#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, k,l ;

Mat img = imread("lena.jpg");

void Mean(int pos, void\* data){

int sum1=0, sum2=0, sum3=0,avg1, avg2, avg3, g=0,v=pos;

if(v%2 == 1){

Mat\* img = (Mat\*)data;

Mat img2(img->rows, img->cols, CV\_8UC3, Scalar(255,255,255));

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

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

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

for(l=-v; l<=v; 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];

g++;

}

}

}

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

img2.at<Vec3b>(i, j)[0] = avg1;

img2.at<Vec3b>(i, j)[1] = avg2;

img2.at<Vec3b>(i, j)[2] = avg3;

g=0;

sum1=0;

sum2=0;

sum3=0;

}

}

imshow("lena",img2);

waitKey(0);}}

int main(){

int v=0;

namedWindow("lena", WINDOW\_NORMAL);

createTrackbar("t", "lena", &v, 5,Mean, (void\*)&img);

waitKey(0);

}