

Not part of the test.

X. Consider this win method from a tic tac toe game.

public void win () {

if (b [0] [0] != 'x' && b [0] [0] == b [0] [1] [1] && b [0] [1] [1] == b [0] [2] [2]) {

JOptionPane.showMessageDialog (null, w, "Horizontal Win", JOptionPane.ERROR_MESSAGE);

button [0] [0].setEnabled (false);

button [0] [1].setEnabled (false);

button [0] [2].setEnabled (false);

}

if (b [1] [0] != 'x' && b [1] [0] == b [1] [1] [1] && b [1] [1] [1] == b [1] [2] [2]) {

JOptionPane.showMessageDialog (null, w, "Horizontal Win", JOptionPane.ERROR_MESSAGE);

button [1] [0].setEnabled (false);

button [1] [1].setEnabled (false);

button [1] [2].setEnabled (false);

}

if (b [2] [0] != 'x' && b [2] [0] == b [2] [1] [1] && b [2] [1] [1] == b [2] [2] [2]) {

JOptionPane.showMessageDialog (null, w, "Horizontal Win", JOptionPane.ERROR_MESSAGE);

button [2] [0].setEnabled (false);

button [2] [1].setEnabled (false);

button [2] [2].setEnabled (false);

}

if (b [0] [0] != 'x' && b [0] [0] == b [1] [1] [0] && b [1] [1] [0] == b [2] [2] [0]) {

JOptionPane.showMessageDialog (null, w, "Vertical Win", JOptionPane.ERROR_MESSAGE);

button [0] [0].setEnabled (false);

button [1] [0].setEnabled (false);

button [2] [0].setEnabled (false);

}

if (b [0] [1] != 'x' && b [0] [1] == b [1] [1] [1] && b [1] [1] [1] == b [2] [1] [1]) {

JOptionPane.showMessageDialog (null, w, "Vertical Win", JOptionPane.ERROR_MESSAGE);

button [0] [1].setEnabled (false);

button [1] [1].setEnabled (false);

button [2] [1].setEnabled (false);

}

if (b [0] [2] != 'x' && b [0] [2] == b [1] [2] [2] && b [1] [2] [2] == b [2] [2] [2]) {

JOptionPane.showMessageDialog (null, w, "Vertical Win", JOptionPane.ERROR_MESSAGE);

button [0] [2].setEnabled (false);

button [1] [2].setEnabled (false);

button [2] [2].setEnabled (false);

}

if (b [0] [0] != 'x' && b [0] [0] == b [1] [1] [1] && b [1] [1] [1] == b [2] [2] [2]) {

JOptionPane.showMessageDialog (null, w, "Diagonal Win", JOptionPane.ERROR_MESSAGE);

button [0] [0].setEnabled (false);

button [1] [1].setEnabled (false);

button [2] [2].setEnabled (false);

}

if (b [0] [2] != 'x' && b [0] [2] == b [1] [1] [1] && b [1] [1] [1] == b [2] [0] [0]) {

JOptionPane.showMessageDialog (null, w, "Diagonal Win", JOptionPane.ERROR_MESSAGE);

button [0] [2].setEnabled (false);

button [1] [1].setEnabled (false);

button [2] [0].setEnabled (false);

}

if (b [0] [0] != 'x' && b [0] [0] == b [1] [1] [1] && b [1] [1] [1] == b [2] [0] [0]) {

JOptionPane.showMessageDialog (null, w, "Diagonal Win", JOptionPane.ERROR_MESSAGE);

button [0] [0].setEnabled (false);

button [1] [1].setEnabled (false);

button [2] [0].setEnabled (false);

}

You are going to ask for a second question for practice, so this is it.

(a) Circle 8 sets of repeated code in the before section.

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(b) Rewrite the win method to call the oneline method (coded in part c).

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public void win () {

oneline(0, 0, 0, 1, 0, 2, Horizontal Win);

oneline(1, 0, 0, 1, 1, 2, Horizontal Win);

oneline(2, 0, 0, 2, 1, 2, Horizontal Win);

oneline(0, 0, 0, 1, 0, 2, Vertical Win);

oneline(0, 0, 1, 1, 1, 2, Vertical Win);

oneline(0, 2, 1, 2, 2, 2, Vertical Win);

oneline(0, 0, 0, 1, 1, 2, Diagonal Win);

oneline(0, 2, 1, 1, 2, 0, Diagonal Win);

}

(c) Write the oneline method using the parameters given.

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public void oneline(int x1, int y1, int x2, int y2, int x3, int y3, String dir)

{

if (b[x1][y1] != 'b' &&

b[x1][y1] == b[x2][y2] && b[x2][y2] == b[x3][y3])

{

String w = b[x1][y1] + " has won!";

JOptionPane.showMessageDialog(null, w,

dir, JOptionPane.ERROR_MESSAGE);

button[x1][y1].setEnabled(false);

button[x2][y2].setEnabled(false);

button[x3][y3].setEnabled(false);

}