#include <stdio.h>

#include <iostream>

#include <opencv2/highgui/highgui.hpp>

#include <opencv2/imgproc/imgproc.hpp>

#include <opencv2/core/core.hpp>

using namespace cv;

using namespace std;

int i, j, a[256], l=0, t;

int main(){

Mat img= imread("lena.jpg", CV\_LOAD\_IMAGE\_GRAYSCALE);

for(i=0; i<256; i++){

a[i] = 0;

}

for(i=0; i<img.rows; i++){

for(j=0; j<img.cols; j++){

t = img.at<uchar>(i, j);

a[t]++;

}

}

for(i=0; i<256; i++){

l = max(l,a[i]);

}

Mat img1(l , 255, CV\_8UC3, 255 );

for(i=0; i<img1.rows; i++){

for(j=0; j<img1.cols; j++){

img1.at<Vec3b>(i, j)[2] = 255;

img1.at<Vec3b>(i, j)[1] = 255;

img1.at<Vec3b>(i, j)[0] = 255;

}

}

for(i=0; i<img1.cols; i++){

for(j=0; j<a[i] ; j++){

img1.at<Vec3b>(j,i)[2] = 0;

img1.at<Vec3b>(j,i)[1] = 0;

img1.at<Vec3b>(j,i)[0] = 0;

}

}

imshow("histogram", img1);

waitKey(0);

return 0;

}