Java Adapter Classes

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Java Adapter Classes

- Java adapter classes *provide the default implementation of listener interfaces*.
- If you inherit the adapter class, you will not be forced to provide the implementation of all the methods of listener interfaces. So it *saves code*.
- The adapter classes are found in **java.awt.event**, **java.awt.dnd** and **javax.swing.event** packages.
- The Adapter classes with their corresponding listener interfaces are given below.

java.awt.event Adapter classes

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

java.awt.dnd Adapter classes

Adapter class	Listener interface
MouseInputAdapter	MouseInputListener
InternalFrameAdapter	InternalFrameListener

javax.swing.event Adapter classes

Adapter class	Listener interface
DragSourceAdapter	DragSourceListener
DragTargetAdapter	DragTargetListener

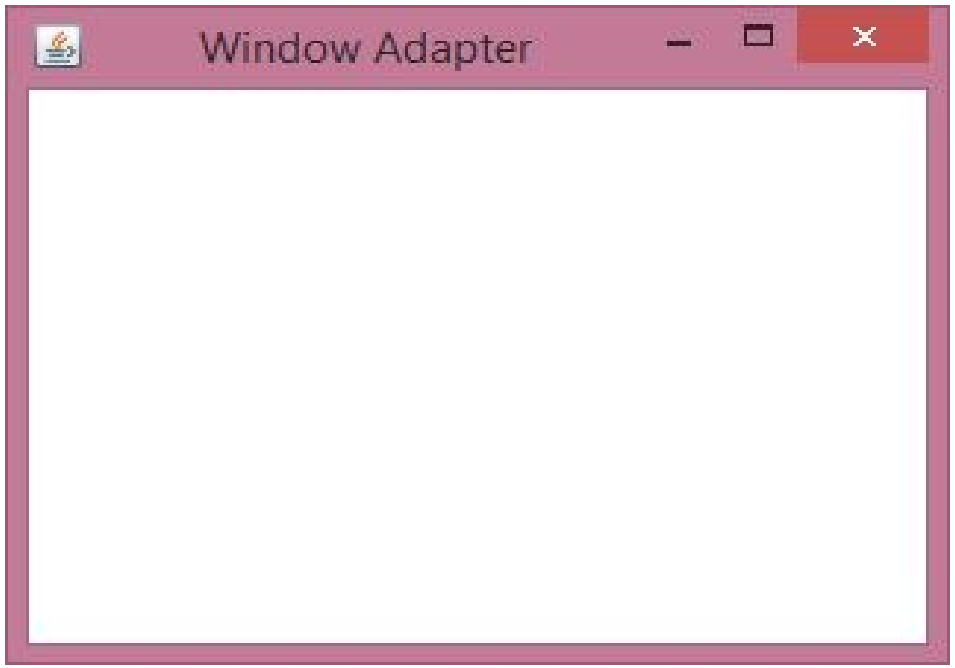
Java WindowAdapter : Example

```
import java.awt.*;
import java.awt.event.*;
public class AdapterExample
{
    Frame f;
    AdapterExample(){
        f=new Frame("Window Adapter");
        f.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e) {
                f.dispose();
            }
        });
```

Java WindowAdapter : Example

```
f.setSize(400,400);
        f.setLayout(null);
        f.setVisible(true);
    }
public static void main(String[] args) {
    new AdapterExample();
}
}
```

