

Krzysztof Pancierz  
Programowanie współbieżne i rozproszone  
JavaBeans

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//KLASA GŁÓWNA

```
public class HeaterMain {  
  
    public static void main(String[] args)  
    {  
        Heater heater=new Heater();  
        HeaterView heaterView=new HeaterView();  
        heater.addPropertyChangeListener(heaterView);  
        HeaterGUI heaterGUI=new HeaterGUI(heater);  
    }  
}
```

//\*\*\*\*\*

//KLASA ZIARNA

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

```
public class Heater implements Serializable  
{  
    private int temperature;  
  
    private PropertyChangeSupport propertyChange=  
        new PropertyChangeSupport(this);  
  
    public Heater()  
    {  
        temperature=25;  
    }  
  
    public synchronized void setTemperature(int temp)  
    {  
        int oldTemp=temperature;  
        temperature=temp;  
  
        propertyChange.firePropertyChange("temperature", new Integer(oldTemp), new  
        Integer(temperature));  
    }  
  
    public synchronized int getTemperature()  
    {  
        return temperature;  
    }  
  
    public synchronized void increment()  
    {  
        setTemperature(getTemperature()+1);  
    }  
  
    public synchronized void decrement()  
    {  
        setTemperature(getTemperature()-1);  
    }  
  
    public synchronized void addPropertyChangeListener(PropertyChangeListener listener)  
    {  
        propertyChange.addPropertyChangeListener(listener);  
    }  
}
```

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```
//*****
```

```
//KLASA INTERFEJSU GRAFICZNEGO DO ZMIANY STANU WŁAŚCIWOŚCI ZIARNA
```

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

public class HeaterGUI extends JFrame implements ActionListener
{
    JButton b1, b2;
    Heater heater;

    public HeaterGUI(Heater h)
    {
        super("HeaterGUI");

        heater=h;

        this.setSize(300,150);
        this.setLocation(50,50);
        this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        b1=new JButton("Increase");
        b1.setSize(200,30);
        b1.setLocation(50,20);
        b1.addActionListener(this);
        b2=new JButton("Decrease");
        b2.setSize(200,30);
        b2.setLocation(50,60);
        b2.addActionListener(this);
        Container zawartosc=this.getContentPane();
        zawartosc.setLayout(null);
        zawartosc.add(b1);
        zawartosc.add(b2);

        this.setVisible(true);
    }

    public void actionPerformed(ActionEvent e)
    {
        if(e.getSource()==b1)
        {
            heater.increment();
        }

        if(e.getSource()==b2)
        {
            heater.decrement();
        }
    }
}
```

```
//*****
```

```
//KLASA INTERFEJSU GRAFICZNEGO DO WYŚWIETLANIA STANU WŁAŚCIWOŚCI ZIARNA
```

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

public class HeaterView extends JFrame implements PropertyChangeListener
{
    JLabel l1;
```

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```
public HeaterView()
{
    super("HeaterView");

    this.setSize(300,150);
    this.setLocation(200,200);
    this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    l1=new JLabel(" 25\u2103");
    l1.setSize(200,60);
    l1.setLocation(50,20);
    l1.setFont(new Font("Times", Font.BOLD, 48));
    Container zawartosc=this.getContentPane();
    zawartosc.setLayout(null);
    zawartosc.add(l1);

    this.setVisible(true);
}

public void propertyChange(PropertyChangeEvent e)
{
    l1.setText(" "+(Integer)e.getNewValue()+"\u2103");
}
}

//*****
```