

Graphics in Swing

java.awt.Graphics class provides many methods for graphics programming.

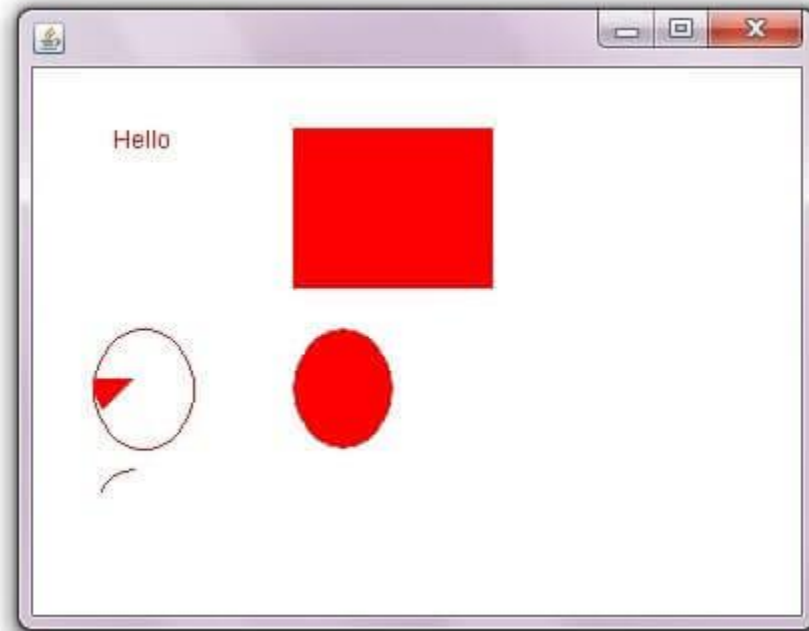
- **public abstract void drawString(String str, int x, int y):** is used to draw the specified string.
- **public void drawRect(int x, int y, int width, int height):** draws a rectangle with the specified width and height.
- **public abstract void fillRect(int x, int y, int width, int height):** is used to fill rectangle with the default color and specified width and height.

- **public abstract void drawOval(int x, int y, int width, int height):** is used to draw oval with the specified width and height.
- **public abstract void fillOval(int x, int y, int width, int height):** is used to fill oval with the default color and specified width and height.
- **public abstract void drawLine(int x1, int y1, int x2, int y2):** is used to draw line between the points(x1, y1) and (x2, y2).

- **public abstract boolean drawImage(Image img, int x, int y, ImageObserver observer):** is used draw the specified image.
- **public abstract void drawArc(int x, int y, int width, int height, int startAngle, int arcAngle):** is used draw a circular or elliptical arc.
- **public abstract void fillArc(int x, int y, int width, int height, int startAngle, int arcAngle):** is used to fill a circular or elliptical arc.

- **public abstract void setColor(Color c):** is used to set the graphics current color to the specified color.
- **public abstract void setFont(Font font):** is used to set the graphics current font to the specified font.

Example



Code

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

public class DisplayGraphics extends Canvas{

    public void paint(Graphics g) {
        setBackground(Color.WHITE);
        setForeground(Color.RED);
        g.drawString("Hello",40,40);
        g.fillRect(130, 30,100, 80);
        g.drawOval(30,130,50, 60);
        g.fillOval(130,130,50, 60);
        g.drawArc(30, 200, 40,50,90,60);
        g.fillArc(30, 130, 40,50,180,40);

    }
}
```

```
public static void main(String[] args) {  
    DisplayGraphics m=new DisplayGraphics();  
    JFrame f=new JFrame();  
    f.add(m);  
    f.setSize(400,400);  
    //f.setLayout(null);  
    f.setVisible(true);  
}  
  
}
```


Displaying image in swing

- For displaying image, we can use the method `drawImage()` of `Graphics` class.

Syntax of `drawImage()` method:

`public abstract boolean drawImage(Image img, int x, int y, ImageObserver observer)`: is used draw the specified image.

Example

```
import java.awt.*;
import javax.swing.JFrame;
public class MyCanvas extends Canvas{
    public void paint(Graphics g) {

        Toolkit t=Toolkit.getDefaultToolkit();
        Image i=t.getImage("p3.gif");
        g.drawImage(i, 120,100,this);

    }

    public static void main(String[] args) {
        MyCanvas m=new MyCanvas();
        JFrame f=new JFrame();
        f.add(m);
        f.setSize(400,400);
        f.setVisible(true);
    }
}
```

Output

