Lab 4

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1 Histogram of an Image

Figure 1. race.tif
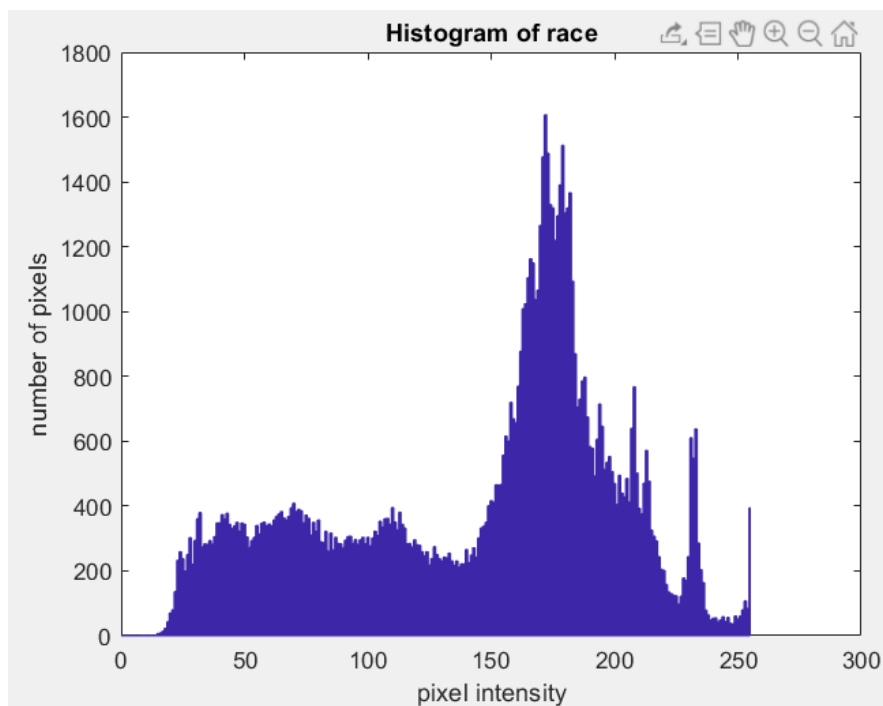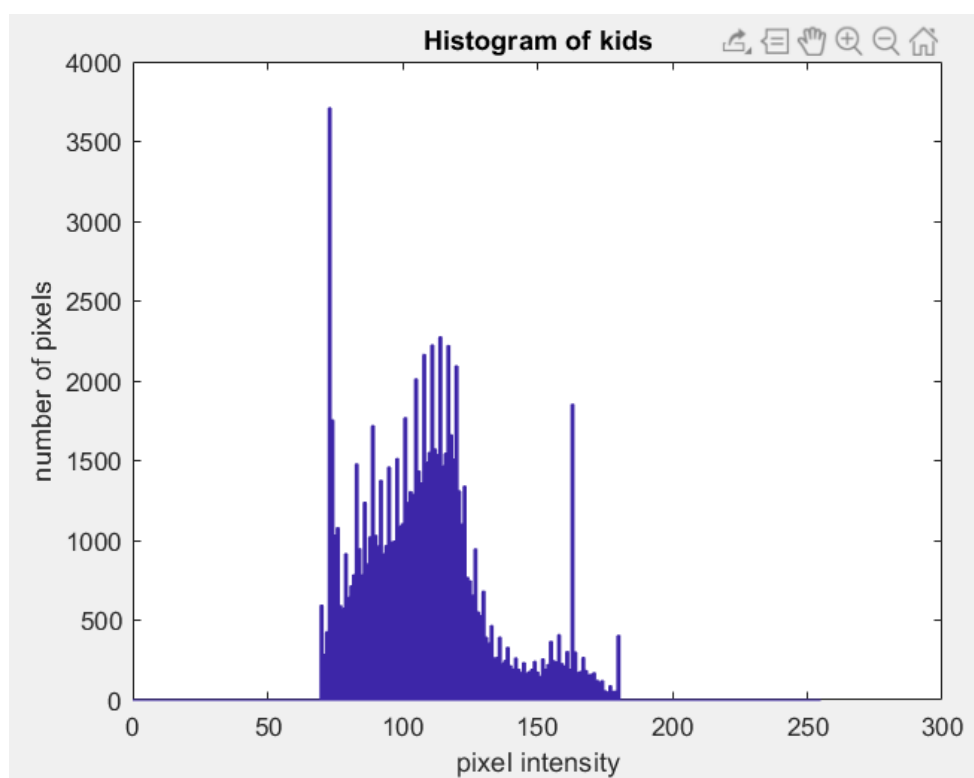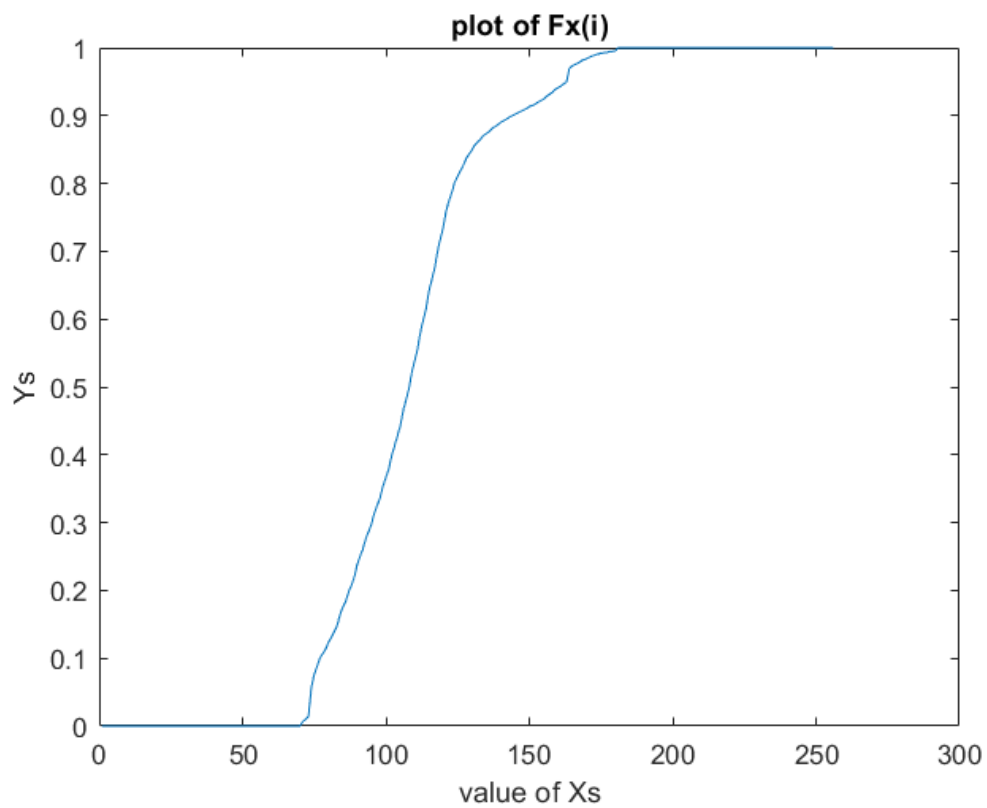