```java
1   /*
2    * David Lim
3    * 9/26/22
4    * Star Patterns
5    */
6
7   import javax.swing.*;
8   import java.awt.*;
9   import java.awt.event.ActionListener;
10  import java.security.cert.X509CRLSelector;
11  import java.util.Arrays;
12  import java.awt.event.ActionEvent;
13
14  public class Main extends JFrame implements ActionListener{
15      JTextArea txaOutput = new JTextArea("", 10, 30);
16      JButton btn1 = new JButton("1");
17      JButton btn2 = new JButton("2");
18      JButton btn3 = new JButton("3");
19      String[][] starArray = new String[10][10];
20      public static void main(String[] args){
21          Main frame = new Main();
22          frame.setSize(500,500);
23          frame.setVisible(true);
24      }
25
26      public Main(){
27          super("Star Patterns");
28          setDefaultCloseOperation(EXIT_ON_CLOSE);
29          setLayout(new FlowLayout());
30          add(txaOutput);
31          add(btn1);
32          add(btn2);
33          add(btn3);
34
35          btn1.addActionListener(this);
36          btn2.addActionListener(this);
37          btn3.addActionListener(this);
38
39      }
40
41      public void actionPerformed(ActionEvent event){
42          Object objSource = event.getSource();
43          String outputString = "";
44
45          if (objSource == btn1){
46              for(int i=1; i <= 10; i ++){
47                  for(int x=1; x <= i; x++){
48                      outputString += "*" ;
49                  }
50                  outputString+="\n";
51                  txaOutput.setText(outputString);
52              }
53          }
54
55          if (objSource == btn2){
56              for (int i=1; i<=10; i++){
57                  for(int x=10; x>=i; x--){
```

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58                      outputString += "*";
59                  }
60              outputString+="\n";
61              txaOutput.setText(outputString);
62          }
63      }

65      if (objSource == btn3){
66          for (int i=1; i<=10; i++){
67              for(int x=1; x<=i; x++){
68                  outputString += "   ";

70              }
71              for(int k=10; k>i; k--){
72                  outputString += "*";
73              }
74              outputString+="\n";
75              txaOutput.setText(outputString);
76          }
77      }
78  }
79 }
80
```