jTextField4, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jTextField5, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jTextField7, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jTextField8, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)))

.addGroup(layout.createSequentialGroup()

.addComponent(jTextField6, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(18, 18, 18)

.addComponent(jTextField9, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)))))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton4, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jButton5, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton6, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton7, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jButton8, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton9, javax.swing.GroupLayout.PREFERRED\_SIZE, 60, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addContainerGap(18, Short.MAX\_VALUE))

);

pack();

}

public static void main(String args[]) {

java.awt.EventQueue.invokeLater(new Runnable() {

public void run() {

new TicTacToeGUI().setVisible(true);

}

});

}

// Variables declaration

private JButton jButton1;

private JButton jButton2;

private JButton jButton3;

private JButton jButton4;

private JButton jButton5;

private JButton jButton6;

private JButton jButton7;

private JButton jButton8;

private JButton jButton9;

private JTextField jTextField1;

private JTextField jTextField2;

private JTextField jTextField3;

private JTextField jTextField4;

private JTextField jTextField5;

private JTextField jTextField6;

private JTextField jTextField7;

private JTextField jTextField8;

private JTextField jTextField9;

// End of variables declaration

}