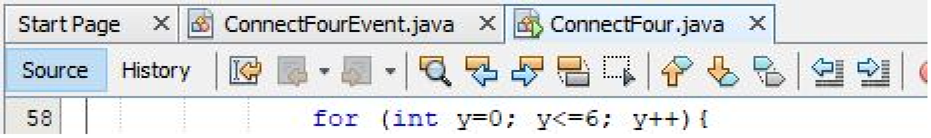
Connect 4 Manual

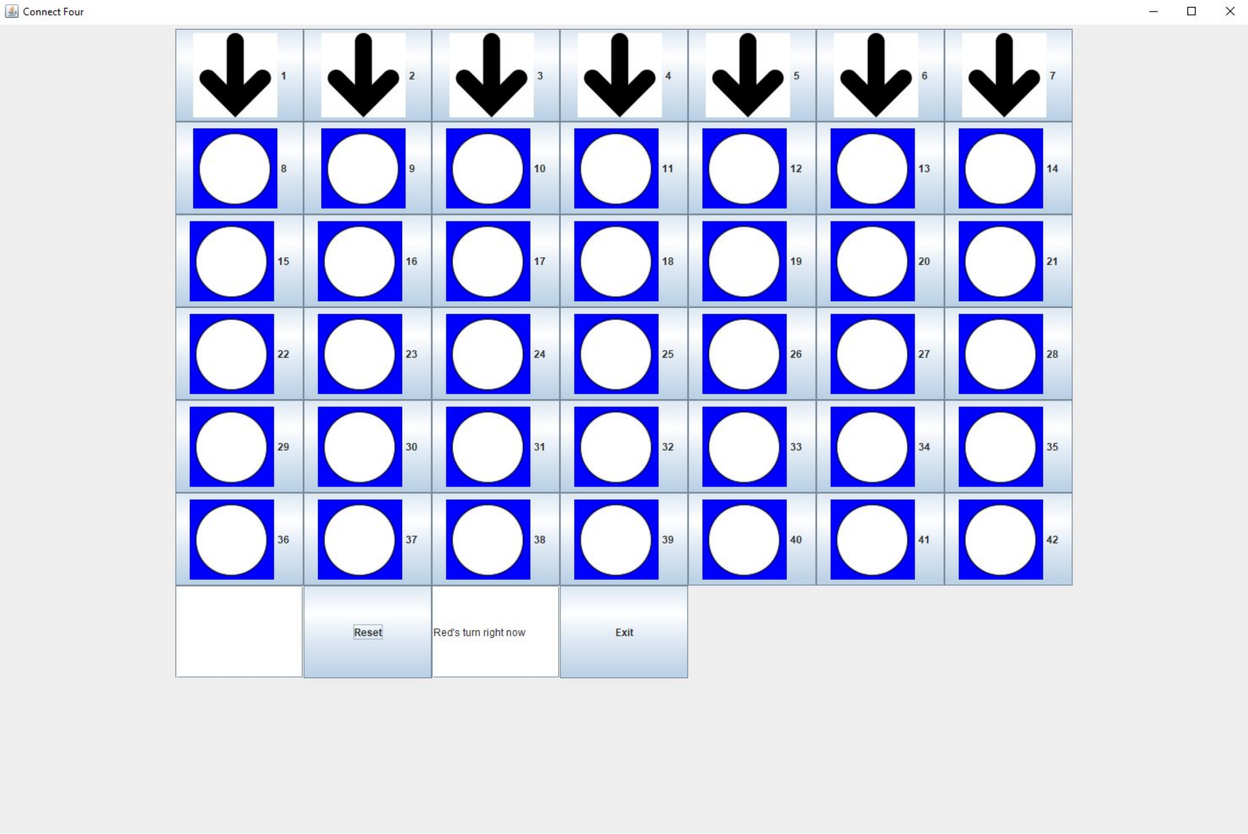
Description: This Connect 4 is a two player connection game where each player gets a colour and take turns placing their piece in a column where the piece falls to the bottom of the column. The purpose of the game is to win by getting 4 of your colour in a row horizontally, vertically, or diagonally. This version of Connect 4 is meant for 2 human players.

