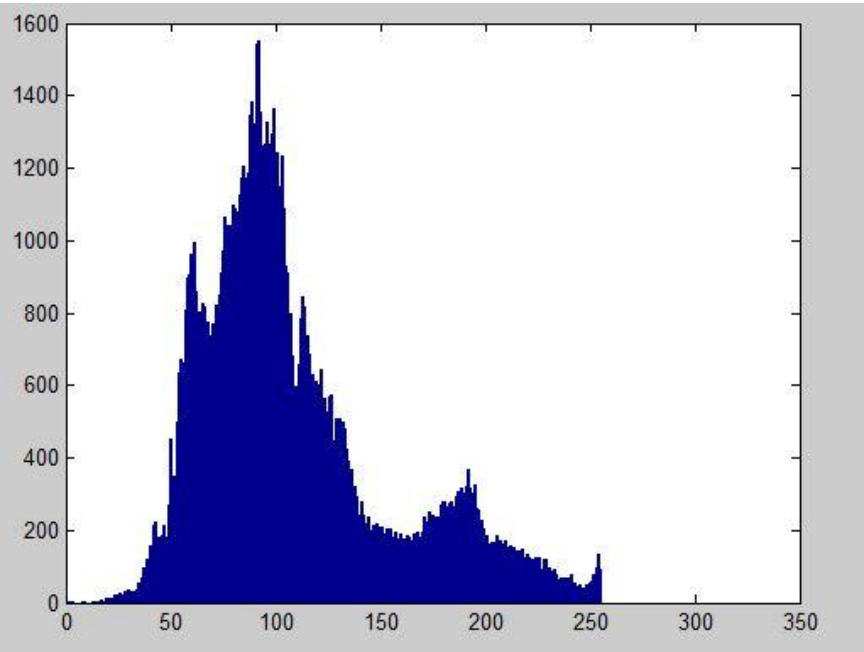
Histogram

This histogram is a graph showing the number of pixels in an image at each different intensity value found in that image

For an 8 bit grayscale image there are 256 different possible intensities , and so the histogram will graphically displays 256 numbers showing the distribution of pixels amongst these grayscale values



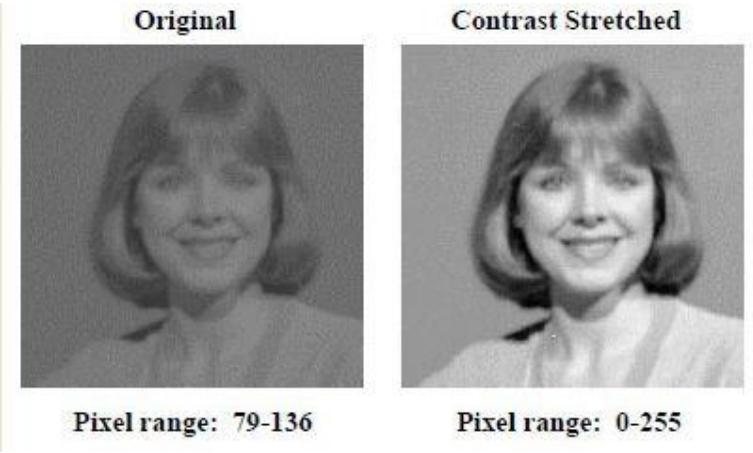
Histogram stretching

- We increase the dynamic range.
- We do not alter the basic shape of the histogram , but we spread it so to cover the entire dynamic range.

- we use straight line slope equation.

- (Smax – Smin)/(Rmax – Rmin)
  - S output image gray level
  - R input image gray level

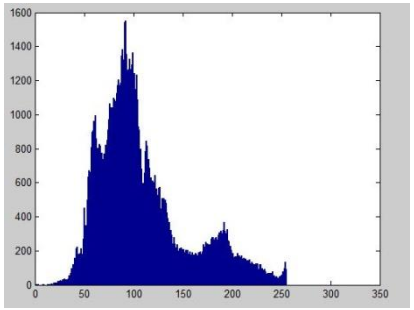
- This transformation function shifts and streches the grey level range of input image to occupy the entire dynamic range (Smin Smax)



Stretching

Image = Imadjust(image , [lowin , highin],[lowout , highout]);

$$T(R) = \frac{Smax - Smin}{Rmax - Rmin}(R - Rmin) + Smin$$




```
b = imread ['image.jpg'];
const=255/(max(max(b))-min(min(b)));
cmin = 0 ;
c(x1,y1) = const*(b(x1,y1)-w)+cmin
```

S output image gray level
R input image gray level