Министерство образования Республики Беларусь

Министерство образования и науки Российской Федерации

МУВПО “Белорусско-Российский университет”

Кафедра “ПОИТ”

Отчет по

Лабораторной работе №5

# Алгоритмы заполнения многоугольников методом САР

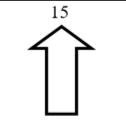
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Могилёв 2020



using System;

using System.Drawing;

using System.Windows.Forms;

namespace KGlab5

{

public partial class Form1 : Form

{

public Form1()

{

InitializeComponent();

DrawCDA();

}

public void DrawCDA()

{

Bitmap bmp = new Bitmap(pictureBox1.Width, pictureBox1.Height);

Graphics graph = Graphics.FromImage(bmp);

Pen pen = new Pen(Color.Black);

int x1 = 200, y1 = 100, x2 = 100, y2 = 200;

int longs;

double x = x1;

double y = y1;

if (Math.Abs(x2 - x1) <= Math.Abs(y2 - y1))

{

longs = Math.Abs(x2 - x1);

}

else

{

longs = Math.Abs(y2 - y1);

}

double dx = (x2 - x1) / longs;

double dy = (y2 - y1) / longs;

for (int i = 0; i <= longs; i++)

{

bmp.SetPixel((int)x, (int)y, Color.Black);

x += dx;

y += dy;

}

x1 = 100;

y1 = 200;

x2 = 180;

y2 = 200;

graph.DrawLine(pen, x1, y1, x2, y2);

x1 = 180;

y1 = 200;

x2 = 180;

y2 = 300;

graph.DrawLine(pen, x1, y1, x2, y2);

x1 = 180;

y1 = 300;

x2 = 220;

y2 = 300;

graph.DrawLine(pen, x1, y1, x2, y2);

x1 = 220;

y1 = 300;

x2 = 220;

y2 = 200;

graph.DrawLine(pen, x1, y1, x2, y2);

x1 = 220;

y1 = 200;

x2 = 300;

y2 = 200;

graph.DrawLine(pen, x1, y1, x2, y2);

x1 = 300;

y1 = 200;

x2 = 200;

y2 = 100;

x = x1;

y = y1;

if (Math.Abs(x2 - x1) <= Math.Abs(y2 - y1))

{

longs = Math.Abs(x2 - x1);

}

else

{

longs = Math.Abs(y2 - y1);

}

dx = (x2 - x1) / longs;

dy = (y2 - y1) / longs;

for (int i = 0; i <= longs; i++)

{

bmp.SetPixel((int)x, (int)y, Color.Black);

x += dx;

y += dy;

}

for (int yscan = 102; yscan <= 299; yscan++)

{

bool finishleft = false;

bool finishright = false;

for (int xscan = 201; finishleft == false; xscan--)

{

if (bmp.GetPixel(xscan - 1, yscan) != bmp.GetPixel(0, 0))

{

bmp.SetPixel(xscan, yscan, Color.Blue);

finishleft = true;

}

else

{

bmp.SetPixel(xscan, yscan, Color.Blue);

}

}

finishleft = false;

for (int xscan = 201; finishright == false; xscan++)

{

if (bmp.GetPixel(xscan + 1, yscan) != bmp.GetPixel(0, 0))

{

bmp.SetPixel(xscan, yscan, Color.Blue);

finishright = true;

}

else

{

bmp.SetPixel(xscan, yscan, Color.Blue);

}

}

finishright = false;

}

pictureBox1.Image = bmp;

}

}

}

