Report

Project 4

**Sin city live effect**

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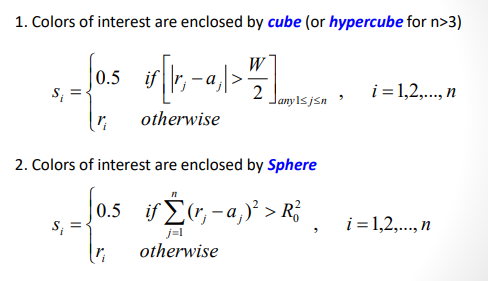
**Objectives**

Write a program that shows only chosen by clicking on live webcam translation vivid color while demonstrating others in grayscale.

Color Slicing

Highlighting a specific range of colors in an image

Display the color of interest so that they stand out from background. Use the region defined by the colors as a mask for further processing.



Code

Firstly, color slicing method was implemented. Above mentioned function was written:

void color\_slicing(int alpha\_slider) {

Mat modified = original.clone();

for (int r = 0; r < original.rows; r++) {

for (int c = 0; c < original.cols; c++) {

if (sqrt(pow((original.at<cv::Vec3b>(r, c)[0] - color\_center[0]), 2) + pow((original.at<cv::Vec3b>(r, c)[1] - color\_center[1]), 2) + pow((original.at<cv::Vec3b>(r, c)[2] - color\_center[2]), 2)) > alpha\_slider) {

int average = (original.at<cv::Vec3b>(r, c)[0] + original.at<cv::Vec3b>(r, c)[1] + original.at<cv::Vec3b>(r, c)[2]) / 3;

modified.at<cv::Vec3b>(r, c)[0] = average;

modified.at<cv::Vec3b>(r, c)[1] = average;

modified.at<cv::Vec3b>(r, c)[2] = average;

}

}

}

imshow("Color", modified);

}

After, trackbar for edge radius was implemented in main():

namedWindow("Color", CV\_WINDOW\_FREERATIO);

char TrackbarName[50];

sprintf\_s(TrackbarName, "Alpha x %d", alpha\_slider\_max);

createTrackbar(TrackbarName, "Color", &alpha\_slider, alpha\_slider\_max, on\_trackbar);

on\_trackbar(alpha\_slider, 0);

and the function is following:

void on\_trackbar(int alpha\_slider, void\*)

{

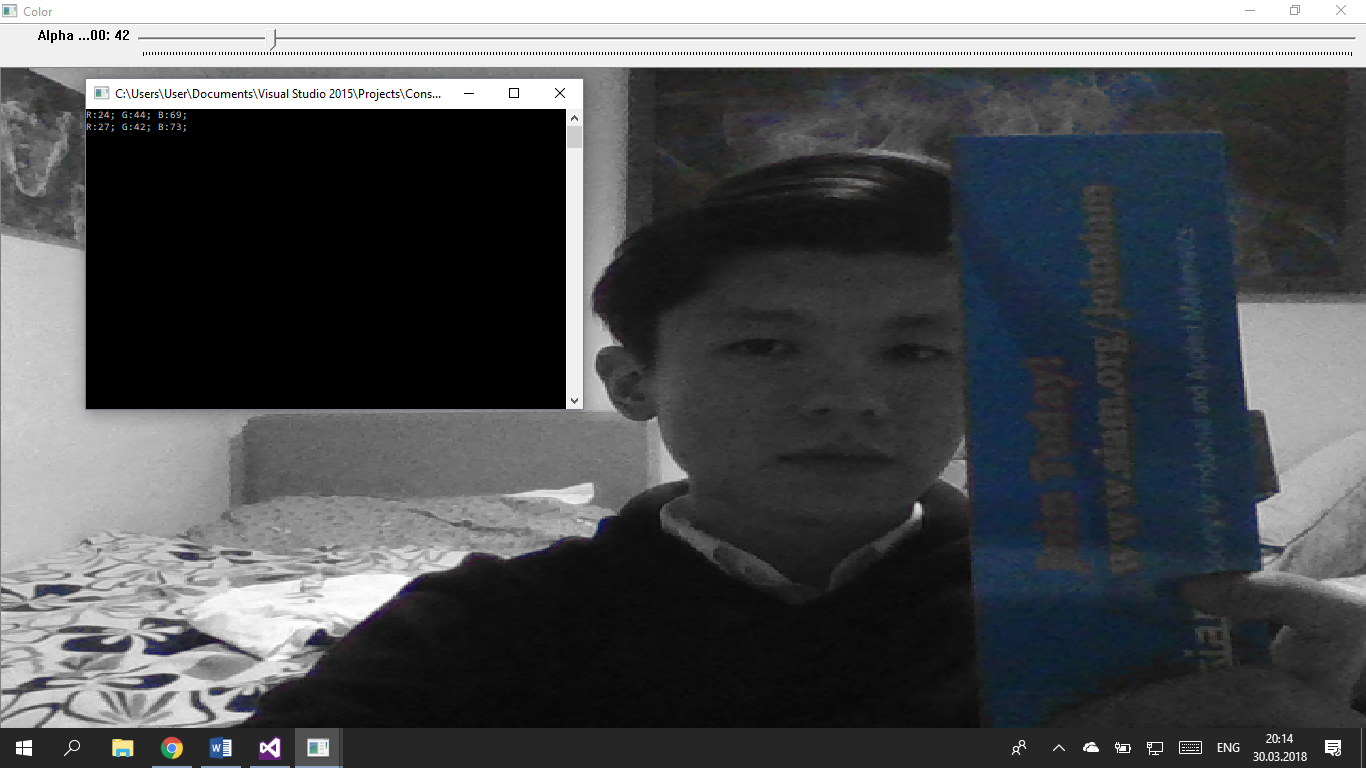
color\_slicing(alpha\_slider);

}

Webcamera was connected using VideoCapture function.

Results

When it clicked to blue color



When it clikcked to another pixel e.g. dark red Sweater the result is



