

ActionEvent's getSource() method

```
import java.awt.*;
import java.awt.event.*;
import java.awt.Color;
import javax.swing.*;

public class gui_actions{
    public static void main(String[] args){
        final JFrame frame=new JFrame();
        final JButton redButton=new JButton("RED");
        final JButton blueButton=new JButton("BLUE");
        JPanel panel1=new JPanel();
        JPanel panel2=new JPanel();
        panel2.setBackground(Color.green);
        final JButton thirdButton = new JButton("This button changes color");
        ActionListener AL = new ActionListener(){
            public void actionPerformed(ActionEvent e){
                if(e.getSource()==redButton){
                    thirdButton.setBackground(Color.RED);
                }
                else if (e.getSource()==blueButton){
                    thirdButton.setBackground(Color.BLUE);
                }
            }
        };
        redButton.addActionListener(AL);
        blueButton.addActionListener(AL);
        frame.setLayout(new FlowLayout());
        frame.add(panel1);
        frame.add(panel2);
        panel1.add(redButton);
        panel1.add(blueButton);
        panel2.add(thirdButton);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.pack();
        frame.setVisible(true);
    }
}
```



Interface Type

Exercise 1: Rewrite the gui_actions class as a subclass of JFrame

Exercise 2: Rewrite the gui_actions class using a private inner class AL that implements ActionListener interface

```
private class AL implements ActionListener{
    public void actionPerformed(ActionEvent e){
        if(e.getSource()==redButton){
            thirdButton.setBackground(Color.RED);
        }
        else if (e.getSource()==blueButton){
            thirdButton.setBackground(Color.BLUE);
        }
    }
}
```

Solution to Exercise 1

```
import java.awt.*;
import java.awt.event.*;
import java.awt.Color;
import javax.swing.*;

public class gui_eventSourceExample extends JFrame{
    public gui_eventSourceExample(){
        super("Color Changer");
        final JFrame frame=new JFrame();
        final JButton redButton=new JButton("RED");
        final JButton blueButton=new JButton("BLUE");
        JPanel panel1=new JPanel();
        JPanel panel2=new JPanel();
        panel2.setBackground(Color.green);
        final JButton thirdButton = new JButton("This button changes color");
        ActionListener AL = new ActionListener(){
            public void actionPerformed(ActionEvent e){
                if(e.getSource()==redButton){
                    thirdButton.setBackground(Color.RED);
                }
                else if (e.getSource()==blueButton){
                    thirdButton.setBackground(Color.BLUE);
                }
            }
        };
        redButton.addActionListener(AL);
        blueButton.addActionListener(AL);
        frame.setLayout(new FlowLayout());
        frame.add(panel1);
        frame.add(panel2);
        panel1.add(redButton);
        panel1.add(blueButton);
        panel2.add(thirdButton);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.pack();
        frame.setVisible(true);
    }
    public static void main(String[] args){
        gui_eventSourceExample ex=new gui_eventSourceExample();
    }
}
```

Solution to Exercise 2

```
import java.awt.*;
import java.awt.event.*;
import java.awt.Color;
import javax.swing.*;

public class gui_actions2{
    JButton redButton=new JButton("RED");
    JButton blueButton=new JButton("BLUE");
    JButton thirdButton = new JButton("This button changes color");
    JPanel panel1=new JPanel();
    JPanel panel2=new JPanel();

    public gui_actions2(){
        final JFrame frame=new JFrame();
        panel2.setBackground(Color.green);
        redButton.addActionListener(new AL());
        blueButton.addActionListener(new AL());
        frame.setLayout(new FlowLayout());
        frame.add(panel1);
        frame.add(panel2);
        panel1.add(redButton);
        panel1.add(blueButton);
        panel2.add(thirdButton);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.pack();
        frame.setVisible(true);
    }

    public static void main(String[] args){
        gui_actions2 g=new gui_actions2();
    }

    private class AL implements ActionListener{
        public void actionPerformed(ActionEvent e){
            if(e.getSource()==redButton){
                thirdButton.setBackground(Color.RED);
            }
            else if (e.getSource()==blueButton){
                thirdButton.setBackground(Color.BLUE);
            }
        }
    }
}
```