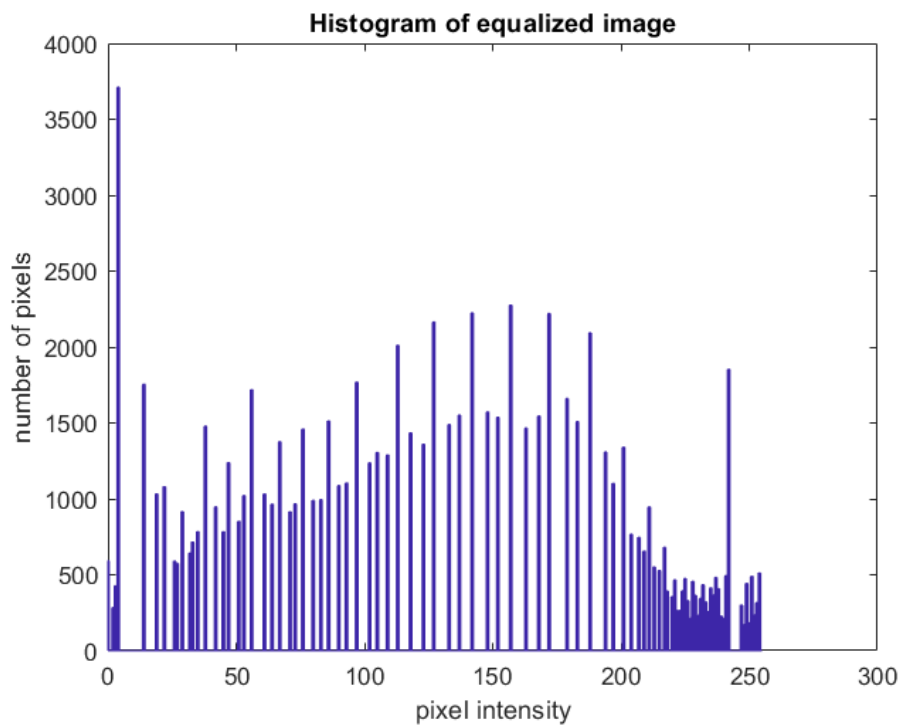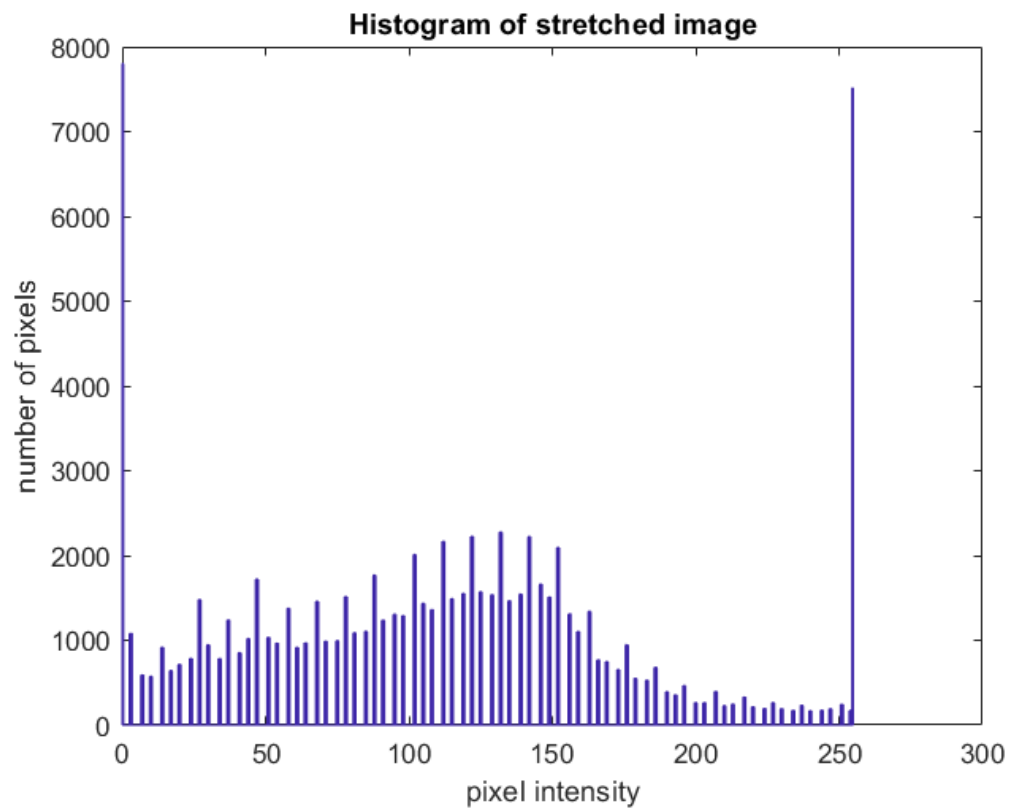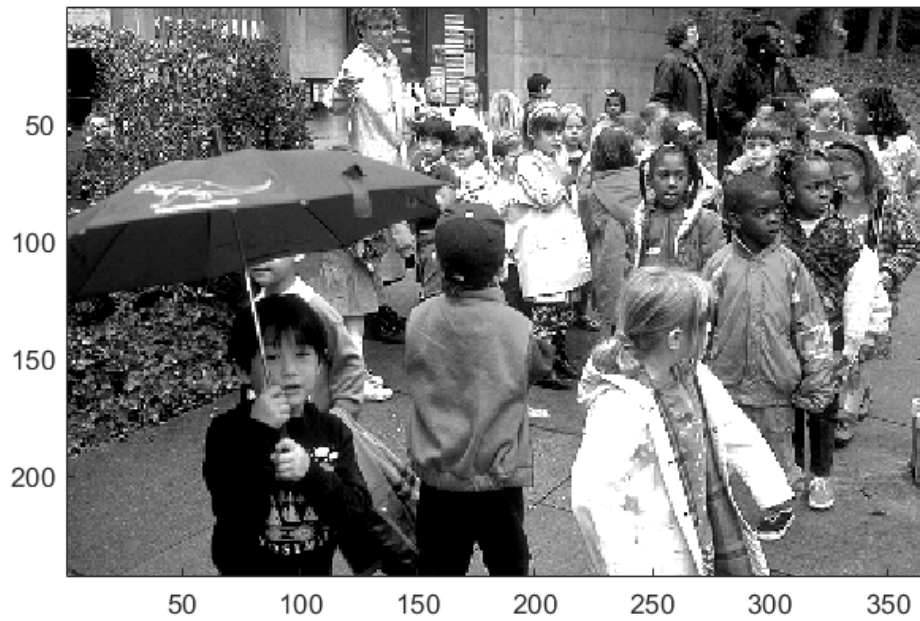
Figure 2. kids.tif

