

ID: 18791

GUIApp

```
/*
 * To change this license header, choose License Headers in Project Properties.
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 * and open the template in the editor.
 */
package textapp;

//showing the View Part
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class GUIApp extends JApplet {
    private JButton jbtController = new JButton("Show Controller");
    private JButton jbtView = new JButton("Show View");
    private ModelApp model = new ModelApp();

    public GUIApp() {
        setLayout(new FlowLayout()); //setting layout
        add(jbtController);
        add(jbtView);

        jbtController.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                JFrame frame = new JFrame("Controller");
                ControllerApp controller = new ControllerApp();
                controller.setModel(model);
                frame.add(controller);
                frame.setSize(200, 100);
                frame.setLocationRelativeTo(null);
                frame.setVisible(true);
            }
        });

        jbtView.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                JFrame frame = new JFrame("View");
                TextApp view = new TextApp();
                view.setModel(model);
                frame.add(view);
            }
        });
    }
}
```

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        frame.setSize(200, 200);
        frame.setLocation(200, 200);
        frame.setVisible(true);
    }
});
}
public static void main(String[] args) {
    GUIApp applet = new GUIApp();
    JFrame frame = new JFrame();
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    frame.setTitle("MVCDemo");
    frame.getContentPane().add(applet, BorderLayout.CENTER);
    frame.setSize(300, 200);
    frame.setLocationRelativeTo(null);
    frame.setVisible(true);
}
}

```

TextApp

```

/*
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 */
package textapp;

import java.awt.*;
import java.awt.event.*;

public class TextApp extends javax.swing.JPanel {
    private ModelApp model;
    public void setModel(ModelApp newModel) {
        model = newModel;
        if (model != null)
            model.addActionListener(new ActionListener() {
                @Override
                public void actionPerformed(ActionEvent e) {
                    repaint();
                }
            });
    }
    public ModelApp getModel() {
        return model;
    }
    @Override
    protected void paintComponent(Graphics g) {
        if (model != null) {
            super.paintComponent(g);

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        setFont(new Font("Helvetica", Font.BOLD, model.getFontSize()));
        setForeground(model.getColor());
        FontMetrics fm = g.getFontMetrics();
        int stringWidth = fm.stringWidth(model.getText());
        int stringAscent = fm.getAscent();
        int xCoordinate = getWidth() / 2 - stringWidth / 2;
        int yCoordinate = getHeight() / 2 + stringAscent / 2;
        g.drawString(model.getText(), xCoordinate, yCoordinate);
    }
}
}

```

ModelApp

```

/*
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 */
package textapp;

import java.awt.Color;
import java.awt.event.*;
import java.util.*;
public class ModelApp
{
    private String text = "Student ID is 18791";
    private int fontSize = 24;
    private java.awt.Color color;
    private ArrayList<ActionListener> actionListenerList;

    //getter and setter methods

    public String getText() {
        return this.text;
    }
    public void setText(String text) {
        this.text = text;
        processEvent(
            new ActionEvent(this, ActionEvent.ACTION_PERFORMED, "text"));
    }
    public int getFontSize() {
        return fontSize;
    }
    public void setFontSize(int fontSize) {
        this.fontSize = fontSize;
        processEvent(
            new ActionEvent(this, ActionEvent.ACTION_PERFORMED, "fontSize"));
    }
}

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}
public Color getColor() {
    return color;
}
public void setColor(Color color) {
    this.color = color;
    processEvent(
        new ActionEvent(this, ActionEvent.ACTION_PERFORMED, "color"));
}

```

```

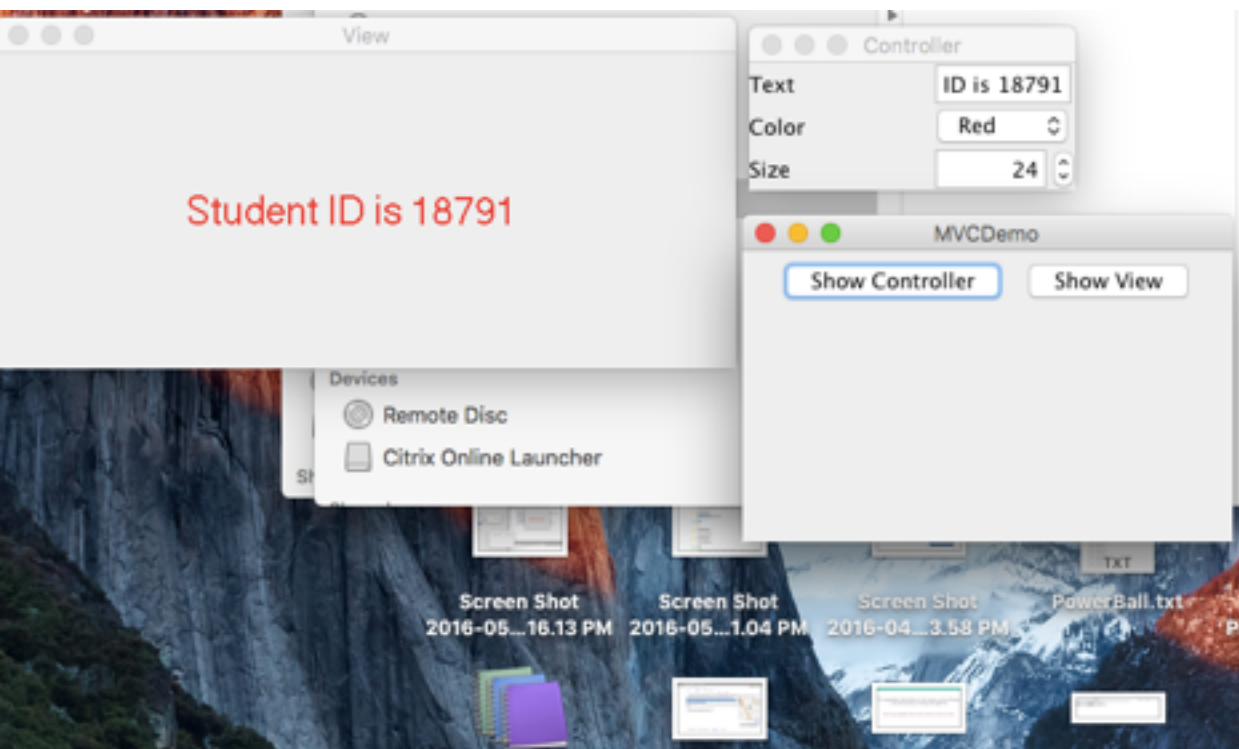
public synchronized void addActionListener(ActionListener l) {
    if (actionListenerList == null)
        actionListenerList = new ArrayList<ActionListener>();
    actionListenerList.add(l);
}
public synchronized void removeActionListener(ActionListener l) {
    if (actionListenerList != null && actionListenerList.contains(l))
        actionListenerList.remove(l);
}
private void processEvent(ActionEvent e) {
    ArrayList<ActionListener> list;
    synchronized (this) {
        if (actionListenerList == null) return;
        list = (ArrayList<ActionListener>)(actionListenerList.clone());
    }
}

```

```

for (int i =
0; i <
list.size(); i+
+) {

```



```
    ActionListener listener = list.get(i);  
    listener.actionPerformed(e);  
  }  
}  
}
```