CS F213 - Object Oriented Programming

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https://github.com/JenniferRanjani/Object-Oriented-Programming-with-Java

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Recall

- Implementing the Listener Interface
  - Same Class: b.addActionListener(**this);**
  - External Class: b.addActionListener(Object of the Class implementing the Interface);
  - Anonymous Class: tf.addTextListener(new TextListener() {
    public void textValueChanged(TextEvent E) {   }
    });

- Handling Mouse Events
- Handling Key Events

Adapter Classes

- They provide default implementation of listener interfaces

- If inherited, implementation of all the methods of listener interface is not required. Hence, it saves the code

- Adapter classes are found in **java.awt.event package**

java.awt.event commonly used Adpater Classes

Adapter class	Listener interface
WindowAdapter	WindowListener
KeyAdapter	KeyListener
MouseAdapter	MouseListener
MouseMotionAdapter	MouseMotionListener
FocusAdapter	FocusListener
ComponentAdapter	ComponentListener
ContainerAdapter	ContainerListener

Window Adapter Class - Example

```java
import java.awt.*;
import java.awt.event.*;
public class test extends WindowAdapter {
test()
{
        Frame f = new Frame("Adapter Example");
        f.setSize(300,300);
        f.setVisible(true);
        f.addWindowListener(this);
    }
public void windowClosing(WindowEvent e) {
System.exit(0);
}
public static void main(String[] args) {
        new test();
    }
}
```

Text Area & Mouse Adapter - Example

```java
public class test extends Frame
{
    Label l;
    TextArea area;

    test()
    {
        setSize(400,400);
        setVisible(true);
        l=new Label();
        l.setBounds(20,50,200,20);
        l.setBackground(Color.cyan);
```

Text Area & Mouse Adapter - Example

```java
area=new TextArea();

area.setBounds(20,80,300, 150);

area.addMouseListener(new MouseAdapter()

{

public void mouseReleased(MouseEvent e)

{

    l.setText(area.getSelectedText());

    }

});


add(l);add(area);

}
public static void main(String[] args)

{

new test();

}

}
```
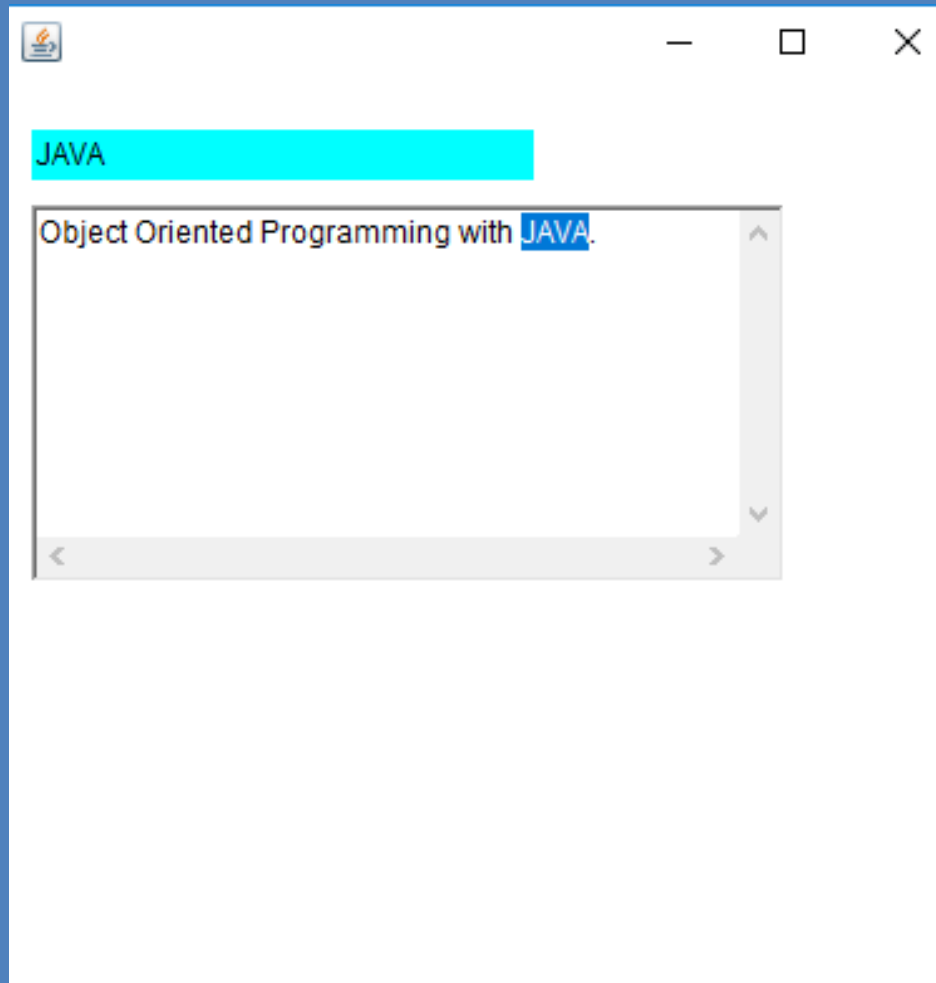
Screen Shot

Review Question

Remove the label from the previous example and include a Button. When the button is pressed, all the characters in the Text Area are converted to uppercase and is displayed in the Text Area. When a portion of the text is selected using the mouse, only the selected text is converted into upper case. Decide whether adapter classes should be extended or listener interfaces should be implemented.