using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Windows.Forms;

using AForge;

using AForge.Imaging.Filters;

using AForge.Imaging;

using AForge.Video;

using AForge.Video.DirectShow;

using AForge.Vision;

using AForge.Vision.Motion;

namespace Goruntuisleme

{

public partial class Form1 : Form

{

private VideoCaptureDevice kameraAygit;

private FilterInfoCollection webcamAygit;

int objectX;

int objectY;

public Form1()

{

InitializeComponent();

}

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

private void Form1\_FormClosed(object sender, FormClosedEventArgs e)

{

if (kameraAygit != null && kameraAygit.IsRunning)

{

kameraAygit.SignalToStop();

kameraAygit = null;

}

}

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

private void Form1\_Load(object sender, EventArgs e)

{

webcamAygit = new FilterInfoCollection(FilterCategory.VideoInputDevice);

foreach (FilterInfo VideoCaptureDevice in webcamAygit)

{

comboBox1.Items.Add(VideoCaptureDevice.Name); // WebCamleri listele

comboBox1.SelectedIndex = 0;

}

}

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

void cam\_goruntu\_new\_frame(object sender, NewFrameEventArgs eventArgs)

{

Bitmap image = (Bitmap)eventArgs.Frame.Clone();

Bitmap image1 = (Bitmap)eventArgs.Frame.Clone();

pictureBox1.Image = image;

if (radioButton1.Checked == true)

{

ColorFiltering filter = new ColorFiltering();

filter.Red = new IntRange(150, 255);

filter.Green = new IntRange(0, 75);

filter.Blue = new IntRange(0, 75);

filter.ApplyInPlace(image1);

nesnebul(image1);

}

if (radioButton2.Checked == true)

{

ColorFiltering filter = new ColorFiltering();

filter.Red = new IntRange(0, 75);

filter.Green = new IntRange(0, 75);

filter.Blue = new IntRange(100, 255);

filter.ApplyInPlace(image1);

nesnebul(image1);

}

if (radioButton3.Checked == true)

{

ColorFiltering filter = new ColorFiltering();

filter.Red = new IntRange(80 , 255);

filter.Green = new IntRange(80, 255);

filter.Blue = new IntRange(30, 80);

filter.ApplyInPlace(image1);

nesnebul(image1);

}

}

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

public void nesnebul(Bitmap image)

{

BlobCounter blobCounter = new BlobCounter();

blobCounter.MinWidth = 2;

blobCounter.MinHeight = 2;

blobCounter.FilterBlobs = true;

blobCounter.ObjectsOrder = ObjectsOrder.Size;

Grayscale griFiltre = new Grayscale(0.2125, 0.7154, 0.0721);

Bitmap griImage = griFiltre.Apply(image);

blobCounter.ProcessImage(griImage);

Rectangle[] rects = blobCounter.GetObjectsRectangles();

pictureBox2.Image = griImage;

foreach (Rectangle recs in rects)

{

if (rects.Length > 0)

{

Rectangle objectRect = rects[0];

//Graphics g = Graphics.FromImage(image);

Graphics g = pictureBox1.CreateGraphics();

using (Pen pen = new Pen(Color.FromArgb(252, 3, 26), 2))

{

g.DrawRectangle(pen, objectRect);

}

//Cizdirilen Dikdörtgenin Koordinatlari aliniyor.

objectX = objectRect.X + (objectRect.Width / 2);

objectY = objectRect.Y + (objectRect.Height / 2);

g.DrawString(objectX.ToString() + "X" + objectY.ToString(), new Font("Arial", 12), Brushes.Red, new System.Drawing.Point(250, 1));

g.Dispose();

}

}

}

private void button1\_Click(object sender, EventArgs e)

{

kameraAygit = new VideoCaptureDevice(webcamAygit[comboBox1.SelectedIndex].MonikerString);//webcam listesinden kafadan birinciyi al diyoruz.

kameraAygit.NewFrame += new NewFrameEventHandler(cam\_goruntu\_new\_frame);

kameraAygit.DesiredFrameRate = 30;//saniyede kaç görüntü alsın istiyorsanız. FPS

kameraAygit.DesiredFrameSize = new Size(320, 240);//görüntü boyutları

kameraAygit.Start();

}

private void timer1\_Tick(object sender, EventArgs e)

{

label2.Text = objectX.ToString();

label3.Text = objectY.ToString();

int X = Convert.ToInt32(label2.Text);

int Y = Convert.ToInt32(label3.Text);

if (X<100 && Y<75)

{

label1.Text = "1.Ledi Yak";

serialPort1.Write("A");

}

if (X>=100 && X<200 && Y < 75)

{

label1.Text = "2.Ledi Yak";

serialPort1.Write("B");

}

if (X >=200 && X < 300 && Y < 75)

{

label1.Text = "3.Ledi Yak";

serialPort1.Write("C");

}

if (X < 100 && Y >= 75 && Y < 150)

{

label1.Text = "4.Ledi Yak";

serialPort1.Write("D");

}

if (X >= 100 && X < 200 && Y >= 75 && Y < 150)

{

label1.Text = "5.Ledi Yak";

serialPort1.Write("E");

}

if (X >= 200 && X < 300 && Y >= 75 && Y < 150)

{

label1.Text = "6.Ledi Yak";

serialPort1.Write("F");

}

if (X < 100 && Y >= 150 && Y < 225)

{

label1.Text = "7.Ledi Yak";

serialPort1.Write("G");

}

if (X >= 100 && X < 200 && Y >= 150 && Y < 225)

{

label1.Text = "8.Ledi Yak";

serialPort1.Write("H");

}

if (X >= 200 && X < 300 && Y >= 150 && Y < 225)

{

label1.Text = "9.Ledi Yak";

serialPort1.Write("I");

}

}

private void button2\_Click(object sender, EventArgs e)

{

try

{

serialPort1.PortName = "COM3";

serialPort1.BaudRate = 9600;

serialPort1.Open();

MessageBox.Show("Bağlantı Kuruldu");

}

catch

{

MessageBox.Show("Bağlantı Kurulmadı");

}

timer1.Start();

}

}

}