Announcements

• Assignment 6 out today
• Topic today is 2D arrays – Read Chap 7.6-7
Two-Dimensional Arrays

```
int [][] values = new int[20][15];
// Declares an array with 20 rows, 15 cols
// Sum up all the values
int sum = 0;
for (int k=0; k<20; k++)
{
    for (int j=0; j<15; j++)
    {
        sum += values[k][j];
    }
}
```
Classwork Today

• APT – Pixmap
  – Read in 1D array and convert to 2D array
  – Print 2D array
  – Expand the 2D array
  – Print 2D array again
  – Convert new 2D array back to 1D array
Idea

• Each item in 2D array is replaced by 3 rows and 4 cols of that item
Assignment 6 - Pixmap

- Wrapped up our 2-D array into a class
- Pixmap
  - private String myFileName;
  - private BufferedImage myImage;
  - private Dimension mySize;
- Create a pixmap
- Get and Set a color from one pixel
  - public Color getColor (int x, int y)
  - public void setColor (int x, int y, Color value)
Other Pixmap methods

- public String getName()
- public boolean isInBounds(int x, int y)
- public Dimension getSize()
- public void setSize(int width, int height)

• NOTE: Look at code for “Negative” – it’s already been done for you
Mirror Vertically and Horizontally

- Mirror vertically
  - Think about writing a swap method

- Mirror horizontally
Emboss a Picture
• Example –
  – Expand by 3 rows and 2 columns
Filter - Blur

- Example – Blur 9 x 9
Edge Detection

- Example – edge detect 5x5