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TRAITEMENT DE L'IMAGE

TP3

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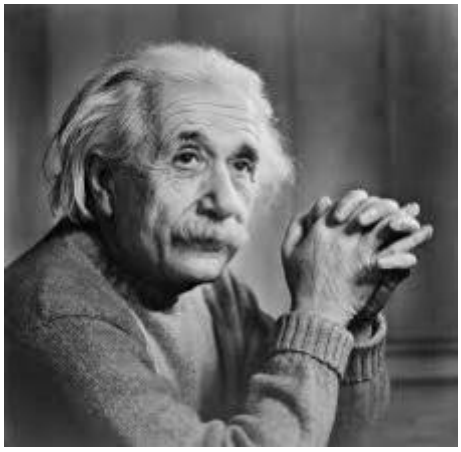
ATTENTION !

In this pratical work, we will use this image as a original image :



A. Write a program to calculate and display the histogram of the image:

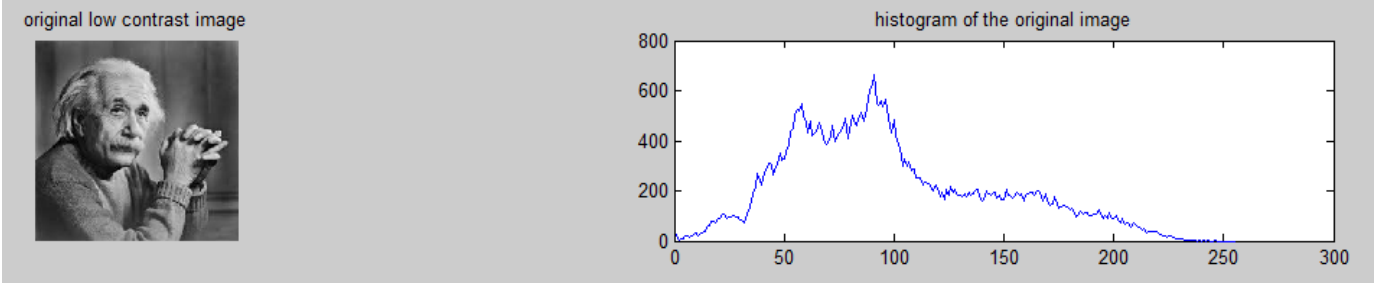
To obtain the histogram of the image that we have, we execute this program on Matlab:

```
clear all;
clc;
clf;

% Read a low contrast image
org_image=imread ('C:\Users\Halima-Jk\Desktop\einstain.jpeg','jpeg');
subplot(3,2,1);
imshow(org_image);
title('original low contrast image');

%use histogram clipping function on low contrast image
imggris=rgb2gray(org_image);
H=imhist(imggris,256);
subplot(3,2,2), plot(H);
title('histogram of the original image');
```

That's the result of the previous program :



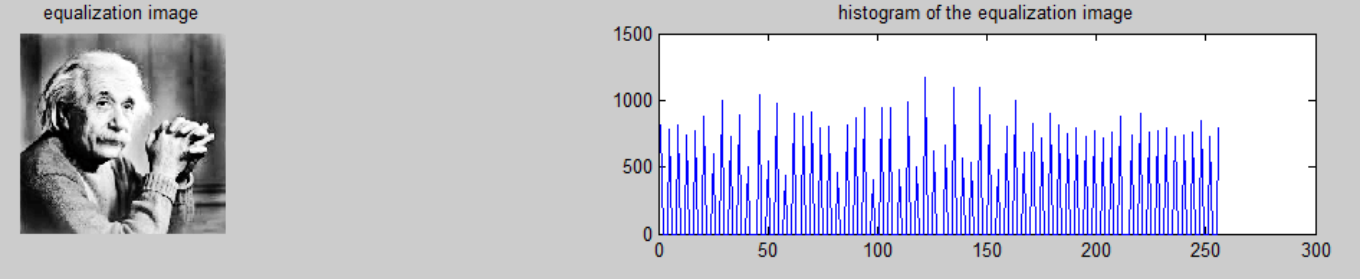
After we see the histogram of the image , we can say that there is a High dynamic range which means very bright and very dark parts in the image .

B. Write a program that equalize the histogram and display the image:

To equalize the histogram of the original image we should execute this program:

```
17      %use histogram equalization function on low contrast image
18 -    imggris=rgb2gray(org_image);
19 -    eq_image=histeq(imggris);
20 -    subplot(3,2,3), imshow(eq_image);
21 -    title('equalization image');
22
23      %display histogram of equalization image
24 -    I=imhist(eq_image);
25 -    subplot(3,2,4), plot(I);
26 -    title('histogram of the equalization image');
```

That's the result of the previous program :



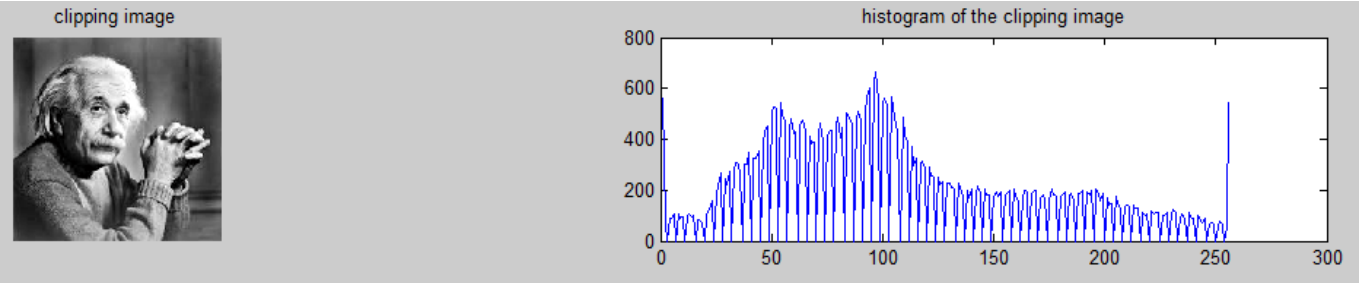
As wee can clearly from the image , the new image contrast has been enhanced and its histogram has also been equalized .

C. Apply histogram clipping to the original image to increase contrast:

To increase the contrast, we should execute the following program:

```
28      %use histogram clipping function on low contrast image
29 -    imggris=rgb2gray(org_image);
30 -    clip_image= imadjust(imggris);
31 -    subplot(3,2,5), imshow(clip_image);
32 -    title('clipping image');
33
34      %display histogram of clipping image
35 -    G= imhist(clip_image);
36 -    subplot(3,2,6), plot(G);
37 -    title('histogram of the clipping image');
```

That's the result of the previous program :



We see that the clipping does a better job than the equalization. The clipping has produces better results in term of brightness .