#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;

Mat img = imread("paint.png",CV\_LOAD\_IMAGE\_GRAYSCALE);

Mat img1(img.rows, img.cols, CV\_8UC1,Scalar(0));

int c=1, k=0;

Mat trans(Mat img2,int k){

Mat img3(img.rows, img.cols, CV\_8UC1,Scalar(0));

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

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

img3.at<uchar>(i,j) = img2.at<uchar>(i,j);

}}

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

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

if(img1.at<uchar>(i,j)==255){

img3.at<uchar>(i,j+k) = img1.at<uchar>(i,j);

}}}

return img3;

}

void dbs(int x, int y){

img1.at<uchar>(x,y) = 255/c;

for(int p=-1; p<=1; p++){

for(int q=-1; q<=1; q++){

if(p+x>=0 && q+y<img.cols && p+x<img.rows && y +q>=0){

if(img.at<uchar>(x+p,y+q)!=255 && img1.at<uchar>(x+p,y+q)==0){

dbs(x+p,y+q);}

}

}

}}

int main(){

int i, j;

imshow("m", img1);

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

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

if(img.at<uchar>(i,j)!=255 && img1.at<uchar>(i,j)==0){

dbs(i,j);

c++;}

}}

Mat img2(img.rows, img.cols, CV\_8UC1,Scalar(0));

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

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

if((img1.at<uchar>(i,j)== 255/2 || img1.at<uchar>(i,j)== 255/3) && img2.at<uchar>(i,j)!=255 ){

img2.at<uchar>(i,j) = img1.at<uchar>(i,j);

}}}

namedWindow("m1",WINDOW\_NORMAL);

createTrackbar("t","m1",&k,img1.cols);

while(1){

imshow("m1", trans(img2,k));

waitKey(5);

}

}