2 Histogram Equalization

2.

3.

4.

3 Contrast Stretching

2.

Histogram of stretched image

number of pixels

pixel intensity
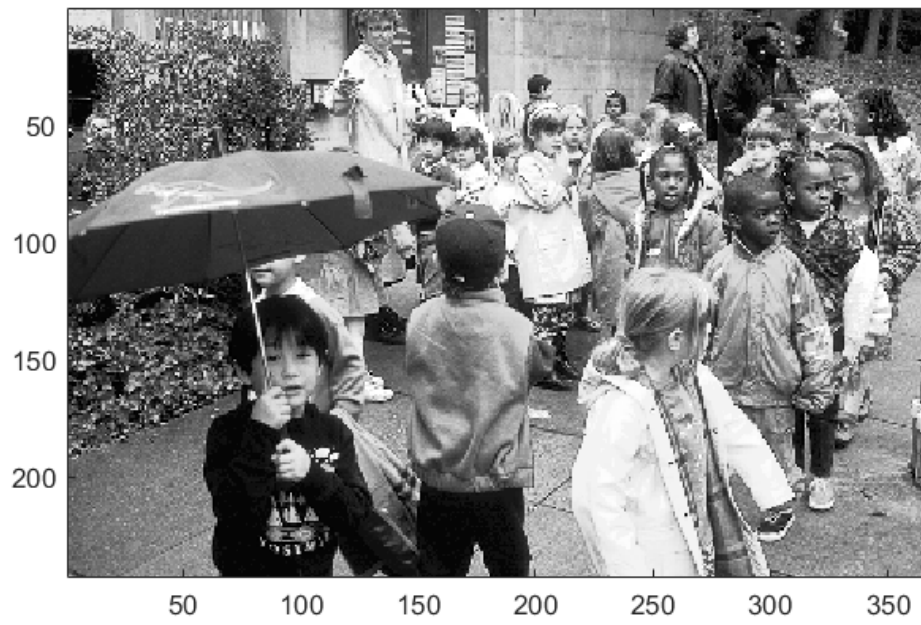
4.2 Determining the Gamma of Your Computer Monitor

1.

