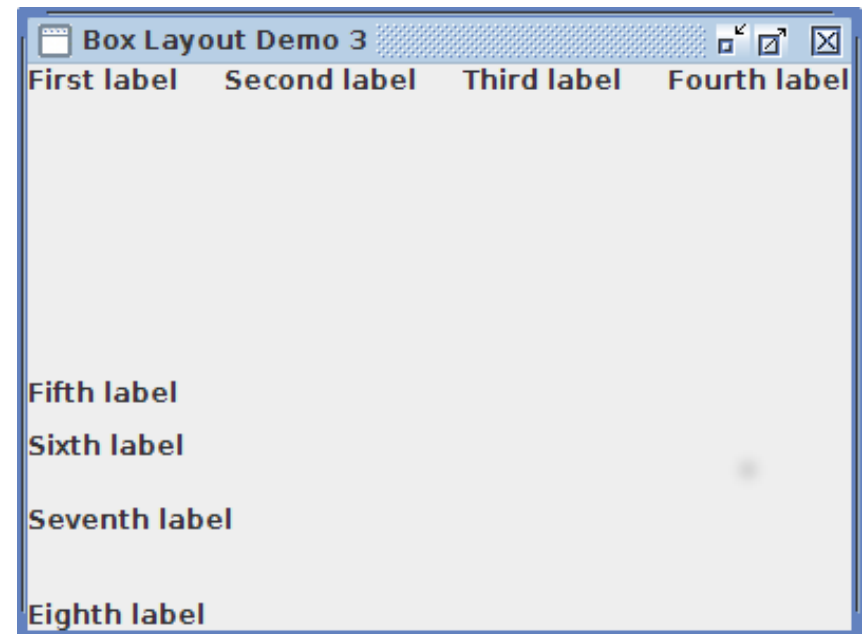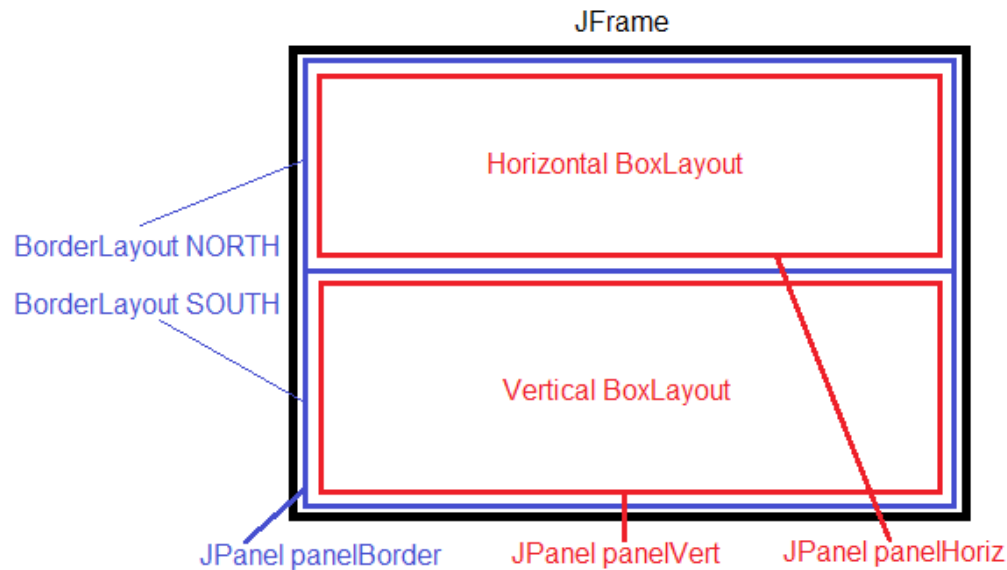# 6. GUI Programming :: Java Layout Managers :: Combining Layouts

The true power of the different layout managers becomes apparent when you understand that they can be combined to create any desired layout. For example, consider the combination of a *JPanel* laid out using *BorderLayout* and two *JPanel*s laid out with *BoxLayout*:

6. GUI Programming :: Java Layout Managers :: Combining Layouts (continued)

We first create *panelBorder* setting its layout manager to *BorderLayout*:

```
JPanel panelBorder = new JPanel();
panelBorder.setLayout(new BorderLayout());
```