Instructions:

The program must run from the ConnectFour.java file as ConnectFourEvent.java does not have a main class. When ConnectFour.java is runs you will be met with the game board which opens the panel:

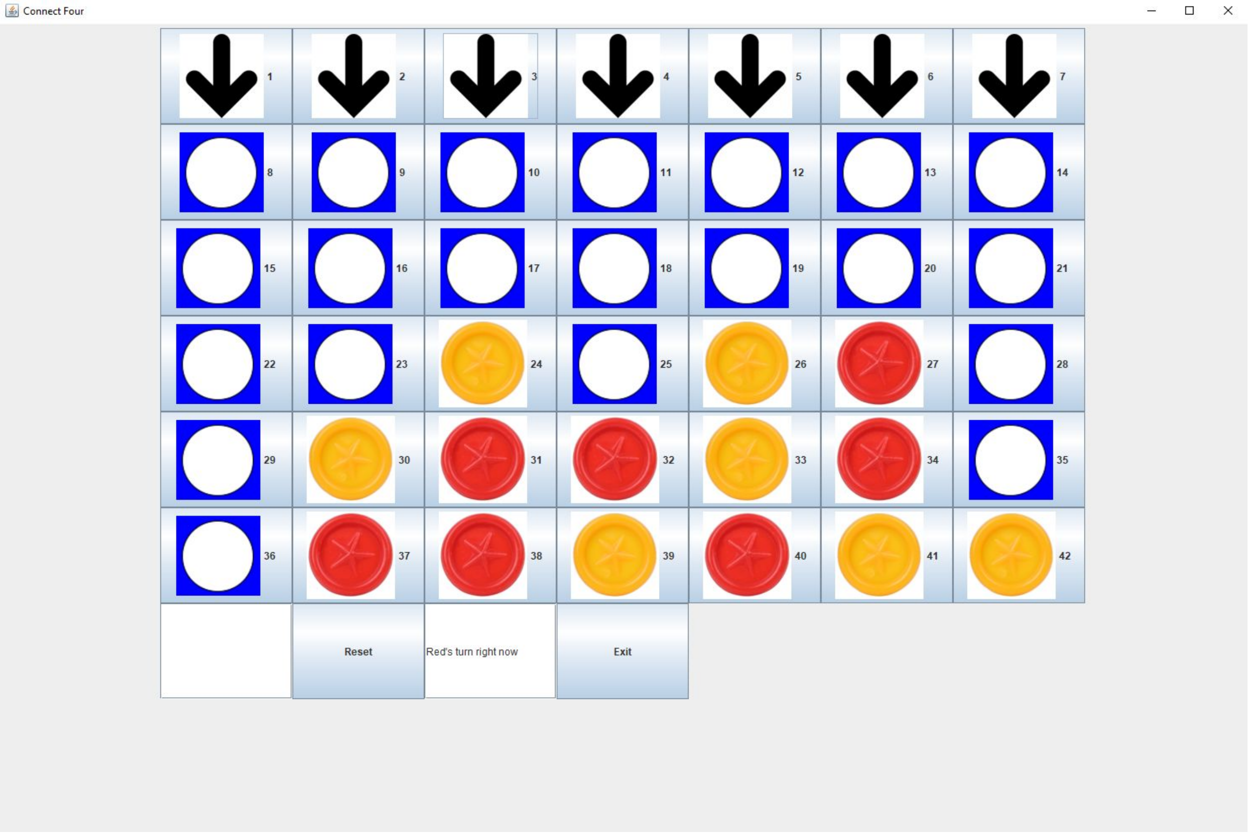


```
                for (int y=0; y<=6; y++){
```



