

```
1 package ex9;
2
3 import java.awt.Graphics;
4 import java.awt.Image;
5 import javax.swing.*;
6
7 public class DisplayImage extends JFrame {
8
9     public DisplayImage() {
10         add(new ImagePanel());
11     }
12
13     public static void main(String[] args) {
14         JFrame frame = new DisplayImage();
15         frame.setTitle("DisplayImage");
16         frame.setSize(300, 300);
17         frame.setLocationRelativeTo(null); // Center the frame
18         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
19         frame.setVisible(true);
20     }
21
22     class ImagePanel extends JPanel {
23
24         ImageIcon imageIcon = new ImageIcon("image/us.gif");
25         Image image = imageIcon.getImage();
26
27         /**
28          * Draw image on the panel
29          */
30         @Override
31         public void paintComponent(Graphics g) {
32             super.paintComponent(g);
33
34             if (image != null) {
35                 g.drawImage(image, 0, 0, this.getWidth(), getHeight(), this);
36                 //g.drawImage(image, 0, 0, this);
37             }
38
39         }
40     }
41 }
42
```

```
1 package ex9;
2
3 import java.awt.Color;
4 import java.awt.Graphics;
5 import javax.swing.JFrame;
6 import javax.swing.JPanel;
7
8 public class DrawArcs extends JFrame {
9
10     public DrawArcs() {
11         setTitle("DrawArcs");
12         add(new ArcsPanel());
13     }
14
15     /**
16      * Main method
17      */
18     public static void main(String[] args) {
19         DrawArcs frame = new DrawArcs();
20         frame.setLocationRelativeTo(null); // Center the frame
21         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
22         frame.setSize(250, 300);
23         frame.setVisible(true);
24     }
25
26     class ArcsPanel extends JPanel {
27
28         // Draw four blades of a fan
29         protected void paintComponent(Graphics g) {
30             super.paintComponent(g);
31
32             int xCenter = getWidth() / 2;
33             int yCenter = getHeight() / 2;
34             // 80% of the outer frame
35             int radius = (int) (Math.min(getWidth(), getHeight()) * 0.4);
36
37             int x = xCenter - radius;
38             int y = yCenter - radius;
39
40             g.setColor(Color.red);
41             g.fillArc(x, y, 2 * radius, 2 * radius, 0, 30);
42             g.setColor(Color.green);
43             g.fillArc(x, y, 2 * radius, 2 * radius, 90, 30);
44             g.setColor(Color.blue);
45             g.fillArc(x, y, 2 * radius, 2 * radius, 180, 30);
46             g.setColor(Color.yellow);
47             g.fillArc(x, y, 2 * radius, 2 * radius, 270, 30);
48
49         }
50     }
51 }

```

2021/12/10 上午2:45		DrawPolygon.java		2021/12/10 上午2:45		DrawPolygon.java	
1	package ex9;			54			g.drawPolygon (polygon);
2				55		}	
3	import java.awt.Graphics;			56		}	
4	import java.awt.Polygon;			57		}	
5	import javax.swing.JFrame;			58			
6	import javax.swing.JPanel;						
7							
8	public class DrawPolygon extends JFrame {						
9							
10	public DrawPolygon() {						
11	setTitle("DrawPolygon");						
12	add(new PolygonsPanel());						
13	}						
14							
15	/**						
16	* Main method						
17	*/						
18	public static void main(String[] args) {						
19	DrawPolygon frame = new DrawPolygon();						
20	frame.setLocationRelativeTo(null); // Center the frame						
21	frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);						
22	frame.setSize(200, 250);						
23	frame.setVisible(true);						
24	}						
25							
26	class PolygonsPanel extends JPanel {						
27							
28	protected void paintComponent(Graphics g) {						
29	super.paintComponent(g);						
30							
31	int xCenter = getWidth() / 2;						
32	int yCenter = getHeight() / 2;						
33	int radius = (int) (Math.min(getWidth(), getHeight()) * 0.4);						
34							
35	// Create a Polygon object						
36	Polygon polygon = new Polygon();						
37							
38	// Add points to the polygon						
39	polygon.addPoint(xCenter + radius, yCenter);						
40	polygon.addPoint((int) (xCenter + radius * Math.cos(1 * 2 * Math.PI / 7)),						
