

Section 14: Graphics and Sound

1) Images

- a) `private Image image;`
- b) `image = getImage(getDocumentBase(), "pic.gif/jpg");`
- c) `g.drawImage(image, x, y, width, length, this);`

example:

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

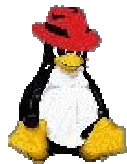
public class chp20 extends Applet {

    private Image i;

    public void init() {
        i = getImage(getDocumentBase(), "tuxhat.gif");
    }

    public void paint(Graphics g) {
        g.drawImage(i,100,100,69,89, this);
    }

}
```



2) Audio

- a) private AudioClip sound;
- b) sound = getAudioClip(getCodeBase(), "sound.au");
- c) sound.play();
- d) sound.loop();
- e) sound.stop();

example:

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

public class chp20a extends Applet {

    private AudioClip s;

    public void init() {
        s = getAudioClip(getCodeBase(), "birds.wav");
        s.play();
    }

}
```

3) Double Buffering Images

- a) eliminates flicker
- b) idea:
 - i) create a Graphics variable
 - ii) draw all things to this variable (passing when necessary)
 - iii) use drawImage to draw the buffer
- c) example:

```
Image myBuffer;

public void paint(Graphics g) {
    Graphics hiddenG = myBuffer.getGraphics();
    hiddenG.setColor(Color.red);
    hiddenG.drawLine(10,10,50,50);
    g.drawImage(myBuffer,0,0,this);
}
```