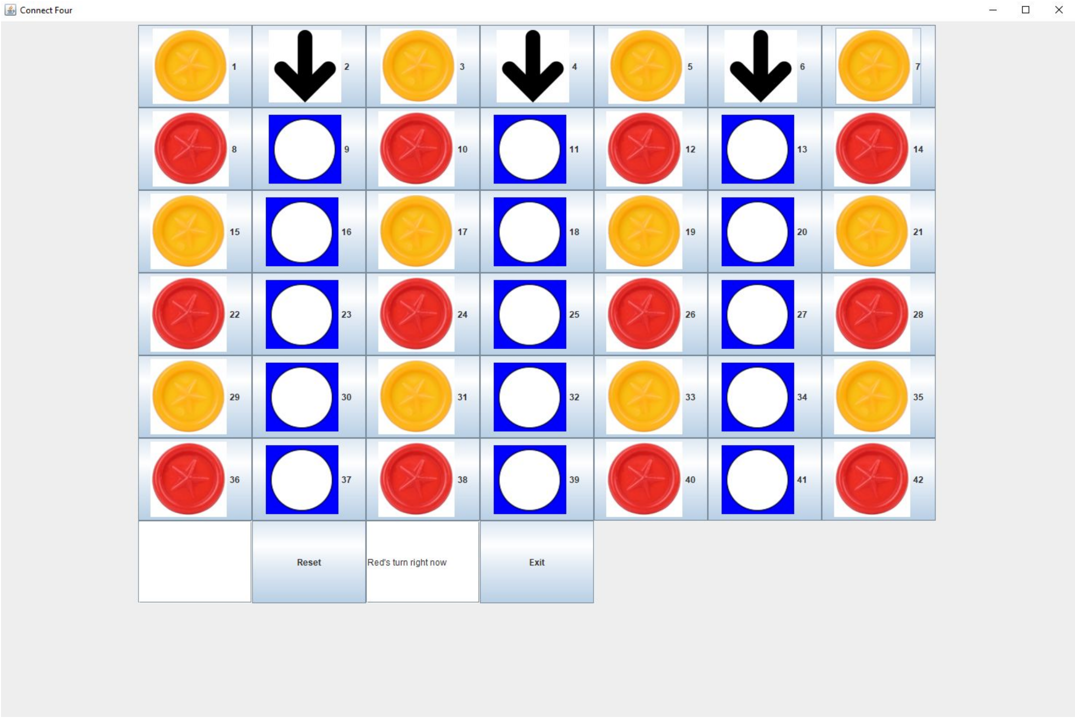
Red's turn right now

To play the game, red will go first then yellow then red etc… until a winner is found. To make a move you MUST click the arrows at the top. When plays are made the 2nd blank box will announce whose turn it is:



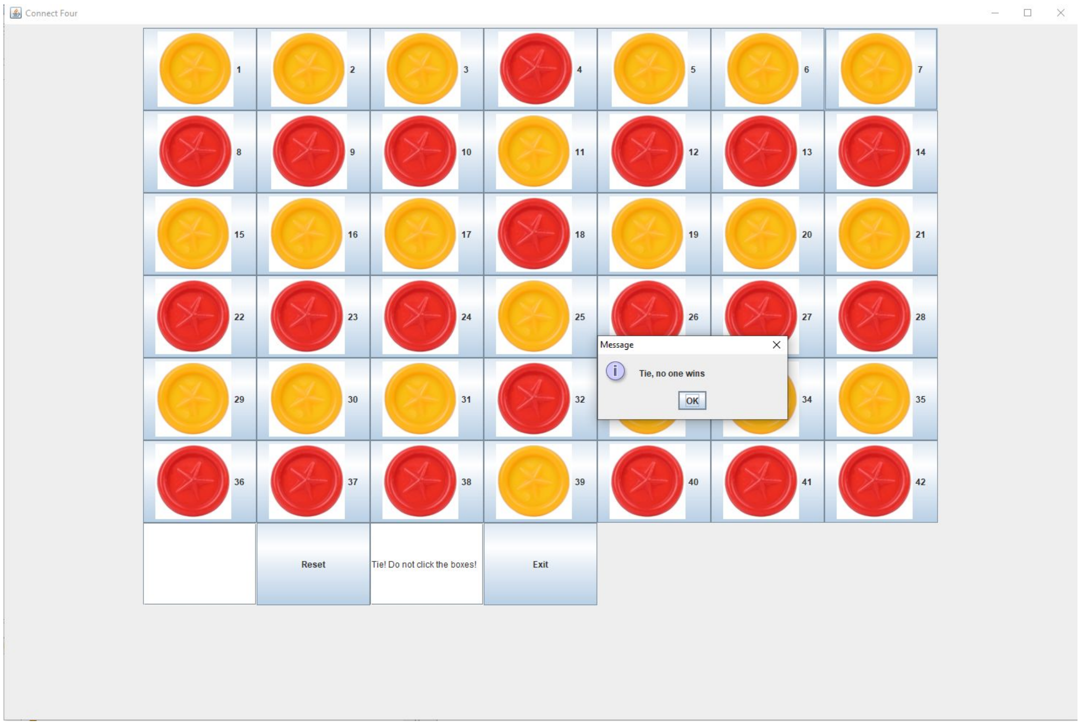
Red's turn right now

The arrow is the max spot allowed to be clicked, the arrow box can be filled with a piece removing the arrow and replacing with the piece depending on whose turn it is:



Red's turn right now

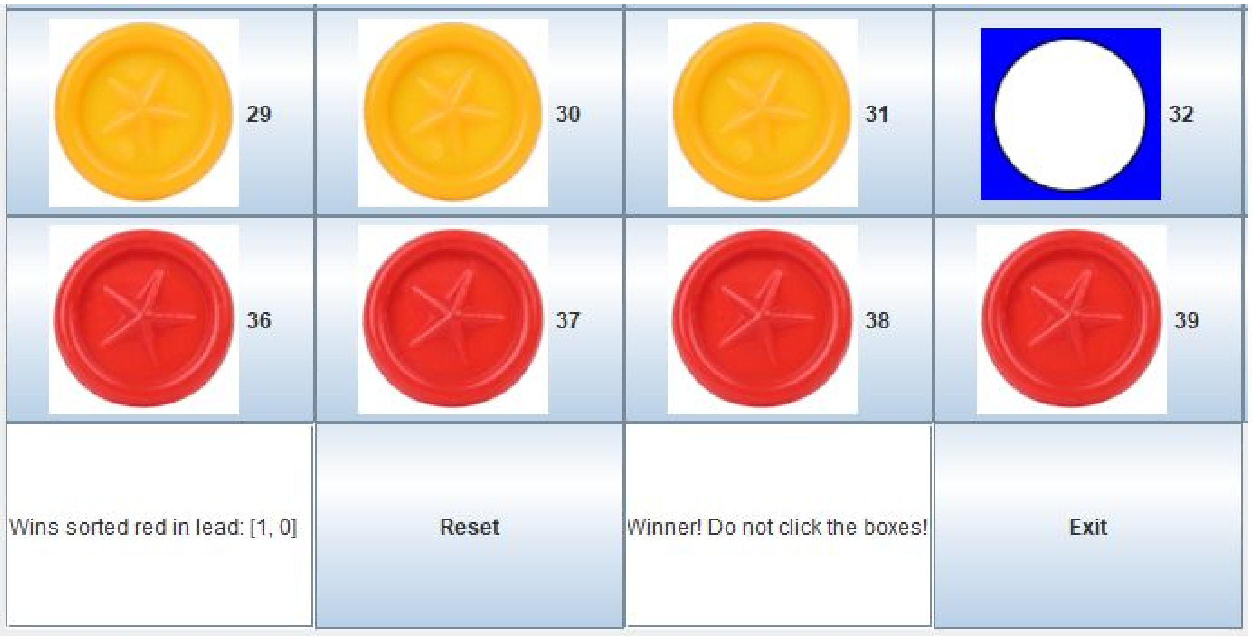
When a player wins or ties a pop announcing a winner or tie will appear and the second blank box where it announces turns says there is a winner or tie and informs the player not to click anymore boxes.



Tie, no one wins

Tie! Do not click the boxes!

