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Practical Sheet

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Program No:- 16

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T.U.Roll.No. :- 24179

Title: Events Handling

Item Listener Code:

```
import java.awt.*;
import java.awt.event.*;
public class ItemListenerExample implements ItemListener {
    Checkbox checkBox1, checkBox2;
    Label label;
    ItemListenerExample() {
        Frame f = new Frame("Checkbox Example");
        label = new Label();
        label.setAlignement (Label.CENTER);
        label.setSize(400, 100);
        checkBox1 = new Checkbox("C++");
        checkBox2.setBounds(100, 100, 50, 50);
        checkBox2 = new Checkbox("Java");
        checkBox2.setBounds(100, 150, 50, 50);
        f.add (checkBox1); f.add (checkBox2); f.add (label);
        checkBox1.addItemListener(this);
        checkBox2.addItemListener(this);
        f.setSize(400, 400);
        f.setLayout (null);
        f.setVisible (true);
        f.setDefaultCloseOperation (JFrame.EXIT_ON_CLOSE);
    }
    public void itemStateChanged (ItemEvent e) {
        if (e.getSource() == checkBox1)
            label.setText ("C++ checkbox: " + (e.getStateChange() == 1 ? "checked" : "unchecked"));
        if (e.getSource() == checkBox2)
            label.setText ("Java checkbox: " + (e.getStateChange() == 1 ? "checked" : "unchecked"));
```

```
public static void main (String args[]) {  
    new IterListenerExample();  
}
```

}

}

 CheckBox Example — □ ×

Java Checkbox: checked

☒ C++

☒ Java

PS D:\Utsav\Java\Lab_165_java\CheckBoxExample>

KeyListener Code:

```
import java.awt.*;
```

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

```
public class KeyListenerExample extends Frame implements KeyListener
```

```
    Label l;
```

```
    TextArea area;
```

```
    KeyListenerExample() {
```

```
        l = new Label();
```

```
        l.setBounds(20, 50, 100, 20);
```

```
        area = new TextArea();
```

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

```
        area.addKeyListener(this);
```

```
        add(l);
```

```
        add(area);
```

```
        setSize(400, 400);
```

```
        setLayout(null);
```

```
        setVisible(true);
```

```
    }
```

```
    public void keyPressed(KeyEvent e) {
```

```
        l.setText("Key Pressed");
```

```
    }
```

```
    public void keyReleased(KeyEvent e) {
```

```
        l.setText("Key Released");
```

```
    }
```

```
    public void keyTyped(KeyEvent e) {
```

```
        l.setText("Key Typed");
```

```
    }
```

```
    public static void main(String[] args) {
```

```
        new KeyListenerExample();
```

```
    }
```

```
}
```



Key Released

Key Typed when Key Pressed
Key Release when Key not Pressed

PS D:\Utsav\Java\lab 16> java KeyListenerExample

MouseListener Code:

```
import java.awt.*;
import java.awt.event.*;
public class MouseListenerExample extends Frame implements MouseListener
{
    Label l;
    MouseListenerExample() {
        addMouseListener(this);
        l = new Label();
        l.setBounds(20, 60, 100, 20);
        add(l);
        setSize(300, 300);
        setLayout(null);
        setVisible(true);
    }
    public void mouseClicked(MouseEvent e) {
        l.setText("Mouse Clicked");
    }
    public void mouseEntered(MouseEvent e) {
        l.setText("Mouse Entered");
    }
    public void mouseExited(MouseEvent e) {
        l.setText("Mouse Exited");
    }
    public void mousePressed(MouseEvent e) {
        l.setText("Mouse Pressed");
    }
    public void mouseReleased(MouseEvent e) {
        l.setText("Mouse Released");
    }
    public static void main(String[] args) {
        new MouseListenerExample();
    }
}
```



Mouse Entered

```
PS C:\Users\A\Java\lab_16> java com.net.javafire.Example
```


Window Code.

```
import java.awt.*;  
import java.awt.event.WindowEvent;  
import java.awt.event.WindowListener;  
  
public class WindowExample extends Frame implements Window  
Listener {
```

```
    WindowExample() {  
        addWindowListener(this);  
        setSize(400, 400);  
        setLayout(null);  
        setVisible(true);  
    }
```

```
    public static void main (String [] args) {  
        new WindowExample();  
    }
```

```
    public void windowActivated (WindowEvent arg0) {  
        System.out.println("activated");  
    }
```

```
    public void windowClosed (WindowEvent arg0) {  
        System.out.println("Closed");  
    }
```

```
    public void windowClosing (WindowEvent arg0) {  
        System.out.println("closing");  
        dispose();  
    }
```

```
    public void windowDeactivated (WindowEvent arg0) {  
        System.out.println("deactivated");  
    }
```

```
    public void windowDeiconified (WindowEvent arg0) {  
        System.out.println("deiconified");  
    }
```

```
    }
```



```
public void windowIconified(WindowEvent e) {  
    System.out.println("iconified");  
}
```

```
public void windowOpened(WindowEvent e) {  
    System.out.println("opened");  
}
```

```
}
```

```
PS D:\Utsav\Java\lab 16> java WindowExample
activated
opened
closing
deactivated
closed
PS D:\Utsav\Java\lab 16> |
```

Focus Event ~~listener~~ Code:

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

public class FocusEventExample {
    private JFrame mainWindow;
    private JLabel headerLabel;
    private JLabel statusLabel;
    private JPanel controlPanel;

    public FocusEventExample() {
        prepareGUI();
    }

    public static void main(String[] args) {
        FocusEventExample focusEventExample = new FocusEventExample();
        focusEventExample.showFocusListenersDemo();
    }

    private void prepareGUI() {
        mainWindow = new JFrame("Java Swing Examples");
        mainWindow.setSize(400, 400);
        mainWindow.setLayout(new BorderLayout(3, 1));
        headerLabel = new JLabel("", JLabel.CENTER);
        statusLabel = new JLabel("", JLabel.CENTER);
        statusLabel.setSize(350, 100);
        mainWindow.addWindowListener(new WindowAdapter() {
            public void windowClosing(WindowEvent windowEvent) {
                System.exit(0);
            }
        });

        controlPanel = new JPanel();
        controlPanel.setLayout(new FlowLayout());
        mainWindow.add(headerLabel);
        mainWindow.add(controlPanel);
        mainWindow.add(statusLabel);
        mainWindow.setVisible(true);
    }
}
```

```

3 private void showFocusListenerDemo() {
    headerLabel.setText("Listener in action: Focus Listener");
    JButton okButton = new JButton("OK");
    JButton cancelButton = new JButton("Cancel");
    okButton.addFocusListener(new CustomFocusListener());
    cancelButton.addFocusListener(new CustomFocusListener());
    controlPanel.add(okButton);
    controlPanel.add(cancelButton);
    mainWindow.setVisible(true);
}

```

```

3 class CustomFocusListener implements FocusListener {
    public void focusGained(FocusEvent e) {
        statusLabel.setText(statusLabel.getText() +
            getComponent().getClass().getSimpleName() +
            " gained focus.");
    }
    3 public void focusLost(FocusEvent e) {
        statusLabel.setText(statusLabel.getText() +
            getComponent().getClass().getSimpleName() +
            " lost focus.");
    }
    3
}

```

3

3