41	(int) (yCenter - radius * Math.sin(1 * 2 * Math.PI / 7)));						
42	polygon.addPoint((int) (xCenter + radius * Math.cos(2 * 2 * Math.PI / 7)),						
43	(int) (yCenter - radius * Math.sin(2 * 2 * Math.PI / 7)));						
44	polygon.addPoint((int) (xCenter + radius * Math.cos(3 * 2 * Math.PI / 7)),						
45	(int) (yCenter - radius * Math.sin(3 * 2 * Math.PI / 7)));						
46	polygon.addPoint((int) (xCenter + radius * Math.cos(4 * 2 * Math.PI / 7)),						
47	(int) (yCenter - radius * Math.sin(4 * 2 * Math.PI / 7)));						
48	polygon.addPoint((int) (xCenter + radius * Math.cos(5 * 2 * Math.PI / 7)),						
49	(int) (yCenter - radius * Math.sin(5 * 2 * Math.PI / 7)));						
50	polygon.addPoint((int) (xCenter + radius * Math.cos(6 * 2 * Math.PI / 7)),						
51	(int) (yCenter - radius * Math.sin(6 * 2 * Math.PI / 7)));						
52							
53	// Draw the polygon						
localhost:4649/?mode=click		localhost:4649/?mode=click		localhost:4649/?mode=click		localhost:4649/?mode=click	
				1/2		2/2	

```
1 package ex9;
2
3 import javax.swing.*;
4
5 public class MyFrame {
6
7     public static void main(String[] args) {
8         JFrame frame = new JFrame("MyFrame"); // Create a frame
9         frame.setSize(400, 300); // Set the frame size
10        frame.setLocationRelativeTo(null); // New since JDK 1.4
11        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
12        frame.setVisible(true); // Display the frame
13    }
14 }
15
```

```
1 package ex9;
2
3 import javax.swing.*;
4
5 public class MyFrameWithComponents {
6
7     public static void main(String[] args) {
8         JFrame frame = new JFrame("MyFrameWithComponents");
9
10        // Add a button into the frame
11        JButton jbtOK = new JButton("--I AM VERY FAT--");
12        frame.add(jbtOK);
13
14        frame.setSize(400, 300);
15        frame.setVisible(true);
16        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
17        frame.setLocationRelativeTo(null); // New since JDK 1.4
18    }
19 }
20
```

```
1 package ex9;
2
3 import javax.swing.JButton;
4 import javax.swing.JFrame;
5 import java.awt.BorderLayout;
6
7 public class ShowBorderLayout extends JFrame {
8
9     public ShowBorderLayout() {
10         // Set BorderLayout with horizontal gap 5 and vertical gap 10
11         setLayout(new BorderLayout(5, 10));
12
13         // Add buttons to the frame
14         add(new JButton("East"), BorderLayout.EAST);
15         add(new JButton("South"), BorderLayout.SOUTH);
16         add(new JButton("West"), BorderLayout.WEST);
17         add(new JButton("North"), BorderLayout.NORTH);
18         add(new JButton("Center"), BorderLayout.CENTER);
19     }
20
21     /** Main method */
22     public static void main(String[] args) {
23         ShowBorderLayout frame = new ShowBorderLayout();
24         frame.setTitle("ShowBorderLayout");
25         frame.setLocationRelativeTo(null); // New since JDK 1.4
26         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
27         frame.setSize(300, 200);
28         frame.setVisible(true);
29     }
30 }
31
```

```
1 package ex9;
2
3 import javax.swing.JLabel;
4 import javax.swing.JTextField;
5 import javax.swing.JFrame;
6 import java.awt.FlowLayout;
7
8 public class ShowFlowLayout extends JFrame {
9
10     public ShowFlowLayout() {
11         // Set FlowLayout, aligned left with horizontal gap 10
12         // and vertical gap 20 between components
13         setLayout(new FlowLayout(FlowLayout.RIGHT, 10, 20));
14
15         // Add labels and text fields to the frame
16         this.add(new JLabel("First Name"));
17         add(new JTextField(8));
18         add(new JLabel("MI"));
19         add(new JTextField(1));
20         add(new JLabel("Last Name"));
21         add(new JTextField(8));
22     }
23
24     /** Main method */
25     public static void main(String[] args) {
26         ShowFlowLayout frame = new ShowFlowLayout();
27         frame.setTitle("ShowFlowLayout");
28         frame.setLocationRelativeTo(null); // New since JDK 1.4
29         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
30         frame.setSize(200, 200);