Java WindowAdapter : Example



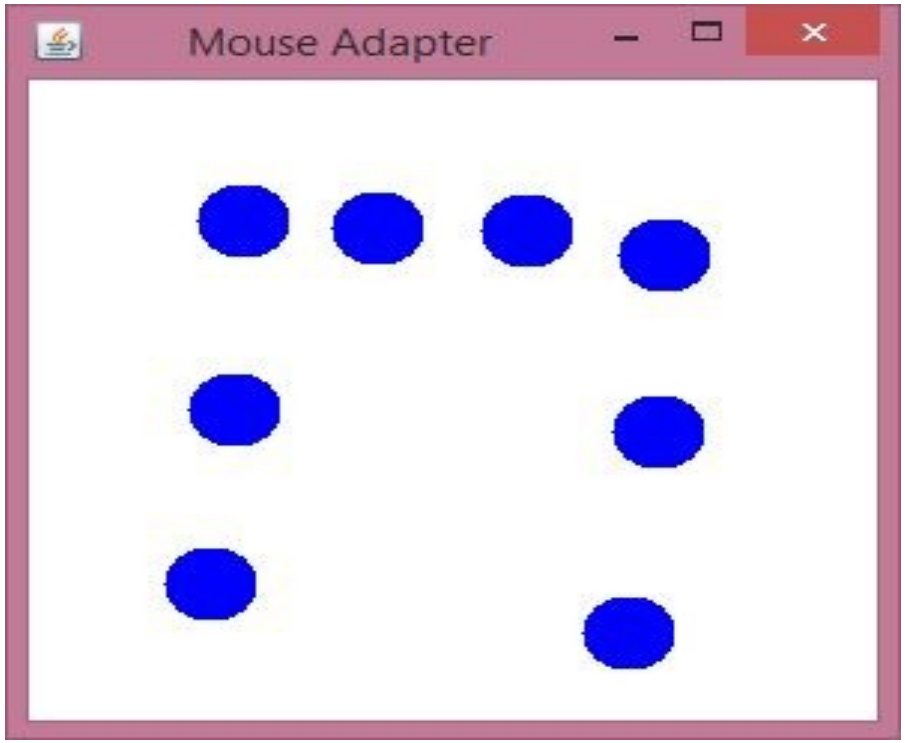
Java MouseAdapter : Example

```
import java.awt.*;
import java.awt.event.*;
public class MouseAdapterExample extends MouseAdapte
{
    Frame f;
    MouseAdapterExample(){
        f=new Frame("Mouse Adapter");
        f.addMouseListener(this);

        f.setSize(300,300);
        f.setLayout(null);
        f.setVisible(true);
    }
```

Java MouseAdapter : Example

```
public void mouseClicked(MouseEvent e) {
        Graphics g=f.getGraphics();
        g.setColor(Color.BLUE);
        g.fillOval(e.getX(),e.getY(),30,30);
    }

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

Java MouseAdapter : Example



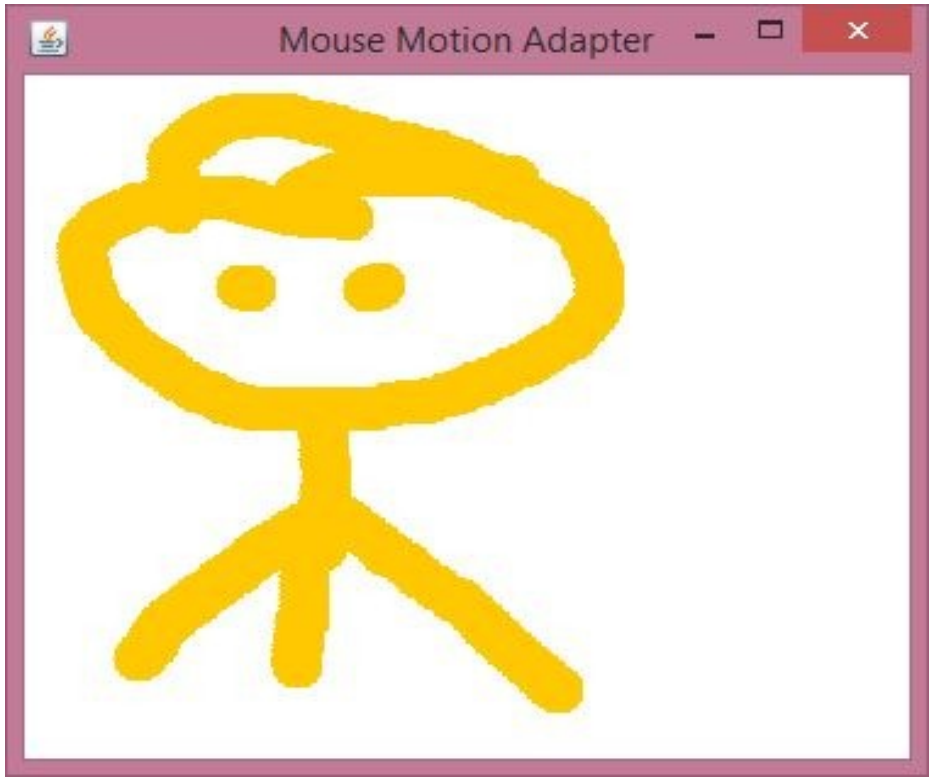
Java MouseMotionAdapter : Example

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

public class MouseMotionAdapterExample extends MouseMotionAdapter
{
    Frame f;
    MouseMotionAdapterExample()
{
        f=new Frame("Mouse Motion Adapter");
        f.addMouseMotionListener(this);

        f.setSize(300,300);
        f.setLayout(null);
        f.setVisible(true);
    }
```