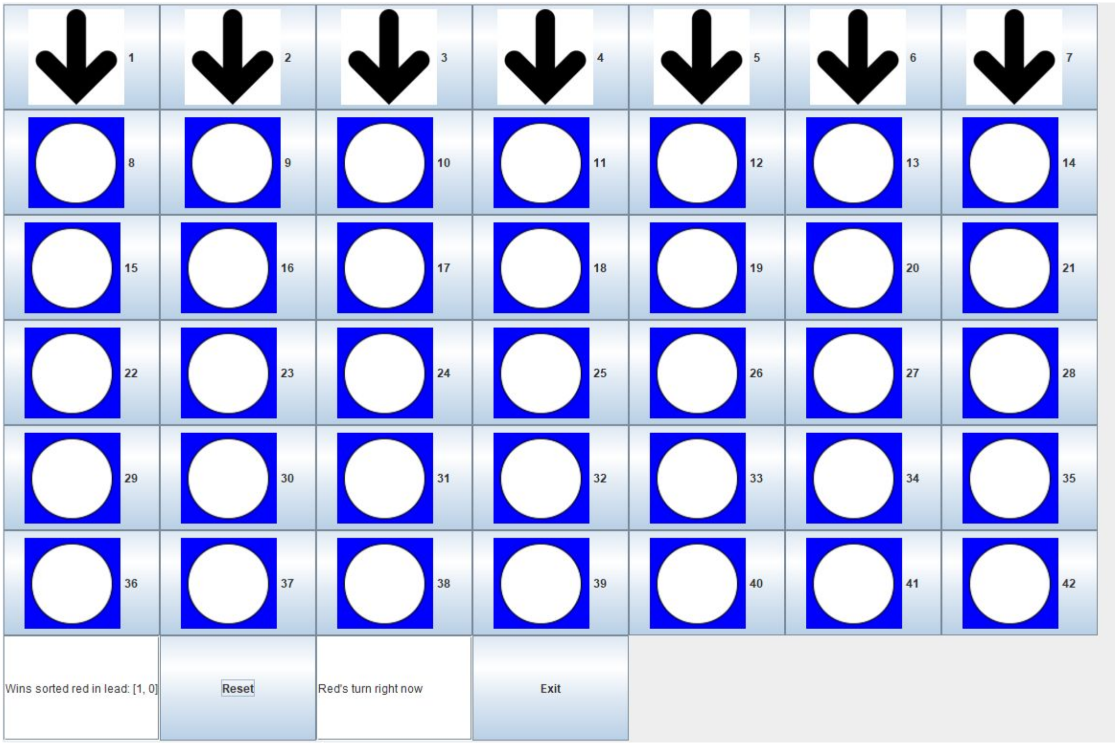
When someone wins the first box sorts the wins and tells player who is in the lead (red or yellow).



Wins sorted red in lead: [1, 0]

Winner! Do not click the boxes!

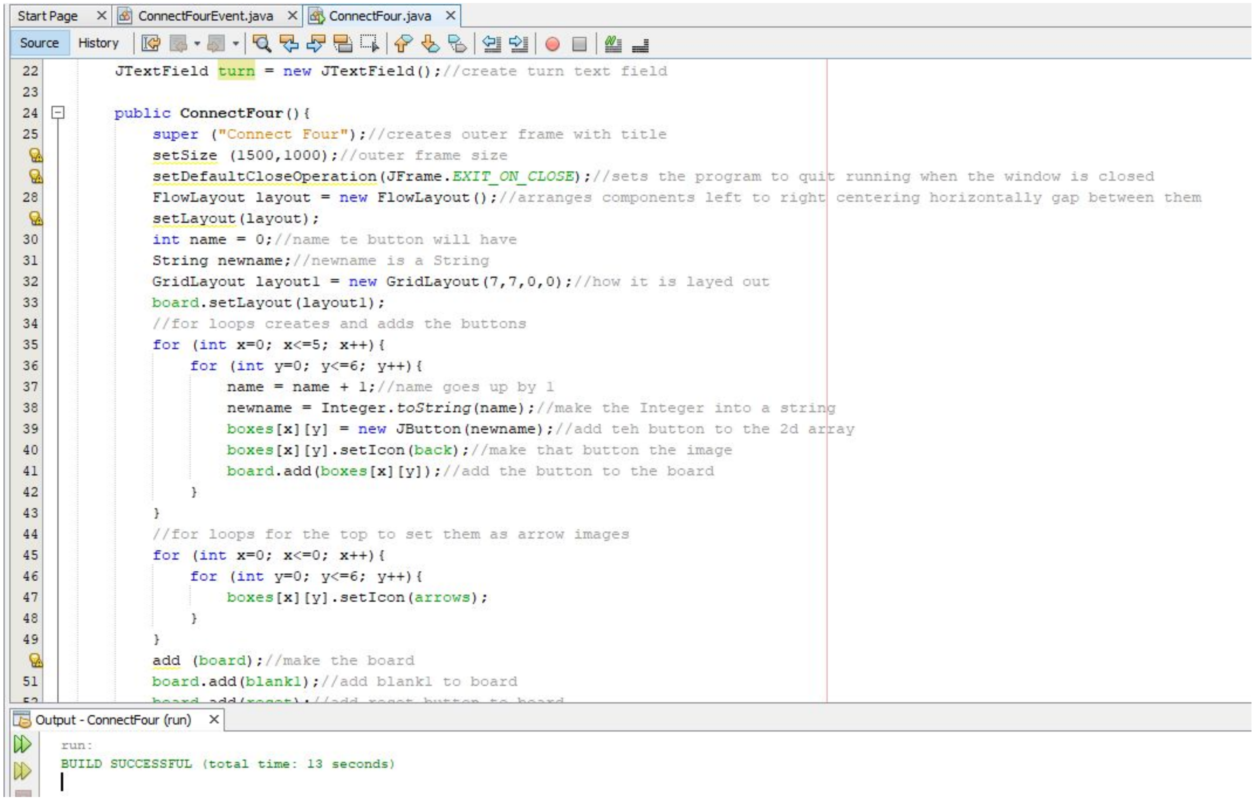
When the reset button is hit a new board will be presented with the first box still showing the wins:



Wins sorted red in lead: [1, 0]

Red's turn right now

Clicking the exit button will leave the board and close the panel and exiting the program:



```
    JTextField turn = new JTextField();//create turn text field

    public ConnectFour(){
        super ("Connect Four");//creates outer frame with title
        setSize (1500,1000);//outer frame size
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);//sets the program to quit running when the window is closed
        FlowLayout layout = new FlowLayout();//arranges components left to right centering horizontally gap between them
        setLayout(layout);
        int name = 0;//name te button will have
        String newname;//newname is a String
        GridLayout layout1 = new GridLayout(7,7,0,0);//how it is layed out
        board.setLayout(layout1);
        //for loops creates and adds the buttons
        for (int x=0; x<=5; x++){
            for (int y=0; y<=6; y++){
                name = name + 1;//name goes up by 1
                newname = Integer.toString(name);//make the Integer into a string
                boxes[x][y] = new JButton(newname);//add teh button to the 2d array
                boxes[x][y].setIcon(back);//make that button the image
                board.add(boxes[x][y]);//add the button to the board
            }
        }
        //for loops for the top to set them as arrow images
        for (int x=0; x<=0; x++){
            for (int y=0; y<=6; y++){
                boxes[x][y].setIcon(arrows);
            }
        }
        add (board);//make the board
        board.add(blank1);//add blank1 to board
        board.add(reset);//add reset button to board
```

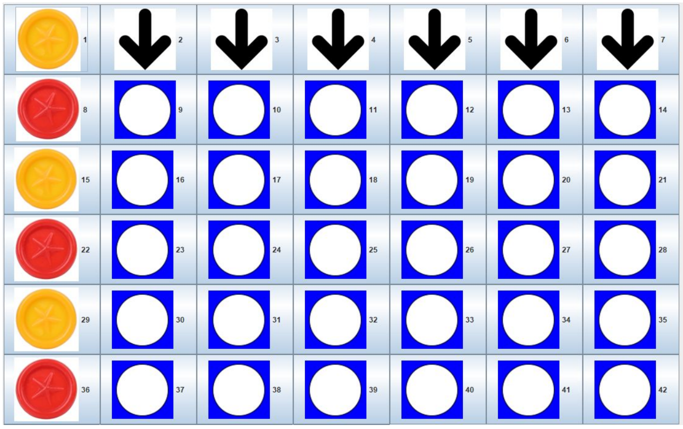
```
run:
BUILD SUCCESSFUL (total time: 13 seconds)
```

Limitations:

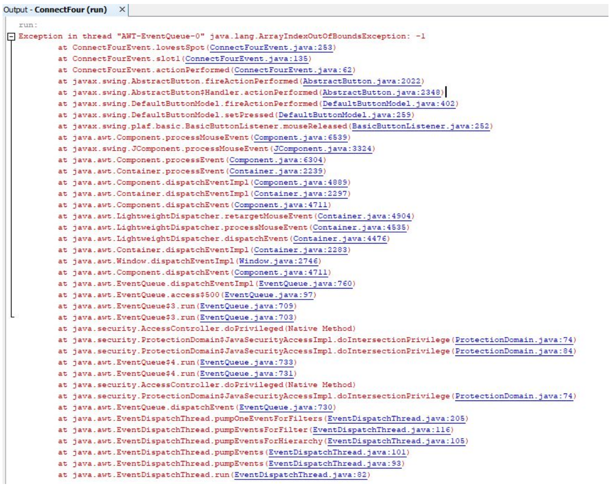
After a winner is found and any box/button is clicked, it will count it as another win for the player that won. (If red won and you click one of the arrows or ANY button on the board, the winner popup will come up and count it as a win in the win sort box).

