Announcements

- Lab 8 is online — (REQUIRES YOU TO PREPARE AN IMPLEMENTATION PLAN!)
- Hw 3 is graded. Will be returned in lab.
- Homework 6 will appear Monday
Today’s Plan

- 2-Dimensional arrays
- 1-Dimensional arrays
- Arrays in general!
The diagram shows the effect of thresholding on an image. The original image contains two people. The threshold values 127 and 129 are applied, resulting in two transformed images. The graph on the right illustrates the relationship between original pixel values and transformed pixel values, with a linear transformation indicated by the yellow line.

- **Original Pixel Values**: The range from 0 to 255.
- **Transformed Pixel Values**: The range from 0 to 255.
- **Threshold Values**: 127 and 129.
Array Construction

```java
int [] [] result = new int [ width ][ height ];
```
Histograms
1-Dimensional Arrays

Declaring a 1-dimensional array

- int[] counts;
- String [] letters;

Constructing a 1-dimensional array

- counts = new int[ 26 ];
- letters = new String[ text.length() ];

The first element is letters[0];

The number of elements is letters.length

The final element is letters[letters.length - 1]
Initializing 1-Dimensional Arrays

int[] squares = new int[20];
Initializing 1-Dimensional Arrays

```java
int[] squares = new int[20]; //all 0

int i = 0;
while(i < squares.length) {
    squares[i] = i*i;
    i = i + 1;
}
```
Initializing 1-Dimensional Arrays

JButton[] buttonList = new JButton[20];
Initializing 1-Dimensional Arrays

JButton[] buttonList = new JButton[20]; // all null
Initializing 1-Dimensional Arrays

JButton[] buttonList = new JButton[20]; //all null

int i = 0;
while(i < buttonList.length) {
    buttonList[i] = new JButton("Button #" + i);
    contentPane.add(buttonList[i]);
    i = i + 1;
}