Java MouseMotionAdapter : Example

```
public void mouseDragged(MouseEvent e)
{
    Graphics g=f.getGraphics();
    g.setColor(Color.ORANGE);
    g.fillOval(e.getX(),e.getY(),20,20);
}
public static void main(String[] args)
{
    new MouseMotionAdapterExample();
}
}
```

Java MouseMotionAdapter : Example



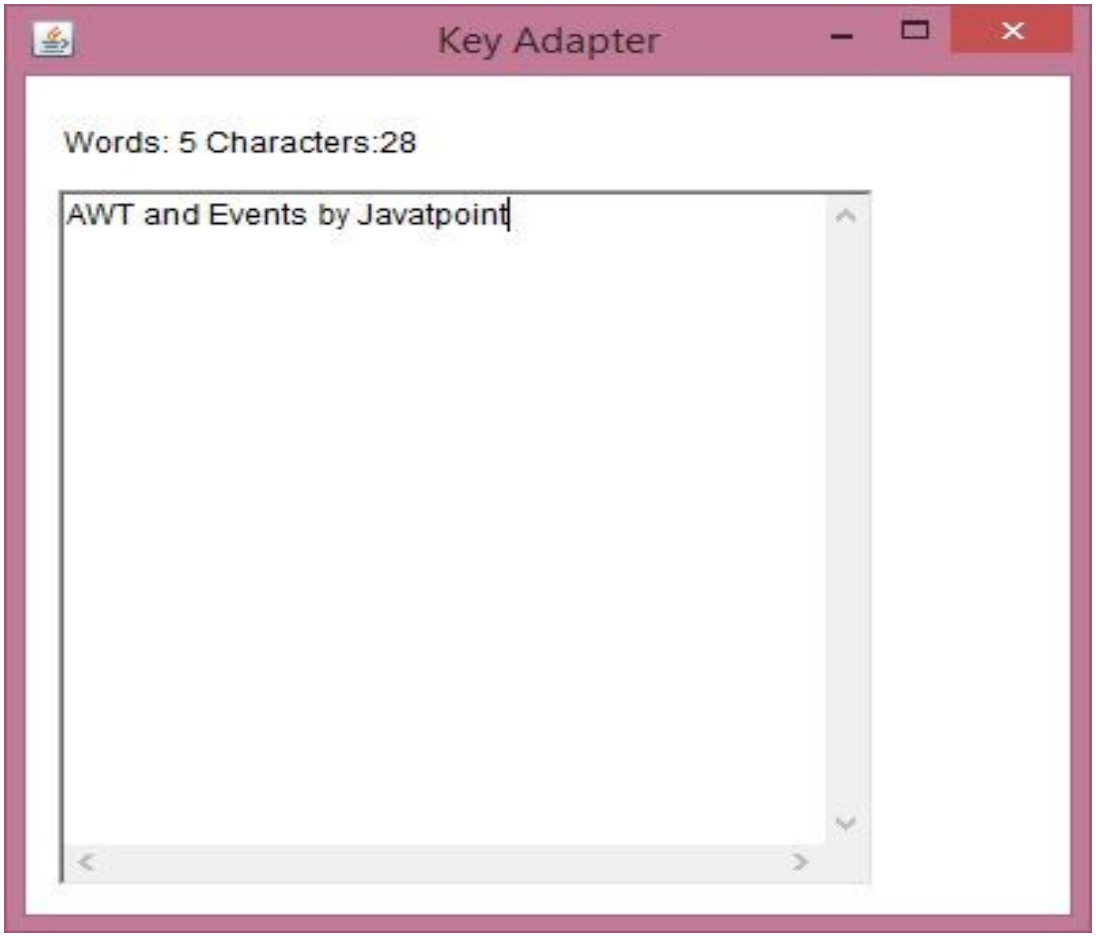
Java KeyAdapter : Example

```
import java.awt.*;
import java.awt.event.*;
public class KeyAdapterExample extends KeyAdapter{
    Label l;
    TextArea area;
    Frame f;
    KeyAdapterExample(){
        f=new Frame("Key Adapter");
        l=new Label();
        l.setBounds(20,50,200,20);
        area=new TextArea();
        area.setBounds(20,80,300, 300);
        area.addKeyListener(this);
```

Java KeyAdapter : Example

```
f.add(l);
    f.add(area);
    f.setSize(400,400);
    f.setLayout(null);
    f.setVisible(true);
}
public void keyReleased(KeyEvent e) {
    String text=area.getText();
    String words[]=text.split("\\s");
    l.setText("Words: "+words.length+" Characters:"+text.length());
}
  public static void main(String[] args) {
    new KeyAdapterExample();
}
}
```

Java KeyAdapter : Example



Thank you!
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