

CS1007 lecture #14 notes

thu 25 oct 2001

<http://www.cs.columbia.edu/~sklar/cs1007>

today:

- news
- more graphics
- reading: *ch 2.10, ch 4.8*

1

Color.

- `java.awt.Color` class
- color is defined using the “RGB” methodology
- “Red”, “Green”, “Blue”
- each is an integer between 0 and 255, where 0 means no color and 255 means maximum color
- so white is: red=255 green=255 blue=255
or the ordered triple (255,255,255)
- and black is: red=0 green=0 blue=0
and red is: red=255 green=0 blue=0
and green is: red=0 green=255 blue=0
and blue is: red=0 green=0 blue=255
- make up your own colors...

3

example from book.

```
import java.applet.*;
import java.awt.*;

public class snowman extends Applet {

    public void paint( Graphics g ) {
        final int MID = 150;
        final int TOP = 50;
        setBackground( Color.cyan );
        g.setColor( Color.blue );
        g.fillRect( 0,175,300,50 );
        g.setColor( Color.yellow );
        g.fillOval( -40,-40,80,80 );
        g.setColor( Color.white );
        g.fillOval( MID-20,TOP,40,40 );
        g.fillOval( MID-35,TOP+35,70,50 );
        g.fillOval( MID-50,TOP+80,100,60 );
        g.setColor( Color.black );
        g.fillOval( MID-10,TOP+10,5,5 );
        g.fillOval( MID+5,TOP+5,5,5 );
        g.drawArc( MID-10,TOP+20,20,10,190,160 );
        g.drawLine( MID-25,TOP+60,MID-50,TOP+40 );
        g.drawLine( MID+25,TOP+60,MID+55,TOP+60 );
        g.drawLine( MID-20,TOP+5,MID+20,TOP+5 );
        g.fillRect( MID-15,TOP-20,30,25 );
    } // end of paint
} // end of class
```

5

news.

- *in a panic...* homework #4 has been extended to tomorrow
- homework #5 will be posted tomorrow,
due Nov 7 AFTER BREAK
so do it before or after — your choice!
- reminder: midterm II is on Nov 1

2

more methods from the `java.awt.Graphics` class.

```
void setColor( Color color );
– sets the foreground (pen) color to the specified color

void fillRect( int x, int y, int width, int height );
– draws a filled rectangle with its upper left corner at (x,y), extending the specified “width” and “height”

void fillOval( int x, int y, int width, int height );
– draws a filled oval circumscribed in the bounding rectangle with its upper left corner at (x,y), extending the specified “width” and “height”

void fillArc( int x, int y, int width, int height,
              int startAngle, int arcAngle );
– draws a filled arc whose oval is circumscribed in the bounding rectangle with its upper left corner at (x,y), extending the specified “width” and “height”, where the arc starts at the “startAngle”, measured in degrees (where 0°) is horizontal along the positive x-axis, extending for “arcAngle” degrees
```

4

modified example.

```
import java.applet.*;
import java.awt.*;

public class ex14 extends Applet {
    public void paint( Graphics g ) {
        final int MID = 150;
        final int TOP = 50;
        setBackground( Color.cyan );
        g.setColor( Color.blue );
        g.fillRect( 0,350,400,50 );
        g.setColor( Color.yellow );
        g.fillOval( -40,-40,80,80 );
        // animate the snowman
        g.setColor( Color.white );
        for ( int top=50; top<=210; top+=10 ) {
            g.setColor( Color.cyan );
            g.fillOval( MID-20,top,40,40 );
            g.fillOval( MID-35,top+35,70,50 );
            g.fillOval( MID-50,top+80,100,60 );
            try {
                Thread.sleep( 1000 );
            }
            catch( InterruptedException x ) {
            }
            g.setColor( Color.white );
            g.fillOval( MID-20,top,40,40 );
            g.fillOval( MID-35,top+35,70,50 );
            g.fillOval( MID-50,top+80,100,60 );
        } // end for
    } // end paint
} // end class ex14
```

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