31         frame.setVisible(true);
32     }
33 }
34
```

```
1 package ex9;
2
3 import javax.swing.JLabel;
4 import javax.swing.JTextField;
5 import javax.swing.JFrame;
6 import java.awt.GridLayout;
7
8 public class ShowGridLayout {
9
10     /** Main method */
11     public static void main(String[] args) {
12         JFrame frame = new JFrame();
13
14         frame.setLayout(new GridLayout(3, 2, 5, 5));
15
16         // Add labels and text fields to the frame
17         frame.add(new JLabel("First Name"));
18         frame.add(new JTextField(8));
19         frame.add(new JLabel("MI"));
20         frame.add(new JTextField(1));
21         frame.add(new JLabel("Last Name"));
22         frame.add(new JTextField(8));
23
24         frame.setTitle("ShowGridLayout");
25         frame.setLocationRelativeTo(null); // New since JDK 1.4
26         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
27         frame.setSize(200, 125);
28         frame.setVisible(true);
29     }
30 }
31
```

```
1 package ex9;
2
3 import javax.swing.*;
4 import java.awt.Graphics;
5
6 public class TestGetGraphics extends JFrame {
7
8     private JLabel jlblBanner = new JLabel("Banner");
9
10     public TestGetGraphics() {
11         add(jlblBanner);
12         //System.out.println(jlblBanner.getGraphics());
13     }
14
15     public static void main(String[] args) {
16         TestGetGraphics frame = new TestGetGraphics();
17         frame.setTitle("TestGetGraphics");
18         frame.setLocationRelativeTo(null); // Center the frame
19         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
20         frame.setSize(200, 100);
21         frame.setVisible(true);
22
23         // suspending here until pressing enter to return
24         JOptionPane.showMessageDialog(null, "Delay on purpose\nClick OK to dismiss
the dialog");
25
26         Graphics graphics = frame.jlblBanner.getGraphics();
27         graphics.drawLine(0, 0, 150, 150);
28
29
30
31     }
32 }
33
```

```
1 package ex9;
2
3 import javax.swing.*;
4 import java.awt.*;
5
6 public class TestImageIcon extends JFrame {
7
8     private ImageIcon usIcon = new ImageIcon("image/us.gif");
9     private ImageIcon myIcon = new ImageIcon("image/my.jpg");
10    private ImageIcon frIcon = new ImageIcon("image/fr.gif");
11    private ImageIcon ukIcon = new ImageIcon("image/uk.gif");
12
13    public TestImageIcon() {
14        setLayout(new GridLayout(1, 4, 5, 5));
15        add(new JLabel(usIcon));
16        add(new JLabel(myIcon));
17        add(new JLabel(frIcon));
18        add(new JLabel(ukIcon));
19    }
20
21    /** Main method */
22    public static void main(String[] args) {
23        TestImageIcon frame = new TestImageIcon();
24        frame.setTitle("TestImageIcon");
25        frame.setLocationRelativeTo(null); // Center the frame
26        frame.setSize(600, 200);
27        frame.setVisible(true);
28    }
29 }
30 }
31
```

```
1 package ex9;
2
3 import java.awt.Graphics;
4 import javax.swing.*;
5
6 public class TestPaintComponent extends JFrame {
7
8     public TestPaintComponent() {
9         add(new JLabel("Banner"));
10    }
11
12    public static void main(String[] args) {
13        TestPaintComponent frame = new TestPaintComponent();
14        frame.setTitle("TestPaintComponent");
15        frame.setLocationRelativeTo(null); // Center the frame
16        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
17        frame.setSize(200, 100);
18        frame.setVisible(true);
19    }
20
21    class NewLabel extends JLabel {
22
23        public NewLabel(String text) {
24            super(text);
25        }
26
27        @Override
28        protected void paintComponent(Graphics g) {
29            super.paintComponent(g);
30            g.drawLine(0, 0, 50, 50);
31        }
32    }
33 }
34
```

```

1 package ex9;
2
3 import java.awt.Color;
4 import java.awt.Graphics;
5 import javax.swing.*;
6
7 public class TestPanelDrawing extends JFrame {
8
9     public TestPanelDrawing() {
10         add(new JPanel());
11     }
12
13     public static void main(String[] args) {
14         TestPanelDrawing frame = new TestPanelDrawing();