2 & 3.
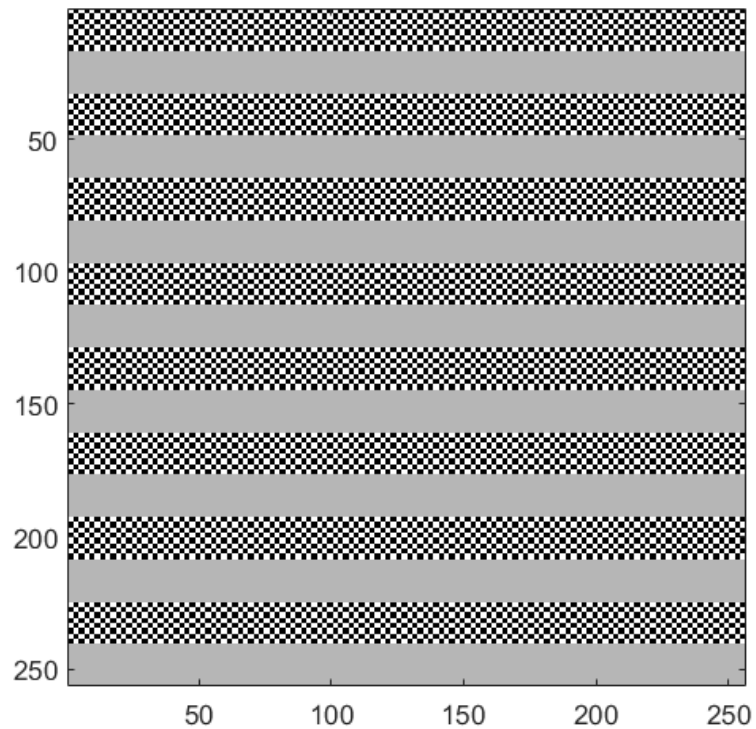
4.2 $I_c = (I_{255} + 0)/2$, $I_g = I_{255}(g/255)^r$

$I_{255}/2 = I_{255}(g/255)^r = \frac{1}{2}$

$\log_{g/255}(1/2) = r$

$g = 183$ $\therefore r = 2.09$

4.3 Gamma Correction

1. $\gamma = 2.09$

Figure 3. original image

Figure 4. corrected image

2.

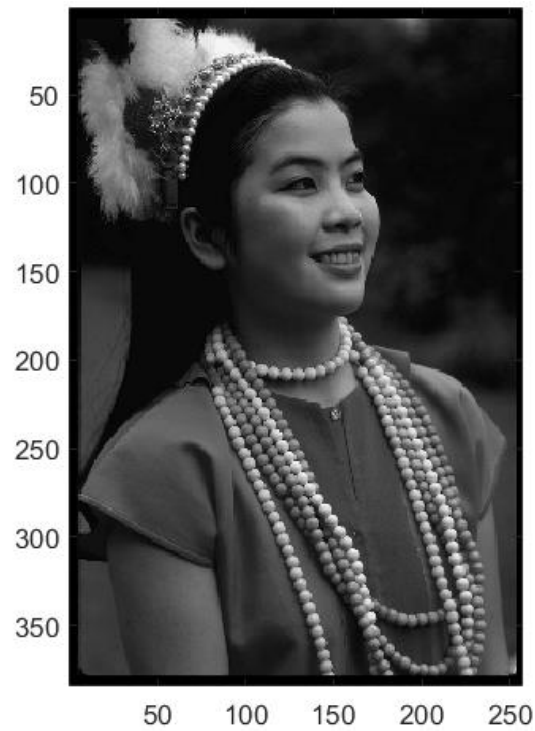Corrected image = 255 * (Original Image / 255)^(1/ γ)

4.3 Gamma Correction

1.

Figure 5. corrected image of gamma15.tif

2.