Next we create *panelHoriz* setting its layout manager to *BoxLayout(BoxLayout.X_ AXIS)*:

```
JPanel panelHoriz = new JPanel();
panelHoriz.setLayout(new BoxLayout(panelHoriz, BoxLayout.X_AXIS));
```

and add the *JLabel*s (with glue between them) to it:

```
addHorizLabel(panelHoriz, "First label", true);
addHorizLabel(panelHoriz, "Second label", true);
addHorizLabel(panelHoriz, "Third label", true);
addHorizLabel(panelHoriz, "Fourth label", false);

private void addHorizLabel(JPanel pPanel, String pText, boolean pGlue) {
   JLabel label = new JLabel(pText);
   pPanel.add(label);
   if (pGlue) pPanel.add(Box.createHorizontalGlue());
}
```

6. GUI Programming :: Java Layout Managers :: Combining Layouts (continued)

We then create *panelVert* setting its layout manager to *BoxLayout*(*BoxLayout.Y_AXIS*):

```
JPanel panelVert = new JPanel();
panelVert.setLayout(new BoxLayout(panelVert, BoxLayout.Y_AXIS));
```

and add the *JLabel*s to it:

```
addVertLabel(panelVert, "Fifth label", 10);
addVertLabel(panelVert, "Sixth label", 20);
addVertLabel(panelVert, "Seventh label", 30);
addVertLabel(panelVert, "Eighth label", 0);
```

To create a "rigid area" (unlike glue, the rigid area size remains the same when the *Jframe* is resized) between the labels we use the *Box.createRigidArea*() method which requires a *java.awt.Dimension* object as the argument. The arguments to the *Dimension*() constructor specify the **int** height and **int** width of the *Dimension* object.

```
private void addVertLabel(JPanel pPanel, String pText, int pSpace) {
    JLabel label = new JLabel(pText);
    pPanel.add(label);
    if (pSpace > 0) pPanel.add(Box.createRigidArea(new Dimension(0, pSpace)));
}
```

6. GUI Programming :: Java Layout Managers :: *BoxLayout* Demo 3

```java
// BoxLayoutDemo3.java
import java.awt.BorderLayout;
import java.awt.Dimension;
import javax.swing.Box;
import javax.swing.BoxLayout;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;

public class BoxLayoutDemo3 {
    public static void main(String[] args) { new BoxLayoutDemo3().run(); }
    public void run() {
        JFrame.setDefaultLookAndFeelDecorated(true);
        JPanel panelBorder = new JPanel();
        panelBorder.setLayout(new BorderLayout());
        JPanel panelHoriz = new JPanel();
        panelHoriz.setLayout(new BoxLayout(panelHoriz, BoxLayout.X_AXIS));
        addHorizLabel(panelHoriz, "First label", true);
        addHorizLabel(panelHoriz, "Second label", true);
        addHorizLabel(panelHoriz, "Third label", true);
        addHorizLabel(panelHoriz, "Fourth label", false);
```

6. GUI Programming :: Java Layout Managers :: *BoxLayout* Demo 3 (continued)

```java
      JPanel panelVert = new JPanel();
      panelVert.setLayout(new BoxLayout(panelVert, BoxLayout.Y_AXIS));
      addVertLabel(panelVert, "Fifth label", 10);
      addVertLabel(panelVert, "Sixth label", 20);
      addVertLabel(panelVert, "Seventh label", 30);
      addVertLabel(panelVert, "Eighth label", 0);
      panelBorder.add(panelHoriz, BorderLayout.NORTH);
      panelBorder.add(panelVert, BorderLayout.SOUTH);
      JFrame frame = new JFrame("Box Layout Demo 3");
      frame.setSize(400, 300);
      frame.add(panelBorder);
      frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
      frame.setVisible(true);
   }
   private void addHorizLabel(JPanel pPanel, String pText, boolean pGlue) {
      JLabel label = new JLabel(pText);
      pPanel.add(label);
      if (pGlue) pPanel.add(Box.createHorizontalGlue());
   }
   private void addVertLabel(JPanel pPanel, String pText, int pSpace) {
      JLabel label = new JLabel(pText);
      pPanel.add(label);
      if (pSpace > 0) pPanel.add(Box.createRigidArea(new Dimension(0, pSpace)));
   }
}
```