#include <stdio.h>

#include <iostream>

#include <opencv2/highgui/highgui.hpp>

#include <opencv2/imgproc/imgproc.hpp>

#include <opencv2/core/core.hpp>

int i, j, k, l, c=0, sum1 =0, sum2=0, sum3=0;

float avg1, avg2, avg3;

using namespace cv;

using namespace std;

int main(){

Mat img = imread("lena.jpg"); Mat img1(img.rows, img.cols, CV\_8UC3, 255);

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

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

for(k=-1; k<=1; k++){

for(l=-1; l<=1; l++){

if(k+i>=0 && l+j<img.cols && k+i<img.rows && j +l>=0){

sum1+=img.at<Vec3b>(i+k, j+l)[0];

sum2+=img.at<Vec3b>(i+k, j+l)[1];

sum3+=img.at<Vec3b>(i+k, j+l)[2];

c++;

}

}

}

avg1= sum1/c; avg2= sum2/c; avg3= sum3/c;

img1.at<Vec3b>(i, j)[0] = avg1;

img1.at<Vec3b>(i, j)[1] = avg2;

img1.at<Vec3b>(i, j)[2] = avg3;

c=0;

sum1=0;

sum2=0;

sum3=0;

}

}

imshow("lena2",img1); imshow("lena", img);

waitKey(0);

}