The only way to place a piece is by clicking the arrow button, this is to minimise code so I do not need to code 42 buttons which would result in too much code (over 800 lines). This way there is only code for 7 buttons.

When the next available box is the arrow box, the piece will the arrow box (which is what should happen) but if you click the button where the arrow was, the output box will write out an error but the game still works perfectly fine.

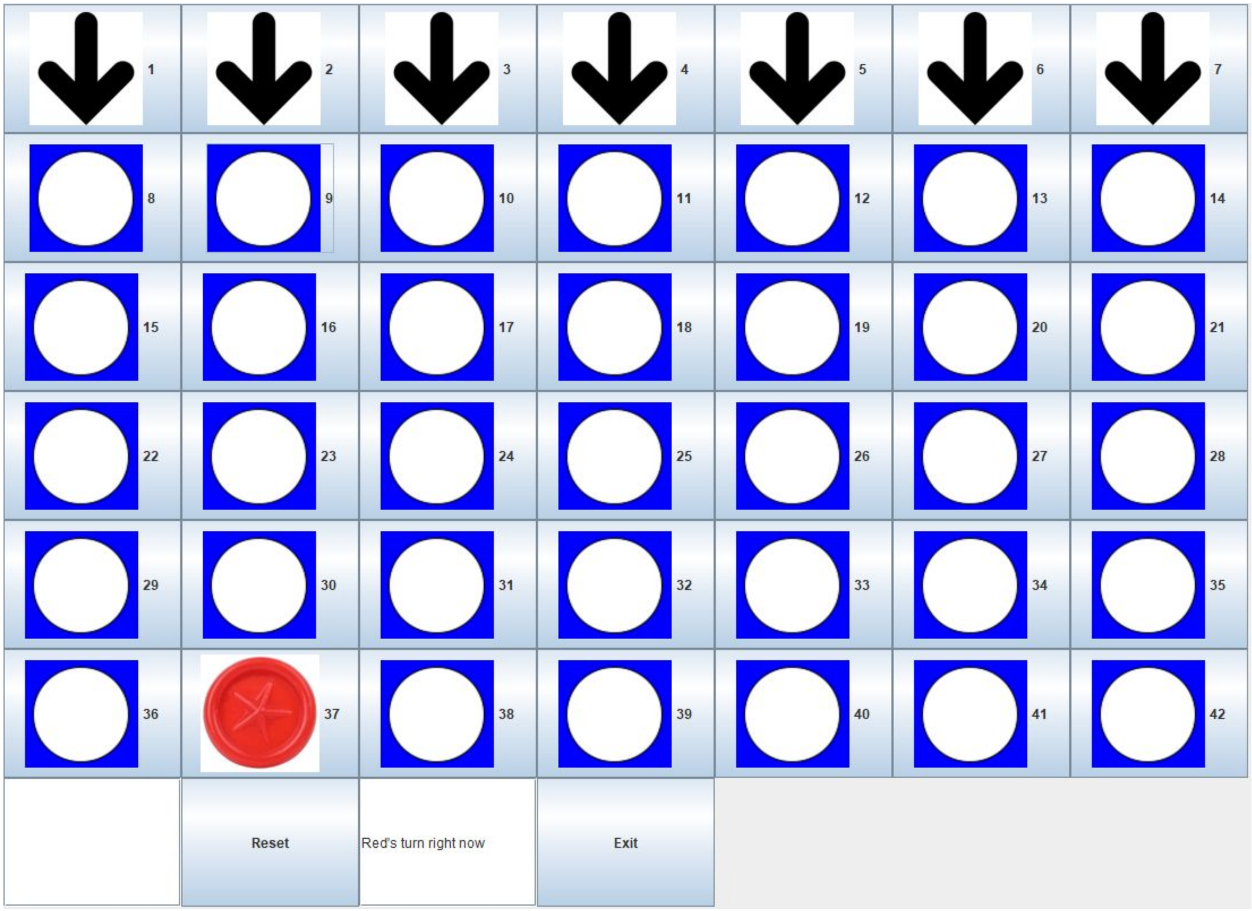


(clicking the yellow piece at the very top will make the output box print out that error but the game will still work perfectly)



```
run:
Exception in thread "AWT-EventQueue-0" java.lang.ArrayIndexOutOfBoundsException: -1
        at ConnectFourEvent.lowestSpot(ConnectFourEvent.java:253)
        at ConnectFourEvent.slot1(ConnectFourEvent.java:135)
        at ConnectFourEvent.actionPerformed(ConnectFourEvent.java:62)
        at javax.swing.AbstractButton.fireActionPerformed(AbstractButton.java:2022)
        at javax.swing.AbstractButton$Handler.actionPerformed(AbstractButton.java:2348)
        at javax.swing.DefaultButtonModel.fireActionPerformed(DefaultButtonModel.java:402)
        at javax.swing.DefaultButtonModel.setPressed(DefaultButtonModel.java:259)
        at javax.swing.plaf.basic.BasicButtonListener.mouseReleased(BasicButtonListener.java:252)
        at java.awt.Component.processMouseEvent(Component.java:6539)
        at javax.swing.JComponent.processMouseEvent(JComponent.java:3324)
        at java.awt.Component.processEvent(Component.java:6304)
        at java.awt.Container.processEvent(Container.java:2239)
        at java.awt.Component.dispatchEventImpl(Component.java:4889)
        at java.awt.Container.dispatchEventImpl(Container.java:2297)
        at java.awt.Component.dispatchEvent(Component.java:4711)
        at java.awt.LightweightDispatcher.retargetMouseEvent(Container.java:4904)
        at java.awt.LightweightDispatcher.processMouseEvent(Container.java:4535)
        at java.awt.LightweightDispatcher.dispatchEvent(Container.java:4476)
        at java.awt.Container.dispatchEventImpl(Container.java:2283)
        at java.awt.Window.dispatchEventImpl(Window.java:2746)
        at java.awt.Component.dispatchEvent(Component.java:4711)