15         frame.setTitle("TestPanelDrawing");
16         frame.setLocationRelativeTo(null); // Center the frame
17         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
18         frame.setSize(200, 100);
19         frame.setVisible(true);
20     }
21
22     class JPanel extends JPanel {
23
24         int x = 0;
25
26         protected void paintComponent(Graphics g) {
27             super.paintComponent(g);
28             g.drawLine(0, 0, 50, 50);
29             g.setColor(Color.red);
30             g.drawString("Banner " + x++, 0, 50);
31
32         }
33     }
34
35 }
36

```

```

1 package ex9;
2
3 import java.awt.*;
4 import javax.swing.*;
5
6 public class TestPanels extends JFrame {
7
8     public TestPanels() {
9         // Create panel p1 for the buttons and set GridLayout
10         JPanel p1 = new JPanel();
11         p1.setLayout(new GridLayout(4, 3));
12
13         // Add buttons to the panel
14         for (int i = 1; i <= 9; i++) {
15             p1.add(new JButton(" " + i));
16         }
17
18         p1.add(new JButton(" " + 0));
19         p1.add(new JButton("Start"));
20         p1.add(new JButton("Stop"));
21
22         // Create panel p2 to hold a text field and p1
23         JPanel p2 = new JPanel(new BorderLayout());
24         p2.add(new JTextField("Time to be displayed here"), BorderLayout.NORTH);
25         p2.add(p1, BorderLayout.CENTER);
26
27         // Add contents to the frame
28         add(p2, BorderLayout.EAST);
29         add(new JButton("Food to be placed here"), BorderLayout.CENTER);
30     }
31
32     /** Main method */
33     public static void main(String[] args) {
34         TestPanels frame = new TestPanels();
35         frame.setTitle("The Front View of a Microwave Oven");
36         frame.setLocationRelativeTo(null); // Center the frame
37         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
38         frame.setSize(400, 250);
39         frame.setVisible(true);
40     }
41 }
42

```

```
1 package ex9;
2
3 import java.awt.*;
4 import javax.swing.*;
5 import javax.swing.border.*;
6
7 public class TestSwingCommonFeatures extends JFrame {
8
9     public TestSwingCommonFeatures() {
10         // Create a panel to group three buttons
11         JPanel p1 = new JPanel(new FlowLayout(FlowLayout.LEFT, 2, 2));
12         JButton jbtLeft = new JButton("Left");
13         JButton jbtCenter = new JButton("Center");
14         JButton jbtRight = new JButton("Right");
15         jbtLeft.setBackground(Color.WHITE);
16         jbtCenter.setForeground(Color.GREEN);
17         jbtRight.setToolTipText("This is the Right button");
18         p1.add(jbtLeft);
19         p1.add(jbtCenter);
20         p1.add(jbtRight);
21         p1.setBorder(new TitledBorder("Three Buttons"));
22
23         // Create a font and a line border
24         Font largeFont = new Font("Arial", Font.BOLD, 20);
25         Border lineBorder = new LineBorder(Color.BLACK, 2);
26
27         // Create a panel to group two labels
28         JPanel p2 = new JPanel(new GridLayout(1, 2, 5, 5));
29         JLabel jlblRed = new JLabel("Red");
30         JLabel jlblOrange = new JLabel("Orange");
31         jlblRed.setForeground(Color.RED);
32         jlblOrange.setForeground(Color.ORANGE);
33         jlblRed.setFont(largeFont);
34         jlblOrange.setFont(largeFont);
35         jlblRed.setBorder(lineBorder);
36         jlblOrange.setBorder(lineBorder);
37         p2.add(jlblRed);
38         p2.add(jlblOrange);
39         p2.setBorder(new TitledBorder("Two Labels"));
40
41         // Add two panels to the frame
42         setLayout(new GridLayout(2, 1, 5, 5));
43         add(p1);
44         add(p2);
45     }
46
47     public static void main(String[] args) {
48         // Create a frame and set its properties
49         JFrame frame = new TestSwingCommonFeatures();
50         frame.setTitle("TestSwingCommonFeatures");
51         frame.setSize(300, 150);
52         frame.setLocationRelativeTo(null); // Center the frame
53         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
54         frame.setVisible(true);
55     }
56 }
57 }
58 }
```