

```
clear all
```

```
%% 1 Histogram of an Image
```

```
race = imread('./race.tif');  
figure(1)  
hist(race(:), [0:255]);  
xlabel('pixel intensity')  
ylabel('number of pixels')  
title('Histogram of race')
```

```
kids = imread('./kids.tif');  
figure(2)  
hist(kids(:), [0:255]);  
xlabel('pixel intensity')  
ylabel('number of pixels')  
title('Histogram of kids')
```

```
%% 2 Histogram Equalization
```

```
kids = imread('./kids.tif');
```

```
Y = equalize(kids);
```

```
figure  
image(Y+1);  
axis('image');  
graymap = [0:255; 0:255; 0:255]'/255;  
colormap(graymap);
```

```
figure  
hist(Y(:), [0:255]);  
xlabel('pixel intensity')  
ylabel('number of pixels')  
title('Histogram of equalized image')
```

```
%% 3 Contrast Stretching
```

```
kids = imread('./kids.tif');
```

```
output = stretch(kids, 75, 150);
```

```
figure  
image(output);  
axis('image');  
graymap = [0:255; 0:255; 0:255]'/255;  
colormap(graymap);
```

```
figure
hist(output(:), [0:255]);
xlabel('pixel intensity')
ylabel('number of pixels')
title('Histogram of stretched image')
```

```
%% 4.2
```

```
Y = Checkerboard(183);
```

```
figure
image(Y);
axis('image');
graymap = [0:255; 0:255; 0:255]'/255;
colormap(graymap);
%}
```

```
%% 4.3
```

```
linear = imread('./linear.tif');
linear = double(linear);
```

```
gamma = 2.09
c_image = 255 .* (linear/255).^(1/gamma);
```

```
figure
image(c_image);
axis('image');
graymap = [0:255; 0:255; 0:255]'/255;
colormap(graymap);
```

```
gamma15 = imread('./gamma15.tif');
gamma15 = double(gamma15);
```

```
gamma = 2.09
c_image = 255 .* (gamma15./255).^(1.5/gamma);
```

```
figure
image(c_image);
axis('image');
graymap = [0:255; 0:255; 0:255]'/255;
colormap(graymap);
```