        at java.awt.EventQueue.dispatchEventImpl(EventQueue.java:760)
        at java.awt.EventQueue.access$500(EventQueue.java:97)
        at java.awt.EventQueue$3.run(EventQueue.java:709)
        at java.awt.EventQueue$3.run(EventQueue.java:703)
        at java.security.AccessController.doPrivileged(Native Method)
        at java.security.ProtectionDomain$JavaSecurityAccessImpl.doIntersectionPrivilege(ProtectionDomain.java:74)
        at java.security.ProtectionDomain$JavaSecurityAccessImpl.doIntersectionPrivilege(ProtectionDomain.java:84)
        at java.awt.EventQueue$4.run(EventQueue.java:733)
        at java.awt.EventQueue$4.run(EventQueue.java:731)
        at java.security.AccessController.doPrivileged(Native Method)
        at java.security.ProtectionDomain$JavaSecurityAccessImpl.doIntersectionPrivilege(ProtectionDomain.java:74)
        at java.awt.EventQueue.dispatchEvent(EventQueue.java:730)
        at java.awt.EventDispatchThread.pumpOneEventForFilters(EventDispatchThread.java:205)
        at java.awt.EventDispatchThread.pumpEventsForFilter(EventDispatchThread.java:116)
        at java.awt.EventDispatchThread.pumpEventsForHierarchy(EventDispatchThread.java:105)
        at java.awt.EventDispatchThread.pumpEvents(EventDispatchThread.java:101)
        at java.awt.EventDispatchThread.pumpEvents(EventDispatchThread.java:93)
        at java.awt.EventDispatchThread.run(EventDispatchThread.java:82)
```

When it is red or yellow turn and you click one of the blue empty buttons, the turn box will say it is the other player’s turn instead. The box will print out the right turn after a correct click (clicking on the arrow).



Red's turn right now

Hitting reset is meant to reset the board, not the number of wins. The only way to reset the number of wins is by exiting. This is something I was not able to achieve. I had mentioned in the scope doc that the first to 7(?) wins will be the winner and the game will restart. Instead my game is infinite until the exit button is hit. This ended up helping me cause the XML file stores wins OF THE CURRENT SESSION. This means if the first game red has 2 wins yellow has 0. Then the XML file will say that. Then after quitting and starting the game again, until the exit button is hit, the XML file will not update.