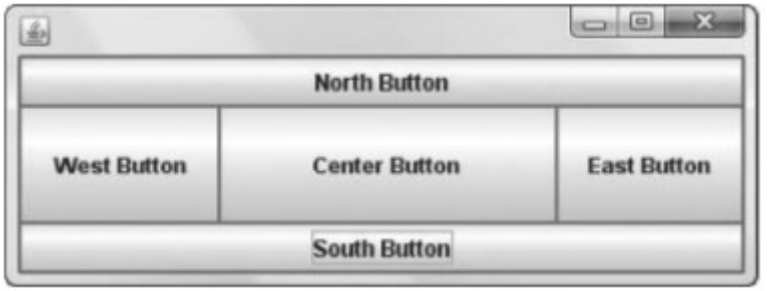
Layout Manager

Layout Manager

- A layout manager is an object that controls the size and position (that is, the layout) of components inside a Container object.
- The layout manager that you assign to the window determines how the components are sized and positioned within the window.

Layout

BorderLayout	Use when you add components to a maximum of five sections arranged in north, south, east, west, and center positions.
FlowLayout	Use when you need to add components from left to right; FlowLayout automatically moves to the next row when needed, and each component takes its preferred size.
GridLayout	Use when you need to add components into a grid of rows and columns; each component is the same size.
CardLayout	Use when you need to add components that are displayed one at a time.
BoxLayout	Use when you need to add components into a single row or a single column.
GridBagLayout	Use when you need to set size, placement, and alignment constraints for every component that you add

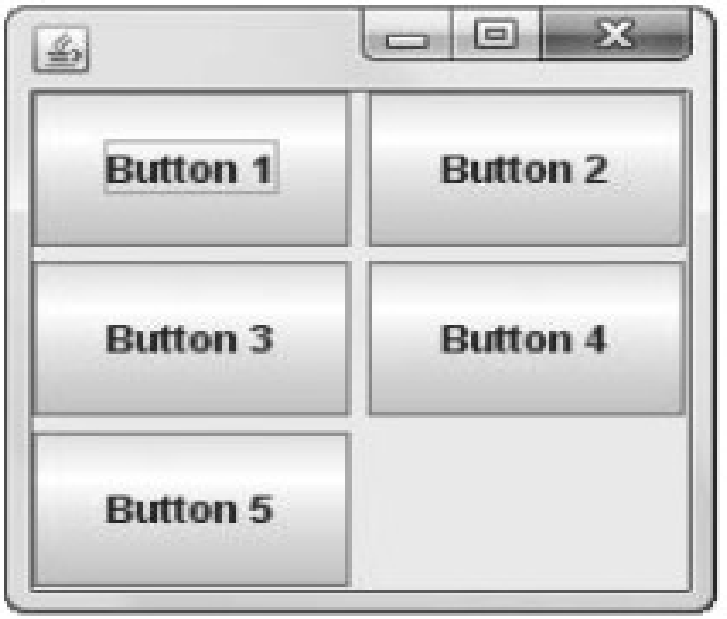


BorderLayout

```
import javax.swing.*;
import java.awt.*;
public class JDemoBorderLayout extends JFrame
{
   private JButton nb = new JButton("North Button");
   private JButton sb = new JButton("South Button");
   private JButton eb = new JButton("East Button");
   private JButton wb = new JButton("West Button");
   private JButton cb = new JButton("Center Button");
   public JDemoBorderLayout()
   {
      setLayout(new BorderLayout());
      add(nb, BorderLayout.NORTH);
      add(sb, BorderLayout.SOUTH);
      add(eb, BorderLayout.EAST);
      add(wb, BorderLayout.WEST);
      add(cb, BorderLayout.CENTER);
      setVisible(true);
      setSize(400, 150);
   }
   public static void main(String[] args)
   {
      JDemoBorderLayout frame = new JDemoBorderLayout();
   }
}
```

GridLayout

```
import javax.swing.*;
import java.awt.*;
public class JDemoGridLayout extends JFrame
{
   private JButton b1 = new JButton("Button 1");
   private JButton b2 = new JButton("Button 2");
   private JButton b3 = new JButton("Button 3");
   private JButton b4 = new JButton("Button 4");
   private JButton b5 = new JButton("Button 5");
   private GridLayout layout = new GridLayout(3, 2, 5, 5);
   public JDemoGridLayout()
   {
      setLayout(layout);
      add(b1);
      add(b2);
      add(b3);
      add(b4);
      add(b5);
      setVisible(true);
      setSize(200, 200);
   }
   public static void main(String[] args)
   {
      JDemoGridLayout frame = new JDemoGridLayout();
   }
}
```



CardLayout

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
public class JDemoCardLayout extends JFrame
   implements ActionListener
{
   private CardLayout cards = new CardLayout();
   private JButton b1 = new JButton("Ace of Hearts");
   private JButton b2 = new JButton("Three of Spades");
   private JButton b3 = new JButton("Queen of Clubs");
   public JDemoCardLayout()
   {
      setLayout(cards);
      add("ace", b1);
      b1.addActionListener(this);
      add("three", b2);
      b2.addActionListener(this);
      add("queen", b3);
      b3.addActionListener(this);
      setSize(200, 100);
      setVisible(true);
   }
   public void actionPerformed(ActionEvent e)
   {
      cards.next(getContentPane());
   }
   public static void main(String[] args)
   {
      JDemoCardLayout frame = new JDemoCardLayout();
   }
}
```